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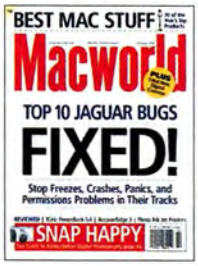

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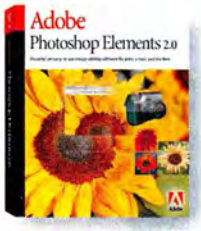

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BY RICK LEPAGE

As OS X Matures, Great Mac Products Abound

A Very Good Year

THE PAST YEAR WAS GOOD FOR MAC PRODUCTS. WE SAW A better and richer set of software and hardware than we did in 2001. From Apple came the introduction of the flat-panel iMac and the eMac, enhanced portables, and new Power Macs (although the Power Macs weren't as well received as Apple might have hoped). Windows users got a chance to play with the iPod, and there were plenty of cool new cameras, printers, and gadgets for everyone to enjoy. And as Mac OS X matured, we finally saw new applications and updates to the old standbys. At this point, the absence of QuarkXPress and missing support for many scanners are the biggest impediments to a Mac user's move to OS X.

This month's issue includes "The 18th Annual Editors' Choice Awards," our look at the top products of 2002. As is always the case with these awards, there are a few surprises mixed in with the usual suspects. As I looked over the final list of Eddy winners, I was struck by the variety and depth of new products and updates—a far cry from last year, when the long shadow of OS X cast a pall over the development community.

The process of choosing the awards is a long one. This year, it started in August, after Macworld Conference & Expo New York, as we took stock of the products we saw (and the ones we hoped to see). Our dedicated editors want to ensure that every product has its moment in the Eddys spotlight. We don't give out awards in the same categories every year, so part of our job is to gauge the strengths and weaknesses of the Mac market and eventually settle on a specific set of categories—this year, there were 23. Doing it right takes a lot of work, and I think the *Macworld* team did a great job of sifting through all of 2002's products to pick the best ones. We hope that you'll find these awards—and the story that goes along with them—helpful and insightful.

Hello, 2003 (Best Wishes, Mac OS 9)

While last year was good, 2003 will be pivotal for Mac users, as Apple drops OS 9 as a bootable operating system from all new Macs and moves solely to OS X (though you'll still be able to run OS 9 applications in Classic mode).

What this means for you depends on who you are and what you do. This news isn't good if you're a dyed-in-the-wool OS 9 user, but ultimately Apple's decision won't make that much difference to you—unless you're that rare combination: someone who wants OS 9 *and* the latest gear.

For OS 9 users sitting on the fence, for occasional OS X dabblers, and for people running OS X on older Macs, 2003 should be an excellent year to upgrade.

I say that because one of the primary reasons Apple is creating an OS X–only future is that it cannot continue to spend time and effort on developing hardware that supports two operating systems when its hardware lines are sorely in need of new technologies that showcase the Mac platform. At some point, Apple had to move away from OS 9, even though it knew that some of its user base wouldn't come along right away. The company is hoping that its new products and technologies will entice fence-sitters and Windows users to switch to OS X.

Luckily, we appear to be at another one of those magical times where technologies suddenly bloom. We've seen the recent rise of digital-hub devices and software, and we're finally beginning to see the acceptance of connection standards like Bluetooth. This year, I hope Apple will introduce expanded wireless support and implement next-generation FireWire and USB standards. Apple should also reveal more-concrete plans for Rendezvous, its new networking technology, which seems to have the potential to expand the digital hub in once unimaginable ways.

> This year's new products have far more variety and depth than last year's crop.

There are lots of Mac users who are happy with the Macs they have, even if they run older versions of Mac OS. (I have friends who still run System 7.5.1 or OS 8.6.) And that's fine, especially if their Macs truly do meet their needs. But to ensure its continued growth, Apple needs to innovate, and to do that, it needs to say good-bye to some older technologies. The time has come for the classic Mac OS's curtain call. And I hope that by the end of this year, accolades for the cool new things the Mac of 2003 can do will have muffled the lingering grumbles about the end of OS 9's run. □

What Mac products shaped your year? What do you want to see in this year's Macs? Drop me a line about these topics, what you're looking for from *Macworld*, or anything related to the Mac. Send me an e-mail (rick_lepage@macworld.com) or join in the discussions in our forums (www.macworld.com).

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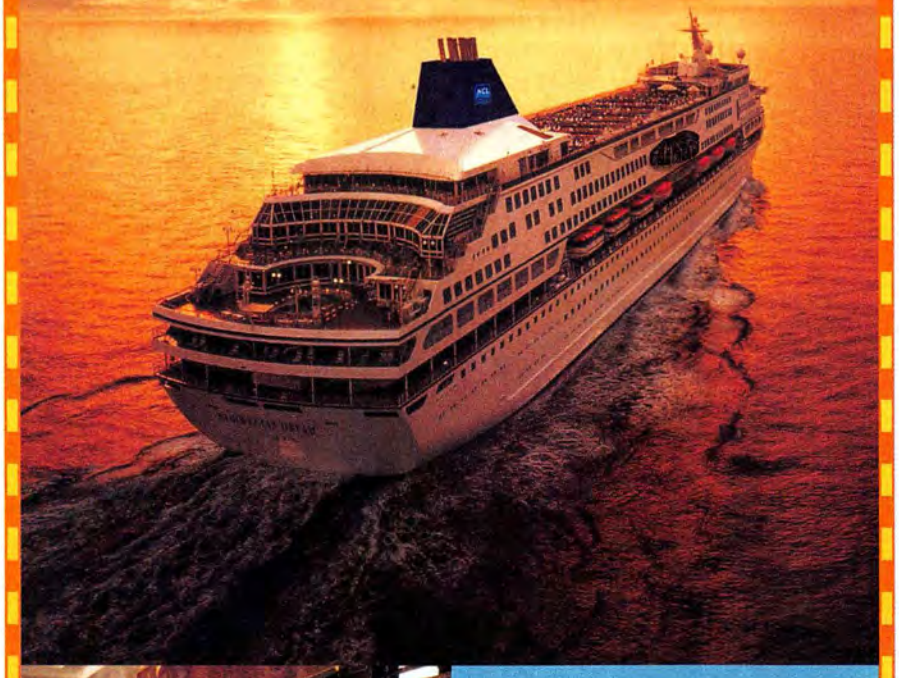

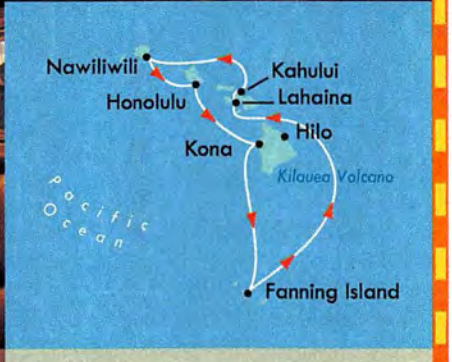

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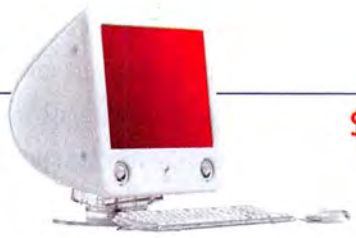

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FEEDBACK

All OS X, All the Time?

Upon seeing a Jaguar-spotted *X* on our November 2002 cover, a few readers wondered whether Apple's new operating system had completely taken over the magazine. "OS X isn't the only system software out there," protested these readers in e-mail doubtlessly composed on Macs that predated the millennium. And we agree—you'll still find tricks and tips for OS 9 in *Macworld*. But a new operating system requires analysis and advice. And judging by the amount of OS X–related mail we receive—questions, comments, and even a few complaints—most readers seem to agree that X should mark this spot. □

The Many Sides of X

JESSE ROTMAN

It's been some time since I became so intensely caught up in *Macworld* that I immediately took an issue to my Mac and began to follow your tips and look for software. But I'm here with your November 2002 issue next to my incredible new 800MHz iMac with the sparkling 17-inch display. This Mac and Jaguar make me feel like I used to when I upgraded Macs years ago. The experience of unpacking and booting was one of those simply awesome, sleep-robbing, defining moments in my life. And *Macworld* is speaking to me again, so I congratulate all of you and all of us for hanging in there and reaping the rewards of steadfast loyalty.

DAN WEBB

I have to admit I was one of the militant holdouts in converting to OS X. After reading all the positive reviews and then discovering the announcement by Intuit that it would soon add OS X support to QuickBooks, I decided to finally take the plunge and upgrade to OS X 10.2. I thought and even feared that it would be a monumental task—replacing a familiar and, though often problematic, comfortable operating system with something unknown and completely different. But the entire process was amazingly easy, and I'm in awe of the simplicity of OS X every day. After totally replacing every program, I was basically up and running and online within five minutes of finishing the installation.

PATRICK McKELVEY

OS X isn't better than OS 9. OS X 10.2 is slow. The beach ball starts spinning when I select the print command, and 25 seconds later, when I can finally click on OK, the ball spins some more before my document prints. Other times, the beach ball spins for no apparent reason. It's like working in molasses. All other actions—opening files and applications, switching between disks, copying files—are noticeably slower than in OS 9, and the spinning beach ball accompanies most of them. Sure, I can have a million programs open at once, and when one crashes, the others are OK, but I can't have QuicKeys menu shortcuts like the ones I've worked with for years in Illustrator and Photoshop. My productivity has dropped dramatically in OS X. The type situation is barely tolerable with Suitcase running the typography show. The FireWire scanner I bought in anticipation of upgrading to OS X won't work with OS X except via quirky third-party software. I can't use my wide-format ink-jet printer—no OS X driver.

WILLIAM ELLIOTT

I was a fan of OS X until I tried to copy the contents of my internal drive to my external drive so I could repartition the former. In OS 9, this was a simple drag-and-drop process. OS X tells me I don't have the authority to copy some of the files. Come on, Apple—this is my computer! Why can't Apple set up OS X to run in single-user and multiple-user modes? If OS X is Mac-friendly, then Apple is using a definition of "friendly" I'm not familiar with.

What About 9?

BRUCE TUFFLI

I'm growing a little weary of *Macworld* paying no attention to OS 9. I realize that Apple has pinned its future on OS X, but a ton of us out here rely daily on OS 9 for our livelihood. If you checked on the percentage of OS 9 and OS X users, I think you would be amazed at how few professionals use OS X on a daily basis. I'm sure that will change in the future, but for now, please don't act like operating systems prior to OS X don't even exist.

JACK PUGH

What is it with OS X users that makes them angry at those who stay at OS 9? It's like the old Mac-versus-Windows argument, but it's in the family now. It's like we've rejected them, not a silly operating system on a computer. I ran OS X 10.1.5 for six months on my PowerBook G3, and now I've stripped it off and gone back to OS 9.2. When Apple puts in a feature that lets me completely disable all of the admin and security features and make the Dock disappear—that is, a feature that lets me run my computer to suit my convenience, not the operating system's—then I may try it again.

The Focused Shopper

JOHN KONOPKA

In his review of DV camcorders (November 2002), Ben Long should have considered a few more criteria—lens speed, autofocus stability, and color accuracy for complicated scenes. The fastest lens means that for indoor shots, the image will have the least amount of noise. It's pretty easy to check in a store—point the camera to a dark corner and see if you can make out the details without the image becoming noisy. In recent comparison shopping, I noticed that on some cameras the autofocus didn't work well in dark scenes—another point in favor of a fast lens. I recommend checking how the camera reproduces complicated scenes such as a knit sweater with a variety of colors. Pure colors, like the ones you'll find in posters, are easy for a CCD camera to reproduce. Complicated images challenge the camera's algorithms for generat-

ing colors from the array of RGB color filters on the CCD. None does a perfect job. Some do better than others. The worst will just show a muddy result when presented with a colorful sweater or similar object.

Readiris Response

JEAN-MARC FONTAINE (IRIS GROUP)

We believe that Christopher Breen's review of Readiris Pro 7 (October 2002) inaccurately portrayed the product. Though Readiris does not come with a spelling checker, it has an interactive learning module. This module, a side feature of the software, does not correct misspellings, but influences the algorithm on specific characters to be used for future OCR by building and appending new characters to a dictionary. When the reviewer clicked 261 times, he was actually training Readiris to recognize specific characters, building a dictionary for later use, not correcting the characters themselves. The reviewer's comments indicated that he did not use a Readiris feature that sets the program dramatically apart from its main competitors—the Manual Image Adjustment option. Readiris lets you rebuild degraded fonts, increasing or decreasing the contrast between the foreground and the background to optimize recognition accuracy. The Image Adjustment feature is available only for documents scanned in color. ScanSoft's OmniPage Pro X (which costs $50 more than Readiris Pro) does not work correctly with many scanners in OS X 10.1. It works with them through Classic using non–OS X scanner drivers, losing the opportunity to use the new memory handling necessary for an imaging application. Readiris Pro 7.0 can be installed directly in OS X and uses OS X scanner drivers. We've even already developed Photoshop Plug-in V7, used by very few scanners.

We stand by the methodology and findings of our review.—Ed.

Driver Distractions

DR. RALPH EISENBERG

In his highly favorable review of the Epson Stylus Photo 2200 (October 2002), Bruce Fraser says that there are "crippling limitations" on what OS X's printer drivers can do. Are there still significant limitations in OS X 10.2.1 as to what the printer drivers can carry out, particularly in paper rolls for 10cm-by-15cm prints? When printing from Photoshop 7, is it necessary to reboot in OS 9 to have access to the broad range of functionality that the Stylus Photo offers, or can you access it in Classic?

As of this writing, the Stylus Pro 2200's complete feature set is still not available in Mac OS X 10.2.1. However, you don't have to restart your Mac in OS 9 to get access to the roll paper, borderless printing, or Matte Black ink features—you can run Photoshop in Classic mode. Simply select the Open In The Classic Environment option in Photoshop 7's Get Info window. After launching Photoshop in Classic for the first time, you'll need to select the 2200 from the Chooser to print to it (if you haven't installed the OS 9 print driver for the 2200, it's on the CD that came with your printer). Epson says that it expects to release a fully functional OS X print driver for the 2200 early in 2003.—Ed.

continues

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Not on the Money

STEVE KLEIN

In the online version of "Money Talks" (*Mac Beat*, November 2002; www.macworld.com/2002/11/macbeat/quickbooks.html), you asked Intuit's David Story if the new QuickBooks for Mac would have feature parity with the Windows version. His awkward reply ran on for seven sentences and 143 words—and it never answered the question. Intuit's evasion strongly suggests that the Mac version of QuickBooks will not offer all the features in the Windows version. Story could have saved 142 words. Is parity with the Windows version something folks can expect? No.

Digital's Domain

RAMIRO ORTA

I had to respond to reader Harrison Judd's objection to the term *film-camera quality* in the August 2002 review of the Canon EOS D60 (*Feedback*, November 2002). I've been a professional photographer for more than 25 years. I specialize in weddings and portraits, so I'm quite familiar with film and, more recently, digital. Judd's comment "the scanned image is preferable, for resolution alone" seems to be a generalization of his own preference. I've worked with scanned images for five years, and I recently used a Canon EOS D30 and Nikon D100. I prefer the digital image. The resolution is far superior to all but the finest drum scan, and the color fidelity is incredible. The 17.5MB files I download from my Nikon D100 capture every bit of detail from the most delicate wedding dress. They reproduce skin tones and the fibers of a fine wool tuxedo in even the most challenging lighting schemes. Digital cameras are not far from being able to compete with film-camera quality. They're competing with and in many instances surpassing film cameras.

Living Spam-Free

DAVE CARTER

I was surprised by reader Aaron Shepard's comments about receiving spam soon after signing up with EarthLink (*Feedback*, November 2002). I've had an EarthLink DSL account for more than a year, and I've never received more than a few spammed messages, usually ads from online vendors I buy from regularly. A friend who uses SBC gets 200 to 300 spams a day and is amazed I don't have this problem. Spam is usually related to your browsing habits and/or failing to select the "don't send me information" option when purchasing products online, to keep your e-mail address from being added to distributed mailing lists. EarthLink isn't the problem.

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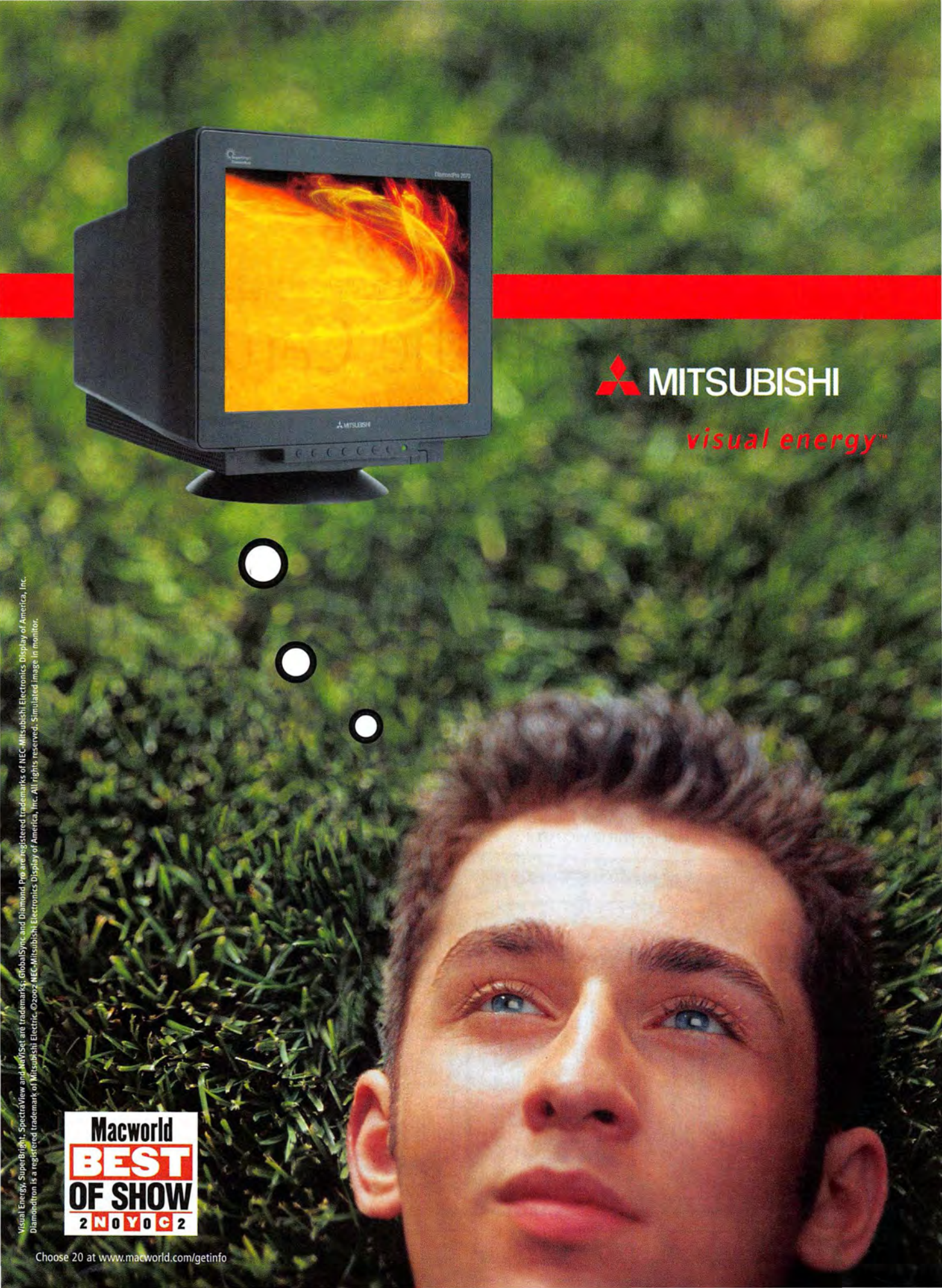
CORRECTIONS

Rick Rizner was the photographer for "Soup Up Your PowerBook" (*Secrets*, January 2003).

Ben Long wrote our reviews of Boris Red 2.5 and Boris Graffiti 2.0 (December 2002).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MACWORLD'S THIRD ANNUAL LOOK AT THE YEAR AHEAD IN MACS

What's in the Cards

No one can say with certainty what to expect from Apple in 2003—no one outside the immediate vicinity of Steve Jobs's office, anyway. But we've managed to find 11 people willing to give us their best guesses. For the third consecutive year, *Macworld* has asked a panel of contributing editors, industry observers, and Mac experts to peer into their flat-panel LCD crystal balls and tell us the answers to the following riddles: What will be 2003's most significant hardware and software products? What will be the biggest news to come from Apple this year? And what will be the year's most significant Mac news?

So what do our panelists foresee? A year filled with digital devices such as PDAs and cell phones, ongoing migration to Mac OS X, and an increasing market share for everybody's favorite platform. We just hope the folks in the immediate vicinity of Steve Jobs's office are taking notes.—PHILIP MICHAELS

WHAT'S NEXT

The latest digital cameras will be the focus of the Photo Marketing Association's annual trade show, in Las Vegas, Nevada, on March 2.

David Blatner
Contributing Editor, *Macworld*

Hardware: The Apple "iPDA," based on the Palm desktop software but combining a 5GB hard drive, a built-in 2-megapixel camera, and easy integration with all the i-apps, and with Microsoft Office v. X, Bluetooth, and a voice recorder.

Software: QuarkXPress 6, which runs only in OS X. But it comes too late, as many companies will have switched to InDesign.

Apple News: Apple buys Xerox.

Market News: Two major PC manufacturers go out of business, Apple's "Switch" campaign starts to show real results, enterprise users begin to switch because of OS X's Unix core, and Apple's market share rises to 10 percent again.

Henry Bortman
Contributing Editor, *Macworld*

Hardware: A Mac-controlled digital-video recorder—or maybe a digital photo album.

Software: A Web browser from Apple.

Apple News: Support for OS X on Intel processors.

Market News: The increased availability of Bluetooth-enabled hardware.

Christopher Breen
Contributing Editor, *Macworld*

Hardware: Venturing out on a very shaky limb, I might suggest another i-device. The "iPhone"? The "iPad"?

Software: The next major iteration of OS X, with greater integration with Apple's applications, the Web, and network and personal computing devices.

Apple News: The severing of past partnerships and formation of new, unexpected business alliances.

Market News: The long shadow of OS 9 will finally fade away. By year's end, the majority of Mac users will pilot Macs running OS X.

Jim Dalrymple
News Director, MacCentral.com

Hardware: Apple's most significant potential hardware release will involve what processor the company decides to go with in the future.

Software: QuarkXPress for OS X.

Apple News: What the company will do with HyperTransport interconnect technology.

Market News: Apple will finally start to see an increase in market share from all sources—education, stores, and enterprise.

Glenn Fleishman
Columnist, *Seattle Times*

Hardware: Quad-processor Power Macs and Xserves with 2GHz PowerPC processors.

Software: "iHub," a program that offers workflow tools for managing all kinds of digital inputs and outputs, from scan-

PAINE PROFFITT

ners, DV camcorders, and digital cameras to ink-jet printers, digital-video recorders, Web galleries, and other formats, replacing several stand-alone, nonintegrated programs.

Apple News: Apple's commitment to processors other than those from Motorola powering Macintosh systems, and Apple still not opening the OS to commodity hardware.

Market News: The improvements for enterprise support in OS X 10.2 will cause an enormous increase in sales, especially of Titanium PowerBooks, to previously untouchable corporations.

Bruce Fraser
Contributing Editor, *Macworld*

Hardware: G5-powered Macs—but not in early 2003.

Software: I'm under a confidentiality agreement (but it will have something to do with processing pixels).

Apple News: The existence of a well-documented OS X developers' kit for peripherals vendors.

Market News: Macs that can't boot into OS 9.

Shawn King
Host, *Your Mac Life*

Hardware: Upgraded, redesigned Power Mac towers. They'll have a different look and a whole new motherboard.

Software: It will be a series of product upgrades—Final Cut Pro 4, iTunes 4, iMovie 3, and so forth—that will continue to extend Apple's industry lead in those sectors.

Apple News: Profit, profit, profit: the Apple Stores will start making buckets of money, and Apple will look healthier across the board. Wall Street will still ignore the company, though.

Market News: All of the above.

Ted Landau
Contributing Editor, *Macworld*

Hardware: I'm counting on a new digital peripheral from Apple this year (maybe more than one). Either a much enhanced iPod or something totally new (perhaps a device that works with Apple's Inkwell software). In second place is the arrival of a G5 Mac. At the very least, there should be some new motherboard designs that help justify Apple's giving up on OS 9 booting.

Software: I expect Apple to release a much enhanced AppleWorks and OS X 10.3. Both of these are at the top of my list. I'm also hopeful that QuarkXPress for OS X will make it out the door in 2003.

Apple News: Apple's "Switch" ads and other attempts to increase its market share finally pay off: Apple's market share will noticeably increase. OS X adoption also accelerates.

Market News: Same as the Apple news.

Tom Negrino
Contributing Editor, *Macworld*

Hardware: More consumer gear: either a Tivo- or ReplayTV-like digital-video recorder that lets you use your Mac as outboard storage, or an Apple-branded handheld that combines the functions of an iPod, cell phone, and PDA—possibly both, in partnership with other companies, such as Philips and Sony Ericsson.

Software: QuarkXPress for OS X. Toward the end of the year, possibly Microsoft Office 11.

Apple News: I have no good answer.

Market News: OS X will become the platform of choice for people and companies looking for an alternative to the Microsoft hegemony, especially larger companies that didn't get on board with the new Microsoft forced-upgrades licensing plans that took effect last fall. As those companies that chose not to upgrade from Office 97 have to replace those desktops, they'll look increasingly to OS X as a credible alternative on both the desktop-application side and in the server arena.

Stephan Somogyi
Contributing Editor, *Macworld*

Hardware: The most impressive Macintosh hardware would result from Apple shipping something with an IBM 970 in it. I do, however, have high hopes for more digital-hub hardware, something with the coolness of the iPod but in a new genre. Perhaps an Apple personal video recorder? An Apple PDA looks more likely with the release of the Dell Axim, though it's unclear to me whether Apple would take the iPod in the direction of a PDA or would want a stand-alone device.

Software: With the growing acceptance of OS X as a Unix platform, I expect to see more developers looking at the Mac as a platform, so we might see completely new apps appearing. Some of the more interesting growth in the Mac market is in the enterprise space, with the apparent success of Xserve.

Apple News: Sustained profitability plus growth would be good.

Market News: Market-share growth beyond 4 to 5 percent worldwide, if Apple can pull it off. In addition, Apple needs to grow the OS X–install base within the overall Mac market. Going past, say, the 50 percent mark would be quite noteworthy.

Franklin N. Tessler
Contributing Editor, *Macworld*

Hardware: I think that we'll see another very cool "digital lifestyle" device, perhaps a PDA-and-cell-phone combo that syncs really nicely with the Mac.

Software: An OS X version of QuarkXPress.

Apple News: One of Apple's top three executives will be leaving the company.

Market News: Market share will show some growth late in the year.

The Ghost of Predictions Past

Who could have predicted that 2002 would bring Mac users a flat-panel iMac, a dual-1GHz Power Mac G4, and the ubiquity of OS X software? Last year's panelists, actually (see "Coming Soon?" *Mac Beat*, March 2002). Here's a look back at some of last year's more notable hits and misses.

Pick a Flat-Panel, Win a Prize A month before Apple unveiled its 15-inch flat-panel iMac at Macworld Conference & Expo San Francisco, MacWindows.com publisher John Rizzo and *Macworld* contributing editors Henry Bortman, Christopher Breen, and Jim Heid predicted that a redesigned iMac with a flat-panel monitor would debut in 2002.

Power Mac Predictions Contributing Editors David Blatner and Scholle Sawyer McFarland correctly figured that Power Macs would hit the gigahertz mark in 2002, with Blatner scoring extra points for predicting a dual-processor model. The year passed without a Power Mac G5, despite Contributing Editor Franklin N. Tessler's forecast.

Software Surprises Last year's panelists correctly prognosticated OS X–native versions of everything from Photoshop to Final Cut to Virtual PC. As for QuarkXPress for OS X, those predictions turned out to be wishful thinking.

Elementary *New York Times* senior writer John Markoff predicted "an information-retrieval technology that will advance Sherlock and integrate even more tightly with OS X." Sounds like Sherlock 3 to us.

Right Idea, Wrong Version Number Blatner and Tessler saw an OS X 10.5 update filling in many of the gaps from earlier versions. Apple saw the same thing, but called it OS X 10.2 instead.

OS 9 Gets the Boot Heid was right when he said that OS X would become the default OS in 2002. Breen was right when he said that Apple would create computers that boot only into OS X—but that's happening in 2003.

Well, Apple Did Make a 20GB Model Contributing Editor Adam C. Engst expected big things from the iPod in 2002, including iPods with larger capacities that could, among other things, display photos and play movies. He was right about the capacity.

What's in Store Tessler predicted that Apple would close some of its retail stores in 2002—it didn't. Markoff thought the retail strategy would be called a success—it was.

There's Always a Chance for a Recount Give Engst credit for the most fearless forecast, with his prediction that Steve Jobs would run for governor of California in 2002 (while remaining CEO of Apple, no less). The new year dawned with Jobs still occupying Apple's headquarters in Cupertino, but not the governor's mansion in Sacramento.—PHILIP MICHAELS

HARDWARE BEAT

Displays

Two LCD monitors from CTX (877/857-7846, www.ctxintl.com): The **S700** ($460) and **S730** ($473) both feature a 1,280-by-1,024-pixel native resolution and the ability to display 16.7 million colors.

An LCD monitor from Formac Electronics (877/436-7622, www.formac.com): The 17.4-inch **Gallery 1740 OX** ($699 for ADC interface, $749 for DVI) is technically identical to the **Gallery 1740** ($899 for ADC interface, $949 for DVI), but it allows for seven dead pixels instead of two. It also carries a one-year warranty instead of a three-year warranty. By easing quality standards and dropping warranty coverage to a level closer to that of Apple's 17-inch Studio Display, Formac hopes to make its panels more appealing to budget-conscious consumers.

Printers

Two new multifunction devices from Epson (800/873-7766, www.epson.com): The **Stylus CX5200** ($199) is a scanner-printer-copier device that prints 22 black-and-white and 11 color pages per minute, and it has a resolution of 5,760 by 1,440 dpi. The **Stylus CX3200** ($149), also a scanner-printer-copier, prints 14 black-and-white and 10 color pages per minute. In addition, it can print an 8-by-10-inch photograph on various media.—COMPILED BY JAMES GALBRAITH

STORAGE BEAT

Hardware

Burners

A FireWire CD-RW drive from Fantom Drives (310/320-7272, www.fantomdrives.com): The **Premier FireWire 52x CD-RW** ($190) burns CD-Rs at speeds as fast as 52× and CD-RWs at 24×. It features the Oxford 911 FireWire Bridge chip set and comes bundled with Roxio's Toast.

External Drives

A USB floppy drive from Y-E Data (847/887-7540, www.yedata.com): The **Y-E Data 2x USB Floppy Drive** ($70) reads and writes floppy diskettes at 2×.

Flash Drives

USB flash drives from Iomega (888/446-6342, www.iomega.com): The **Mini USB Drive** has a 64MB ($70) or 128MB ($100) capacity. A 256MB version is due in early 2003.

Updated USB flash drives from M-Systems (510/494-2090, www.m-sys.com): The **DiskOnKey Pro** is available with a 16MB ($35), 32MB ($45), 64MB ($70), or 128MB ($115) capacity.—COMPILED BY PHILIP MICHAELS

SCANNER MAKERS RUSH TO KEEP UP WITH OS X COMPATIBILITY

When Shall the TWAIN Meet?

It gets its name from the Rudyard Kipling poem "The Ballad of East and West." It's an image-input technology that's included as part of the core of Mac OS X 10.2. It's called TWAIN, an acronym that doesn't actually stand for anything. But the only thing that many Mac users want to know is when TWAIN will help their scanners work in OS X.

TWAIN is a standard software protocol that lets your computer communicate with imaging devices—particularly scanners. The term "TWAIN compliance" refers to a scanner's ability to use this broadly accepted method of sending images from a digitizing device to a Mac. But TWAIN is not the whole story—even though TWAIN is part of the Jaguar update's architecture, the driver for your particular scanner still has to be OS X ready for you to use the device properly.

Jaguar reintroduces the Image Capture application, which not only works great with USB and FireWire digital cameras but also promises new TWAIN compliance. This should mean that you'll be able to plug your scanner in and have it automatically communicate with your Mac. Image Capture works with scanners that already have OS X–compatible TWAIN drivers. According to the Apple Help application, if your scanner's driver is compatible, then Image Capture will let you preview a scanned image, select an area you want to scan, and "set various options that your scanner supports."

Even at this late date, scanner manufacturers such as Microtek, Hewlett-Packard, Epson, Canon, Umax, and AGFA are scrambling to keep pace with the continual updates to OS X. "It's been challenging for HP Scanjet solutions to keep up with Apple's fast-track OS X intro schedule when combined with new code development, changes with TWAIN architecture between 10.1 and 10.2, and maintaining Classic and OS X compatibility for its Mac customers who are still in transition," says Rick Spiller, Hewlett-Packard's Mac-Connect product manager. "Thus, the delayed upgrades and solutions for HP scanners after the August 24 Mac OS X Jaguar intro."

Only now does the Mac market appear to be turning the corner toward virtually complete scanner-driver support. Take Microtek, whose ScanWizard Pro 7.01 now supports six of the company's high-end scanners. Microtek marketing project manager Kristin Lee points out that Apple has praised the company as a success story because it has made the Aqua interface and compatibility major design criteria.

Marking TWAIN Microtek is one of many scanner makers scrambling to make sure that scanners such as its SM 9800 XL support OS X.

Most major manufacturers are now supplying their own updates, so your best bet is to check the Web site of your scanner's manufacturer for specific driver updates. Third-party solutions—such as the SilverFast drivers, from LaserSoft Imaging, and VueScan drivers, from Hamrick Software—also offer OS X compatibility and work with many different scanners (see "Image-Conscious Cat," in "The Cat's Out of the Bag," October 2002).

With legacy scanners and newer models gaining OS X–compatible drivers practically every day, things are looking up for Mac users who rely on scanning. And the line of that Kipling poem that gave OS X's scanning architecture its name—"and never the twain shall meet"—is looking decidedly less prophetic.—ANDREW SHALAT

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MULTIMEDIA BEAT

Hardware

Editing Systems

Media 100 844/Xi, from Media 100 (800/773-1770, www.media100.com): The new video-editing system works with four real-time streams for compositing an unlimited number of video layers. It also includes 10-bit video precision, OMF compatibility with Final Cut Pro and Pro Tools, support for Photoshop layers, and EDL export (starting at $24,995 for hardware and software).

Software

Audio

Audio Hijack 1.5, from Rogue Amoeba Software (www.rogueamoeba.com): The updated software adds digital signal processing (DSP) to OS X–native applications and captures and normalizes audio. Version 1.5 has a Timers feature for recording Internet streams, as well as VU and Menu Bar meters ($16; upgrade, free for registered users).

Traktor DJ Studio 2.0, from Native Instruments (866/556-6487, www.nativeinstruments.de): The updated DJ mixing, live remixing, and mix recording software adds support for both OS 9.2 and OS X. It also sports a redesigned user interface, improved mixer features, and a quick-search function ($199; upgrade, free for registered users).

Video

Echo Fire 2.1, from Synthetic Aperture (949/493-3444, www.synthetic-ap.com): The upgrade to the video-previewing software adds OS X support. Echo Fire gives digital-video users who work in Adobe After Effects and Photoshop a way to instantly preview their work on an NTSC or PAL monitor ($275; upgrade, free for version 2.0 users and $49 for version 1.X users).

Sorenson 3 Compression Suite, from Sorenson Media (801/287-9400, www.sorenson.com): The updated video-compression application, now available only to OS X users, includes the Sorenson Video 3 Pro, Spark Pro, and MPEG-4 codecs. It adds output file constraints, a customizable toolbar, and support for MPEG-4's Advanced Simple Profile ($449; Squeeze 3 for Flash MX available for $119).

Virtix Effects for Final Cut Pro, from Virtix (www.virtix.com): These 30 professional-level effects for Final Cut Pro include One Color (for isolating one color and turning others to black-and-white) and Pixel Finger (for fixing broken pixels in a video), Bubbles, Snow, Smoke, and more ($125).

Announced

A software driver from Aurora Video Systems (586/726-5320, www.auroravideosys.com): The beta driver allows the **IgniterLT, Igniter,** and **IgniterRT** series of professional video-capture boards to be used in OS X for the first time (driver, free; IgniterLT, $999; Igniter, pricing starts at $1,149; IgniterRT, pricing starts at $1,999).—COMPILED BY JONATHAN SEFF

LATEST VIDEO-CAPTURE CARD SELLS FOR FRACTION OF RIVAL PRODUCT'S COST

Blackmagic Plays Its Trump Card

In the world of PCI video-capture cards, Australia's Blackmagic Design (www.blackmagic-design.com) isn't exactly a well-known player. But it has played a hand in developing one of the premier capture cards for Apple's Final Cut Pro: it provided the software driver and video codec for AJA Video Systems' well-regarded Kona SD (*Reviews*, September 2002). With the introduction of its own Deck Link PCI video-capture card, however, Blackmagic would appear to have dealt AJA a serious blow by providing a rival card at a third of the price. But while the $3,295 Kona SD and the $995 Blackmagic DeckLink may look similar, Blackmagic's president, Grant Petty, insists that the two are quite different.

Blackmagic's DeckLink PCI card

"We [with AJA] have always marketed the Kona SD as the card that can do everything," Petty says. "It's got AES/EBU audio, serial digital interface [SDI] audio, genlock—so it can sync to large broadcast systems—and it has serial digital video-in and -out. DeckLink, on the other hand, is a more specialized card that's a dream to use in the right situation."

DeckLink is ideal for a small edit suite with a directly connected digital-broadcast videotape deck. It has SDI-in and -out connections that allow both audio and video to pass through the same cable, rather than over separate lines. The card also has a built-in RS-422 serial deck-control port. DeckLink, however, lacks the AES/EBU audio connections and the genlock of the Kona card, so it's not particularly well suited to working with analog video sources or in large video facilities. And while it has the same video drivers as the Kona card, DeckLink does not support the 23.98-frames-per-second film option its pricier counterpart offers.

So what does that mean for the AJA-Blackmagic partnership? "We are still working hard on drivers and upgrades for the Kona card," Petty says.

Pam Thompson, sales and marketing manager for AJA Video, adds, "The linkage of AJA hardware and [Blackmagic] drivers has been a winning combination from the start, and it will continue to be a winning combination well into the future."—ANTON LINECKER

FORTHCOMING MAC APP ALLOWS ANYONE TO UPDATE SITES

Macromedia's Contribution to Web Design

After architects finish designing a building, they aren't called back to wash the windows or replace lightbulbs. But in many companies, Web designers wind up doing just that—after building a Web site, they get stuck with the time-consuming task of maintaining it.

With Contribute, Macromedia (800/470-7211, www.macromedia.com) hopes to spare Web designers the drudgery of updating information and correcting other people's typos. The $149 program aims to make updating and adding new content to a Web site as easy as using a word processor to type a letter. Designers can use Contribute's system of permissions to provide access to certain parts of a Web page; the rest of the page is protected from inadvertent changes. Anyone with the proper access can use Contribute to open and edit a page. The program lets you either e-mail the altered content to a supervisor for review or publish the page directly to the live site. If you make a mistake, don't worry: Contribute tracks changed pages so you can revert to previous versions.

While Contribute is currently available for Windows, Mac designers looking to escape the tedium of Web-site maintenance will have to wait until a Mac version comes out—Macromedia says that should happen in early 2003.—KELLY LUNSFORD

NEW LACIE DRIVES COVER BOTH ENDS OF STORAGE SPECTRUM

Sizing Up Storage

With the latest additions to its line of storage products, LaCie (503/844-4500, www.lacie.com) is going to extremes. At one end of the spectrum is the LaCie Big Disk, a portable FireWire drive with a massive capacity—500GB—that dwarfs even formerly hefty 120GB drives. Through a combination of a proprietary FireWire board implementation, advanced firmware, and additional drive platters, LaCie was able to blow by the theoretical capacity limits of many hard drives. But all that extra storage space doesn't require extra room—the Big Disk comes in a 10.7-by-1.7-by-10.6-inch case with a drive stand (an optional rack-mounting kit lets you store the Big Disk in a standard 19-inch rack). The $999, 500GB, 5,200-rpm Big Disk is ideal for anyone who wants to archive large graphics and audio files, but digital-video pros may prefer the $899, 400GB model, which features a 7,200-rpm drive. On the opposite end of the size scale is the LaCie Data Bank, a slender, 4.4-by-0.5-by-2.2-inch, 5-ounce drive that fits easily into a pocket. But don't confuse the Data Bank with one of those key-chain-size USB flash drives that max out at around 1GB of storage—the Data Bank features 20GB of capacity. The Data Bank is designed to securely store and quickly transfer large files for Mac users on the move. At press time LaCie hadn't set a full range of capacities and prices; however, it expects to sell the 20GB Data Bank for $349. Together, the Big Disk and Data Bank can handle any storage challenge, big or small.—PHILIP MICHAELS

The LaCie Big Disk

POPULAR NOW UP-TO-DATE GOES CROSS-PLATFORM

A Date with Windows

In an intriguing role reversal—one that treats the large mass of Windows users as a minority—Now Software, a division of Power On Software (800/858-7506, www.nowsoftware.com), is releasing a Windows version of the widely used Now Up-to-Date. The release should be of interest to Mac users: it lets them share files with Windows computers, without any third-party server software other than Now Up-to-Date Server for the Mac.

Now Up-to-Date for Windows is expected to fill the need for group scheduling in cross-platform, small-to-midsize workgroups that don't have the resources to use or maintain Microsoft Exchange Server. Now Up-to-Date joins two cross-platform rivals, Meetingmaker's Meetingmaker 7.1 and Centrinity's FirstClass 7.0.

Now Up-to-Date relies on the Mac-based Now Up-to-Date Event Server software (included in versions 4.0 and later). Windows users can connect to Server as easily as Mac users can, but since there isn't a Windows-compatible Now Up-to-Date Server yet, Windows-only networks won't be able to share content.

Now Up-to-Date for Windows costs $90; it will include a free copy of Now Contact for Windows when the latter product ships in mid-2003. After that, the Windows set of Now Up-to-Date & Contact will cost $130.—JENNIFER BERGER

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PRO FILE | Q&A WITH IAN LEGROW

MAC MOVES

When Corel brought its graphics and design programs to the Mac in the mid-1990s, it was hard for Mac creative professionals to take the developer's products seriously, especially when they compared those products with Adobe and Macromedia applications. But Corel's reputation among Mac users has steadily improved—thanks to the company's purchase of popular Mac graphics programs, its creation of the Procreate product line (for graphics pros), and its early efforts to develop OS X–native software. Ian LeGrow, Corel's executive vice president for new ventures, spoke to *Macworld* about what his company has done to strengthen its Mac presence.—ANDREW SHALAT

AT A GLANCE

IAN LEGROW: Executive Vice President for New Ventures, Corel
MAC: 800MHz Titanium PowerBook G4
SOFTWARE: Apple iTunes, Microsoft Entourage

Was the acquisition of the MetaCreations programs a way of making inroads into the Mac community?

If you look at those products, they're all complementary. Painter is a great complement to other products from Adobe. And obviously the plug-ins, KPT and KnockOut, are dependent on other technology, mainly Photoshop. We saw that as an opportunity of entering the market with a different method from saying "Please switch [to our products]." We can say, "We understand your current workflow is made up of different tools, different from CorelDraw and Photo-Paint. But if you're using those tools on the Mac, then great—our tools work with you. And if you're using Illustrator or Photoshop or InDesign or Quark or FreeHand, these tools also work with you."

Were there any surprises in developing for OS X?

Moving to a new operating system is always going to be challenging. The change from OS 9 to OS X is to a completely new operating system, and we were also one of the first developers on the platform. We released Bryce, Painter, KPT, and Draw 10 at the time. So we worked closely with Apple, with beta versions of software, and we were able to help shape the way some of the OS was developed because we were one of the pioneers.

Has that affected the PC side of your products?

The biggest challenge was with the interface, making it Mac-like. So there hasn't been a lot of crossover in that respect. There were several PC technologies that we were able to leverage on the Mac side for the first time with OS X. The new multithreading model that is part of the OS X kernel—in previous versions it was a cooperative threading model, but now it's true multitasking.

More Info:

www.macworld.com/2003/02/macbeat/corel/index.html
Ian LeGrow and Annette McCleave, Corel's vice president of product marketing, talk about Corel's Mac offerings in the Macworld.com interview.

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PRODUCTIVITY BEAT

Software

Accounting

QuickBooks Pro Edition 5.0 for Mac, from Intuit (888/246-8848, www.quickbooks.com): The business-management app returns to the Mac platform with this version for OS 9 and OS X. New features include a Report Finder feature and PDF capabilities ($300; upgrade, $180).

Communication

Eudora 5.2, from Qualcomm (800/238-3672, www.eudora.com): The latest version of the POP and SMTP e-mail client offers improved filtering, support for Kerberos V authentication, and Secure Sockets Layer e-mail security for OS X 10.2 users. Version 5.2 runs on OS 8.1 and higher ($40; upgrade, $30, or free for users who've paid for the software in the last year).

Cross-Platform

PC MacLAN 9.0, from Miramar Systems (800/862-2526, www.miramar.com): The Mac-to-PC connectivity software has been updated to support files larger than 2GB, as well as long file names and long petitions. In addition, it supports AppleTalk Filing Protocol 3.0 and expands printer support. The latest update fully supports OS X 10.2 while continuing to run on OS 7.5 and higher ($199; upgrade, $69 for version 8.1 users, $99 for all other versions).

Virtual PC 6.0, from Connectix (650/571-5100, www.connectix.com): This version of the Windows-emulation program includes speed increases for OS X 10.2 users, and it allows Windows' Start menu and active Windows applications to appear in the Dock. It also has the ability to mount disk-image files on OS X desktops as volumes (DOS version, $129; Windows XP Home and Windows 98 versions, $219 each; Windows 2000 and Windows XP Professional versions, $249 each; upgrade, $99).

Text Editors

BBEdit 7.0, from Bare Bones Software (781/687-0700, www.barebones.com): The updated HTML and text editor lets users configure multiple Web sites via preferences and then work with files from any of the defined sites. It also adds Syntax coloring support for ASP/VBScript as well as support for XHTML 1.1. Text-editing enhancements include support for selecting and operating on rectangular regions of text. It runs on OS 9.2.2 and later, including OS X ($179; upgrade, $59).

Utilities

Two utilities from Casady & Greene (800/359-4920, www.casadyg.com): **iData Pro X** is the OS X version of the information database. The updated version has Palm connectivity and the ability to import OS X's Mail mailboxes ($40; upgrade, $20). **Spell Catcher for X** is the OS X version of the spelling-checker utility. New features include a Check Selection window and the ability to run in both the native and Classic layers of OS X ($40; upgrade, $20).—COMPILED BY PHILIP MICHAELS

INTUIT, H&R BLOCK UNVEIL UPDATED TAX SOFTWARE

Depth and Taxes

Death and taxes may be the only certainties in life, but annual revisions to tax-preparation applications are becoming just as inevitable. With updates for the 2002 tax year, the two leading providers of tax-preparation programs for the Mac—Intuit (800/446-8848, www.turbotax.com) and H&R Block (818/779-7223, www.taxcut.com)—have added features that aim to save you time and provide you with more-comprehensive advice about filling out your tax return.

Two years ago, Intuit added an Instant Data Entry feature to TurboTax; this feature lets users electronically import W-2, 1098, and 1099 tax information directly from payroll providers and financial institutions. This year, 70 partners are teaming up with Intuit to make tax data available electronically, up from 40 last year; the most important newcomer is ADP, which provides payroll services for about 30 million employees in the United States. Another time-saving feature, My Tax History, lets past TurboTax users transfer their past tax history to this year's return, skipping irrelevant parts of the filing process.

Intuit has added guidance throughout TurboTax. A retirement forecaster uses the information from your tax return to help plan your retirement savings. TurboTax Premiere Home & Business Edition includes a cost/basis calculator to help with investment data entry on your return.

Mac users can purchase the $80 Home & Business Edition or the $50 TurboTax Deluxe. Both versions, which run on OS 9 and OS X, include one free TurboTax state return and a free (with mail-in rebate) federal electronic filing.

H&R Block's TaxCut Platinum features seven assistants that offer guidance and advice on everything from retirement savings and stock options to business expenses and rental property. A 9-Year Tax Preview feature analyzes the effects of recent tax-law changes while letting you see how changes in standard deductions and tax brackets could affect you in the future. In addition to the assistants, TaxCut Platinum gives you access to free advice from H&R Block tax professionals.

Matters of Import TurboTax and TaxCut feature automatic data entry; TurboTax supports ADP, a major supplier of W-2 data.

TaxCut sports improvements to the Entry Manager, for flagging and itemizing entries, and the Click-and-Fix Auditor, for checking errors. Another new feature lets TurboTax users switching to TaxCut easily import data.

Available for both OS 9 and OS X, TaxCut Platinum costs $40. It includes a free state return and free (with $5 mail-in rebate) federal electronic filing.—PHILIP MICHAELS

SEPARATE VERSION OF E-MAIL AND PIM PROGRAM ARRIVES

Microsoft Entourage Stands Alone

Mac users who wanted to get their hands on individual components of Microsoft's Office productivity suite have always been able to buy stand-alone versions of Word, Excel, and PowerPoint—but not of Entourage. Apart from a Word 2001–Entourage 2001 bundle, Microsoft (800/426-9400, www.microsoft.com) has never made its e-mail and personal-information-manager app available outside of the Office suite. That's changing with the January 2003 release of Entourage X as a stand-alone application that sports all the features of the version included with Office v. X. At $99, Entourage X costs more than many other OS X–native e-mail programs (see "Mac OS X E-mail Guide," October 2002), but it also includes integrated calendar, to-do list, and contact-management features in a single product that doesn't require the purchase of an entire software suite.—PHILIP MICHAELS

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GAME BEAT

Software

Android, from Phelios Software (www.phelios.com): This 2-D–action game has players climbing, jumping, and bouncing their way out of danger, through 100 levels and five different worlds ($15).

BombSquad, from Positive Spin Media (www.positivespinmedia.com): If you've ever been envious of Windows users' access to the addictive game Minesweeper, prepare yourself for the OS X edition. But this one's got a twist—a ticking timer right out of a James Bond movie ($5).

F1 Championship Season 2000, from Feral Interactive (www.feral.co.uk): The first serious auto-racing simulation on the Mac in many years, F1 Championship Season features realistic Formula One tracks, cars, drivers, and weather. MacPlay will distribute the game in North America ($50).

Freedom Force, from MacPlay (214/855-5955, www.macplay.com):This role-playing game, which is based on comic-book–style superheroes, puts you in charge of 14 superheroes, including Minuteman, ManBot, and El Diablo, who are attempting to stop the evil Lord Dominion from destroying the world ($40).

Heroes of Might and Magic IV, from 3DO (800/336-3506, www.3do.com): The latest in this series of fantasy-strategy games features a new isometric view of game action, new magic and skill systems, and six new campaigns ($50).

Mutant Storm, from Pompom Games (www.pompom.org.uk): Borrowing from classic games such as Robotron, this psychedelic 3-D arcade game lets you blast hordes of enemies by yourself or with friends, via an included multiplayer mode ($20).

Solitaire Till Dawn X, from Semicolon Software (www.semicolon.com): A longtime favorite of Mac users, this collection of solitaire games has made it to OS X, rewritten. It sports new features, an Aqua interface, and the same old brain-teasing card tricks ($25; $15 for owners of previous versions).

Tom Clancy's Ghost Recon, from Aspyr Media (888/212-7797, www.aspyr.com): The tactical action game from bestselling author Tom Clancy combines the original Russian-themed Ghost Recon game with the new East African Desert Siege expansion pack, to allow players to lead squads of Green Berets on dangerous military missions ($50).

World War II Online, from Strategy First (www.strategyfirst.com): A virtual re-creation of the European theater during World War II, this networked war game mixes action, simulation, and role-playing elements ($35, which includes one month of free online game play).—COMPILED BY JASON SNELL

MACS AT WORK: MACS IN THE MEDIA

Game, Set, Mac for Tennis Channel

Steve Bellamy has turned to Macs for years. They've helped the 38-year-old tennis instructor with everything from demonstrating proper tennis techniques to writing and recording more than 1,500 songs during his days as a musician. Now Bellamy, who estimates that he's owned at least 31 Macs over the years, hopes that his favorite computer will assist him in acing a new field—television.

Bellamy is the president of The Tennis Channel, a cable TV network set to debut in early 2003. Though he may be a television neophyte, Bellamy is drawing on his background as a tennis instructor to broadcast tournament coverage and instructional shows. And he's turning to Macs to help produce that tennis-themed programming. The Tennis Channel production team is using dual-1.25GHz G4 Power Macs running Final Cut Pro to piece together everything from network promos to full-scale TV programs. In addition, the cable network's staff is using Pro Tools to recut some of Bellamy's old songs into bumpers and theme music.

The contacts Bellamy made while exchanging forehands now make him able to launch The Tennis Channel. Lead investor Frank Biondi is the CEO of media giant Viacom, and tennis legends Andre Agassi, Pete Sampras, and Billie Jean King have pitched in. While he may not be a TV expert yet, he believes Macs are the only computers the cable channel and its 60 employees need. "You can't get a smarter product," Bellamy says. "The Mac makes it easy to immediately accomplish things as soon as I pull it out of the box."—GREGG WRENN

Mac Ace The Tennis Channel's Steve Bellamy moves from tennis court to control room with the Mac's help.

WORKING MACS

Do you know any interesting stories about Macs in the workplace? Send your tale to *Macworld*'s Philip Michaels, at pmichaels@macworld.com.

Macs on Your Radio Dial

With talk radio expanding beyond drive-time commutes and onto the Web, more Mac-related audio programming is popping up at a URL near you. The latest offerings come from MacRadio (www.macradio.com), which airs programming, six nights a week, on everything from games to troubleshooting. The Web site broadcasts its shows in MPEG-4 format, available via QuickTime 6 or RealPlayer, and retains an archive of programs for anyone who can't tune in during regularly scheduled broadcasts.

The site's second full season of programming kicked off at the end of September 2002 (a full season of a show runs four to eight weeks). "The broadcast is very much a stage act—it's a unique play every week. It takes a lot out of you," says Robert Aldridge, MacRadio's owner and program director. As a result, he says, he tries to schedule two-week breaks so everyone involved with the shows can recharge before returning.

"We're taking cues from traditional radio but adding things that work for us," Aldridge says.

One of the most successful things MacRadio has added is a high-tech dimension to user interactivity. While hosts of MacRadio shows take phone calls from listeners, they also use Haxial's NetFone, a cross-platform peer-to-peer software package that lets users make Internet-based phone calls. Listeners who'd rather type than talk can send e-mail or drop in on live chats. The result, says Aldridge, is "a lot of interaction between our hosts and the people who listen."

MacRadio is hardly the first marriage between talk radio and the Mac—Shawn King, who has hosted Mac-focused audio broadcasts on the Internet for eight years, currently heads *Your Mac Life*, which airs live on Wednesday nights (www.yourmaclife.com).—LISA SCHMEISER

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WHAT'S HOT

A Quick Look at the World of Macs

1. **Macworld Expo kicks off in San Francisco.** *Oddly enough, Steve Jobs delivers his keynote from Boston.*

2. ***Macworld* recognizes the best hardware and software of 2002 with the annual Eddy awards.** *Thanks to a last-minute advertising blitz by Miramax,* Gangs of New York *scores a controversial win for Software of the Year.*

3. **Mac users complain that the latest dual-processor Power Macs are too loud.** *On the bright side for Apple, sales of iPods with industrial-strength headphones have never been better.*

4. **Microsoft settles its long-running antitrust suit with the federal government.** *Instead of a court-ordered breakup of the software giant, the settlement requires Bill Gates to go to his room immediately after dinner to "think about what you've done."*

Mac OS X Updates

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Antack 1.1
OpenGL 3-D Missile Command–like game

Apple Backup 1.2.1
Backup tool for iDisk .Mac members

Apple Keychain FirstAid 1.0
Verifies and repairs keychain configurations

Application Enhancer 1.2
Hack to enhance other applications

Art Directors Toolkit 3.1
Graphic-design and -production utilities

Beachball 2.0.1
Wait-cursor replacement tool

Boris FX 6.1.2
Effects and compositing creator

Cache Out X 2.1
Clears caches and swapfiles to free up space

Carbon Copy Cloner 2.0
Backup and cloning utility

CE QuicKeys X 1.5.4
Automation utility

ChimeraBooster 1.0
Improves navigation using pipeline on Chimera 0.6

ClearDock 1.2.2
Hack to change Dock background color

Creo Six Degrees 1.5
Desktop-organization tool

DivXRay 1.0
Movie tool converts MPEG-2 program streams into AVI files

Export-Import Entourage X 1.2.2
Transfers data between PIMs

FWB Privacy Toolkit 1.5
Data-encryption and -shredding software

Hide From Dock 1.2
Adds a Hide menu item to apps in the Dock

iGetter X 1.9
Download manager and accelerator

IOXperts USB WebCam Driver 1.0b20
Driver for many USB Web cams

iPhoto Override 10.2.1
Drag-and-drop tool for creating iPhoto libraries

iPulse 1.0
OS X–monitoring application

iView Media Pro 1.5.6
Improved drag and drop, new file-format support for graphics-file catalog

Jaguar Cache Cleaner 1.5
GUI tool for deleting Jaguar system caches

Mac GPS Pro 4.0
Links Garmin GPS receiver to Macs

Meteorologist 1.1.7
Weather access from menu bar or Dock

Metrowerks CodeWarrior 8.3
Maintenance release for application-development environment

Palm Reader 1.2
eBook reader

Prefling 1.7.1
Accesses preference panes from the Dock

PTHClock 2.2
Menu-bar clock and calendar

System Optimizer X 3.1.3
Speeds up system and Internet performance

TypeIt4Me X 1.0
Text macro shortcut tool similar to AutoCorrect

URL Manager Pro 3.0.3
Bookmark manager for browsers

ZipIt 2.2.2
File-compression software

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FireWire Cases Get SMART

A few years ago, Granite Digital (510/471-6442, www.granitedigital.com) became the first storage maker to use the Oxford 911 chip, an ATA-to-FireWire bridge that dramatically improves transfer rates (see "Firing Up FireWire," *Mac Beat*, September 2001). Now Granite is blazing a new trail, with FireWire hard-drive enclosures that monitor SMART-enabled ATA drives. *SMART* stands for "Self-Monitoring Analysis and Reporting Technology," and it's an ATA standard that periodically checks more than 35 hard-drive attributes—including bad sectors, temperature, calibration, CRC errors, and the servomechanism—and warns you when a drive is close to failing. With this warning, you can back up your work and essential data before the drive dies, preventing a lot of downtime. The SMART IDE case kit costs $199; standard FireWire enclosures generally cost $140 to $160. But Granite figures the extra cost is offset by the benefit of equipping your FireWire hard drive with a brain.—ANTON LINECKER

ICONS: WWW.ANDYMARTIN.UK.COM

CREATIVE BEAT

Software

Animation

Carrara 3D Basics, from Eovia (858/457-5359, www.eovia.com): This scaled-down version of Eovia's 3-D–modeling and –animation software is for beginners. Available for OS 8.1 and higher, including OS X, it offers prebuilt objects, textures, effects, training lessons, and tools for exporting and publishing images to the Web ($99).

Cinema 4D 8, from Maxon Computer (877/226-4628, www.maxon.net): This updated 3-D–animation and –modeling software includes expanded modeling tools, greater control over light objects, and new tools for organizing and editing curves. A new, modular product design lets users purchase the basic feature set and then expand the program as necessary, by adding additional modules—currently there are seven. Cinema 4D runs on OS 9 and OS X (basic version, $595; XL Bundle, $1,695; upgrade from version 7 to XL Bundle, $495; Studio Bundle, $2,495; upgrade from version 7 to Studio Bundle, $1,495).

Pixels 3D 4.1, from Pixels Digital (www.pixels3d.com): This update to the 3-D–animation program offers OS X compatibility and a faster ray-tracing engine ($399; upgrade from version 3.X, $199).

Plug-ins

PhotoKit, by Pixel Genius (www.pixelgenius.com): This new OS X–compatible Photoshop 7 plug-in offers 129 photographic effects, including exposure correction, high-pass sharpening, noise reduction, and dodging, as well as a variety of special effects. The plug-in preserves the original image data. You can record multiple filters in an Action for batch processing ($50).

Swift 3D LW 2.0, from Electric Rain (888/613-1500, www.erain.com): The plug-in for LightWave 3D lets users render scenes in the SWF file format. The update for OS 9 and OS X produces full-textured renderings for raster-based output to SWF files ($295; upgrade, $149).

Font Management

FontAgent Pro, from Insider Software (888/263-4799, www.insidersoftware.com): The OS X–native update to FontAgent repairs fonts and deletes corrupt or duplicate fonts. The software's new Font Player feature lets users view and print all of their typefaces in any text string ($90; upgrade, free for FontAgent X users, $70 for users of other versions).

Web Publishing

GoLive PDF Module, from Adobe (800/833-6687, www.adobe.com): The module for Adobe's Web-publishing application converts HTML files to PDFs, which Adobe says are easier to share with team members and clients. After the module is installed, users no longer have to open Adobe Acrobat to create and view PDF files ($20).—COMPILED BY KELLY LUNSFORD AND TERRI STONE

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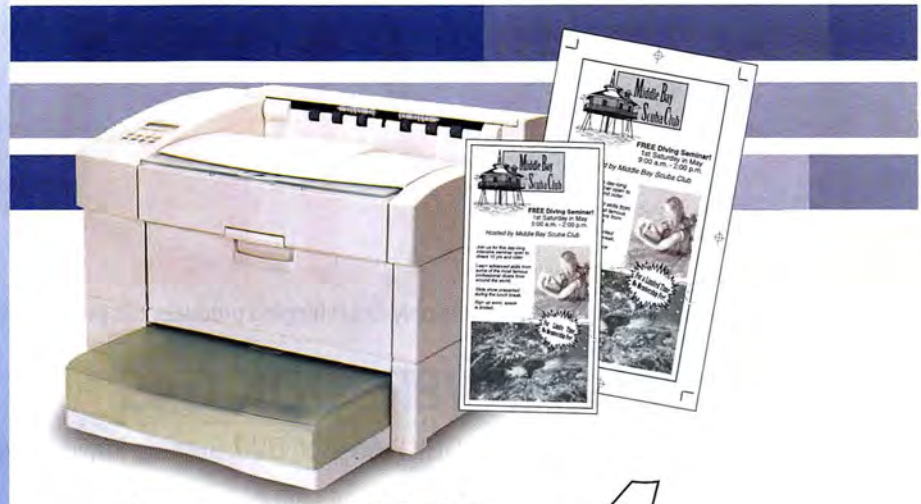

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REVIEWS

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TITANIUM POWERBOOK G4S

New Portable Mac Line Offers 1GHz Processor, DVD-Burning Power, Lower Prices

BY RICK LEPAGE

Apple has kicked the Titanium PowerBook G4 line up a notch by raising the speed of the top model's processor to 1GHz, giving it a DVD-R and CD-RW drive, and dropping its price by $200. The enhancements aren't as significant as those in the last major PowerBook update, in May 2002 (see *Reviews*, July 2002), but they do make an already solid laptop line even more attractive for people looking to upgrade from an old notebook or desktop system, as well as video professionals looking for a mobile DVD studio.

Subtle Changes

The new Titanium PowerBook G4s come in two speeds, 1GHz and 867MHz. The 1GHz model costs $2,999, and it comes with 512MB of RAM (upgradable to 1GB), a 60GB hard drive, the SuperDrive, an ATI Mobility Radeon 9000 video card with 64MB of video RAM, and an AirPort card. The 867MHz system costs $2,299 and includes 256MB of RAM, a 40GB hard drive, the DVD-reading and CD-burning Combo drive, and the same Mobility Radeon 9000 card as the 1GHz model, but with 32MB of video RAM.

The updated PowerBooks also retain many of the enhancements in the line's last major update. These include 1MB of fast DDR Level 3 cache, a 133MHz system bus, a native resolution of 1,280 by 854 pixels on the systems' high-quality 15.2-inch LCDs, and a DVI port for connecting external digital flat-panel displays. They also have the same long battery life and slightly improved AirPort range.

The resultant mix is a fast, portable Mac that nimbly performs nearly all tasks. However, in our tests, the 1GHz model's system and graphics scores were only slightly better than the previous high-end (800MHz) laptop's (see "Just a Little Bit Faster").

Although the benchmark tests show only minor improvements, the new PowerBooks aren't a disappointment. Both the 867MHz and 1GHz models were extremely responsive in day-to-day operations, and generally felt faster than the PowerBooks they replaced. Response times when scrolling and performing other on-screen activities were excellent, and we rarely had to wait for processor-intensive operations to complete. Overall, the new models outperform their predecessors—and cost less.

On-the-Go Video

The 1GHz PowerBook is the first Apple portable to have a version of the CD- and DVD-burning SuperDrive. But this version's maximum burning speed for DVD-R discs is 1×, half the speed of the desktop models' SuperDrives. (The drive burns CD-R discs at 8× and CD-RW discs at 4×.) We burned quite a few DVDs and CDs—from iDVD, DVD Studio Pro, and Toast Titanium—without problems.

Quiet Operation

The 1GHz model's performance and DVD-recording capabilities are strong, but the hard drive is as quiet as a whisper. This model also dissipates heat better than previous PowerBooks. The lower noise levels and reduced heat make for a much more enjoyable computing experience.

Macworld's Buying Advice

The new Titanium PowerBook G4s represent a relatively small upgrade to the PowerBook line. But for Mac owners looking to upgrade from an older Mac, PC owners looking over the fence, or multimedia professionals looking for a mobile video studio, the new PowerBooks are excellent—and reasonably priced—laptops. If you don't need AirPort or DVD-burning capabilities, the 867MHz model is an especially good buy. But the 1GHz model is the most complete portable experience you can buy in one box. □

TITANIUM POWERBOOK G4/1GHZ

RATING: ♦♦♦♦

PROS: Good performance; runs very quietly; DVD-burning capabilities make for fully mobile video studio.

CONS: Slow DVD-burning speed.

PRICE: $2,999

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

TITANIUM POWERBOOK G4/867MHZ

RATING: ♦♦♦♦½

PROS: Good performance for price; runs quietly.

CONS: None significant.

PRICE: $2,299

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Apple Computer, 800/692-7753, www.apple.com

Just a Little Bit Faster

Macworld LAB TEST

	Speedmark 3.2	Adobe Photoshop 7.0.1	iMovie 2.1.2	iTunes 3	Quake III v1.30b5	Cinema 4D XL 7.303
	OVERALL SCORE	SUITE	RENDER	MP3 ENCODE	FRAME RATE	RENDER
PowerBook G4/1GHz	**107**	**1:16**	**1:04**	**1:07**	54.3	10:50
PowerBook G4/867MHz	101	1:17	1:04	1:08	53.8	10:55
PowerBook G4/800MHz	*104*	*1:17*	*1:05*	*1:08*	*55.3*	*10:48*
iBook 800MHz	74	3:15	1:59	2:32	36.5	16:25
iBook 700MHz	*71*	*3:13*	*2:02*	*2:31*	*30.2*	*16:28*
	>Better	<Better	<Better	<Better	>Better	<Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

Speedmark 3.2 scores are relative to those of a 700MHz eMac, which is assigned a score of 100. Adobe Photoshop, iMovie, and iTunes scores are in minutes:seconds. Quake scores are in frames per second. We tested each system with Mac OS X 10.2.1 installed. The iBooks were tested with 256MB of RAM installed, and the PowerBooks were tested with 512MB of RAM installed. We set displays to 1,024-by-768-pixel resolution and 24-bit color. For the Photoshop Suite test, the iBooks were upgraded to 512MB of RAM; the test is a set of ten scripted tasks using a 50MB file. Photoshop's memory was set to 100 percent and History was set to Minimum. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes' Better Quality setting. We tested Quake III at a resolution of 1,024 by 768 pixels and with Graphics set to High Quality. For more information on Speedmark 3.2, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY JAMES GALBRAITH

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39 Deck 3.5.1
40 Canon S830D, Epson Stylus Photo 960, Hewlett-Packard Photosmart 7550
42 VectorWorks 10
43 Formac Gallery 2010
43 Plex
44 Dave 4.0
45 Image Doctor
45 MonacoEZcolor 2.5.1
46 AccountEdge 3
47 Epson Stylus Pro 7600
47 Panasonic AG-DVX100
49 Move2Mac
50 DayLite Personal Edition 1.2, DayLite Business Edition 1.2
51 CrystalMaker 6.0.2
53 Automatic Sequence Export Pro
54 Nik Color Efex Pro Complete Collection
55 penPalette
56 800MHz Apple iBooks
56 Font Reserve 3.1.1
61 THE GAME ROOM
Jedi Knight II: Jedi Outcast, Soldier of Fortune II: Double Helix, Links Championship Edition, Bugdom 2

48 This Month in Digital Cameras
Canon PowerShot S230 Digital Elph, Casio Exilim EX-S2, Fuji FinePix 3800, Hewlett-Packard Photosmart 850, Olympus C-730 Ultra Zoom

OUTSTANDING: ●●●●● VERY GOOD: ●●●● GOOD: ●●● FLAWED: ●● UNACCEPTABLE: ●

DECK 3.5

Midrange Music-Production Tool Moves to OS X, Enriches Video Integration

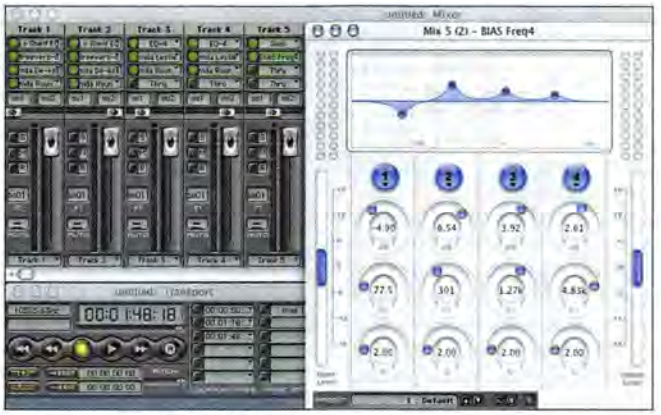
BY DAVID LEISHMAN

Jaguar's release was soon followed by a wave of high-end audio-production applications for Mac OS X, but these programs—with their high prices and pro-level tools—were not for the enthusiast who simply wanted to record, mix, and master music in OS X, without a lot of bells and whistles. Deck 3.5.1, from BIAS (Berkley Integrated Audio Software), is the first moderately priced program that meets this demand. With this new version, BIAS has expanded Deck's excellent tools that let you create audio for video and the Web: the company has added 5.1 surround mixing, as well as the ability to import OMF (Open Media Framework) edit-decision-list (EDL) files, which provide a convenient way to work with applications (such as Apple's Final Cut Pro) that produce high-end video but have limited audio tools.

Impressive Editing Features

Launched more than a decade ago, Deck was one of the first applications to support multitrack digital-audio recording and editing on the Mac. The newest version offers a modern complement of editing features—for example, it lets you record full tracks or add overdubs while monitoring previously recorded tracks.

With Deck, you can add audio tracks and regions to imported video files—a great way to replace dialogue or create and add special effects—and then mix back to stereo or the newly available 5.1 surround format. You can place regions anywhere on a QuickTime movie's timeline (called "spotting") while you monitor the movie. When you're finished, you just export your master back to your video app—nice process, nice sound.



Mixing and Freq-ing Deck's Mixer window enables you to set tracks for recording and routing, and to add plug-ins such as BIAS's Freq 2.0 parametric equalizer.

The Look and Sound

Deck retains the clean and powerful interface introduced last year in version 3.0, adding an Aqua-like appearance to the OS X version. (The OS 9 and OS X versions work equally well.) Its basic editing windows are straightforward and easy to use, and the controls in the Transport and Mixer windows mirror those of familiar hardware devices. The Tracks window enables you to record and edit both audio and mix automation; the Mixer window gives you the ability to choose pan and volume values, and it includes controls for choosing any of Deck's on-board plug-ins.

Deck supports the VST plug-in format and ships with more than 20 plug-ins for each OS, but Deck for OS X requires OS X–native versions; Deck for OS 8.6 through 9.2 also supports the Adobe Premiere format. (There's no support for Apple's OS X–based Audio Unit technology yet.) vBox SE, included with Deck, lets you build and modify preset bundles of plug-ins quickly, and it provides a handy way to audition and compare multiple effects lineups.

The application doesn't offer the sophisticated signal-routing power of applications such as Emagic's Logic Platinum or Steinberg's Cubase, but it can record and play back as many as 64 audio tracks with real-time effects, depending on your hard drive and the speed of your CPU. You can use your Mac's sound-input and -output (I/O) connectors, or a third-party card or outboard device, to capture and play back your tracks. (Your devices need to be compliant with Steinberg's ASIO 1.0 format for use with OS 9, and compliant with Apple's new CoreAudio technology for use with OS X.) Deck is limited to 16-bit audio at sample rates of 44.1kHz or 48kHz, which may disappoint users with audio converters capable of handling higher resolutions, but this shouldn't be a deal breaker for enthusiast-level users or even video pros. While many digital-audio workstations and I/O hardware components can handle 24-bit audio files at 96kHz—which can sound richer when played back on your computer—you'll need to reduce that sample rate for CD or video distribution, anyway.

MIDI and Mastering

Although Deck supports MIDI, it isn't a sequencer; therefore, it can't be used to create MIDI "music" tracks. Fortunately, you can play back prerecorded MIDI tracks in sync with audio files; you'll need to import standard MIDI files from a MIDI sequencer (which may mean added expense) or create them with a third-party utility such as the freeware SimpleSynth for OS X (http://pete.yandell.com/software/). And Deck has comprehensive MIDI control and mapping capabilities, so you can sync to SMPTE (Society of Motion Picture and Television Engineers) time code, or link the program's on-screen faders to an external MIDI control device (such as Tascam's US-428) to remotely control volume, pan, and effects parameters.

The Deck CD also includes a copy of Peak LE. This limited version of BIAS's sample-

continues on page 46

RATING: ●●●●

PROS: Includes all the audio software needed to move songs from idea to disc; reasonable price; addition of OMF support increases integration with video editing.

CONS: Lacks high-resolution sample rates; cannot create MIDI tracks.

PRICE: $399; upgrade from Deck LE, $300

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: BIAS, 800/775-2427, www.bias-inc.com

SIX-COLOR INK-JET PHOTO PRINTERS

New Dye-Based Printers Offer Incremental Improvements, Varying Image Quality

BY BRUCE FRASER

Dye-based ink-jet photo printers straddle two distinct markets—nonprofessional users who want to print photos from a digital camera with a minimum of hassle, and demanding graphics professionals who won't tolerate the weaker blacks in images from more-expensive photo printers that use longer-lasting pigment inks. The latter group is generally willing to trade print longevity for the deeper blacks that dye-based ink-jets produce.

We looked at the latest crop of six-color photo printers that use dye-based inks: the $349 Canon S830D, the $349 Epson Stylus Photo 960, and the $399 Hewlett-Packard Photosmart 7550. All three handle paper as wide as 8.5 inches and offer some advanced capabilities, but they share one unfortunate limitation—significant features that aren't supported in Mac OS X (see "OS X and Printing"). In general, these printers represent evolutionary, but not revolutionary, improvements on their predecessors.

Each printer has its major selling points. The S830D and the Photosmart 7550 offer computerless (direct) printing from a range of digital cameras and multimedia cards. The Stylus Photo 960 offers advanced paper-handling capabilities formerly reserved for Epson's more expensive offerings. However, all three printers can produce images of professional-level quality without intimidating the casual user.

Direct Printing

The direct-printing capabilities of the S830D and the Photosmart 7550 allow you to print images from a digital camera straight to the printer without the aid of a computer: you either insert camera media into the printer's built-in reader or connect a supported camera directly to the printer. The Photosmart 7550 has a built-in LCD viewer that actually shows you the images on the memory card, and Canon offers the same capability as an option: the $99 CV-100 Canon Image Viewer. Both printers allow you to print just the photos you want and not the entire contents of a card. They also take advantage of the EXIF (Extendable Image File Format) data supplied by most current consumer-level digital cameras to perform rudimentary image optimization. In our tests, these prints looked decent, but they were no match for manually edited images.

Even if you're a pro who would never dream of committing unedited images to paper, you may find the ability of the S830D and the Photosmart 7550 to generate an index print—thumbnails of every image on a card—surprisingly useful. Neither printer can handle all images from all cameras, though—check the companies' Web sites for an exhaustive list of supported cameras and file formats.

The Canon S830D

The Stylus Photo 960 doesn't include a card reader or a direct camera connection, but it does support EXIF, as well as Epson's own Print Image Matching (PIM) technology. Though you do need a computer to print to the Epson, it offers automatic image-handling features comparable to those of the other two printers.

Inks and Gamuts

All three printers use six inks to print images. The Canon and Epson printers use cyan, light cyan, magenta, light magenta, yellow, and black, while the Photosmart 7550 uses cyan, light cyan, magenta, light magenta, yellow, and light yellow—it uses the black cartridge only when you're printing black text. The Photosmart 7550 is the first HP printer to use more than four inks. In our previous photo-printer roundups, HP's four-color printers received poor marks for highlight details, which rely on the light inks, so we're glad to see that HP has taken this step in the right direction.

However, after working with the HP printer and subjecting its prints to a close examination, we concluded that HP chose the wrong six inks. The light yellow doesn't seem to influence print quality—yellow is already pretty light, after all—but the absence of black ink in photo prints appears to have a negative effect on the printer's color gamut (the range of colors it can produce), evidenced by its inability to produce dark, saturated colors. Try as we might, we couldn't find a way to get a satisfactory dark green from the Photosmart 7550. It's also the only one of the three printers that doesn't offer individual cartridges for each ink, instead using three cartridges—one for black, one for CMY, and one for light CMY: When one of the colors in a cartridge runs out, you'll need to replace the entire cartridge.

The Canon and Epson printers have very similar color gamuts. The Canon images look better than the Epson's when it comes to dark blues, and the Epson beats the Canon with regard to dark greens, but the differences are subtle. Essentially, these two printers tie in the image-quality category. The Epson produces a slightly darker black than the Canon and a much darker black than the HP.

The Speed of the Feed

Macworld LAB TEST

	Adobe Photoshop 4-by-6 Photo	Adobe Photoshop 8-by-10 Photo	Adobe Photoshop 8-by-10 Photo	Microsoft Word 10-Page Document
	BEST QUALITY	GOOD QUALITY	BEST QUALITY	NORMAL QUALITY
Canon S830D	1:05	2:43	4:58	4:45
Epson Stylus Photo 960	4:33	3:59	8:34	5:32
Hewlett-Packard Photosmart 7550	4:14	9:59	24:12	5:44
BEST RESULTS IN **BOLD.**	<Better	<Better	<Better	<Better

All scores are in minutes:seconds. We tested the printers using an 867MHz Power Mac G4 with OS X 10.2.1 and 256MB of RAM. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We used Adobe Photoshop 7.0.1 to print the photographic images. We recorded the time each printer took to print a 4.5-by-6-inch photo using the best-quality setting. We recorded the time each printer took to print an 8-by-10-inch photo with both the best-quality and next-best-quality settings. We also recorded the time each printer took to print a 10-page Microsoft Word X document at normal quality.—MACWORLD LAB TESTING BY JEFFY K. MILSTEAD

Six-Color Dye-Based Ink-Jet Photo Printers Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	INKS (CARTRIDGES)	FEATURES	PROS	CONS
Canon	S830D	3.5	$349	800/652-2666, www.usa.canon.com	cyan, light cyan, magenta, light magenta, yellow, black (individual cartridges)	PC Card reader with Dazzle 4 in 1 PC Card adapter included (SD, MMC, Memory Stick, SmartMedia); direct connection for supported cameras	Fast; high-quality output.	LCD viewer not built in.
Epson	Stylus Photo 960	4	$349	800/463-7766, www.epson.com	cyan, light cyan, magenta, light magenta, yellow, black (individual cartridges)	paper-roll holder and automatic cutter included	Widest range of paper-handling options and image sizes; best output.	No direct-printing support.
Hewlett-Packard	Photosmart 7550	2.5	$399	800/752-0900, www.hp.com	cyan, magenta, yellow (color cartridge); light cyan, light magenta, light yellow (photo cartridge); black (black-only cartridge)	built-in slots for CompactFlash, Memory Stick, SmartMedia, SD, and multimedia cards; direct connection for supported cameras	Built-in LCD simplifies direct printing.	Very slow; relatively poor-quality output.

One worrisome aspect of the Canon S830D is that, at least on the glossy paper we used in most of our tests, the prints seem to take a long time to reach stable color. When they first came out of the printer, the prints looked awful, with a strange, muddy haze over the entire surface. Fortunately, this disappeared after about 15 minutes. However, when we measured the output from each printer within an hour or two of printing, again after 24 hours, and once more a week later, we found that while the Epson and HP prints seemed fairly stable after 24 hours, the Canon print had shifted color—particularly in the greens—to an extent that discerning viewers would find significant. For advanced users who want to build custom ColorSync profiles for the printer, this raises the question of just when to measure the profiling target, a question we are still pondering.

Resolution and Detail

One of the more baffling specifications of ink-jet printers is the quoted resolution—in this case, 2,880 by 1,440 dpi for the Stylus Photo 960, 2,400 by 1,200 dpi for the S830D, and 4,800 by 1,200 dpi for the Photosmart 7550. In fact, these numbers bear very little correlation to actual printer performance. What they state is the accuracy with which the printer can position the print head.

The ability to reproduce fine detail and subtle gradations depends much more on the size of the ink droplets than on their number. Printers can't reproduce detail any finer than the smallest dot they can put on paper, so smaller droplets translate to finer detail.

Epson is the only vendor to provide a specification (2 picoliters) for droplet size. Naked-eye examination reveals that highlight detail in the Epson's prints is slightly better than in the Canon's, and obviously better than in the HP's. When we looked at the photos through a 30× loupe, it became clear that the Epson's dots are significantly smaller than the Canon's and far smaller than the HP's.

Color Accuracy

The color accuracy of all three of these printers underwhelmed us. Canon and Epson supply ColorSync profiles for each supported paper type, but the profiles we tested weren't particularly accurate—we actually saw better color in the Canon's output when we *didn't* use ColorSync. The Photosmart 7550 doesn't support ColorSync, using HP's proprietary ColorSmart technology instead. It produced the least accurate print, with a noticeable blue cast. All three printers tended to produce oversaturated color, with the Photosmart 7550 being the worst offender.

Print Speed

We tested printer speeds by printing both text and images at the best-quality and second-best–quality settings, which each printer vendor names differently. In all cases, the Canon was the fastest and the HP was the slowest. The difference between the fastest and slowest times for printing a 10-page Microsoft Word document was relatively small, but for images it was huge—at the best-quality setting (with the high-resolution option selected), the HP took more than 24 minutes to print an 8-by-10-inch image, and even at a lower-quality setting, the HP couldn't catch up with the other printers at their best settings (see "The Speed of the Feed" for complete test results).

Paper Handling

The Photosmart 7550 offers an optional automatic duplexing unit, which, combined with HP's double-sided paper, may make it handy for comps. However, it doesn't offer borderless photo printing—something the S830D does provide, but only on 4-by-6-inch paper and only in OS 9. The Stylus Photo 960 has the widest range of paper options, including support for roll-fed printing (with a built-in automated cutter), and for borderless panoramas as long as 44 inches, on rolls 8.3 inches wide—all of which is available only in OS 9. The device also offers a straight-through paper path for handling heavy stocks as thick as 1.3mm.

Macworld's Buying Advice

If computerless printing appeals to you, the Canon S830D may be just what you need. It also delivers high-quality images fast, though getting extremely accurate color may be a challenge. If you place a higher priority on getting the best images you possibly can, consider the Epson Stylus Photo 960, which offers excellent image quality with the widest dynamic range, best highlight detail, and biggest variety of paper options, but at a somewhat lower speed. The only reason we'd consider buying the HP Photosmart 7550 would be its duplexing capability. In all other respects, the others simply outclass it. □

OS X and Printing

One of the major weaknesses of Mac OS X is its support—or lack thereof—for advanced printer-specific features such as borderless printing and custom paper sizes for roll-fed printing. So it should come as no surprise that none of the printers reviewed here have full functionality running in OS X.

In OS X, the Photosmart 7550 isn't capable of mounting digital-camera media on the desktop when they're inserted in its card reader, though the printer can handle this task in OS 9. Borderless printing in OS X is out of the question with both the S830D and the Stylus Photo 960, and the latter also suffers an absence of support for roll-fed printing in OS X. In versions of OS X prior to Jaguar, it was technically impossible for printer vendors to include such features in their drivers.

In Jaguar, things are starting to look more promising, but it's going to take some time. Jaguar has been a fast-moving target, and printer vendors simply haven't caught up. All concerned are working on completing their OS X printer drivers. For now, if you want to take advantage of the more-advanced features, you'll have to perform one of two less-than-desirable workarounds: print from Classic, or boot into OS 9.

VECTORWORKS 10

Mature, Full-Featured CAD Application Offers Well-Integrated 2-D and 3-D Capabilities

BY GREG MILLER

The latest version of Nemetschek's excellent 2-D and 3-D CAD program is the result of 17 years of evolution, but rather than showing its age, VectorWorks 10 (formerly MiniCAD) is showing its maturity. In the past, CAD programs were good at either 2-D drafting or 3-D modeling. But VectorWorks 10 integrates these abilities in one program that excels in both areas, providing everything CAD users are likely to require, whether they're producing details for shop drawings or creating photo-realistic renderings and animations.

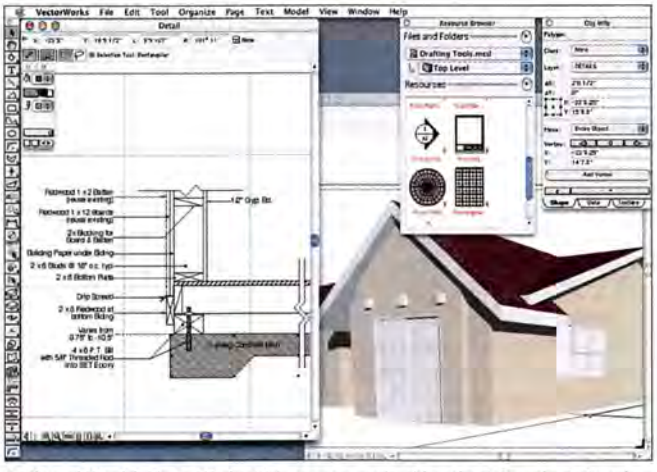
Design in 3-D Space

VectorWorks has always been great for 2-D drafting and adequate for 3-D design. In version 10, Nemetschek has included features that were previously part of its 3D Power Pack add-on, providing more-advanced solid-modeling and surface-modeling capabilities, as well as better Boolean support and an IGES (Initial Graphics Exchange Specification) import-export feature.

VectorWorks provides comprehensive 3-D modeling and rendering based on OpenGL, but for architectural or other work requiring high-quality rendering, you'll need the $300 RenderWorks add-on, which provides photo-realistic rendering including texture mapping, more-realistic shadows, ray tracing, and atmospheres.

A Changing Interface

Nemetschek has enhanced VectorWorks' extensive interface, made up of multiple palettes and well-populated menus, by making the palettes more manageable. One of the biggest changes was merging the Resource Palette and the Object Browser into a single Resource Browser. The Resource Browser is now the place to view and manage resources such as symbols, objects, textures, records, and worksheets. But these changes may cause aggravation for longtime VectorWorks users, as a few commonly used tools and menu items now have different names or locations.



A Virtual World VectorWorks 10 is easy to use in either the 2-D or the 3-D realm.

While most of the alterations are improvements that you'll welcome once you get used to them, Nemetschek has thoughtfully included a "classic" mode, which provides an interface that is more similar to older versions of VectorWorks. Even better, VectorWorks' customizable interface allows users to configure tools and menus.

Keep the Old, Add the New

VectorWorks 10 retains some great features from previous versions—one of the most important is the worksheets feature. Worksheets are Excel-like spreadsheets, built into VectorWorks, that allow you to create schedules, material lists, estimates, and more, with data extracted directly from drawings. You can also export worksheet data to (and import it from) other spreadsheet or word-processing programs.

Another great longtime feature is VectorScript, a lightweight programming language that you can use to customize VectorWorks and add tools and automated solutions.

This version also includes some very useful new features, such as the ability to use tabs within text blocks. Also, you can edit objects simply by double-clicking on them. Other new features we particularly like are the Image Fill and Gradient features. The former lets you create gradients and import 2-D images that you can use to fill objects in your drawing. The latter allows repeated images—much like Adobe Photoshop's pattern filling. These features, along with VectorWorks' ability to import multiple graphics formats, allow users to create graphically richer drawings and presentations.

Works Well with Others

Many CAD programs provide extensive, albeit generic, templates and symbol libraries, but VectorWorks 10 is a bit stingy in this department. This is a problem because architects need to specify real products with real dimensions. Using a generic toilet symbol, for example, doesn't get the job done. However, many building-product manufacturers provide symbols and symbol libraries of their products, in Autodesk's AutoCAD's native file format (DWG) and the AutoCAD Drawing Exchange Format (DXF), that can be imported and used in various CAD programs. VectorWorks 10 makes this a snap by letting you import DWG or DXF objects directly as symbols.

While VectorWorks' Workgroup References allows you to manage drawing standards, layers, symbols, and more across multiple documents, the program lacks the well-developed collaborative capabilities of AutoCAD's External Reference (XREF) files, which allow several team members to work simultaneously on different parts of a drawing. For this reason, we recommend VectorWorks 10 primarily for small to medium-size organizations.

The DXF and DWG import and export capabilities of a CAD program are extremely important for professionals who use CAD and work with a team that uses some form of AutoCAD. VectorWorks' enhanced DXF and DWG capabilities allow the program to import and export AutoCAD versions 2.5 through 2002. More important, VectorWorks' helpful documentation devotes 24 pages to the subject of optimizing DXF and DWG import and export.

While VectorWorks does work well with other programs, we would like to see the ability to export models and renderings in QuickTime VR format, which is a terrific way to show clients how a space will look.

Performance and Help

This latest version boasts faster speeds than VectorWorks 9, and it

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RATING: ★★★★½

PROS: Excellent value; full-featured; mature product; well-integrated 2-D and 3-D capabilities; good documentation; free technical support.

CONS: Base price doesn't include high-quality 3-D renderer; not enough templates and symbols included; no QuickTime VR support.

PRICE: $895; RenderWorks, $300; upgrade from VectorWorks 9, $250; upgrade from VectorWorks 8 and earlier or MiniCAD, $350

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Nemetschek, 888/646-4223, www.nemetschek.net

PLEX

VST Synthesizer Opens Doors for Digital Musicians

BY MIKE COLLINS

Steinberg is keeping the flow of new VST plug-ins fast and furious with its latest offering, Plex. The result of a collaboration with Wolfgang Palm—the man behind the PPG Wave synthesizer from the early 1980s—Plex is a VST instrument that features Palm's new Restructuring Synthesis and a neatly designed, easy-to-use interface.

RATING: ♦♦♦♦

PROS: Interesting new approach to sound synthesis; neat user interface.

CONS: Needs lots of RAM and a fast processor.

PRICE: $250

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Steinberg, info@steinberg.net, http://us.steinberg.net

Plex separates your original audio into four parts: low frequencies, high frequencies, filter characteristics, and amplitude envelopes. The user interface has a circular palette of sound resources that you use to mix and match sound components. This palette is divided into 33 sectors that you can load any of the available sounds into. Plex comes with 97 predefined resources that can be used as starting points to create sounds, and there are 300 preset combination sounds derived from these resources.

But the fun thing is creating presets: the four components of each sound source can be combined and merged freely to create new preset sounds.

The area to the right of the sound palette contains the controls; using the group of four buttons at the window's top right, you can page, or swap, this area to display your controls of interest.

Sound Off Plex's innovative user interface features a palette of sound resources (left) and the Preset page (right).

The Preset page lists 16 presets and has four buttons that copy, paste, store, and recall. The LFO (Low Frequency Oscillator) and ADSR (Attack, Decay, Sustain, Release) pages both incorporate handy visual displays and let you make individual settings for the Base, Top, and Filter components. You use the Global page to access globally applied parameters, such as Pitch LFO, Pan, or Delay.

Macworld's Buying Advice

If you love the sound of a trumpet combined with an electric guitar, and you want the notes to decrescendo like the sound of a gong, look to Plex, which can create this in a snap. The plug-in isn't an essential purchase, but it is a decent luxury item that's definitely worth having. □

FORMAC GALLERY 2010

Stylish Flat-Panel Display Costs Less Than Apple Cinema Display

BY DAVID FANNING

The arrival of Apple's gorgeous Cinema Display was probably accompanied by the painful realization that it was financially out of your reach. A couple of years later, it still costs more than $2,000, despite its aging original specifications. Formac's new screen, the Gallery 2010, outperforms the original Cinema Display, looks the part, and comes close to the specs of the 23-inch Apple Cinema HD Display—at a fraction of the Cinema Display's price.

At a mere $1,699, the Gallery 2010 is set to take on the competition: it's by far the least-expensive large LCD. Don't let the low price fool you, though—the state-of-the-art Gallery 2010 looks fantastic. Its 20.1-inch viewable screen area has a 1,600-by-1,200-pixel resolution, compared with the original 22-inch Cinema Display's 1,200-by-1,024 widescreen format. That means you get 281,600 more pixels from the Gallery 2010, for $800 less. The display comes in two versions: ADC and DVI. The ADC version can be plugged straight into ADC-compatible Macs, but your graphics card will need at least 32MB of video memory to support the giant resolution.

If you have a card with a DVI connection, you can get a Gallery 2010 to match. The DVI version has a power connection on the computer end of the display's cable, so you get a minimalist screen with a single neat cable. USB can also be carried through the main cable, either as part of the ADC or via a connection on the DVI interface.

Formac claims that the Gallery 2010 has a 600:1 contrast ratio—double that of Apple's Cinema Displays, so highlights and lowlights in images you edit will be more visible. It also comes with a three-year warranty, and Formac guarantees that the display will have no more than two dead pixels. This is much better than the Apple one-year warranty and the maximum ten dead pixels that it deems acceptable.

The dead-pixel issue is a thorny one. A dead pixel—one that is stuck either in the on or off position—doesn't render the screen useless, but it's annoying.

The Gallery 2010's color is good, but as with all LCD screens, there can be slight color shifts as viewing angle changes. However, LCD screens are still unsuitable for the highest level of color correction.

Macworld's Buying Advice

If you're looking for an impressive replacement for a big CRT, the Gallery 2010 is definitely a great display. It will be more than sufficient for the vast majority of users, and we recommend putting it on your wish list immediately. □

RATING: ♦♦♦♦½

PROS: Big; bright; beautiful design.

CONS: Image quality not as good as that of Apple Cinema HD Display.

PRICE: $1,699

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Formac, 877/436-7622, www.formac.com

DAVE 4.0

File- and Print-Sharing Utility Makes Windows and Mac Coexistence Easier, Complements Jaguar

BY JONATHAN A. OSKI

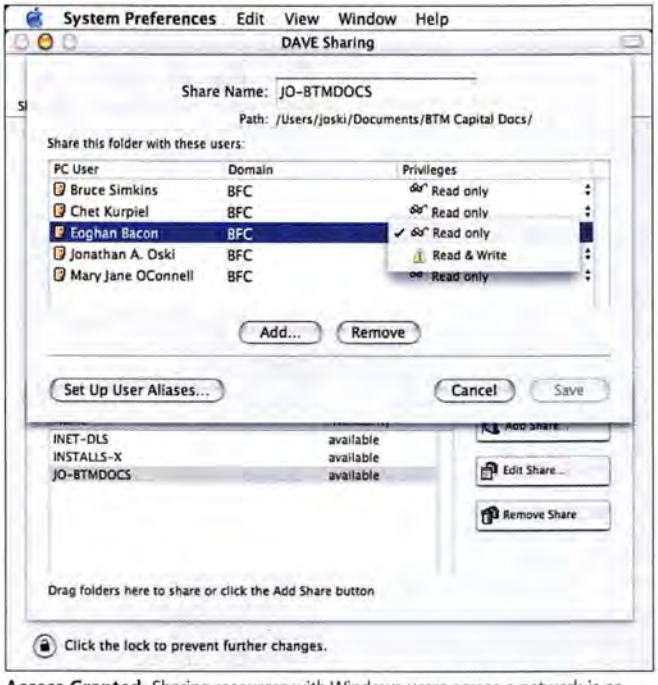
Is Dave, Thursby Software's venerable utility for Windows file and print sharing, necessary now that we have Jaguar? Despite the fact that Jaguar makes it easier to share PC files and connect to Windows machines than OS X 10.1 did, in some circumstances, especially in larger organizations where Mac users need to access files and printers on multiple Windows servers, the answer is a resounding yes. Thursby's latest release, Dave 4.0, boasts new features such as Windows NT Domain Login, PC Setup Assistant, and more security options for file and printer sharing. But whether Jaguar can take the place of Dave depends on the size and configuration of your network (see "Putting Jaguar to the Test").

First Things First

Dave's included first-time configuration utilities for Macs and now for PCs make it fairly easy to start sharing files and printers across a network. (You'll need to be running OS 8.6 or later, or OS X 10.1.5 or later, and at least one Windows- or CIFS-compliant server.) On a PC, Dave's Configuration wizard examines your TCP/IP networking and sharing settings to make sure that they're configured properly to work with Dave.

The process for Macs hasn't changed much since version 3.1.1, apart from the addition of security options for sharing. On a Mac, Dave's Setup Assistant launches immediately after you install the utility and asks you a few questions about your Windows network. It then configures Dave's features in three separate preference panes: Login, Network, and Sharing.

If your network changes, you can either run Setup Assistant again or make the changes manually. The latter option allows you to indicate active ports and your network's Windows Internet Naming Service (WINS) addresses; if you use a laptop, you'll appreciate the ability to save these settings for different locations. However, had Thursby chosen a less tedious, multitabbed approach, similar to that of the OS X Network pane, you could manage all of Dave 4.0's settings in a single window and save yourself some guesswork as to which setting is configured where.



Access Granted Sharing resources with Windows users across a network is as simple as specifying who has rights to access the shared folder.

Share and Share Alike

If you regularly access files on several Windows servers, you'll quickly grow fond of Dave 4.0's Windows NT Domain Login feature, which lets you access the *shares* (shared resources on a server) and printers on all the servers of a Windows network with a single login—unlike Apple's implementation of Server Message Block (SMB) access. Dave also allows you to change your Windows network password from your Mac—without this feature, you'd have to log in on a PC.

OS X 10.2 nicely incorporated Windows-standard SMB and CIFS for sharing files on the Mac with Windows clients; however, OS X 10.2 requires that users manage a separate set of credentials for each client. With Dave, you can secure shared folders, volumes, or printers, using local-level security, share-level security, or user-level security—the last lets you grant access to your local files without separate accounts and passwords.

Like Dave 3.1.1, version 4.0 lets you drag and drop any folders or volumes from your desktop onto a list of shares in the Sharing pane (see "Access Granted"), or click on the pane's Add Share button to share your local files with others. When you add a share, Dave immediately prompts you to specify who can access this share and at what level. Unfortunately, you must use the same security model for all your shared items—and changing the security type removes any

continues on page 57

RATING: ♦♦♦♦

PROS: Single sign-on to all domain shares; flexible security models for file and printer sharing; ability to save settings for use in multiple locations.

CONS: Somewhat expensive for use with smaller Windows networks; multiple panes make configuration changes somewhat tedious.

PRICE: $149; 5-user pack, $599; 10-user pack, $999; 25-user pack, $2,299; upgrade from version 2.0, $90; upgrade from version 3.0, $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Thursby Software, 817/478-5070, www.thursby.com

Putting Jaguar to the Test

If you're currently using Mac OS X 10.1, need better Windows interoperability than it offers, and have a limited budget, you may be on the fence about whether to buy Dave 4.0 or the OS X 10.2 upgrade. Apple added a number of networking improvements in Jaguar, which makes it considerably easier to connect to and share files with Windows systems, both servers and desktops.

Let's look at a simple scenario where you want to access files stored on a Windows server but are not quite sure how to connect to it. Jaguar's browsing capabilities allow you to traverse the Windows networking domains and mount shared file systems. Before Jaguar, you needed a third-party tool, such as Gordon Shulkit's open-source SMB Browser utility or ObjectiveDevelopment's Sharity, to navigate easily through a hierarchy of domains, servers, and shares—but thanks to the SMB directory-access service plug-in for Jaguar, Windows network browsing is a native feature of OS X. Jaguar provides the ability to browse Windows networking domains; the ability to mount SMB or CIFS shares using Windows networking credentials; and the ability to share portions of your file system with Windows networking users employing local security.

These Windows networking features will serve smaller office environments nicely, but for larger businesses there is life beyond Jaguar. If you need to access files or share printers with Windows counterparts, or want to avoid having to log in separately to each Windows server, we recommend Dave 4.0 instead.

IMAGE DOCTOR

New Set of Plug-ins Strips Flaws from Your Photos

BY KELLY LUNSFORD

Alien Skin Software has earned a reputation for developing stellar—if somewhat wacky—image-editing plug-ins that can add effects such as fire and smoke to photographs. But with the release of Image Doctor, an impressive new set of four filters, the company proves that its software can just as skillfully remove blemishes, unwanted background elements, compression artifacts, and other undesirable details.

RATING: ★★★★½
PROS: Easy-to-use interface; very flexible; excellent flaw removal.
CONS: Difficulty handling large selections.
PRICE: $129; for users of other Alien Skin filters, $99
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Alien Skin Software, 888/921-7546, www.alienskin.com

The first three Image Doctor filters let you quickly remove unsightly elements from an image by using samples from the surrounding textures and colors to fill in the problem area. The concept is reminiscent of Photoshop 7's Patch tool, and the results are often comparable. But Image Doctor distinguishes itself by offering a well-designed interface, a large preview window, and useful sliders and options for added flexibility and control over the resampling process.

Impressively, the filters almost always eliminated the target flaw on the first try. However, you'll need to divide large selections into small segments for individual filtering to get the best results and to avoid slowing Image Doctor's performance to a crawl.

The Doctor Is In Image Doctor's Smart Fill filter gives you advanced controls for quickly removing distracting elements—like this tree branch.

Web designers who have the unfortunate task of repurposing a highly compressed JPEG file when the original is no longer available may find Image Doctor's JPEG Repair filter useful. It smooths out the blocky, patchwork appearance of compression artifacts while adding grain to keep the image from appearing overly cartoonish.

While Image Doctor's other filters typically hit their marks, JPEG Repair's effectiveness varied, proving most useful in images without a lot of fine detail. (For best results, use selections to apply varying levels of repair to different parts of the image.) But in a pinch, JPEG Repair can be a beneficial tool, and it consolidates into one convenient window a process that usually requires the tedious application of several Photoshop filters.

Macworld's Buying Advice

If you have yet to upgrade to the latest version of Photoshop—or if you have another image editor—Image Doctor is a must-have filter set. Its simple interface and intelligent sampling make removing flaws a piece of cake. And although most Photoshop 7 users will likely be satisfied with that program's built-in Patch tool, those who spend a lot of time restoring or touching up photos may find Image Doctor's added flexibility worth the extra money. □

MONACOEZCOLOR 2.5

Easy-to-Use Software Creates High-Quality Color Profiles

BY MICHAEL KIERAN

Most serious designers, photographers, artists, and imaging experts use ICC (International Color Consortium) profiles in their work because these profiles provide reliable, predictable color matching across all kinds of input and output devices—from CRT and LCD monitors to scanners, ink-jet and laser printers, and printing presses. Yet for many Mac users, the question is whether building custom profiles, rather than using visual estimation and the generic profiles that come with many printers, is worth the time, trouble, and expense.

Follow the Leader MonacoEZColor 2.5.1 provides a simple interface and step-by-step instructions for creating a variety of ICC profiles.

There are a number of high-priced packages that provide ICC-profile creation, but you can manage your color workflow effectively on a budget, with Monaco Systems' MonacoEZcolor 2.5.1.

Calibrate Your Desire

MonacoEZcolor comes in two versions. The version we tested includes Monaco's Optix monitor calibrator, which supports both CRT and LCD monitors and costs $548. A version without the Optix costs $299, but we recommend that you don't skimp here—if you're relying on a monitor when making important color decisions, it's better to trust the RGB measurements from a colorimeter than to rely on your eyes. (Note that the EZcolor software doesn't work with other monitor calibrators.)

EZcolor uses a step-by-step approach to building profiles, with separate modules for profiling displays, scanners, and printers. For example, profiling our PowerBook screen and a Cinema Display was as easy as attaching the Optix calibrator and stepping through the on-screen instructions. This profile automatically becomes the System Profile in OS 9, and it's stored in the ColorSync Profiles folder in OS X.

The scanner module also performs well, again providing step-by-step instructions for scanning the enclosed industry-standard IT8 color target and matching it with stored reference data.

When it comes to building print profiles, EZcolor makes one essential trade-off that separates it from full-featured profiling packages—it uses your scanner rather than a costly and more-accurate spectrophotometer as a measuring instrument. You print the special EZcolor target on the printer being profiled, tape the original

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RATING: ★★★★½
PROS: Easy-to-use interface; creates high-quality ICC profiles; provides inexpensive color management.
CONS: Some minor user interface glitches; no control over profile characteristics.
PRICE: Software only, $299; with Optix calibrator, $548; upgrade software only, $99; upgrade with Optix, $339
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Monaco Systems, 978/749-9944, www.monacosys.com

ACCOUNTEDGE 3

Inventory Capabilities Strengthen Accounting Package

BY JEFFERY BATTERSBY

MYOB has created an excellent encore to its high-end business-accounting package, AccountEdge. Although version 3 is little changed on the surface, it does offer a significant new feature: inventory management, which can help businesspeople keep better track of existing inventory, maintain histories of sold inventory, and project future needs. Other, minor improvements include enhanced reporting features and easier data entry. AccountEdge 3 will be a boon to inventory-intensive companies, but others may find few reasons to upgrade.

Inventory You Can Count On

While prior versions of AccountEdge included some basic inventory capabilities—such as the ability to set up inventory items with multiple price points in a variety of currencies—the program has always lacked many features that inventory-based businesses need. AccountEdge 3 provides excellent inventory reports—from count sheets to stock alerts—and gives you a five-year audit trail of every item sold, making it easy to see which customers are buying which kinds of items, and when. You can also see both the average price and the last price paid for products in your inventory.

You Can Count on Me AccountEdge's improved inventory functions make it easy to back-order and reorder items.

Minor Tweaks, Major Freak

AccountEdge 3 includes dozens of minor but useful enhancements, including drag-and-drop vCard support between OS X's Address Book and AccountEdge, a pop-up calendar and calculator in date and amount fields, and a new report viewer that allows you to customize your reports on-the-fly by dragging and dropping column headings and quickly changing filters.

Missing in the last OS X release, multiuser file access makes a reappearance in version 3, so it's again possible for Mac and Windows users to share AccountEdge data files across a network. However (and this is a huge *however*), when you use AccountEdge to share files, it's still possible to irreparably corrupt your data if the Mac hosting the data file is also being used to modify the data. Amazingly, MYOB did not include this information in the program's manual. Instead, we found it in the included support documentation and three links deep in the What's New section of MYOB's online help pages. Before you network, make sure you fully understand the online documentation.

Imperfect Online Payroll

MYOB now offers an inexpensive, ADP-like payroll service, called SurePayroll, that includes direct-deposit capabilities and allows local printing of payroll checks. But for some strange reason, this feature isn't integrated into AccountEdge's existing payroll functions—which include the ability to download tax tables, print payroll checks, and store quarterly tax information. Instead, you process your payroll via MYOB's SurePayroll Web site and then download and import the transaction into AccountEdge. It's also more complicated to use than AccountEdge's other features. While we like the concept, SurePayroll has yet to reach its prime.

Macworld's Buying Advice

AccountEdge remains an excellent application for small businesses that need powerful inventory, invoicing, and accounting features in an easy-to-use package. While the program lacks integration with MYOB's online payroll service and it was difficult to find key information about the program's multiuser environment, these faults are eclipsed by AccountEdge 3's overall business value. □

RATING: ♦♦♦♦

PROS: Improved inventory features; streamlined date and amount entry; vCard integration; cross-platform; multiuser capable.

CONS: Poor integration with online payroll service; no warning about possible data corruption.

PRICE: $250; upgrade from version 2, $119; additional users, $99 each

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: MYOB, 800/322-6962, www.myob.com

Deck 3.5

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editing tool lets you work with sound files as waveform "pointers" in a nondestructive way (the original file remains unchanged), with unlimited undos and redos. Peak is great for stereo-track mastering; you can shape and enliven your final mix and then set CD insert points and output RedBook Audio CD–ready files, which you can burn to CD with the included Roxio Toast Lite. Or you can output your mastered tracks for streaming to the Web as either Shockwave or RealAudio files (for more on Peak, see *Reviews*, July 2002).

Macworld's Buying Advice

Deck 3.5.1 is a fine choice for musicians who want a reasonably priced application for audio recording and production. The addition of OMF support should make this program even more attractive to musicians who use other OMF-capable music applications. But musicians who want to work with higher resolutions, or who need to create MIDI tracks, will have to look to alternative music-production programs, such as Digidesign's Pro Tools LE (OS 9 only), or Logic Platinum or Cubase SX, which run in both OS 9 and OS X. Deck's features aren't as deep as the features in those applications, but its wide array of solid tools can help you take a song from first recording to final master. □

VectorWorks 10

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was quite responsive in both Mac OS 9 and OS X. Another feature that remains—and this is perhaps the most important one for new users—is free technical support. VectorWorks' support representatives will answer your questions not only on issues regarding the installation and running of the application, but also on how to use it or how to solve a particularly tricky drawing or modeling problem.

Macworld's Buying Advice

VectorWorks 10 is a full-featured, mature product that successfully integrates 2-D and 3-D design, allowing CAD users to have their cake and eat it too. You could pay more than $4,000 for similar capabilities, so VectorWorks 10 is an excellent value at $895 (not including the $300 you may need to spend on RenderWorks).

New CAD users will appreciate this program's low entry cost and its ease of use. Current users of VectorWorks or MiniCAD will find that VectorWorks 10 is more than worth the cost of upgrading. □

EPSON STYLUS PRO 7600

Wide-Format Printer Shines but Lacks OS X Support

BY RICK LEPAGE

The third generation of Epson's wide-format printer line, the $2,995 Stylus Pro 7600, represents the culmination of the company's growth in the professional graphics market. When used with Epson's UltraChrome pigment inks, this printer offers great quality and speed for photographers and fine artists interested in selling their work without having to worry about the longevity problems of dye inks.

RATING: ★★★★½
PROS: Excellent image quality and print speed; archival-quality prints; great monochrome images; many media; borderless printing.
CONS: Mac OS X print driver still in development; swapping between matte and photo black inks is costly.
PRICE: $2,995
OS COMPATIBILITY: Mac OS 9
COMPANY: Epson, 800/463-7766, www.epson.com

The Stylus Pro 7600 can print on media as wide as 24 inches (the $4,995 Stylus Pro 9600 can print on 44-inch media). Epson does offer a dye-based version of the 7600, but most potential users will be interested in the pigment inks. Epson claims that with these inks—also found in the Stylus Photo 2200 (*Reviews*, October 2002)—you can get archival-quality prints that last as long as or longer than photographic prints: up to 100 years, depending on the medium used. And unlike Epson's previous generation of pigment inks, the UltraChrome inks have a color gamut very similar to that of dye inks, so you don't have to compromise on color to achieve print longevity.

To provide the best photographic output, the 7600 prints with seven inks: cyan, light cyan, magenta, light magenta, yellow, light black, and either photo or matte black. The matte black ink—which doesn't come with the printer—is best for nonglossy, uncoated paper, while the photo black ink is perfect for semigloss or glossy photo paper (the photo ink does print well on matte papers, but you'll get the richest blacks from the matte black ink). You can easily swap between the two black inks, but the process consumes large amounts of ink, an expensive proposition given the $70 price per ink cartridge. For this reason, we recommend picking the ink set that's better for you and sticking with it.

The printer comes with a built-in paper cutter, and it can print borderless images as wide as 24 inches. Epson offers

more than 25 roll-fed media for the printer, including resin-coated glossy and semigloss papers, canvas, fine-art paper, matte-finish and proofing stock, and vinyl.

The 7600's tiny, 4-picoliter droplet size and seven inks add up to true photo-quality prints with balanced skin tones; a bright, wide color gamut; and no visible dot patterns at the standard, 1,440-dpi setting (a 2,880-dpi setting is available but really isn't needed for most images). Another benefit of the UltraChrome inks is their abil-

continues on page 57

PANASONIC AG-DVX100

Pro DV Camcorder Produces Film-Quality Results

BY RICK POPKO AND DEAN MERMELL

Until now, DV camcorders have recorded 29.97-frames-per-second (fps) video to tape (whether in progressive 30p or interlaced 60i capture mode). While recording in 30p gave video a filmlike look, it still didn't impress most filmmakers enough to make them trade in their film cameras.

Panasonic aims to change that with the AG-DVX100, a full-featured, three-chip MiniDV camcorder that really ups the ante. This camcorder can shoot in two 24-fps progressive modes. If you shoot using the first mode, 24p Advanced, you can use programs such as Apple's Cinema Tools with Final Cut Pro to take your footage from camera to computer to film, bypassing the 3:2 pull-down process. The

camera's second mode, 24p, performs a reverse 3:2 pull-down from within the camera, bumping the frame rate to 29.97 so you can view your footage on a television. The results are truly phenomenal. The AG-DVX100 produces jaw-droppingly rich, warm, filmlike imagery with beautiful color saturation, so it's too bad that it doesn't have still-image capabilities. Its deep custom presets allow users to tweak just about any picture setting imaginable, including color temperature, gamma, and skin tone.

The AG-DVX100 has two XLR jacks built into its side, with easy-to-reach manual gain controls. However, the camera's joysticklike control makes menu navigation a little difficult. While its 10× zoom is relatively weak, the camcorder has a wider-angle lens than its competitors, allowing you to squeeze about 20 percent more picture information into a shot than Canon's GL2 or Sony's PD150, which are similar to the AG-DVX100.

You'll also find a generous 3.5-inch LCD, but its color accuracy is disappointing. You can manually adjust the color of the LCD, but if you quickly switch environments (say, going from a bright room to a dark one), you may need to compare the LCD screen again to a properly calibrated production monitor. Additionally, the camera's autoiris is slow to respond when moving from a brightly lit scene to a dark one, and we saw some color noise when shooting in extremely low light.

The AG-DVX100 is also not immune to video artifacts; watch out for moiré patterns and stair-stepping effects that occur around horizontal and diagonal lines.

Macworld's Buying Advice

With the Panasonic AG-DVX100, a fast Mac, and software—such as Apple's Cinema Tools—that supports 24p Advanced mode, you have a production facility at your fingertips, at a fraction of the cost of film, processing, and renting time on a flatbed editor. □

RATING: ★★★★½
PROS: Shoots at 24p; produces awesome filmlike look; warm, saturated colors; wide field of view; wide breadth of custom image presets.
CONS: Only 10× zoom; no still-picture capabilities; LCD color values can be sketchy; slow autoiris.
PRICE: $3,795
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Panasonic, 800/528-8601, www.panasonic.com

THIS MONTH IN DIGITAL CAMERAS

Model	Casio Exilim EX-S2	Canon PowerShot S230 Digital Elph	Fuji FinePix 3800	Olympus C-730 Ultra Zoom	Hewlett-Packard Photosmart 850
Rating	♦♦♦	♦♦♦½	♦♦♦	♦♦♦	♦♦♦½
Resolution (in megapixels)[A]	2.0	3.2	3.2	3.2	3.9
Price	$299	$399	$399	$599	$499
Lens					
Zoom (35mm equiv.)	fixed (36mm)	2× (35mm–70mm)	6× (38mm–228mm)	10× (38mm–380mm)	8× (37mm–300mm)
Maximum Aperture	f3.2	f2.8–f4.0	f2.8–f3.0	f2.8–f3.5	f2.8–f3.1
Media Supported	Secure Digital/MMC[B]	CompactFlash	xD Picture Card	xD Picture Card/SmartMedia	Secure Digital/MMC[B]
Size (in inches)[C]	compact, 3.5 × 2.2 × 0.4	compact, 3.4 × 2.2 × 1.1	midsize, 3.9 × 3.0 × 2.7	midsize, 4.2 × 3.0 × 3.1	midsize, 4.5 × 3.3 × 3.3
Weight (in ounces)	3.1	6.3	10.4	11.1	10.6
Bundled Software	Casio Photo Loader	Canon Digital Camera Solutions, ArcSoft Camera Suite	Fuji FinePix Viewer	Olympus Camedia Master	HP Photo & Imaging
Bundled Hardware	camera dock, AC adapter, USB cable	16MB CompactFlash card, USB and video cables	16MB xD card, conversion lens adapter, USB cable	16MB xD card, USB and video cables	16MB SD card, USB cable, dock insert
Battery[D]	lithium ion	lithium ion	AA (no charger)	AA or CR-V3 (no charger)	AA (no charger)
Additional Features	12MB of on-board memory, Best Shot scene modes	AF[E] illuminator, optional underwater case	supports add-on lenses, EVF[F]	supports add-on lenses, saves favorite settings, EVF[F]	supports optional dock, EVF[F], AF[E] illuminator
Movie Mode	yes, no sound (30-second maximum)	yes, with sound (3-minute maximum)	yes, with sound (3-minute-and-20-second maximum)	yes, with sound (maximum length dependent on card)	yes, with sound (1-minute maximum)
Image Quality	Good; soft and distorted in corners.	Very good; red-eye a problem.	Very good.	Good; images appear grainy, with occasional purple fringing.	Very good; edges often jagged.
User Interface	Very good.	Very good; menus are simple and easy to understand.	Excellent; easy to use.	Good; customizable but confusing at first.	Excellent; intuitive, easy to use.
Pros	Smallest camera available; very good performance; many features for point-and-shoot camera.	Small, stylish metal body; very good performance; AF[E] illuminator; long shutter mode; manual white balance.	Inexpensive for a 6× zoom; supports wide- and telephoto-conversion lenses; aperture priority mode.	Powerful zoom lens; full manual controls; unlimited movie mode; support for external flash.	Great value; very easy to use; can mark photos for e-mail or printing; AF[E] illuminator; impressive software package.
Cons	Expensive for the features offered; photo quality not as good as noncompact cameras.	Red-eye a big problem; 2× optical zoom lens is small.	Camera locked at wide angle in macro and movie modes; no AF[E] illuminator; EVF[F] unusable in low light.	Images noisier than other 3-megapixel cameras; purple fringing sometimes a problem; no AF[E] illuminator.	A/V cable sold separately; image quality not as good as best 4-megapixel cameras; poor bundle aside from software.
Users It's Best For	Consumers looking for a small camera they can take anywhere.	Consumers looking for a small camera they can take anywhere.	Point-and-shoot users who want high-resolution pictures and a long zoom lens.	Point-and-shoot users who want high-resolution pictures and a long zoom lens.	Point-and-shoot users who want high-resolution pictures and a long zoom lens.
Contact	800/962-2746, www.casio.com	800/652-2666, www.powershot.com	800/800-3854, www.fujifilm.com	888/553-4448, www.olympusamerica.com	800/752-0900, www.hp.com

Cameras are listed first in order of resolution and then alphabetically by vendor. [A]The effective resolution of the camera, not the resolution of the CCD. [E]MMC = MultiMedia Card. [C]Width × height × depth. [D]Battery charger included unless otherwise specified. [E]AF = autofocus. [F]EVF = electronic viewfinder.

BY JEFF KELLER

Digital cameras with telephoto lenses are getting more popular—and less expensive. Last month, I looked at three pricier, 5-megapixel cameras with long zooms—Sony's 5× Cyber-shot DSC-F717 (♦♦♦♦½), Minolta's 7× Dimage 7Hi (♦♦♦♦), and Nikon's 8× Coolpix 5700 (♦♦♦♦). This month, I review three hot new models with long zoom lenses, all priced below $600: Fuji's FinePix 3800, Hewlett-Packard's Photosmart 850, and Olympus's C-730 Ultra Zoom.

Be sure to consider the potential trade-offs of a camera with a long zoom lens—an electronic viewfinder (EVF) that is often not as clear as an optical viewfinder and poorer image quality than that of a camera with a short zoom lens (a purple fringe around some edges is the most common complaint).

The FinePix 3800 has a 6× zoom and takes good-quality pictures, but it has trouble with low-light situations due to its lack of an autofocus (AF) illuminator and its EVF, which is unusable in the dark. The Photosmart 850 is the best value in the group, with an 8× zoom and an AF illuminator. Unlike the FinePix, the Photosmart 850 amplifies an image in the EVF when light levels are low. Image quality was very good, although I noticed jagged edges around many subjects. Olympus's C-730 Ultra Zoom has a long, 10× zoom lens and a great feel. Its image quality is good, but its images are noisier than they should be for a $599 camera.

If portability is more important to you than zoom length, the Canon PowerShot S230 Digital Elph is worth considering. This small, metal camera is very responsive and takes high-quality pictures. It also offers an AF illuminator, a rarity on ultrasmall cameras. It has a problem with red-eye in flash photos, and its 2× zoom is limiting, but overall, the S230 is a great small camera. The Casio Exilim EX-S2 is remarkably thin and light, but because its feature set is also relatively thin, it will appeal only to those who need a tiny point-and-shoot camera. □

JEFF KELLER is the editor of the Digital Camera Resource Page. Check www.dcresource.com for in-depth reviews of the cameras discussed here, with sample images.

MOVE2MAC

One-Trick Pony Helps Windows-to-Mac Switchers

BY DAVID POGUE

It's all very well for Apple's "Switch" ads to woo Windows refugees. But once that good-looking Mac is on the desk, switchers face the chore of transferring files and settings from an old PC to the new Mac—a job that entails moving or copying hundreds or thousands of files into specific new locations. Detto's Move2Mac is a satisfying, efficient tool that can save you from that weekend of fiddling—but it doesn't bring over everything.

Keep It Moving Move2Mac's Mac interface is as clean as it gets, showing the transfer progress and time remaining, as well as other useful information, such as whether the cable is connected.

Speedier File Transfers

The box contains two key components: a hybrid Mac-Windows CD and a proprietary USB cable. The process begins on the PC: specify exactly which files, folders, and settings you want brought over to Mac OS X (version 10.2 or later required), and then run the Mac version of the program, connecting the cable when prompted. Stand back as your stuff is copied into the correct places on the Mac. The speed isn't bad; one gigabyte of data takes about 15 or 20 minutes to copy.

Some of what Move2Mac does is pretty obvious—it copies the contents of your PC's My Pictures, My Documents, and My Music folders into your Home folder's Pictures, Documents, and Music folders, respectively. You don't need a $60 kit to do this—especially if you have a network, which allows you to use OS X 10.2's built-in Windows file-sharing feature. But the kit also moves files and settings that would be tedious to move by hand, including Internet Explorer Favorites, e-mail account settings, dial-up Internet settings, e-mail address books (from Outlook Express for Windows only), and even desktop pictures.

E-mail Stays Put

The one disappointment is that Move2Mac doesn't move your actual e-mail messages to the Mac. This is a grisly task, considering the notorious mailbox-format incompatibility of various Mac and PC e-mail programs. However, Move2Mac does come with detailed instructions for performing this migration yourself if you use Outlook or Outlook Express for Windows. (You use Netscape 7, included on the CD, to import e-mail folders and attachments from Outlook or Outlook Express. You then open them in Netscape for Macintosh. From there, you export them to OS X's Mail program—or, with the help of an AppleScript, Microsoft Entourage.)

Another inconvenience is that selecting the Bring Over Everything option creates a folder on your Mac called Migrated PC Files, which contains thousands of PC files that won't mean much on the Mac (Windows Theme Files, Microsoft Access Add-ins, and so on).

Remember, too, that Move2Mac will not convert files from PC to Mac format; however, most documents don't require conversion. For programs such as Quicken, you'll have to export your data from the PC and then import the resulting QIF intermediary file into Quicken for the Mac.

Finally, Detto's piracy paranoia is a bit excessive. In addition to requiring the use of a proprietary cable, the company makes you type a long serial number *and* activate the software over the Internet.

Macworld's Buying Advice

Move2Mac is an unusual program because it's meant to be used only once. Even so, it is a persuasive dollars-for-time proposition. You could do its work manually, but you'd need to have a network, expert knowledge of where files go in each operating system, and hours for copying files and retyping settings. For most people, $60 is a small price to pay for the assistance of this automated computer consultant. □

RATING: ●●●½

PROS: Whittles hours of work down to a few mouse clicks.

CONS: Doesn't transfer e-mail; overly aggressive copy protection.

PRICE: $60

OS COMPATIBILITY: Mac OS X 10.2; Windows 98 or later (Windows 95 version scheduled for later this year)

COMPANY: Detto Technologies, 866/338-8663, www.detto.com

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DAYLITE 1.2

Sales-Relationship–Management Program Delivers Power and Flexibility, but Also Administrative Difficulty

BY JEFFERY BATTERSBY

Since the demise of Symantec's Act for Mac, there's been a dearth of Mac-compatible applications for managing sales relationships. Sure, you can use Microsoft Entourage to store contacts and schedule meetings, but if you need a history of client-related meetings, notes, e-mail messages, and letters, or if you want to track actual and potential sales for a particular deal, you've been out of luck.

In Broad DayLite You can see and manage every aspect of the sales process—from initial pitch to closed sale—in DayLite.

Marketcircle's DayLite places the Mac firmly back into the hands of businesspeople who want to track detailed information about their clients. DayLite—which runs only in OS X—comes in two flavors: a Personal Edition and a server-based Business Edition. Both will keep you organized and productive. And even though the Business Edition is difficult to set up and is missing some key management features, it definitely has the potential to be the cornerstone of your sales operation.

Gettin' Personal

Both editions of DayLite offer fare typical of any personal information manager (PIM): an address book, a calendar, and a task list. If DayLite's standard address-book fields—name, e-mail address, and so forth—don't suit your specific needs, you can customize the program in an infinite number of ways, creating as many new fields as you like.

DayLite offers typical calendaring features, letting you schedule appointments and tasks, as well as specify an associated alarm to alert you to impending deadlines and meetings. You can also create documents such as memos within the program and save them as templates—these come in handy when you want to do a mass mailing, since you can merge data from your address book with your documents.

DayLite will import contact data from programs such as Microsoft Entourage, Act 2.8, and Now Contact, and it accepts exported Palm data. We imported Entourage data in a matter of seconds, without a hitch. But if you're always on-the-go, you'll be disappointed that you can't currently sync DayLite contacts and calendars with your Palm-based handheld—Marketcircle says that this feature will be available once Apple's iSync leaves the beta cycle. Interestingly, you can sync DayLite contacts with Apple's iPod, but it's not possible to sync calendar information with either your Palm or your iPod.

You've Got the Power

The program makes a quantum leap when it comes to managing client relationships and tracking deals. It provides two helpful features: Opportunities and Projects. The Opportunities feature gives a complete overview of pending sales deals and allows you to track the progress of each one—from your first meeting with a customer to the point where you finally close the deal. The Opportunities window lets you select the type of sale you're pitching from a customizable menu, and then select how many units of a product you expect to sell and at what price. DayLite also provides menus indicating where you are in the sales process, when you expect to close the deal, and what you think the probability of actually closing it is. Meanwhile, DayLite tracks every letter and e-mail message you send regarding a particular deal, as well as all pending appointments related to the deal.

Once you close a sale, the Projects feature helps you organize the tasks necessary to bring the sale to completion. Whether you need to write and publish ad copy for a client or order and deliver 10,000 widgets, Projects allows you to organize and view the tasks associated with a specific client in an outline format that makes it easy to see where you stand.

Keeping Good Company

In terms of functionality and appearance, the Business Edition is exactly the same as the Personal Edition. But in terms of setup and user management, it's not fully mature. The job of setting up the Business Edition on a stand-alone server with a static IP address was a bear, mostly due to unclear information on how to create the main database, connect the client machines to the server, and set up new users.

User management is dodgy. You can't give a user administrative capabilities, and there's no group function for creating a sales group, creating an administrative group, or providing permissions from the administrative level. You also can't delete users once you've created them. Moreover, the Business Edition doesn't offer the ability to create shared calendar items that other users can view.

Fortunately, the Business Edition includes a powerful "offline" database capability that allows you to change the database without being connected to the server. Once you reconnect, you can synchronize the changes made on the server, bringing both machines up-to-speed. Unfortunately—and again because of poor documentation—figuring out how to use this feature isn't easy.

Macworld's Buying Advice

DayLite's Personal Edition and Business Edition are well-designed and amazingly customizable programs that give you all the tools you'll need to manage every aspect of your sales from start to finish. But at this point, the Business Edition lacks the necessary security and basic administration tools that most businesses require in a centralized application. □

DAYLITE PERSONAL EDITION

RATING: ●●●●

PROS: Easy, accurate import of existing data from a variety of PIMs; flexible and customizable database; excellent tools for tracking sales progress.

CONS: No direct Palm synchronization; limited synchronization with iPod.

PRICE: $95

OS COMPATIBILITY: Mac OS X

COMPANY: Marketcircle, 888/287-9186, www.marketcircle.com

DAYLITE BUSINESS EDITION

RATING: ●●½

PROS: See pros for Personal Edition.

CONS: Poor user management; poor security; important features are poorly documented.

PRICE: $135 per user

OS COMPATIBILITY: Mac OS X

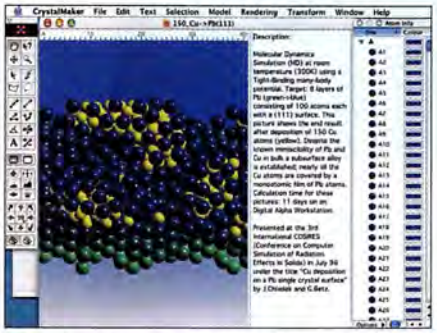
COMPANY: Marketcircle, 888/287-9186, www.marketcircle.com

CRYSTALMAKER 6.0

Creating X-Ray Specs on the Mac Just Got Easier

BY CHARLES SEITER

When you see a picture of a drug molecule or a nanoscale computing element in a newspaper, you're almost always looking at the result of an X-ray crystallographic study. CrystalMaker 5.0, a program that produces those types of images, was a runner-up for a *Macworld* Editors' Choice award for its brilliant display ("The 17th Annual Editors' Choice Awards," February 2002). And the latest version, CrystalMaker 6.0.2, is even better: it's easier to use and thoroughly optimized for Mac OS X.



Gleaming Atoms CrystalMaker 6.0 generates spectacular output that's easy to edit, modify, and preview.

CrystalMaker not only presents the results of crystallographic studies but also lets you build crystal models from scratch or import tables of crystal data in any of a dozen standard formats. The output is beautiful, fully rendered, 3-D crystal images, which you can view with the included stereoscopic glasses as PDF files, JPEG images, or high-resolution PICT files.

CrystalMaker 6.0 is a nearly complete reprogramming effort that takes real advantage of OS X. It abandons the event-processing model the Mac used before OS X, which seriously bogs down in the presence of multiple open windows. The new core of CrystalMaker is almost five times faster on redrawing tasks than version 5.0 (we used a 700MHz iMac G4).

CrystalMaker's interface has been reconstructed, too. In the past, you had to go through a series of tedious dialog boxes to execute common tasks. Instead of dialog boxes for editing and display features, CrystalMaker 6.0 uses OS X sheets. You can have more than one sheet open at a time while you work, regardless of which one is active.

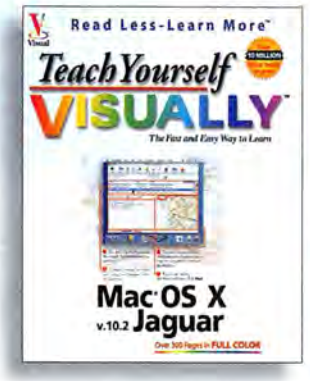
In addition to a spruced-up Graphics window that shows your modeling results, CrystalMaker 6.0 offers a redesigned Output window that keeps track of status information, an Overview window that lets you keep a number of structures in various thumbnail representations on hand, and an Info window that catalogs the atom types in your structures. Since editing is a primary function in fitting crystal structures to diffraction data, version 6.0 has adapted OS X's Data Browser control to provide separate editing windows for bonds, elements, molecules, and crystals, and each window updates its content as you make changes in another window.

Macworld's Buying Advice

If you're a crystallographer, it's time to upgrade to CrystalMaker 6.0. If you're a science instructor, it's no exaggeration to say this program alone would justify buying a Mac to produce materials for chemistry or physics lessons. It handles all crystal-display tasks with grace, and it's a bargain. □

RATING: ●●●●●
PROS: Easy to use; great performance; excellent use of OS X features.
CONS: None significant.
PRICE: $499; academic price, $350; upgrade, $159 to $259
OS COMPATIBILITY: Mac OS X
COMPANY: CrystalMaker, www.crystalmaker.com

How to tame a Jaguar.



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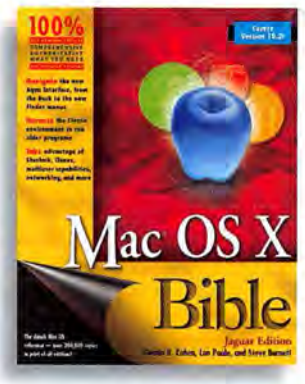

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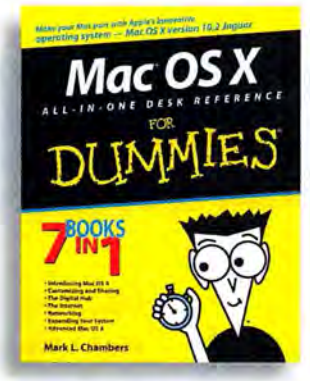

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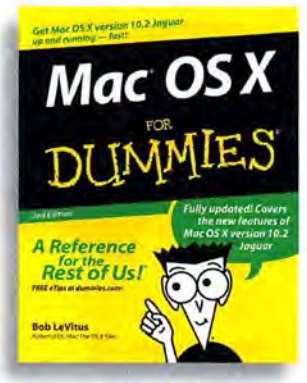

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(Editors' Choice, Seybold 2002)

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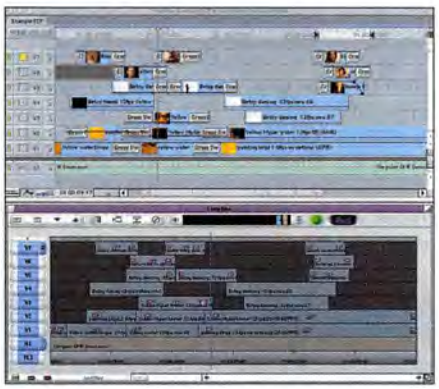
AUTOMATIC SEQUENCE EXPORT PRO

Plug-in Streamlines Workflow between Apple's Final Cut Pro and Avid Video-Editing Programs

BY ANTON LINECKER

Until recently, video professionals who use Final Cut Pro have had only one way to export video sequences to high-end editing systems for finishing: edit decision lists (EDLs). Automatic Duck's Automatic Sequence Export Pro (ASE Pro) plug-in for Final Cut Pro 3.0 circumvents EDLs altogether. Instead, ASE Pro exports Final Cut Pro sequences as Open Media Framework (OMF) files that you can import into a variety of Avid systems.



EDLs, Begone Using ASE Pro to export your sequences from Final Cut Pro (top) to practically any Avid system (bottom) is easier than using edit decision lists.

Going Beyond EDLs

EDLs are simple ASCII files that describe a narrow variety of edits, transitions, effects, and tracks. Depending on the type you use, EDLs limit you to two levels of video and either two or four tracks of video. Traditionally, editors spend days preparing to export an EDL, conforming their work to these rigid specifications. By contrast, ASE Pro lets you export far more-complex sequences. The OMF file that the plug-in generates acts as a replacement for an EDL—it carries all of a sequence's track information, as well as all the related clip data. When you import the OMF into an Avid system, your sequence appears exactly as it did in Final Cut Pro, with all your clips placed properly in the timeline. All you need to do to finish a project is capture the media at a high resolution, manage the effects and titles, and output the project to tape.

While ASE Pro does streamline the transfer of projects between Final Cut Pro and Avid systems, the process is not fully automated. Final Cut Pro and Avid systems don't share common effects and text generators, so many effects in Final Cut Pro don't have a direct equivalent in Avid. Simple dissolves and basic motion effects (scale and rotation, for example) carry over seamlessly, but complicated effects, filters, and text don't. Even here, ASE Pro helps out by creating placeholders in the Avid sequence so you can re-create the effect or text quickly. All you have to do is select the effect placeholder and apply the closest Avid equivalent of the desired effect.

You must also give some thought to the editing process

continues on page 57

RATING: ★★★★½

PROS: Great time-saver; re-creates Final Cut Pro sequences in Avid video systems with minimal effort; helpful documentation.

CONS: Does not transfer most effects or text.

PRICE: $395; download, $385

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Automatic Duck, www.automaticduck.com

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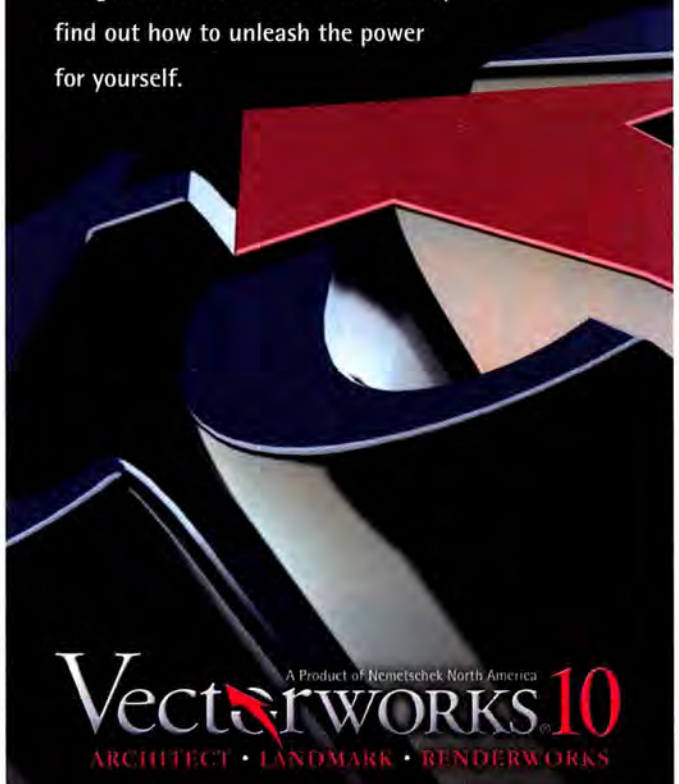

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NIK COLOR EFEX PRO COMPLETE COLLECTION

Plug-in Set Offers Practical Color Correction

BY BEN LONG

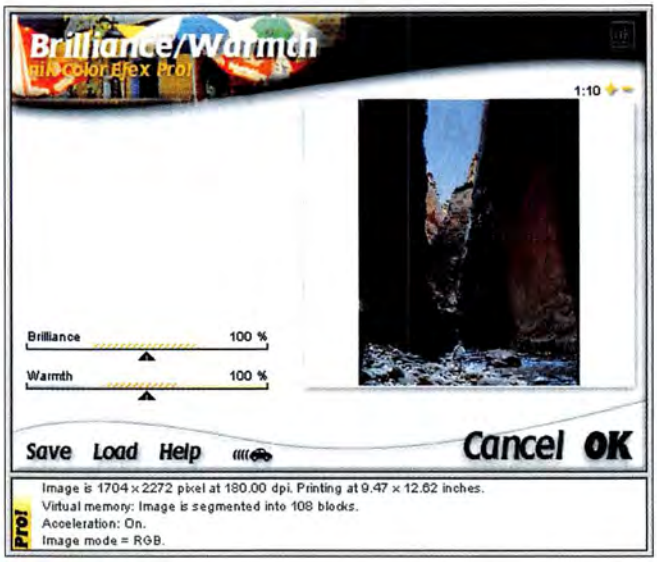
For years, photographers have created color and special effects with filters that attach to the end of a camera lens. Now Nik Multimedia's Color Efex Pro Complete Collection offers Adobe Photoshop users 55 powerful color-correction filters that mimic many of the effects real-world filters create. Color Efex Pro's filters, which are Photoshop 7– and Mac OS X–compatible, imitate the ones that photographers use most often on their lenses. For example, a Red Contrast filter, like a traditional red lens filter, improves contrast in an image. Color Efex also includes yellow, green, magenta, blue, and cyan contrast filters.

Other real-world filters include a Skylight filter that reduces blue casts in outdoor photos; Lighten Center and Darken Center, which balance luminance in an image; and a vast assortment of graduated color filters. For example, the Graduated 0h (gray) filter darkens skies without affecting foreground elements.

All of Color Efex's filters have a uniform, simple dialog box and a set of sliders that let you control filter intensity. In addition, the Graduated filters provide sliders for rotating the filter and changing the location of the gradient, allowing you to adjust for the horizon's location in an image.

Color Efex also includes a Polarizing filter that tries to mimic the effects of a circular polarizer. Though it can't eliminate reflections like a real polarizer, it credibly improved the contrast between skies and clouds. Note that many of these filters are available separately (and for less money) in Nik's Color Efex Pro Photo Classic Set and Photo Design Set.

RATING: ★★★★½
PROS: High-quality output; simple interface.
CONS: No document preview.
PRICE: $300
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Nik Multimedia, 619/725-3150, www.nikmultimedia.com



Easy on the Eyes The Nik Color Efex plug-ins provide sliders for adjusting each filter's parameters, as well as a thumbnail preview.

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The Color Efex Pro Complete Collection also includes a number of filters that create effects impossible to attain with lens filters. For example, the Contrast Only filter allows you to change contrast in an image without adjusting the color, while Classical Blur creates a washed look that's unlike the simple unsharpening effect of typical blur filters. The impressive Sunshine filter lets you add realistic sunlight to an otherwise dark, shadowy image.

Our only complaint about ColorEfex's interface is the lack of a document preview à la the preview in Photoshop's native filters. Trying to judge results from the small thumbnail preview in the plug-in window is difficult.

Macworld's Buying Advice

Color Efex Pro Complete Collection includes a lot of everyday filters that all Photoshop users will turn to again and again. Pros who need to regularly perform complex color correction will benefit in a big way from this set. □

penPalette

♦♦♦; Nik Multimedia, 619/725-3150, www.nikmultimedia.com; $99

Adobe Photoshop plug-in penPalette makes working with layers and layer masks easy: it lets you use a pressure-sensitive tablet to apply filters to any layer in a document. The plug-in saves you the trouble of making selections before applying a filter, and it lets you control the intensity of a filter through pen pressure.

When you select penPalette from Photoshop 7's Automate menu, a floating palette from which you can select a filter effect appears. From the filter's dialog box, you can configure the filter as you normally would in Photoshop. Then penPalette duplicates the layer you're working on, applies the filter, and creates a layer mask you can paint on with brush tools.

The plug-in comes with basic filters including Warm, Cool, Contrast, Add Noise, and Despeckle, and it provides access to any other Nik plug-ins that you've installed.

People who are uncomfortable with layers and layer masks will particularly appreciate penPalette's intuitive interface and helpful functions.

MonacoEZcolor 2.5

continued from page 45

IT8 target to the same sheet, and then scan them together. The EZcolor software compares its internal reference values for the two targets with the scanned values, and calculates both the scanner and printer profiles.

You can apply these profiles in Adobe Photoshop and other imaging and graphics programs, where they visibly improve color accuracy and enable color matching across an incredible variety of devices. The process of creating and applying profiles is explained in the concise and well-organized documentation.

While the printer-profiling module is good, a few minor user-interface glitches mar this otherwise excellent program. Overall, the program performed flawlessly, generating profiles that made an obvious and immediate difference in color quality.

EZcolor also has a very basic profile-editing feature, but it's not especially useful, which is no surprise for a product in this price class. In fact, profile editing and the ability to make scanner profiles are the two features that distinguish EZcolor from its main competitor, the $499 Spyder PhotoSuite Pro, from ColorVision, which also does a good job of building monitor and printer profiles.

Macworld's Buying Advice

Professional photographers, prepress shops, and commercial printers will still need a spectrophotometer-based profiling package such as MonacoProfiler ($4,250) or GretagMacbeth's ProfileMaker Pro ($2,995), which provide advanced profile-editing tools and precise control over black generation. However, if you're ready to adopt color management but are unwilling to shell out thousands of dollars for a spectrophotometer and a high-end profiling package, MonacoEZcolor is a cost-effective way to visibly improve color accuracy. □

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800MHZ iBOOKS

9X

★★★★, $1,599 (14.1-inch model); ★★★★½, $1,299 (12.1-inch model); Apple Computer, 800/692-7753, www.apple.com

Apple's newly updated, 800MHz iBook is, overall, what you'd expect—slightly faster than its 700MHz predecessor (see Macworld Lab's test results in this month's review of the new PowerBook G4s). However, this system is quite a bit faster in terms of video, thanks to the ATI Mobility Radeon 7500 graphics processor—this step up from the older Mobility Radeon chip in previous iBooks takes advantage of OS X's Quartz Extreme video-acceleration technology.

Although it lacks a G4 processor, this iBook runs OS X well enough. However, we're still looking forward to the day that this last cornerstone of Apple's product line migrates to the more powerful G4 processor.

The iBook with a 14.1-inch screen comes with 256MB of RAM; the 12.1-inch model, 128MB. But the 14.1-inch model costs $300 more, is a pound heavier, and offers the same maximum display resolution—its pixels are larger than the 12.1-inch model, but there aren't any more of them. That makes it a product that will appeal only to people who are looking for a "large-print edition" of the iBook: namely, anyone whose eyes can't handle reading the screen of the smaller model.

With a bright screen, decent speed, small size, and light weight, the 12.1-inch iBook remains one of the best values in the Mac product line and a fantastic choice for anyone who doesn't need to use software that's optimized for the G4 processor, such as multimedia and graphics applications.—JASON SNELL

FONT RESERVE 3.1.1

9X

★★★★½; DiamondSoft, 415/381-3303, www.fontreserve.com; $100

Choosing a Mac OS X font-management tool has just become more difficult. DiamondSoft's latest upgrade to Font Reserve, version 3.1.1, is a major one, bringing Jaguar compatibility, support for OpenType fonts, and improved automatic activation of fonts from within Adobe Illustrator and InDesign 2, and QuarkXPress. Font Reserve also lets you do something that no other font-management tool does: deactivate and remove unnecessary system fonts from OS X's System Fonts folder. For people who design on one computer but output from another, this is a wonderful feature.

Unlike its competitor, Extensis's Suitcase, Font Reserve 3.1.1 runs as a background application. You can turn Font Reserve on or off via the small Font Reserve Settings application, from which you set most of Font Reserve's important preferences.

This version has the familiar two-paned window interface of earlier renditions, so at first glance you won't notice much of a difference. The changes are mainly under the hood. While Font Reserve still employs its ClassicActivator, a mini-app within the program that activates fonts specifically for applications running in Classic mode, it now lets you activate fonts for your whole system from within Font Reserve Browser.

Version 3.1.1 can keep current Font Reserve users working at peak efficiency, and its useful management of the OS X System Fonts folder may even make it an attractive option for people using other font-management tools. With this upgrade, Font Reserve remains a comprehensive font-management system that won't let you down.—ANDREW SHALAT

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Epson Stylus Pro 7600

continued from page 47

ity to produce a true neutral gray: Photographers looking to reproduce black-and-white images can do so without the annoying green color cast caused by Epson's first pigment-ink set. As is the case with print quality, Epson has kicked print speed significantly above that of its previous wide-format printers: a borderless 18-by-24 inch print took roughly 30 minutes to print at the standard-quality setting, and a letter-size photo printed in eight minutes. Depending on the print type, the 7600 printed 20 to 30 percent faster than its predecessor, the Stylus Pro 7500.

Beyond the ink-swapping issue, the only real problem with the Stylus Pro 7600 is its lack of an OS X driver. Epson told us that issues related to paper sizes prevented the development of a driver until the release of Jaguar. A driver, now in the works, is due early in 2003. While all the printer's features worked flawlessly with Adobe Photoshop in Classic mode, we'd prefer not having to drop into Classic simply to print.

Macworld's Buying Advice

The Epson Stylus Pro 7600 offers the best and most efficient output for photographers or artists looking to sell their work in quantity, especially at larger print sizes. With excellent quality and print speed, a color gamut that rivals that of dye-based printers, flexible options for many media, and true archival print life, the 7600 is a great buy, and it will be even closer to perfect once OS X drivers become available. □

Automatic Sequence Export Pro

continued from page 53

before attempting export to Avid. For example, Avid and Final Cut Pro differ significantly in the way they handle nesting and in the maximum number of video tracks they support. It's important to know which type of Avid system you're exporting files to. Avid Xpress DV, for example, can handle only 8 video tracks, while Final Cut Pro can handle 99. But the concise, well-written ASE Pro support documents clearly explain the export process and the inherent limitations on moving projects between these two systems.

Macworld's Buying Advice

For professional video editors who often finish their Final Cut Pro projects on high-end Avid systems, ASE Pro can be a lifesaver. Although it can't transfer most of your effects and text, it can significantly streamline your workflow and add a great deal of flexibility. □

Dave 4.0

continued from page 44

current shares—so you'll need to carefully consider which security model works best when you set it up.

Macworld's Buying Advice

Smaller, cost-conscious businesses that already use OS X 10.2 may have a tough time justifying the purchase of Dave 4.0. However, despite its somewhat tedious configuration method, Dave 4.0 allows Mac users in large organizations to access shares via a single sign-on; likewise, Windows users can access Mac files and printers through the same security model. Dave offers great functionality for Mac users on Windows networks who just want to blend in. □

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Game Experience May Change During Online Play

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TEEN T CONTENT RATED BY ESRB

Blood
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Suggestive Themes

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A Star Wars Spin-off Headlines a Great New Roster of Games

The Force Is with You

LUCASARTS' *STAR WARS* FRANCHISE HAS BEEN BLESSED WITH superlative computer and console games for a long, long time. In recent years, however, some mediocre games (most of which never made it to the Mac) have tarnished the brand's image a bit. Fortunately, loving Jedi Knight II: Jedi Outcast requires no Jedi mind trick. It's a gripping 3-D–action game that'll be the answer to the prayers of many a Mac *Star Wars* fan.

Living the Dream Jedi Knight II: Jedi Outcast puts you in the *Star Wars* universe, complete with blasters, lightsabers, and—of course—spaceships.

Jedi Bad Boy

Published on the Mac by Aspyr, Jedi Knight II: Jedi Outcast follows a dark-edged protagonist named Kyle Katarn. He's a Jedi bad boy—a disciple of the Force who has given up his powers and chosen the swashbuckling life of a mercenary employed by the fledgling New Republic in the days following the collapse of the Galactic Empire (in other words, after the movie *Return of the Jedi* wraps up). Katarn is thrust back into the center of things when a new and menacing evil comes forth. After an encounter with Jedi Master Luke Skywalker, Katarn begins to regain his Force powers, and he slings his lightsaber on his belt, setting out on a quest for both justice and vengeance. As time goes on, Katarn's Force powers develop and reemerge. Then things get really interesting.

Flash back to me as an eight-year-old boy—back when I actually had hair. I had a lightsaber I'd gotten for Christmas—little more than a flashlight with a three-foot plastic cone on its end—and used it to stage mock battles with my friends in our yard, reliving Obi-Wan Kenobi's epic confrontation with Darth Vader. That's what Jedi Knight II is all about: you get to slice things up with a lightsaber (including creatures—one reason the game carries an ESRB rating of M for Mature). How cool is that? And in addition to the lightsaber, an impressive arsenal of equipment—ranging from blasters to grenades to precision rifles—is available along the way, so don't expect every confrontation to be in the form of hand-to-hand combat.

Based on the Quake III: Arena engine, Jedi Knight II features impressively detailed scenery that's architecturally and stylistically consistent with the *Star Wars* movies we grew up with. The story line is terrific, definitely fitting in with the *Star Wars* universe. There are plenty of scripted sequences that help flesh out the game's story and background, and the voice acting is, with a few exceptions, reasonably good. Jedi Knight II is challenging, too. In fact, some game levels are so tough that I had to resort to cheats to get through.

But Jedi Knight II is about much more than running through levels and accomplishing missions, although heaven knows there's a lot of that as well. The game is also about mastering Katarn's innate Jedi powers and improving his lightsaber prowess. There's even a Jedi variation on the *Matrix*-style Bullet Time slow-motion technique employed in MacSoft's Max Payne (♦♦♦♦; "*Macworld*'s 2002 Game Hall of Fame," January 2003). It'll take you a while to master all of Katarn's powers, especially as his Force abilities are expanded further in Jedi Knight II's multiplayer mode.

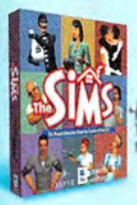
What's more, the game's designers have done an excellent job of imbuing computer-controlled characters with some decent intelligence. I found a few stormtroopers that would occasionally run into walls or get stuck behind big objects, but for the most part, the computer does a good job of challenging even experienced players to use strategy and offense to the best of their abilities.

> Jedi Knight II reminds me of when I was eight—and still had hair.

The game's multiplayer mode includes a built-in game-finding service compatible with the Windows version of Jedi Knight II. That's great because it means you can compete with your PC-using friends—but a drawback is that Jedi Knight II has been available on the PC for a while now, so most of the PC gamers you'll encounter in pickup games will have months of experience on you.

continues

The Sims Have Pets!



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JEDI KNIGHT II: JEDI OUTCAST

RATING: ★★★★½

PROS: A story worthy of the *Star Wars* name; good computer-controlled players; extensive multiplayer options.

CONS: PC users with more experience may kick your butt; tough levels may require cheating to finish.

PRICE: $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Aspyr Media, 888/212-7797, www.aspyr.com

Like an old bantha being prodded by Tusken Raiders, I suffered countless humiliations served up by Jedis more adept than I, until I scaled the learning curve. It's the cross borne over and over again by Mac gamers who bide their time as games are ported over.

The Bottom Line Jedi Knight II is one of LucasArts' and Aspyr's best games ever. Its *Star Wars* trappings are icing on the cake.

Fortune Cookie

This has turned out to be a very mercenary month. But while Kyle Katarn seeks and destroys in a galaxy far, far away, John Mullins plies his trade a bit closer to home.

He's a covert operative for a clandestine agency called the Shop, here on planet Earth. As Mullins, you have to carry out operations in far-flung parts of the world, such as Hong Kong, Kamchatka, and South America, thwarting the efforts of a terrorist organization that has plans to use deadly biological weapons. It's a story straight out of the pages of a Tom Clancy novel, and if you enjoy modern-day technothrillers, there's a lot to recommend Soldier of Fortune II: Double Helix, albeit with a few caveats.

Ammo Not Optional If you didn't expect a game called Soldier of Fortune II to feature gunplay, you haven't been paying attention.

Many of Soldier of Fortune II's missions emphasize your ability to move around undetected. A key element of the game is a sound meter that shows when you're making enough noise to be detected by nearby baddies. It's important to pay attention to the meter (located on your heads-up display), and it's sometimes handy to be armed with a knife, too.

With almost six dozen levels to explore in single-player mode, a wealth of options to choose from in multiplayer mode, and a random mission generator, Soldier of Fortune II offers virtually unlimited replayability. The random mission generator doesn't produce maps with the same degree of polish as levels created by game designers and third-party enthusiasts, but they're good enough and certainly challenging.

Soldier of Fortune II is based on the Quake III: Arena game engine, but its creators have added a new damage-modeling technology called, fittingly enough, Ghoul II. The new technology enables you to more realistically injure or kill your opponents in various ways—shoot an enemy guard in the leg, for instance, and watch him crumple as his leg gives out beneath him. To keep him from calling to his comrades for help, though, you may need to finish him off with a shot to the head.

It's no wonder that the game carries an ESRB rating of M for Mature. Soldier of Fortune II features some serious gore and violence, though that can be tuned down somewhat by activating parental controls in the game's preferences.

Soldier of Fortune II's rendering technology is not without flaws, as is evident in the game's first level, a flashback sequence set in Prague during the waning days of the Cold War. In this scene, you'll see rain falling and creating water droplets inside roofed objects, including cargo containers. Oops.

Also, the game occasionally bogs down, with unplayably slow frame rates even on a dual-1GHz Power Mac G4, a machine well above the game's recommended minimum system requirements. The Windows version of Soldier of Fortune II can be piggish, too, so I can't blame this slow speed on the Mac conversion alone—yet I wonder if something could have been done to speed up the Mac version a little bit.

The Bottom Line Soldier of Fortune II offers impressive multiplayer gaming

continues

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SOLDIER OF FORTUNE II: DOUBLE HELIX
RATING: ♦♦♦½
PROS: Random mission generator lets you play over and over again.
CONS: Runs like molasses even on a dual-1GHz Power Mac G4.
PRICE: $50
OS COMPATIBILITY: Mac OS X
COMPANY: MacPlay, 214/855-5955, www.macplay.com

capabilities and nearly infinite replay value, thanks to its random mission generator. But it's enough of a system hog that it may tax even faster Macs to the breaking point.

It's Tee Time

The Mac has not been a stronghold for sports games, to say the least. One big exception has been Links, the all-time best-selling golf simulation, which has appeared on the Mac in numerous incarnations. The company that developed Links has been absorbed into Microsoft, but that hasn't stopped the appearance of Links Championship Edition on the Mac, this time in a conversion published by Bold.

It's in the Hole Links Championship Edition is a remarkable simulation that puts you in the spikes of legendary golfers such as Arnold Palmer and Annika Sorenstam.

Links Championship Edition is without question the most intricate and detailed golf simulation I've ever played on my Mac. It features excellent graphics with realistic animations of more than a dozen different pro golfers, along with breath-taking re-creations of 13 real-world golf courses. And a new physics engine makes Links Championship Edition frighteningly, frustratingly challenging as you try to sink the ball in the hole.

It's huge in scope. The entire collection is packed on four CD-ROMs. After installing it, you can opt to place various support files—including golfer animations and course graphics—onto your hard drive, which reduces disc swapping at the expense of drive space. A full installation takes up more than 2GB.

This simulation of real-world golfing is so complex that it will easily frustrate folks who don't spend enough time reading the documentation and getting familiar with the sometimes cryptic interface.

Links Championship Edition sports a dizzying array of features and functions that I could only dream of trying to get a full handle on, but one thing is clear: the interface is daunting. Preferences windows pop open and display a bewildering assortment of buttons and check boxes, drop-down menus, and other features; even the main window can become cluttered with various camera windows and other gewgaws that help you determine where your shot is going to go. All told, the simulation will be intimidating for someone who just wants to whack a ball a few times.

Included with the program is Arnold Palmer Course Editor, a sophisticated 3-D–design application that lets you create surprisingly realistic and detailed golf courses of your own. The program itself also supports the use of courses designed by other users (on PCs and Macs), so you can download and share courses to your heart's content. There's even a multiplayer mode, so you can use the GameRanger game-finding service or direct machine-to-machine play via TCP/IP.

The program uses OpenGL to produce realistic and detailed 3-D topography, though I did encounter some problems with screen resolution and bit depth that I couldn't resolve until I upgraded my Mac to OS X 10.2.

continues

LINKS CHAMPIONSHIP EDITION
RATING: ♦♦♦½
PROS: Detailed animations and beautiful course settings make for a realistic simulation; course designer offers added play value.
CONS: Nonintuitive interface and complex controls may be overwhelming to impatient gamers.
PRICE: $50
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Bold, 866/512-9111, www.boldgames.com

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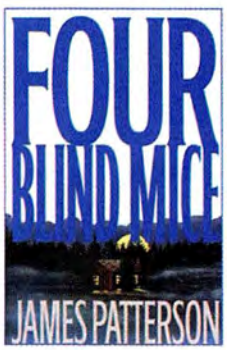

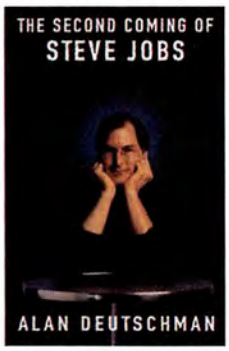

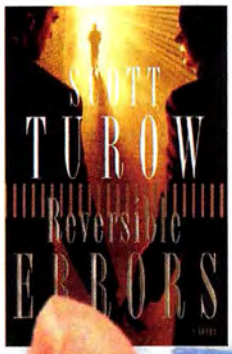

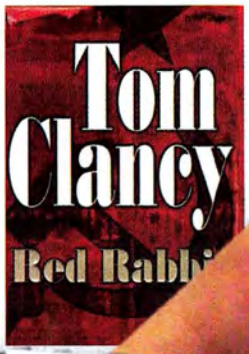

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The Bottom Line Links Championship Edition is a startlingly realistic simulation of golfing, but its complex interface may make it daunting for casual duffers.

Watch and Learn, Grasshopper Young bug Skip is the hero of Bugdom 2—but his robot pal sure looks familiar.

The Good Kind of Bugs

After striking gold with the excellent Otto Matic (★★★★½; "*Macworld*'s 2002 Game Hall of Fame," January 2003), 3-D–game maker Pangea Software decided to revisit one of its earlier successes, the cute-insect game Bugdom. The sequel, Bugdom 2, is a third-person action game like its predecessor, but it features new game play and new characters.

In Bugdom 2, you're in charge of Skip, a young grasshopper who has been accosted by a bully bee on his way to visit his family. The bee absconds with Skip's knapsack, and an adventure ensues as Skip chases the bee across the land of Bugdom in a quest to recover his goods.

Skip's strength is in jumping and flying for short periods, and that's been taken into account as part of the game's thoughtful and creative level design. Bugdom 2 is very much a classic 3-D platform-action game, different enough from its predecessor to appeal to folks who've had enough of the original and are seeking new challenges.

Yes, Bugdom 2 has the normal allotment of platform action: jumping, running, and accomplishing various tasks. But it's got some variation that keeps it from being boring: Skip balances precariously on top of balls, surfs down drainpipes and into sewers, and even mans the controls of a balsa-wood model airplane, bombing enemy anthills and avoiding leaping frogs and squadrons of bad bugs.

Skip's not alone in his quest—Sam the Snail and Sally the Chipmunk are usually nearby, and if you help them by plying Sally with acorns or finding Sam's lost shell, they'll reward you with objects you need, such as keys to new levels, maps, and so on. Skip must also help his mice friends, who find themselves caught in mousetraps, a situation similar to that of the trapped ladybugs in the original Bugdom.

Bugdom 2's controls are simple. You use the keyboard to navigate, jump, and pick up and kick objects. Rich, colorful palettes, amusing animations, and high-quality music and sound effects abound (although the limited character dialogue is a bit on the amateurish side). And at a time when some games tax even the fastest Macs available, it's refreshing to see a game so thoroughly optimized for "older" Macs: minimum requirements call for an iMac DV.

Pangea's games don't cater to hard-core gamers; instead, the company focuses on developing games that will appeal to as broad an audience as possible. To that end, Bugdom 2 succeeds admirably—there's plenty here to keep gamers of all ages occupied for hours. And since its violence is pretty comical and never gory, the game is perfectly safe for all audiences.

Because Bugdom 2 is a third-person action game, your view of the game's world is from just behind Skip himself. The game automatically controls where the "camera" is positioned—and as is the case with many third-person games, objects sometimes block your view. Unfortunately, in some of the more densely populated levels, this can happen at particularly inopportune times, such as when a bad bug is bearing down on Skip.

The Bottom Line Bugdom 2 is proof that good ideas can be improved on. With beautiful graphics and varied game play, Bugdom 2 will keep fans of the original and new players alike challenged and interested for hours. □

BUGDOM 2

RATING: ★★★★

PROS: New, varied game play keeps you challenged; easy-to-learn controls.

CONS: Third-person perspective can occasionally block the view of the action.

PRICE: $35; download, $30; for most schools, free

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Pangea Software, www.pangeasoft.net

MacCentral.com Senior Editor PETER COHEN thinks the power of the Force would come in mighty handy when the TV remote is just out of reach.

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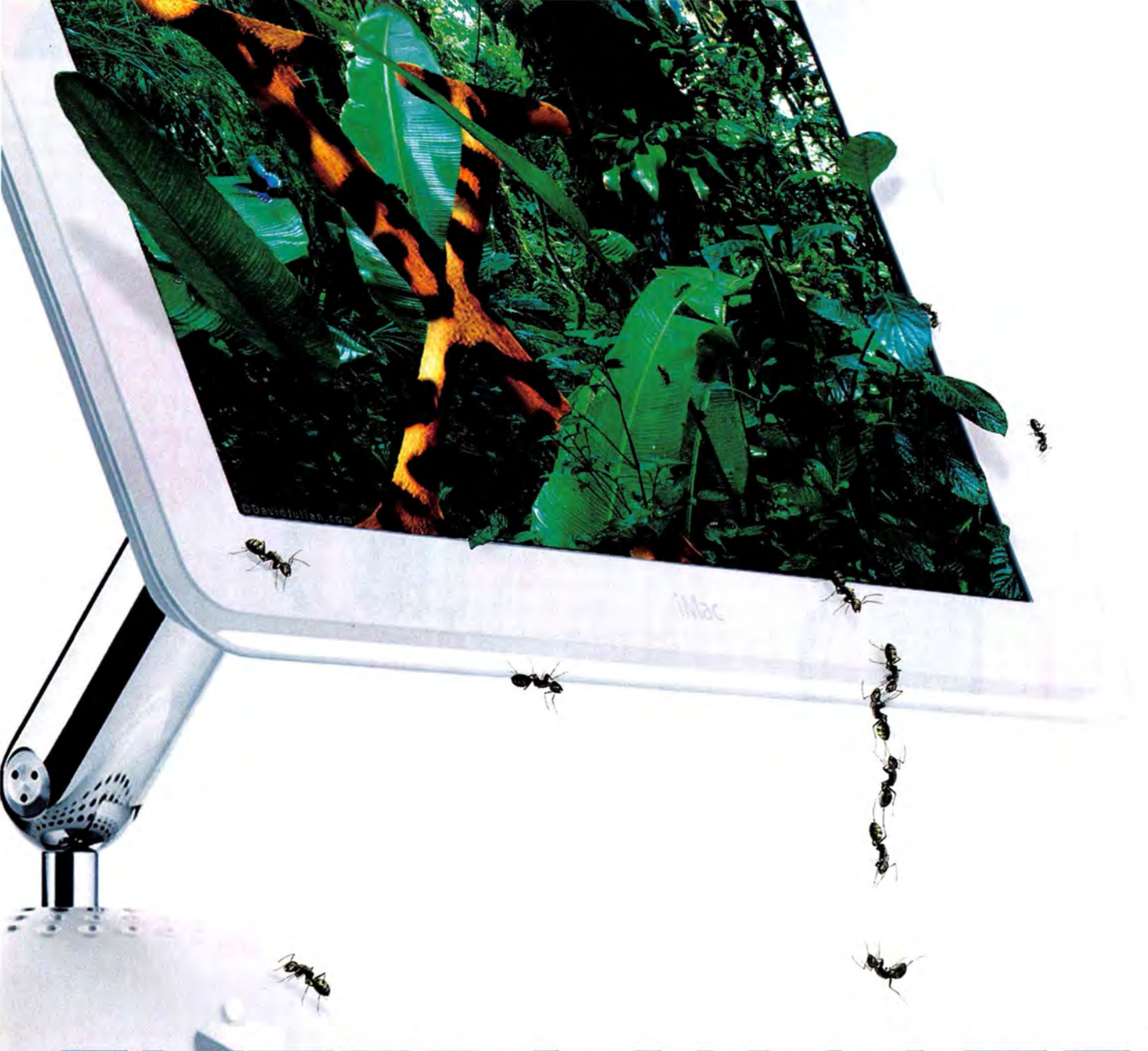
Left page image "good luck with lucky charms", copyright The Image Bank, Garry Gay.



EXTERMINATE

BY | TED LANDAU

Squash Jaguar's Bugs with These Expert Tips

Flowers have bees. Summer has mosquitoes. Picnics have ants. And Jaguar, too, has bugs. While Mac OS X 10.2 is far better groomed than its predecessors, it does have some scruffy areas. When something goes wrong in Jaguar—from permissions failures to application crashes to kernel panics—we can help you give the big cat a flea dip.

OS X TROUBLES

PHOTO ILLUSTRATIONS © DAVIDJULIAN.COM

Permissicus Erraticus

SPECIMEN SPECIFICS

First Aid, part of OS X's Disk Utility, can solve some permissions problems. It determines what the permissions should be by checking the receipt files stored in the Library: Receipts folder.

Don't delete the contents of this folder. If you do, the Repair Disk Permissions and Verify Disk Permissions buttons in First Aid won't work, and you'll have to try more-complicated alternatives.

Problem: Permissions Woes

If you've ever tried to open, copy, move, or delete a file in OS X but were unable because you didn't have "sufficient permission" or didn't "own" the file, welcome to the club. This is the most frequent source of frustration in OS X.

Pest Control If the file is in the System Folder or is a Unix file, leave it alone or risk more trouble. For other files, try the following fixes, in order, until one eliminates the problem:

❶ Select Get Info for the file, and if the Locked option is selected, deselect it.

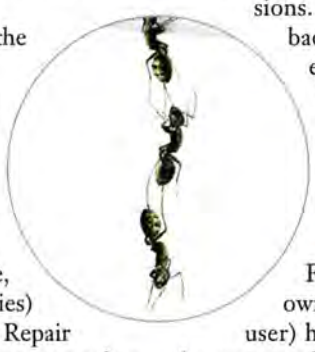
❷ When the file is on a volume other than the start-up volume, select Get Info for the volume and open the Ownership & Permissions section. If the Ignore Ownership On This Volume option is not selected, select it.

❸ If the file is on the start-up volume, launch Disk Utility (Applications: Utilities) and go to the First Aid tab. Click on the Repair Disk Permissions button. This is worth a try even when a symptom is not clearly related to permissions. Incorrect permissions can cause an assortment of undesirable Mac behaviors, including failure to start up.

❹ Use Terminal or a third-party program such as Rainer Brockerhoff's Xray ($10; www.brockerhoff.net) to directly modify the file's permissions. In Jaguar, you can also modify a file's permissions from the Finder: Select the item you want to modify, and click on Get Info in the Finder's File menu. In the resulting Info window, click on the disclosure triangle to open Ownership & Permissions. Click on the padlock icon. In the Owner pop-up menu, select your name (it's the one that has *(Me)* after it). Enter your administrative name and password when prompted. If necessary, change the Owner Access setting to Read & Write.

❺ When permissions prevent you from deleting a file that's in the Trash, you can change the file's permissions as described above. However, it's easier to use the Force Empty Trash command in Arbysoft's freeware utility BatChmod (www.versiontracker.com). Or you can launch Terminal and use the remove command (rm), with root access, to delete the file. (See "Root Access" for details.)

❻ Files in the Home: Library: Preferences folder, such as com.apple.loginwindow.plist and com.apple.NetInfoManager.plist, can acquire incorrect permissions. Don't try to replace these files with backup copies—you'll get a permissions error. Instead, drag the problem preference file to the Trash. Then move the backup copy to the Preferences folder. You should be able to delete the trashed file, even though you can't replace it.



❼ Permissions for your OS 9 System Folder may be modified so that only its owner (typically the initial administrative user) has read and write access. If you're not the owner and you attempt to launch Classic from this folder, an error message will inform you that "you don't have sufficient permissions to run Classic." You'll have to ask the administrative user to change the folder's permissions so that Group also has read and write access.

❽ Sometimes OS X prevents you from deleting or moving a file because it's "in use," even when you've quit every visible application other than the Finder. Although the symptom is similar, this is not a permissions error. To free up your file, log out and log back in.

Repair Permissions Disk Utility's First Aid panel offers a shotgun approach to solving a permissions problem: It resets all OS X software permissions to default values.

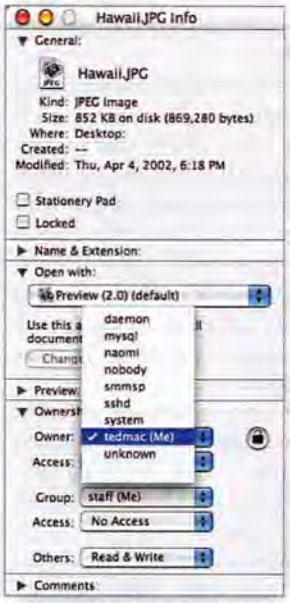
Problem: Unexpected Quits

The problem you're likeliest to encounter is an unexpected quit by an application. In most cases, OS X is not at fault. Rather, the program itself is to blame. In Jaguar, Microsoft Word is particularly prone to such quits, but it's far from alone.

Pest Control To eradicate these quits, try each of the following fixes, in order, until the program behaves:

❶ Check the Web site of the product's maker for an updated version of the application. It may contain a fix for the bug.

❷ Delete the application and reinstall it. If the program uses an installer, let it place the application in its default location (probably the Applications folder).



Power to the User The redesigned Info window in Jaguar finally lets administrative users choose a file's owner.

❸ Go to the Library: Preferences folder in your Home directory. In the Search box in the window's toolbar, type the name of the application. Ideally, you'll get at least one file that ends in *.plist* and includes the name of the program and the vendor. Remove this file from the folder. Log out and log back in. Try your application again. If the problem is gone, that preferences file was the cause. Trash it. You'll have to create your preferences settings again, but at least the unexpected quits will have ceased.

❹ Go to the Library: Caches folder of your Home directory. Again, check for any files or folders that have the name of the problem application. Delete them.

❺ Investigate your fonts—they can cause application crashes, as well as several other problems. (See "Troubleshoot Fonts" for more advice.)

Problem: Application Freezes

If your cursor turns into a spinning beach ball while you're in a program and stays that way indefinitely, the application is frozen. Fortunately, in OS X, a freeze affects only that application. You can continue working in other applications without thawing the frozen one. Still, you'll need to melt the ice before you can use the problem application again.

Pest Control There are a few ways to deal with a frozen application:

❶ Select Force Quit from the Apple menu (or hold down ⌘-option-escape). From the window that appears, select the name of the application and click on the Force Quit button. When Jaguar believes that a program is frozen, that program's name will be red in the Force Quit window.

❷ You can also force-quit applications from the Dock. Click and hold the frozen application's icon and, from the menu that appears, select Force Quit. You'll bypass the Force Quit window, directly quitting the application. Sometimes the Dock method succeeds where the Force Quit window fails.

❸ If you've tried the first two ways and the freeze recurs when you relaunch the program, log out and log back in. If the program still freezes, restart and try again. If even that fails, follow the advice in the "Problem: Unexpected Quits" section.

ROOT ACCESS

When OS X says you don't have sufficient permission to do something, root access is usually required. The root user owns the essential files and processes that run your Mac. Restricting access to these items helps prevent inadvertent changes that can bring down a system. However, any administrative user can get root access in several ways. Here are some common methods:

Log In as the Root User Select Enable Root User from the Security menu in NetInfo Manager (Applications: Utilities), and follow the prompts to assign a password. The next time you arrive at the Login window, enter root as the user name and use the password you selected (if you have a list of users instead of text boxes, select the Other option). If you've selected automatic login at start-up, log out to get to the Login window. Once you're logged in as root, you shouldn't be bothered by permissions errors. But proceed with caution, as you're no longer protected from your own potential mistakes.

Open a Specific Application with Root Access Brian Hill's Pseudo will help you here ($15; http://personalpages.tds.net/~brian_hill/). Just drag the application you want to open to the Pseudo icon. If you open BBEdit or Property List Editor this way, for example, you'll be able to edit the program's documents that are owned by root.

Use Terminal to Get Root Access Terminal is especially useful for deleting files you can't otherwise delete. In particular, the sudo command gives you temporary root access. To delete a file from the Trash, follow these steps:

1. Launch Terminal.
2. Type sudo rm -R (don't press return yet).
3. Press the spacebar once.
4. Drag the item you want to delete from the Trash to the Terminal window. The path for the item should appear in the command line.
5. Press return. You'll be asked for your password. Enter it and press return again, and the item will be deleted.

Use Single-User Mode This is a last resort that should be necessary only when your Mac can't start up and you need to edit or delete a file. To start up in single-user mode, hold down ⌘-S at start-up. This will bring up a command-line interface similar to the Terminal environment. You have root access here by default. You can now edit or remove files as needed.

For example, turning on the Connect Automatically When Needed option in the PPP Options window (accessed from the PPP tab of Network System Preferences) can prevent the Mac from starting up in certain cases. If this happens, you need to move or delete the var/db/SystemConfiguration/preferences.xml preferences file. However, you can't delete the file if you can't start up. The solution is to start up in single-user mode and do the following:

Type mount -uw / and press return. Type rm /var/db/SystemConfiguration/preferences.xml and press return. Type reboot.

You'll need to re-enter all your network settings when you restart, but the start-up problem will be solved.

Problem: Prohibitory Sign at Start-Up

Jaguar introduces a new icon that indicates problems at start-up. Called the prohibitory sign, it's a circle with a line through it. Once this sign appears, the start-up fails.

Pest Control Try each of the following, in order, until you've ended prohibition:

❶ The selected start-up volume may not contain a bootable copy of OS X. Disconnect any external hard drives, and restart while holding down the X key until the OS X logo appears. This should force the Mac to start from your internal drive running OS X.

On newer desktop Macs, hold down the power for several seconds—until the Mac shuts off—and then

Kernelus Panicus

SPECIMEN SPECIFICS

Prior to Jaguar, a kernel panic caused several lines of text to appear directly over the display. The text typically made no sense to the user, but it could be helpful to a developer attempting to diagnose the panic's cause. Unfortunately, unless you took a photo of the text on screen, or wrote it down, there was no way to send it to a developer.

In Jaguar, the overwritten text is gone, replaced by a more user-friendly message that begins with "You need to restart your computer."

However, the diagnostic text is still accessible. Look for a file called panic.log in Library: Logs. You can copy the output and send it to Apple or the vendor of the problem software via e-mail.

press it again to restart. On older desktop machines, press the restart button. On most laptops, press ⌘-control-power.

If the prohibitory sign doesn't appear when you restart, go to the Start-up Disk system preference and reselect your normal start-up volume. (As a last resort at this stage, if you have OS 9, restart in OS 9 and select the OS X volume from the Start-up Disk control panel.)

If you can't restart, try again, this time zapping the PRAM by holding down ⌘-option-P-R at start-up until the Mac chimes three times.

❷ Disconnect your peripheral hardware devices, one at a time; after you remove each device, try to restart. If you continue to get the prohibitory sign, try removing third-party RAM, graphics cards, and processor upgrades. (You may need to swap in the equipment that came with your Mac in such cases.) If you discover that a particular peripheral is causing the conflict, contact the third-party vendor for possible solutions.

A Crash by Any Other Name The error message no longer says that a system crash has occurred, and the bomb icon is gone. But it's still a crash.

❸ Start up from the Mac OS X Install CD and launch Disk Utility. Go to the First Aid tab and select Repair Disk Permissions.

❹ Bypass the cause of the start-up crash. Restart, and press the shift key as soon as you hear the start-up chimes. Hold down the key until the blue screen with the Mac logo appears. When the words *Safe Boot* appear on the screen, let go of the shift key.

> You need to restart your computer. Hold down the Power button for several seconds or press the Restart button.
>
> Veuillez redémarrer votre ordinateur. Maintenez la touche de démarrage enfoncée pendant plusieurs secondes ou bien appuyez sur le bouton de réinitialisation.
>
> Sie müssen Ihren Computer neu starten. Halten Sie dazu die Einschalttaste einige Sekunden gedrückt oder drücken Sie die Neustart-Taste.
>
> コンピュータを再起動する必要があります。パワーボタンを数秒間押し続けるか、リセットボタンを押してください。

The safe boot prompts OS X to run fsck, the Unix disk-check and -repair function. To find out whether fsck has solved your problem, immediately try to restart normally. Only if this restart fails do you need to continue searching for other causes.

You may have a conflict between OS X software and a third-party KEXT (kernel extension) file, stored in the System: Library: Extensions folder. These files are typically device drivers (for peripheral USB and FireWire devices, for example). The safe boot disables these items and allows start-up to proceed. A safe boot also disables third-party start-up items (stored in Library: StartupItems), another potential source of conflicts. (If all of this sounds similar to the OS 9 method of starting up with extensions off, that's because it is! Happily, these conflicts are infrequent in OS X.)

Once you're logged in, you can remove the potential culprit from its folder, permanently disabling it. If you don't know which file to remove, check the files' modification dates. The most-recently added files that aren't from Apple are your prime suspects.

To work around the permissions errors that appear when you try to move these files, make yourself the owner of each file (as described in "Problem: Permissions Woes"), or use Infosoft's MOX Optimize ($20; http://fly.to/infosoft). Just be careful about what you remove. Disabling a Jaguar-installed KEXT file won't fix a crash, but it will make a start-up failure a certainty. If you're in doubt about what you're removing, contact Apple or the vendor of the problem software for advice.

With the problem item removed, you can start up without a safe boot. Of course, you lose whatever function the removed file provided. That's why the ultimate resolution is a bug-fix update that lets you return the file. Check the vendor's Web site to see whether one is already available.

❺ A corrupted font in OS 9's System Folder can also cause this start-up failure. To diagnose an OS 9 font problem, remove the Fonts folder from the OS 9 System Folder and restart normally. If the problem vanishes, a font in the Fonts folder was the cause. If you want to use these OS 9 fonts, you'll need to do some trial-and-error testing to determine the offending font. Otherwise, you can simply leave all these fonts disabled (see "Troubleshoot Fonts" for more on fonts).

❻ If none of the previous steps solve the problem, reinstall OS X. Use Jaguar's Archive & Install feature for a clean reinstall of OS X 10.2. (See "Migrate to Jaguar with a Clean Install," in "The Cat's Out of the Bag," October 2002, for step-by-step instructions.) If the Options button needed to access the feature is missing, you have the Jaguar Update CD, which doesn't permit Archive & Install.

Problem: Login Crashes

If you've made it as far as the Login window, you may think you're past all the possible obstacles to a suc-

Take Heed If you get this message, you probably need updated software from the developer of the program you're using. Until you get the update, it's safest to click on Don't Use.

cessful start. Not quite—you can still crash. The culprit may be a rogue item on the list in the Login Items pane in System Preferences. (These are the items you've set to launch automatically each time you log in.) This sort of problem is likeliest immediately after you update to a new version of OS X, causing a conflict between an existing login item and the update.

Pest Control To get past these crashes, you need to find the conflicting login item—via a technique that disables all login items at start-up—and remove it.

Once you've logged in, you can identify the problem login item by trial-and-error, removing one login item at a time, logging out, and then logging back in. Or you can check the log files of the Console utility (Applications: Utilities); the output text may include the name of a specific login item, implicating it as the culprit. To make sure you're recording the needed log files, activate crash reporting in Console's Preferences. New in Jaguar, the Logs tab of Apple System Profiler also lists all available log files.

❶ Wait for the Login window to appear at start-up. After you enter your password, press and hold down the shift key and click on the Login button. Continue to hold down the shift key until the desktop appears. Login items will not load. You can now remove any problematic login item by selecting the item from the Login Items window and clicking on the Remove button.

❷ If you're set to automatically log in, no Login window will appear. The trick is to press and hold down the shift key right *after* the blue start-up screen with the OS X logo appears. You'll bypass a safe boot while forcing the Login window to appear, whether or not you're set to automatically log in. You can now hold down the shift key again, when clicking to log in, to disable login items.

❸ Say you want to shoot with both barrels, doing a safe boot and disabling login items during the same start-up. Let go of the shift key after you see the "Safe Boot" message on your screen; then press it again and wait for the Login window to appear. This is especially important if you're set to automatically log in. In this case, if you hold down the shift key at start-up to do a safe boot and continue to hold it down, you'll go straight to your desktop, bypassing the Login window. No login items will be disabled.

TROUBLESHOOT FONTS

Lost in Mac OS X's font maze? These tips will help you navigate.

Location, Location, Location Fonts are in several places on your drive, and as in real estate, location is important. Fonts in the Library: Fonts folder of a Home directory are available only to the user of that account. Fonts in Library: Fonts are accessible for all local users. Fonts in System: Library: Fonts are also accessible for all local users, but they are essential for System use; in general, you should not modify the contents of the System: Library: Fonts folder. If OS 9 is installed, OS X accesses fonts in the OS 9 System Folder used for Classic, even if you're not running Classic.

Variations on a Theme OS X looks for fonts in the following order: your Home: Library: Fonts folder, the Library: Fonts folder, the System: Library: Fonts folder, and lastly the OS 9 Fonts folder. If you have different versions of the same font on your drive, OS X will use the one it finds first. (System processes—such as the font for menu-bar items—though, typically use a font in System: Library: Fonts before any other.) This can cause a number of problems—for example, even a font that's only slightly different from the font used to create a document can cause the document's text to reflow.

Don't put two versions of the same font in the same Fonts folder. This is likely to lead to problems such as application crashes and even a failure of the Mac to start up.

Smooth Operator Since OS X 10.1.5, text smoothing (antialiasing) has been available for Carbon applications (such as the Microsoft Office programs and Internet Explorer). To activate this feature, select the Enable Quartz Text Smoothing option in the application's Preferences menu. However, if odd symptoms (such as text that vanishes from the screen) occur after you do this, turn the feature off. You can use Unsanity's freeware app Silk (www.unsanity.com/products.php) to turn on text smoothing in Carbon applications that don't include a preference for it.

If fonts suddenly look jagged, delete the com.apple.FcacheSystemDomain file in System: Library: Caches. (You'll need root access to do this.)

Crash Test Sometimes, the absence of a font can cause an application to crash. For example, if you remove the TrueType HelveticaNeue.dfont from Library: Fonts, as some users do so they can substitute a PostScript version of the font, iCal will crash on launch. The solution is to not delete that font! If you've already deleted it, return it from a backup copy if you have one. Otherwise, either reinstall OS X or use a utility such as Pacifist ($20; www.charlessoft.com) to extract the font from the Essentials.pkg file on the OS X Install CD. If you must have the PostScript version of HelveticaNeue, use a font manager such as Extensis's Suitcase 10 (800/796-9798, www.extensis.com) or DiamondSoft's Font Reserve 3.1 (415/381-3303, www.diamondsoft.com).

Display Dingbats If you can't display graphic fonts such as Symbol and Zapf Dingbats correctly, especially in Cocoa applications such as TextEdit, use Jaguar's Character Palette. In TextEdit, select Show Fonts from the Format: Font menu. In the Fonts window that appears, select Show Characters from the Extras pop-up menu. Finally, select the character you want and click on the Insert button. The character will be inserted into your TextEdit document. In Carbon applications, you also have to make sure that the font selected in the document matches the font listed in the Character Palette Font menu.

You can make the Character Palette accessible anywhere in OS X by activating the Character Palette option in the Input Menu tab of the International System Preferences pane.

Problem: The KEXT Warning

You may get the following error message when a third-party KEXT file attempts to load at start-up: "The program you're using needs to use a system file that may reduce the security of your computer."

This error is caused by a change in Jaguar designed to improve the security of your Mac. An unscrupulous individual intent on infiltrating your Mac couldn't find an easier entrance than KEXT files. They operate at the core of the operating system, and a hacked

KEXT file can wreak havoc on the contents of your drive. To protect against this, Jaguar requires that all KEXT files have the proper owner and group. If a KEXT file isn't up to spec, you get the KEXT warning message. This should prevent hacked KEXT files from loading at start-up. It can also prevent legitimate KEXT files from loading, which is the likeliest reason you'll see the error.

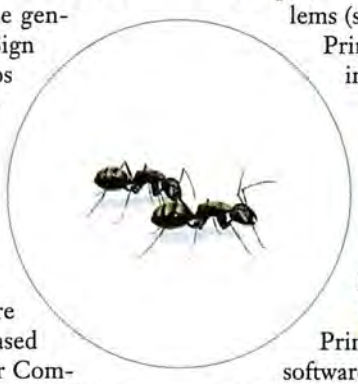
Pest Control The KEXT alert box offers you three options. You can select Fix And Use (which sets the file's permissions to meet the required specs), Use (which allows the file to load but doesn't change its permissions), or Don't Use. Select one of the first two options only if you're confident that the file named in the alert box is safe to use. If in doubt, choose Don't Use.

Apple has told developers that these buttons won't exist in the next major upgrade to OS X, which will refuse to load nonconforming KEXT files, without exception. It will be up to developers to make sure that permissions are set correctly.

Problem: Kernel Panic

The most disruptive error that you can encounter in OS X is a kernel panic, a crash of the operating system's core that in turn brings down your entire computer. Fortunately, kernel panics are rare events.

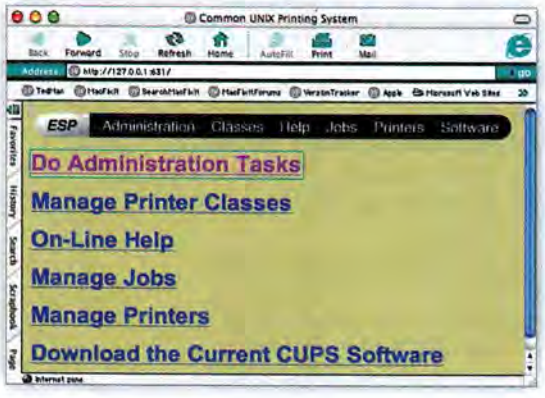
Pest Control Restart and follow the general advice in "Problem: Prohibitory Sign at Start-Up." If none of those steps help, you may have to wait for a bug-fix update of the problem software. Ask the vendor of the software for specific advice.



Problem: Printer-Driver Incompatibility

In Jaguar, Apple replaced OS X's entire printing architecture with the Unix-based printing architecture called CUPS, or Common Unix Printing Software (see "Jaguar's Printing Power," *Secrets*, elsewhere in this issue).

If you don't have printing problems, you may not notice the difference. OS X 10.2 still uses Print Center, and the user interface is very similar. But everything else is different.



The CUPS Alternative If Jaguar's Print Center utility gives you a hassle, you may have more success accessing the CUPS printing software directly via a Web browser.

The move to the new architecture remedied a number of printing problems that plagued OS X 10.1. Unfortunately, it also introduced some problems. Many printer drivers that worked in OS X 10.1 don't work in Jaguar. Symptoms vary from a simple failure to print a document to Print Center crashing each time you select a printer.

Pest Control When your printer and Jaguar won't cooperate, try the following solutions in this order:

1. Update to the latest version of Mac OS. For example, OS X 10.2.1 fixed several printing problems (such as "error -1" messages and some Print Center crashes) that hampered the initial release of Jaguar.
2. Check the printer vendor's Web site for an updated version of the driver. If there is one, install it.
3. If Print Center crashes when trying to access a specific printer, delete the printer from the list in Print Center and then add it back.
4. Download Fixamac Software's Print Center Repair (www.fixamac.net/software/pcr), and run it. This shareware utility includes such options as Repair CUPS Directory and Repair Spool Directory.
5. Try the free Gimp-Print (http://gimp-print.sourceforge.net/MacOSX.php3). It includes more than 180 CUPS-compatible drivers for the most-popular printers.

The Last Word

If you haven't already moved to Mac OS X 10.2, you shouldn't let this litany of problems keep you from upgrading. Most of the time, Jaguar runs just as well as the cat that shares its name. And with the information in this guide, you can eliminate pests when they do show up. □

Contributing Editor TED LANDAU (www.tlandau.com) is the author of *Mac OS X Disaster Relief* (Peachpit Press, 2002), recently updated to cover Jaguar. For people who want a more personal touch, he offers a seminar on troubleshooting Jaguar (www.macseminars.com).

MENU EXTRAS

In Jaguar, Apple changed the rules so that third-party menu extras, such as Frank Vercruesse's ASM application switcher ($15; www.vercruesse.de/software) and StuffIt Deluxe's Magic Menu ($80; www.aladdinsys.com), wouldn't function. If Apple's decision doesn't suit you, there are a couple alternatives:

Download and install Unsanity's free Menu Extra Enabler (www.unsanity.com/products.php). In most cases, that's all you need to do. For extras that still don't work, launch Terminal and type the following:

```
sudo ln -s /System/Library/Frameworks/ApplicationServices.framework/Versions/A/Frameworks/HIServices.framework /System/Library/PrivateFrameworks/HIServices.framework
```

If you use StuffIt Deluxe 7.X, Magic Menu won't require these workarounds.

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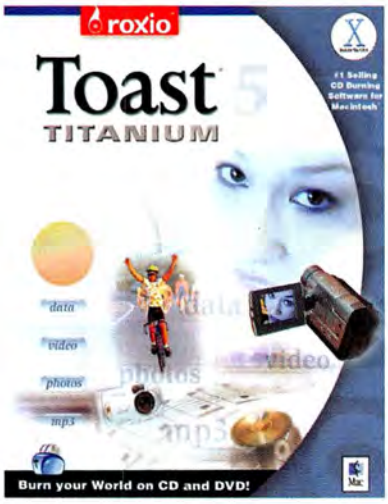

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THE 18TH ANNUAL EDITORS' CHOICE AWARDS

IF 2001 WAS THE YEAR THAT MAC OS X finally arrived, full blown, on the scene, then 2002 was the year that the people who make Mac hardware and software accepted OS X as their own. In the past year, the Mac development community has given us a slew of ingenious and intriguing products for Apple's new operating system, and old standbys have been updated to take advantage of the changes Apple's software engineers have wrought on the Mac platform.

So when it came time for *Macworld*'s editors to convene and choose the best products of 2002, we ended up looking at as many products from new faces as from old friends. The OS X transition has been bumpy, but if the products that have earned Editors' Choice Awards in this, our 18th year of bestowing these honors, are any indication, the Mac is entering a remarkable new era of innovation.

So without any further ado, we present our favorite products from a remarkable year in the life of the Macintosh.

FEATURE PHOTOGRAPHY BY SCOTT PETERSON

GENERAL MAC

BUSINESS-PRODUCTIVITY SOFTWARE

WINNER **MYOB FirstEdge** ($99; 800/322-6962, www.myob.com/us) fills a long-standing need of Mac users who run small businesses—a full-featured business-management tool at an affordable price. With FirstEdge, MYOB provides the sales-tracking, invoicing, banking, and custom management features in its award-winning AccountEdge program, but without the high-end accounting features that are of little use to a one- or two-person operation. And at less than $100, FirstEdge helps you keep tabs on your revenue but doesn't ask you to part with too much of it.

RUNNERS-UP No one can dispute the position of AEC Software's **FastTrack Schedule 8.0.1** ($299; 800/346-9413, www.aecsoft.com) as the preeminent project-management application on the Mac, but past versions of the program have been saddled with a clunky interface. Version 8's Aquafied interface makes this outstanding program much easier to use and navigate. Chronos's **StickyBrain 2.0.1** ($45; download, $40; 435/615-7335, www.chronosnet.com) is a fast, flexible data-organization tool that lets you easily grab text, graphics, and URLs from other applications. More important, the Sticky Browser feature helps you search for and find all the data you've gathered, with a minimum of fuss and effort.

PRODUCTIVITY UTILITY

WINNER Karelia Software's **Watson 1.5** ($29; comments@karelia.com, www.karelia.com) puts a wealth of information—such as stock prices, phone numbers, Mac software updates, and even baseball scores—at your fingertips, saving you the trouble of having to launch a browser to track down the data you need. Completely customizable, Watson can remember your personalized preferences to give you convenient, localized searching. While Apple has incorporated many of Watson's search capabilities into OS X 10.2, the latter can't match Watson's innovative features.

RUNNERS-UP TLA Systems' **DragThing 4.5.1** ($25; james.t@kagi.com, www.dragthing.com) offers OS X users a powerful alternative to the Dock and a way to organize their desktops; the utility combines OS 9's Applications menu and Launcher into a single, endlessly customizable program that launches at start-up. If you were to buy each of the utilities featured in Aladdin Systems' **Ten for OS X 1.0.2** ($50; 800/732-8881, www.aladdinsys.com), you'd spend somewhere in the neighborhood of $170. Aladdin's suite of productivity-boosting OS X utilities gives you solid tools such as FruitMenu, LaunchBar, LimeWire Pro, and WindowShade X, for less than a third of that price.

GAME

WINNER Blizzard Entertainment's **Warcraft III: Reign of Chaos** ($50; 800/953-7669, www.blizzard.com) is more than just a sequel to the game that helped popularize the real-time–strategy genre. With a modernized look featuring polygonal 3-D graphics, and several game-play enhancements that put a renewed emphasis on strategy, this version ratchets up the challenge and reward of playing the game. A richly detailed OS X–only editor that allows you to create your own Warcraft III worlds helps this game stand out further from the crowd.

RUNNERS-UP Aspyr Media's **Star Wars Jedi Knight II: Jedi Outcast** ($50; 888/212-7797, www.aspyr.com) captures all the excitement of using the Force—with none of the unfortunate lightsaber accidents. The game boasts some impressive scenery, extensive multiplayer options, and intelligent computer-controlled characters. MacSoft's **Stronghold** ($35; 763/249-7600, www.wizworks.com/macsoft) offers something for everyone in a blend of strategy game and city-building simulator that features multiple modes of play.

SCIENCE/ENGINEERING SOFTWARE

WINNER With **Mathematica 4.2** ($1,880; 800/441-6284, www.wolfram.com), Wolfram Research released an upgrade that added new mathematics functions and an improved user experience to an already solid program. Users now have a feature-rich statistics package that includes analysis of variance, as well as a set of global-optimization functions that make Mathematica more useful for social science and business research. Anyone who relies on printed records for archival purposes or publication will also appreciate the improved word-processing features.

RUNNERS-UP The MathWorks' **Matlab 6.5** ($1,900; 508/647-7000, www.mathworks.com) is a welcome upgrade, offering improved application speed, programming options and graphical rendering of math functions for engineers, and much better Mac compatibility. Nemetschek's **VectorWorks 10** ($895; 888/646-4223, www.nemetschek.net) shows off the company's 17 years of experience. This CAD application fully integrates 2-D–drafting and 3-D–modeling capabilities while providing users with a more powerful tool set.

PERIPHERAL

WINNER The **PowerKey Pro USB 650, Admin version** ($299; 800/769-3773, www.sophisticated.com), from Sophisticated Circuits, is not your ordinary six-outlet power strip; its accompanying software puts the power in your hands. You can control when the power is on, schedule onetime and recurring events such as waking up and shutting down your Mac, and assign keystrokes to control the power of other peripherals. Connecting the PowerKey Pro to a phone line gives you remote control, and the device also gives you the ability to restart Macs after system crashes or power failures.

RUNNERS-UP Any portable-Mac user who's had to untangle a rat's nest of peripheral cables will appreciate Kensington's **PocketMouse Pro** ($44; 800/235-6708, www.kensington.com). This compact optical mouse sports a retractable USB cord, so it's easy to store when you hit the road. Wacom has long set the standard for pen tablets, and the **Wacom Cintiq 18sx** ($3,449; 800/922-9348, www.wacom.com) upholds that tradition by incorporating a spring-loaded stand, adjustable levers, and other industrial-design improvements in an 18-inch tablet with more than 14 by 11 inches of active space.

GENERAL-PURPOSE PRINTER

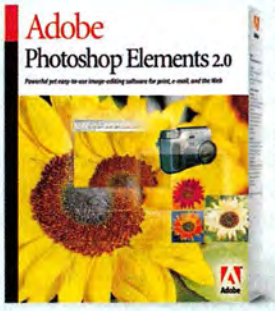
WINNER Thanks to Hewlett-Packard's wondrous **HP Color LaserJet 2500L** ($999; 800/752-0900, www.hp.com), you *can* get a full-featured color laser printer for less than $1,000. This PostScript printer can churn out a full-color page from a cold start in 40 seconds, has a small footprint, and uses easy-to-swap consumables. When used with OS X's Printer Sharing, the Color LaserJet 2500L can serve a small workgroup with ease.

PRODUCTS OF THE YEAR

HARDWARE

In a year dominated by splashy products such as the iMac and the iPod, it might be easy to overlook the **Epson Stylus Photo 2200**—but you shouldn't. This marvel represents the pinnacle of photographic printing on the desktop: it turns any Mac into a true digital darkroom, whether you're working with scanned images from negatives or photos from a digital camera.

The 2200 creates excellent, long-lasting prints that are vibrant and sharp, and Epson's pigment inks work as well for black-and-white photos as for color (traditionally, monochrome images have been problematic for photo printers). In addition, Epson has loaded this printer with thoughtful extras, such as a straight-through paper path for thick paper stock, an attachment for feeding roll paper (equipped with a cutter), and two different types of black ink—one for printing on glossy, semiglossy, and coated paper types, and one for printing on matte-finish and fine-art papers.



SOFTWARE

Adobe Photoshop Elements 1.0 offered many of Photoshop's strengths without burdening users with the leviathan's complexity or staggering price. Not satisfied with that already impressive combination, Adobe made version 2.0 even easier for novice and intermediate users while incorporating more Photoshop features and adding new tools.

Adobe Photoshop Elements 2.0 is brimming with elegant touches—including the Search field, Tip panels, How To palette, and Glossary—that help newcomers navigate the image-editing process. Yet the application isn't dumbed down, leaving plenty of room for users to grow as their skills increase. Elements 2.0 includes almost all of Photoshop's file-browsing capabilities, and it borrows the Brush tool, Auto Color, and Picture Package from its older sibling. New and exclusive to Elements are the powerful but intuitive Quick Fix command; the Selection Brush, with soft-edged and partial selections; and Frame From Video, which imports stills from QuickTime and iMovie files.

Despite these marked improvements, Elements 2.0 still costs only $99, an amazing price for such an appealing and powerful package.

RUNNERS-UP The **Canon i850 Photo Printer** ($199; 800/385-2155, www.usa.canon.com) is a great general-purpose ink-jet printer that does a good job across the board—glossy photos, bright business reports, readable text documents, and more. If you're less concerned about glossy-photo printing and want more speed, try the **Epson Stylus C82** ($149; 800/873-7766, www.epson.com), a solid and speedy ink-jet printer. It uses waterproof (and long-lasting) pigment inks that look great on almost every paper type.

SYSTEM-ENHANCEMENT UTILITY

WINNER St. Clair Software's **Default Folder X 1.6.3** ($35; support@stclairsoft.com, www.stclairsw.com) gets our heartfelt hurrahs for making the little things in life—namely Open and Save dialog boxes—better for OS X users. The boxes work the way they should, giving you the ability to jump to a file or folder by pressing the first letter of its name. This utility even provides an easy way to assign hot keys to your favorite folders, making file navigation a process you won't have to think twice about.

RUNNERS-UP SkyTag Software's **File Buddy 7.2.4** ($50; 919/933-9595, www.skytag.com) is an extremely useful utility that lets you work with your file system much more efficiently, create droplet apps to perform common tasks, and change all the nitty-gritty information about your files without hitting the command line. Proteron's **MaxMenus 1.2.1** ($20; 402/932-3894, www.proteron.com) lets you create custom menus that include apps, documents, folders, and files—or any combination thereof—in the four corners of your screen, as well as easily assign keystrokes.

NETWORK-MANAGEMENT SOFTWARE

WINNER Neon Software's **NetMinder Ethernet 5.0** ($795; 800/334-6366, www.neon.com) lets network administrators glean a huge amount of information about their Mac networks. This OS X–native network analyzer gets our nod for providing easy-to-use and extremely useful troubleshooting help while watching Ethernet packets, TCP/IP usage, and users' Web browsing—all of which can save you a lot of time each day. And the software costs thousands less than other analyzers.

RUNNERS-UP Also from Neon Software, **LANsurveyor 7.0.1** ($495; 800/334-6366, www.neon.com) bridges the gap between troubleshooting and network-management applications by keeping track of exactly what's connected to your network and what's happening within it. Netopia's **netOctopus 4.1** (10-user license, $650; 50-user license, $3,050; 510/814-5100, www.netopia.com) is a must for today's understaffed and oversubscribed IT support teams. Taking advantage of OS X's new network-specific features, it lets you keep your users' software up-to-date by running installer scripts remotely.

CREATIVE

WEB PUBLISHING SOFTWARE

WINNER **Macromedia Flash MX** ($499; 800/457-1774, www.macromedia.com) adds significant power and polish to the industry standard for creating interactive Web animations and interfaces. In addition to OS X compatibility, the new version offers a more intuitive interface, enhanced timeline controls, the ability to embed video, and numerous under-the-hood improvements. And developers will appreciate additions to its scripting capabilities.

RUNNERS-UP Web-design program **Adobe GoLive 6.0.1** ($399; 800/833-6687, www.adobe.com) made its mark with improved code creation and support for database-driven content—including preconfigured server setups. Simply put, **Macromedia Fireworks MX** ($299; 800/457-1774, www.macromedia.com) is one of the best programs available for creating and optimizing Web graphics, and a revamped interface eliminates many of the workflow frustrations caused by previous versions.

MUSIC SOFTWARE

WINNER Music sampling and synthesis have reached a new level with Propellerhead Software's **Reason 2.0** ($399; distributed by M-Audio, 800/969-6434, www.m-audio.com). Added to its impressive rack of virtual equipment are the Malström Graintable Synthesizer and NN-XT Advanced Sampler, and everything now works at 24-bit resolution. The program also includes two CDs of versatile samples.

RUNNERS-UP Ableton's **Live 1.5** ($300; distributed by M-Audio, 800/969-6434, www.m-audio.com) is a sequencing instrument that lets you use your Mac or MIDI keyboard to trigger and layer sounds. The intuitive interface and ability to change tempo without altering pitch make it great for live performances. Emagic's **Logic Platinum 5.4** ($949; 530/477-1051, www.emagicusa.com), the first pro-level sequencer to make the jump to OS X, includes a heartier Audio Engine, support for Apple's Audio Units technology, and real-time sample-rate conversion.

DISPLAY

WINNER Apple may have given up on the CRT, but luckily for color pros, Sony hasn't. The **Artisan Color Reference System** ($1,799; 800/571-7669, www.sony.com) combines a 21-inch Sony GDM-C520K Flat Trinitron monitor, a USB sensor, a display hood, and Artisan calibration software, to provide one-button color calibration. This sleekly designed system offers accurate color for those who need it.

RUNNERS-UP The **Apple Cinema HD Display** ($3,499; 800/538-9696, www.apple.com) not only is an inch bigger than the original Cinema Display but also has 40 percent more pixels—and it retains the bright, clear picture and clean, one-cable convenience of its predecessor. The **Boxlight Cinema 17SF** ($3,799; 800/884-6464, www.boxlight.com) will make your business presentations shine, and you'll appreciate its compact, 6.4-pound design as you carry it home each weekend: The Cinema 17SF will take your home entertainment center to the next level.

PROFESSIONAL GRAPHICS SOFTWARE

WINNER **Adobe Photoshop 7.0.1** ($609; 800/833-6687, www.adobe.com) adds much-appreciated productivity features to an already stellar graphics program. In addition to OS X support, the new version offers a revamped painting engine, workspace and tool presets, a file browser for searching and managing large numbers of images, and the new Healing Brush and Patch tools, which can do wonders for images with unwanted details.

RUNNERS-UP No matter what you want to do with your images, **CorelDraw Graphics Suite 11** ($529; 800/772-6735, www.corel.com) probably has the tool you need. The new version offers numerous improvements, including a simplified interface, 3-Point drawing tools for creating vector shapes, and support for symbols. **Image Doctor** ($129; 888/921-7546, www.alienskin.com), a wonderful set of filters from Alien Skin Software, makes it easy to remove unwanted scratches, blemishes, JPEG compression artifacts, and even large objects from your photos.

ASSET-MANAGEMENT SOFTWARE

WINNER **iView MediaPro 1.5.5**, from iView Multimedia ($90; download, $80; [44] 207-223-8691, www.iview-multimedia.com), manages your images, movies, and audio files. This low-priced program includes sophisticated features such as support for AppleScript, ColorSync, and digital cameras' EXIF (Exchangeable Image File Format) data. Throw in the ability to build Web pages, edit images, and archive assets to CD, and iView is a clear winner.

RUNNERS-UP Canto's **Cumulus 5.5 Workgroup Edition** ($995 plus $295 per client; 415/703-9800, www.canto.com) was designed as a professional tool for creative companies with a truckload of assets, and it was one of the first professional asset managers to run on OS X. Apple's **iPhoto 1.1.1** (free; 800/538-9696, www.apple.com) disproves the adage "You get what you pay for." Though it has a few shortcomings, iPhoto is all many digital photographers need to manage and share their images.

PRINT-PUBLISHING SOFTWARE

WINNER **Adobe InDesign 2.0.1** ($699; 800/833-6687, www.adobe.com) is as innovative as the first version but surpasses it with a usability that's drawing applause from print designers and service bureaus. Adobe has managed to add features such as object transparency (which isn't just for flashy effects) *and* port the application to OS X.

RUNNERS-UP DiamondSoft added OS X functionality and the powerful System Font Handler to **Font Reserve Single User 3.1.1** ($90; download, $100; 415/381-3303, www.diamondsoft.com). Extensis's **Suitcase 10.1.3** ($100; 800/796-9798, www.extensis.com) now runs as an application in OS X, easily controls Classic fonts, and otherwise retains its familiar interface.

3-D SOFTWARE

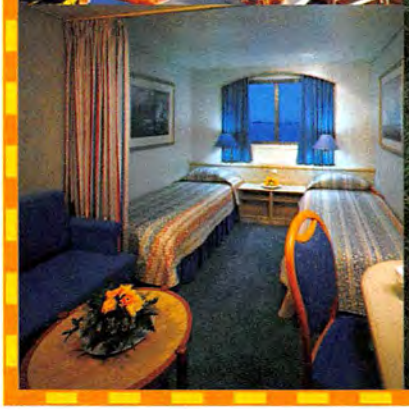
WINNER With **Maya Complete 4.5**, by Alias|Wavefront ($1,999; 877/405-6645, www.aliaswavefront.com), this premier 3-D–modeling and –animation tool has at last reached parity with its Windows counterpart. The program is now faster and easier to use, thanks to an improved interface, an expanded tool set, and new support for dual processors. Designers will also appreciate its new subdivision-surface modeling feature, which lets you build lifelike characters with less effort than traditional NURBS modeling requires.

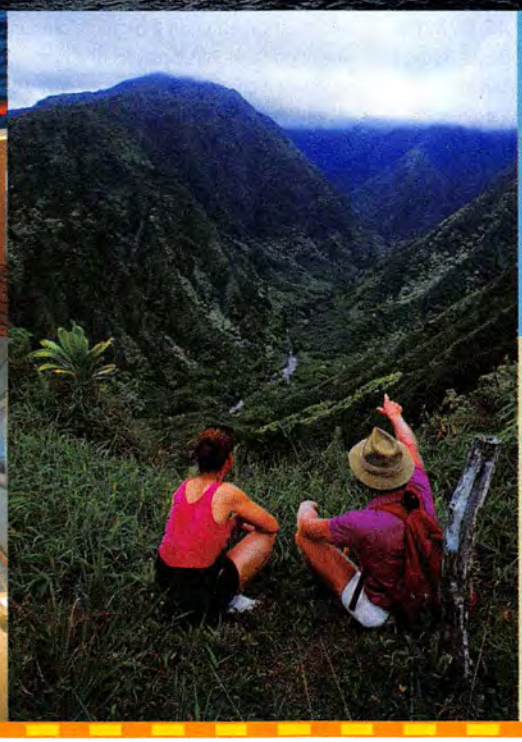
RUNNERS-UP **Axeledge 1.5**, by MindAvenue ($395; download, $385; 866/646-3283, www.mindavenue.com), offers intuitive, powerful tools for creating interactive 3-D Web content—regardless of your design background. Features include character-animation tools, an importer for LightWave files, and HTML-export tools. Electric Image's **Universe 5.0** ($1,295; 949/481-6660, www.electricimage.com) is the second major upgrade to this top-notch renderer this year. The program offers lightning-fast rendering, new character-animation tools, Global Illumination light objects, and multiprocessor support.

To learn more see us online at www.geekcruises.com/home/mm2_home.html

MacMania II

June 1–8, 2003





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DIGITAL HUB

DIGITAL VIDEO SOFTWARE

WINNER Apple's **Final Cut Pro 3.02** ($999; 800/538-9696, www.apple.com) is a giant leap forward for affordable video editing. This version runs natively in OS X, and it adds color-correction tools and many real-time transitions and effects previews. Its new OfflineRT format allows you to store and edit hours of footage on a PowerBook. Also included is Boris Calligraphy, for better titling, and new integration with DVD Studio Pro, for exporting chapter and compression markers.

RUNNERS-UP If you use a high-end Avid editing system, **Avid Xpress DV 3.5** ($1,699; 800/949-2843, www.avid.com) should make you feel right at home—you can share user profiles between the two and even bring your Xpress DV projects into high-end Avid systems for finishing. The program also provides more than 100 real-time effects and great color correction. **Boris Red 2.5.2** ($1,595; 888/772-6747, www.borisfx.com) brings its impressive set of compositing and animation tools to OS X, including rotoscoping, vector text, and 2-D and 3-D titling, and it can work as a plug-in within your video-editing software.

DV CAMCORDER

WINNER With the introduction of the three-CCD **Panasonic AG-DVX100** ($3,795; 800/528-8601, www.panasonic.com), the digital-video revolution got a boost. The AG-DVX100 is the first MiniDV digital camcorder to capture action at a filmlike 24 frames per second. Filmmakers will marvel at the warm tones and beautiful color saturation this new camera can produce, and they will be wowed by the ability to customize just about any of the camera's features.

RUNNERS-UP Canon gets nods this year for two stellar products. The single-CCD **Canon Optura 200MC** ($1,500; 800/652-2666, www.canondv.com) aims to help those with consumer budgets achieve near-professional results with excellent image stabilization and color accuracy. The **Canon GL2** ($2,400; 800/652-2666, www.canondv.com), with its three CCDs and 20× optical zoom, was designed with the video professional in mind.

STORAGE

WINNER For speed and bundled software, it's hard to top Yamaha's **CRW-F1ZDX** ($280; 800/492-6242, www.yamahamultimedia.com). The CD-RW drive features remarkable 44× write and 24× rewrite speeds, as well as software such as Adobe Photoshop LE 5.0 for OS 9, MusicMatch Jukebox, Dantz Retrospect Express 5.0, and Toast 5 Lite. An Apple update to OS X has nullified the one limitation the CRW-F1ZDX had when it was released—incompatibility with iTunes 3.

RUNNERS-UP CMS Peripherals' **ABSplus** ($279–$599; 714/424-5520, www.cmsproducts.com) offers Mac users a quick and easy way to start backing up their data with an integrated software-hardware product. Just install the software and plug in the FireWire drive (which comes in a variety of capacities for desktop and portable Macs), and ABSplus will copy any new or changed files without requiring any configuration. WiebeTech's **FireWire DriveDock** ($140–$160; 316/744-8722, www.wiebetech.com) won't win any beauty contests, but the FireWire bridge station scores points for innovation by allowing you to convert an internal IDE hard drive into a portable FireWire device.

DIGITAL MEDIA DEVICE

WINNER Apple's **iPod 20GB** ($499; 800/538-9696, www.apple.com) is the latest and most capacious in this groundbreaking line of portable music players. The well-designed iPod offers a huge hard drive and a FireWire interface for quickly transferring files to it, and is tightly integrated with iTunes. It comes with a clip-on remote control; it can play MP3, AIFF, and WAV files; and it doubles as a portable FireWire hard drive. You can also use it to store and view contacts and calendars.

RUNNERS-UP By allowing USB capture of TV shows directly to MPEG-1 video, El Gato Software's **EyeTV** ($199; info@elgato.com, www.elgato.com) brings the benefits of personal video recorders such as TiVo and ReplayTV to the Mac. It can pause or replay live TV, and it can automate program recording easily via software and the Web. Slim Devices' **SliMP3** ($249; 650/210-9400, www.slimdevices.com) streams MP3 music over your network via Ethernet, has a bright display and a remote control for browsing and selecting music, and connects to any stereo receiver.

CONSUMER GRAPHICS SOFTWARE

WINNER For digital photographers who want to edit their photos, **Adobe Photoshop Elements 2.0** ($99; 800/833-6687, www.adobe.com) offers much of the power of its professional-grade counterpart at a fraction of the cost and learning-time investment. The many new features include a Quick Fix command, which lets you adjust brightness, color, and focus from a single window; a Selection Brush for easily making complex paths around objects; and the ability to capture and import still images from video.

RUNNERS-UP **ImageBuddy 2.6**, by KepMad Systems ($20; imagebuddy@kepmad.com, www.kepmad.com), lets you save money and time by printing out multiple images (including captions and drop shadows) on a single sheet of photo paper. If you need only basic image editing, Caffeine Software's **PixelNhance 1.5.9** (free; 408/249-1290, www.caffeinesoft.com) offers easy-to-use tools at a price that's hard to beat—free. This program's straightforward interface lets you easily adjust levels, color, sharpening, and more.

PHOTO PRINTER

WINNER The **Epson Stylus Photo 2200** ($699; 800/873-7766, www.epson.com) is the most amazing printer we've ever seen. It produces smoothly detailed images that rival anything you can do in the darkroom—and they'll last as long as 100 years, far longer than most photographs. The secret is Epson's use of seven pigment inks and the tiny size of its ink droplets; the results are the best color *and* black-and-white prints you can get out of a computer, bar none.

RUNNERS-UP The **Canon S830D Direct Connect Photo Printer** ($300; 800/385-2155, www.usa.canon.com) features great image quality and longevity, and it has a built-in media reader for saving and printing images directly from your digital camera. The **Epson Stylus Photo 960** ($349; 800/873-7766, www.epson.com) uses dye inks, so it doesn't have the print longevity of the 2200—its output will last for a mere 10 to 25 years—but it does give you great photos for a lot less money.

DIGITAL CAMERA (LESS THAN $1,000)

WINNER There are plenty of great digital cameras to choose from in this price range, but the **Canon PowerShot G3** ($899; 800/652-2666, www.powershot.com) is the first one we mention when someone asks us

MAC OF THE YEAR

For a company that prides itself on simplicity, Apple certainly sold a lot of different Mac models in 2002, from the high-end PowerBook G4 and dual-1.25GHz Power Mac G4 down to the unheralded but remarkably successful white G3 iMac. But our favorite Mac of the past year was the **800MHz iMac**, because it combined so many great features in one reasonably priced package. Start with the machine's complete redesign, first introduced this year: that futuristic, posable screen and white dome body resemble nothing so much as a desk lamp. But once you move the stainless-steel neck to slightly reposition the screen for a better view, you'll wonder why all computer monitors aren't like this one. Three USB ports and two FireWire ports indicate that this Mac was designed to be smack at the center of Apple's digital hub, surrounded by external peripherals such as printers and digital cameras. The top model's 17-inch, 1,440-by-900-pixel flat-panel display puts the perfectly fine 15-inch iMac's screen to shame. Its 800MHz G4 processor is powerful enough for all but the most demanding applications and excels when working with Apple's digital-hub applications, including iMovie and iPhoto. The included SuperDrive brings DVD-burning capabilities to the desktop. And all of this costs only $1,999. From a design standpoint, the new iMac was tops among Macs in 2002, and the 800MHz, 17-inch LCD model is a cut above the rest.

which camera to buy. It works for both the casual shooter and the advanced shutterbug, offering excellent scene modes for automatic shooting, full manual controls, and a great user interface, with a sharp 4× zoom lens and a detail-rich resolution of 4 megapixels.

RUNNERS-UP The **Nikon Coolpix 4300** ($500; 800/645-6687, www.nikonusa.com) is a small 4-megapixel camera with a 3× zoom and a great macro mode for close-up shots. Sony has long been a bit player in the Mac digital-camera market, but the **Sony DSC-F717 Cyber-shot** ($999; 800/222-7669, www.sonystyle.com), with its 5× zoom and 5-megapixel resolution, made us stand up and take notice.

DIGITAL CAMERA (MORE THAN $1,000)

WINNER Canon has been the ruler of the prosumer digital-camera realm since the 2000 debut of the single-lens reflex (SLR) EOS D30. And with the release of the 6.3-megapixel **Canon EOS D60** ($1,999; 800/652-2666, www.powershot.com), Canon shows that it has no plans to give up its throne. The D60 has a smart and easy-to-use interface, and it takes great pictures; best of all, it can use Canon's acclaimed line of lenses for 35mm film cameras.

RUNNERS-UP If you want high resolution but don't want to move to the pricier SLRs, the **Nikon Coolpix 5700** ($1,200; 800/645-6687, www.nikonusa.com) may be for you. It sports a 5-megapixel CCD, a 7× zoom lens, and pro-level features. And Nikon finally answered the EOS D series with a comparable digital SLR, the **Nikon D100** ($1,999; 800/645-6687, www.nikonusa.com), a great 6.1-megapixel camera that has the feel of the company's film cameras and can use Nikon's line of high-quality lenses. □

All Mac products released between November 2, 2001, and November 1, 2002, were eligible for this year's Editors' Choice Awards, which are based on a survey of *Macworld* editorial preference, primarily focusing on new features of products released during this year's eligibility period.

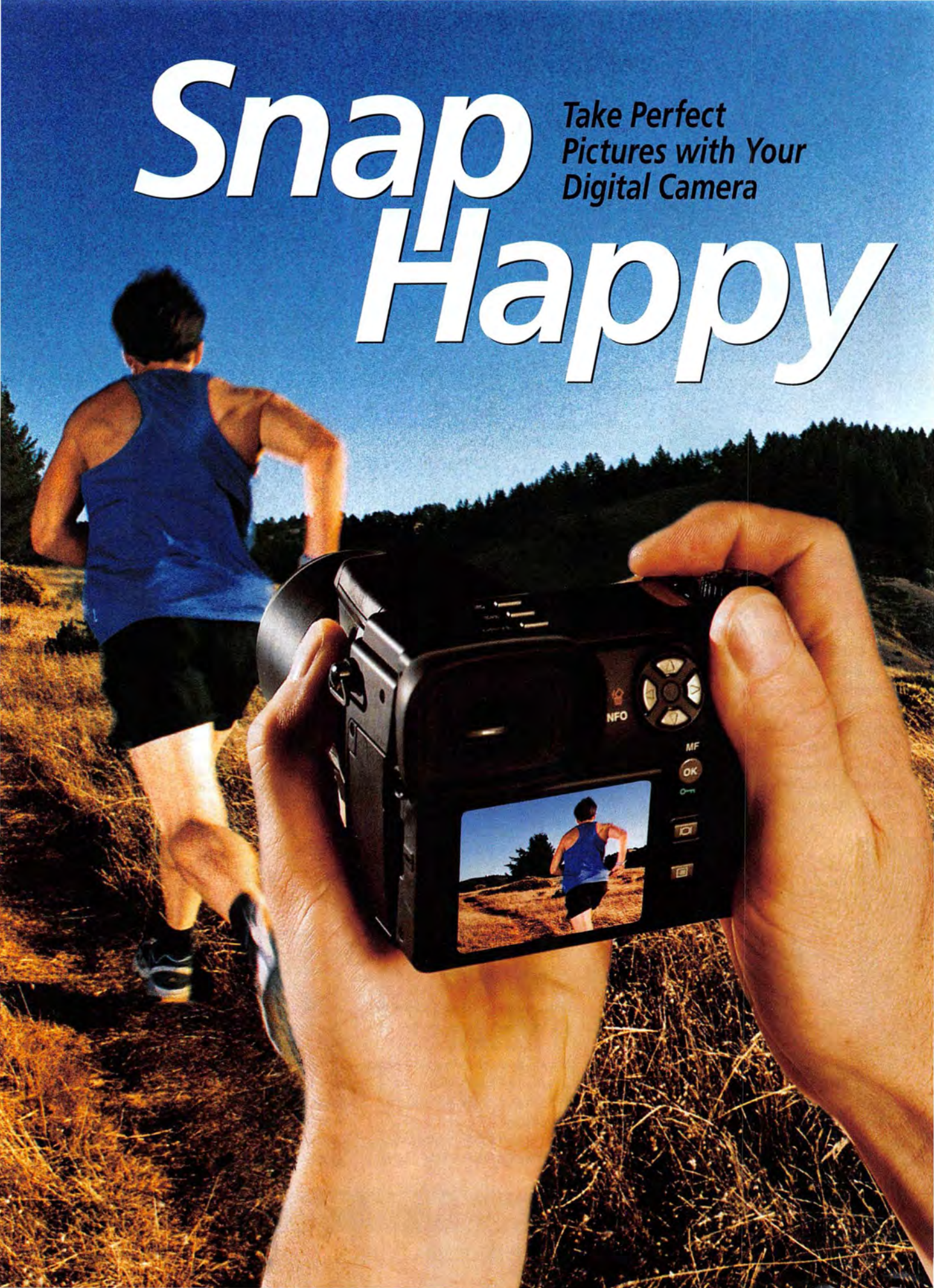
BREAKTHROUGH PRODUCT OF THE YEAR

Arriving only weeks after we wrapped up last year's Editors' Choice Awards, Apple's **iPod** has been with us for a year, and now we're more impressed with the company's first serious foray into consumer electronics than we were when it debuted. So many of the iPod's features are remarkable innovations: its trailblazing combination of small size and large capacity, the scroll-wheel–driven controls, the iTunes-like interface that simplifies finding what you're looking for amid thousands of MP3 files, and the speedy FireWire connection.

In the months since its arrival, Apple and enterprising Mac developers have improved the iPod by turning it into a portable repository for other data, including calendar and address-book information: the hard drives keep getting bigger, and Apple has added a handy remote control to the iPod package. And let's not forget the iPod for Windows, which may prove to be one of Apple's most effective advertising tools, showing off the company's sense of style and innovation and beckoning PC users to make the switch. All in all, the iPod is more than just an impressive music player—it's a breakthrough product that affects Apple and Mac OS in numerous ways that go way beyond listening to your favorite tunes while you're on the go.

Snap Happy

Take Perfect Pictures with Your Digital Camera



BY | BEN LONG

With their instant feedback, reusable media, and excellent image quality, today's digital cameras offer great advantages over their film counterparts. What's more, most digital cameras provide intelligent auto modes that do much of the difficult photographic work for you. But as sophisticated as they are, even the best auto modes can't get it right every time. If you're constantly struggling to fix images that are too dark, washed out, or just not the shot you were hoping to capture, you're probably not taking advantage of everything your digital camera offers. To get the best pictures possible, you'll need to make some smart choices about your camera's settings.

When shooting a photograph, you may be tempted to think, "This is good enough; I can always correct it later in Photoshop." But no matter how skilled you are at image editing, it's wise to start with the best image you can capture.

In this article, we'll take an in-depth look at your digital camera's controls and show you how to get great photos—even in some notoriously challenging situations.

Balancing Quality and Size

One of the first things you should do when preparing to shoot is pick resolution and compression settings. In truth, you probably won't change these settings very often, but since they directly affect the quality of your images and how many shots you can take, it's important to understand the tradeoffs involved with each.

Your digital camera's resolution setting (expressed in width and height) determines the number of pixels the camera uses to capture an image. Images with higher resolutions show more detail, but they also consume more space—so your camera's storage card can't hold as many of them.

The compression setting affects the overall quality of your image. All digital cameras compress images before storing them. Low compression rates result in larger files and better-looking images. The more you compress an image, the more its quality degrades. (Confusingly, some cameras express compression in terms of image quality—for example, good, better, and best. In these cases, higher settings actually result in lower compression rates.)

Storage is becoming increasingly inexpensive, so you can avoid compromising image quality simply by buying more storage cards. This way, you can leave your camera's settings at the highest resolution with the least compression.

But if you're running out of room and want to squeeze in a few more images, you'll need to adjust the camera's settings. If you plan on printing your images, it's best to set the resolution as high as possible and increase the compression. This may introduce some compression artifacts, but these won't degrade print quality as much as a low resolution will (see "Balancing Act").

If your destination is e-mail, video, or the Web, image size isn't much of a concern.

Balancing Act
Although a high compression setting will let you fit more images on a storage card, it will also degrade your images and increase the number of compression artifacts—square, blotchy patches of color.

PHOTO-ILLUSTRATION BY PHILIP KAAKE; CAR PHOTO BY BEN LONG

Where Was That Again?

Almost every digital camera has a unique interface and organization scheme for its settings and controls. If you're not sure where to find some of the features we mention, consult your camera's manual. If the documentation has gone the way of lone socks and spare keys, don't worry. Most companies offer downloadable PDF versions of camera manuals on their Web sites.

Here are some commonly used icons to look for when you're searching through your camera's menus and options:

White Balance

- Sunlight/Outdoor
- Cloudy
- Incandescent/Indoor
- Fluorescent

Program Modes

- Portrait
- Twilight/Low Light
- Landscape
- Sports

Set the compression to the best quality (lowest amount of compression) and decrease the resolution. In most cases, you can set the resolution as low as 640 by 480. (For more on compression and resolution, see "Size Matters: Preparing Your Photos for Web or Print.")

Seeing the Light

Developing a keen eye for light quality is an essential part of getting great shots. Each time you prepare to shoot in a new location, you need to make some quick decisions about the available light. How bright is it? What's the source? The answers will help you choose the correct ISO (light sensitivity) and white-balance settings for your images.

ISO Different types of film have different characteristics. Some film is formulated for indoor shooting while some is for outdoor use; other film, due to its increased sensitivity to light, is best suited to shooting in low light.

You can also adjust your digital camera for different types of light. But unlike film cameras, which carry only one type of film at a time, digital cameras can be adjusted on a shot-by-shot basis, so you don't have to commit to a particular type of light sensitivity for all your shots.

A keen eye for light quality is an essential part of getting great shots. How bright is it? What's the light source? The answers to these questions will help you choose the best settings.

Light sensitivity is measured using a scale called ISO. Many digital cameras provide a choice of ISO values—usually 100, 200, and 400. As the ISO value increases, the digital camera becomes more light-sensitive. But high ISO values, like high compression, have drawbacks—they produce nosier images.

In general, a camera's auto-ISO feature will yield good results. But if you want to shoot in a low-light situation where a flash is not appropriate—for example, at a theatrical performance—then you'll want to consider cranking up the ISO.

White Balance You should pay attention not only to the amount of light but also to the light source. Different kinds of light have different color qualities. Photographers refer to these differences as *color temperature*. For example, sunlight, which tends to be blue, has a different color temperature than incandescent light, which tends more toward yellow.

Finding the Right White Our camera's outdoor white-balance setting (right) produces a much warmer image than its auto white balance (left).

BEN LONG

Size Matters: Preparing Your Photos for Web or Print

Before you can share images with others, whether through print, e-mail, or the Web, you'll probably need to resize them. You can do this in just about any image editor—for example, Adobe Photoshop or, if you don't have $609 to spend, its more economical sibling, the $99 Photoshop Elements (800/833-6687, www.adobe.com).

You can resize an image by adjusting its pixel dimensions, its resolution, or both. Pixel dimensions are the width and height of an image, as measured in pixels. The pixel dimensions of a typical 2-megapixel image are 1,600 by 1,200.

Resolution is a measure of how closely those pixels are spaced. At 72 pixels per inch (ppi), a 1,600-by-1,200 image will measure 22 by 16 inches. At 300 ppi, it'll measure 5 by 4 inches, because those same pixels are packed closer together.

Resizing for the Web

If your images are destined for the Web or e-mail, 1,600 by 1,200 pixels is too big. After all, the average computer screen is only 1,024 by 768 pixels. You'll probably want to knock the image down to around 400 by 300 pixels and 72 ppi (the resolution of most monitors).

To discard some pixels in Photoshop Elements, a process called *resampling* or *downsampling*, open the Image Size dialog box (Image: Resize: Image Size). Make sure the Resample Image option is selected. Enter the pixel dimension you want in the Width or Height field (see "Slimming Your Photos"). The Resolution field should be set to 72 ppi.

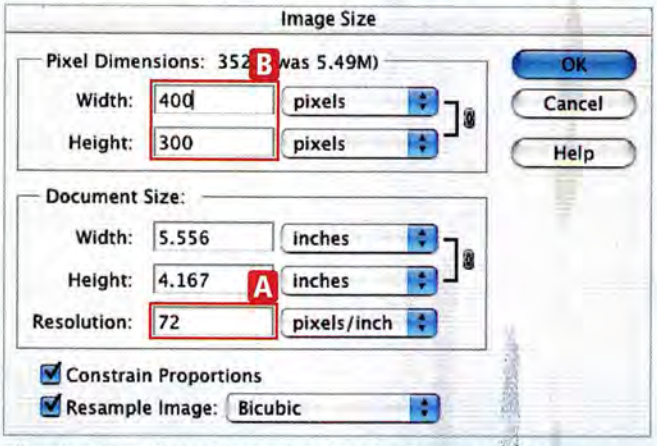
Although making an image smaller means that fine detail will be lost, downsampling doesn't usually degrade quality. In fact, your image might even get a little sharper.

Resizing for Print

If your final destination is print, you'll need to make a few additional decisions. First you must choose a resolution. Though your printer may claim that it prints 1,440 dpi or more, your images don't need such a high resolution, because your printer uses several different colored dots to re-create the color of each pixel in your image. In other words, there is not a direct 1:1 correspondence between those 1,440 printer dots and the pixels on your computer screen.

For the typical desktop ink-jet printer, 240 ppi is the highest resolution you need. If you plan to send your photo to an online printing service after editing it, check the service's Web site for resolution recommendations. In many cases, 300 ppi will suffice. To adjust your resolution for printing, deselect the Resample Image option and enter a new number into the Resolution field. Elements will adjust the document's size to match the resolution you entered. At 240 ppi, a 1,600-by-1,200 image measures 6.6 by 5 inches.

But what if you want to print a smaller image—one, say, 5 inches wide? As in the earlier example, you'll need to downsample. But instead of entering new pixel dimensions, simply enter your desired document size. Again, make sure that the Resample Image option is selected. Elements will then automatically calculate the appropriate pixel dimensions.



Slimming Your Photos To shrink a photo for displaying on the Web or inclusion in an e-mail message, set the resolution to 72 ppi A and enter the new pixel dimensions B.

Note that unlike a 35mm film camera, which uses a 3:2 aspect ratio for its images, most digital cameras use a 4:3 aspect ratio. As a result, a digital image that's 5 inches wide is actually 3.75 inches high, not the standard 3.5 inches. To print digital images in traditional film sizes, first set your resolution as we've described and then crop your images to the appropriate size.

If you want to go bigger, to print at 7.5 by 10 inches, for example (you can't go to a full 8 by 10 inches because of the camera's 4:3 aspect ratio), you have two options. With the Resample Image option selected, enter the new document dimensions, and let Elements *interpolate* (make up new pixels) to create the larger document. This process is called *upsampling*. The downside is that this may create new artifacts and aberrations in the image. Most notably, diagonal lines can become jagged, or *aliased*.

The second option is to *deselect* the Resample Image option and then enter new document dimensions. This spreads out the original 1,600 by 1,200 pixels over a 7.5-by-10-inch image. In the process, the resolution will drop to 160 ppi.

So which is the better option? In this case, it's probably better to upsample. Photoshop's resampling algorithms are very good and aren't likely to introduce too many artifacts after such a small resizing. Printing at a lower resolution, though, will result in a marked softening of the image.

It's important to note that resampling—either up or down—can have a profound effect on an image's sharpness. Downsampling results in a sharper image, and upsampling produces softer images. For this reason, it's a good idea to perform any necessary resizing *before* you apply sharpening filters.

Your eyes can adjust to changes in color temperature, so colors look the same no matter what kind of light you're in. However, your digital camera doesn't fare as well. To render color accurately, a digital camera has to know what kind of light you're shooting in so it can compensate—this process is called *white balancing*.

Most cameras come with an automatic–white-balance feature that adjusts the camera for the current lighting. But this feature can sometimes get confused, particularly if you're shooting a scene that features a single dominant color or includes different types of light (sunlight streaming into a room lit with fluorescent light, for example).

In these situations, you'll need to adjust the white balance. Most cameras include white-balance presets for all of the normal types of light: daylight, daylight with clouds, incandescent, and fluorescent (see "Finding the Right White"). If your camera's automatic–white-balance feature is unreliable, you may want to switch to one of the preprogrammed modes whenever you change lighting situations.

Flash Photography: Beyond the Basics

Everybody knows what the camera's built-in flash is for, right? It goes off automatically when there's not enough light. And everybody knows how ornery and feeble these flashes can be. If you're too close to your subject, the flash blows out the picture, turning your best friend into a ghost. If you're farther than about eight feet away, the flash is too weak to do anything useful at all.

No matter what kind of camera you have, you'll take your best pictures if *you* decide when to use the flash, instead of letting the camera decide. Believe it or not, the camera's automatic flash is wrong about half the time.

Fill Flash

If you set the flash to auto when you shoot outdoors, the camera will conclude, more often than not, that there's plenty of light in the frame, and it won't bother to fire the flash. But it's not smart enough to determine whether the person you're photographing is, in fact, in shadow (see "A Helping Hand"). As a result, you'll be left with an underexposed subject against a brightly lit background.

A Helping Hand When left in auto flash mode (left), the camera reads the background, the lawn, the reflections—everything except the person in the foreground. As a result, your subject is underexposed and too dark. Forcing the flash (right) solves the problem nicely.

STORYPHOTO.COM

The solution in this situation is to *force* the flash on. Provided you're close enough to the subject, the flash will provide enough fill light to balance the subject's exposure with that of the surrounding background. So how do you take your flash out of auto mode? Most cameras offer a couple of different flash settings. Cycle through your camera's flash modes until you get to the forced-flash icon (usually a single lightning bolt). Stand within eight feet of the subject so you can get enough flash for a proper exposure.

This kind of fill flash will dramatically improve your outdoor portraits. It will eliminate the silhouette effect when your subject is standing in front of a bright background, and it creates a flattering frontal light that softens smile lines and wrinkles and puts a nice twinkle in the subject's eyes.

Rim Lighting

Once you've experimented with fill flash, try this technique that pros use to create striking portraits: Position the subject with her back to the sun (preferably when it's high above the horizon and not shining directly into your camera lens). Set your camera to forced flash. If the sun is shining into the lens, block it with your hand or a lens shade. The sun creates a *rim light* around the subject's hair (see "Capturing Rim Lighting"). You'll also notice that her eyes are more relaxed and open. In one swift move, you've made your subject more comfortable and improved your chances for a dramatic portrait.

Take a few pictures and review your work on screen. The forced flash should create a nice fill light. If your model is too bright, move back a few steps and try again. If she's too dark, move a little closer. (If your camera accepts filters, try a softening filter for rim-lighting shots. It can reduce facial wrinkles and create a nice glow around the subject's head.)

When it works, rim lighting creates portraits that you'll be very proud of. It's not the right technique for every situation, but sometimes it produces jaw-dropping results.

Tips from the Pros Some digital cameras offer a manual white-balance control. If you have this feature and want a truly accurate white balance, get a piece of white paper and place it in your shot. (Don't hold the paper directly in front of the camera. It needs to be illuminated by the light in your scene.) Zoom in on the paper so that it fills a large portion of the image, and activate the manual white-balance feature. The camera will examine the white paper and calibrate itself for the current lighting. As with the white-balance presets, if you change to a different lighting situation, you'll need to take a new white-balance measurement.

Another advanced feature that can come in handy—if your camera offers it—is white-balance bracketing, which automatically shoots the same image multiple times using a variety of slightly altered white-balance settings. This feature is useful if you're particularly unsure about the lighting, or if color accuracy is extremely important.

THE TWO-STEP

When you take a picture, don't immediately press the shutter button all the way down. An automatic camera isn't designed to work that way. Instead, press the shutter halfway down, and wait for the camera to signal that everything's OK (usually with a light or beep). When you press the shutter halfway, the camera focuses, meters, and calculates white balance before giving you the all clear. Then you can press the button the rest of the way. (If your camera always measures focus from the center of the image, point the camera at your subject, press the shutter halfway down, and *then* reframe your shot. This ensures that the subject is sharp no matter where it appears in the frame.)

If you just press the button all the way down, the camera must take all of these measurements and then take the shot. This will cause a lag, which can be long enough for you to miss the moment you were hoping to capture.

Getting the Perfect Exposure

Once you've selected appropriate ISO and white-balance settings, you're ready to frame your shot. The most important consideration here is good exposure.

At the simplest level, your camera's exposure controls ensure that there's enough light to yield a good image

Indoor Flash

Another challenging flash situation is indoor photography. Over the years, you've probably seen plenty of indoor flash photos that have a pitch-black background and an overexposed, practically nuked subject. This is because the light from a typical digital camera's flash reaches only about eight to ten feet. But you can make certain adjustments to prevent the room's background from falling into a black hole.

Manual Adjustments If your camera has a manual mode that allows you to dictate both the aperture (f-stop) and shutter speed, try this combination as a starting point for flash photography indoors: set your film speed to 100, the aperture to f5.6, and the shutter speed to 1/15 of a second. Turn on the forced-flash mode. (*Don't* use the red-eye reduction feature.)

Capturing Rim Lighting Remember being told to have the sun at your back when taking a picture? That's not always the best advice for portraits. In fact, you may want the sun on the model's back to create a rim-light effect.

Hold the camera as steady as possible. (At these slow shutter speeds, your shots are more vulnerable to camera shake. Your flash will help freeze everything in its range—but the background, not illuminated by the flash, may blur if the camera isn't steady.) As you review the shots, you'll see that they look much different than what you're accustomed to. Specifically, the camera captures more of the room's ambience and background detail.

Slow-Synchro Flash If your camera doesn't have a manual mode, all is not lost. Almost all consumer models have a nighttime or slow-synchro mode, often indicated by a crescent-moon icon or stars over a mountain. This mode is for shooting portraits at twilight, but you can also use it indoors to open up the background (see "A Little Ambience, Please"). Granted, you don't have as much control with this setting as you do with a manual mode, but you might be pleasantly surprised by the results.—DERRICK STORY

A Little Ambience, Please Tired of having your flash subjects lost in a black hole of darkness? Try using what photographers call "slow-synchro flash." Set your camera's shutter speed and aperture manually to control the exposure of the background. The camera's flash will ensure that the subjects are exposed properly.

By the Book This is an excerpt from *iPhoto: The Missing Manual* (O'Reilly/Pogue Press, 2002), by Derrick Story, David Pogue, and Joseph Schorr. Derrick Story is also the author of *Digital Photography Pocket Guide* (O'Reilly, 2002), a complete guide to the ins and outs of digital cameras—including tips for shooting in just about every situation you may come across (www.oreilly.com/catalog/digphotopg).

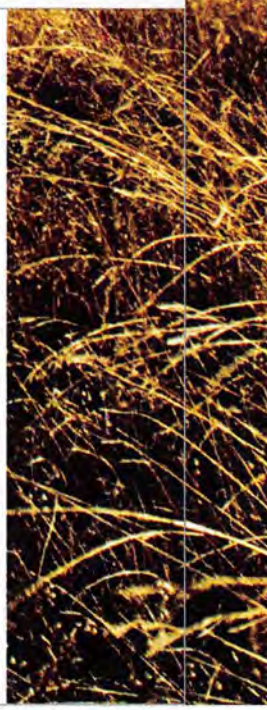
but not so much light that your image washes out. It does this by balancing its shutter speed (the amount of time the shutter stays open) with its aperture (the size of the lens' opening). Your camera's auto-exposure mode can produce good results for most scenes, but for difficult shots such as quick motion, or specialty shots such as soft backgrounds, you'll often get better results if you take over some of the controls. When used correctly, your camera's exposure controls can provide tremendous creative possibility.

Light Metering No matter what your photographic goals are, the key to getting properly exposed images lies in your camera's light meter. When you press the shutter button down halfway, the camera runs through a list of tasks: it calculates an appropriate focus, selects a white balance, and uses the light meter to measure the amount of light in your scene and determine an appropriate shutter speed and aperture.

However, your meter doesn't necessarily choose a shutter speed and aperture that will yield the *best* image—just one that is neither too bright nor too dark. Your camera's light meter always assumes that it's pointed at something that is 18 percent gray, because generally, a scene reflects 18 percent of the light that strikes it. While this assumption is often right, you may need to tweak the camera's exposure settings to get the best results (for tips, see "True Colors: Compensating for Automatic Exposure").

How a camera meters an image can dramatically affect the accuracy of the exposure. Today, many cameras offer metering options: usually matrix, center weight, and spot. Matrix metering divides your scene into a grid, meters each cell, and then calculates an exposure based on all of that metering. Center-weight metering takes the same approach but prioritizes the center cells (where your subject most likely is). Spot metering measures just a narrow portion of the center of the image.

So which meter should you choose? Because of its big-picture approach, matrix metering is the best option for most situations. If there's a marked difference in lighting between the background and the subject in the center of a scene—a person standing in front of a window, for example—center-weight metering is a better option.

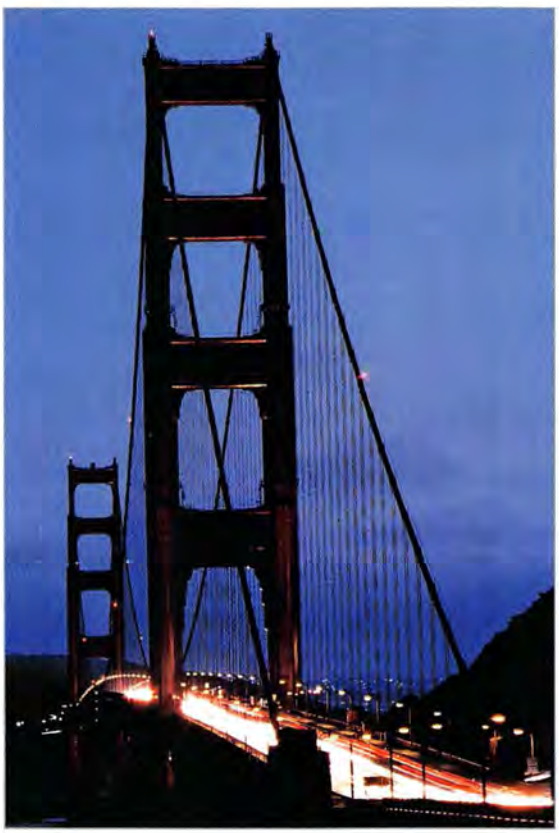


BETTER PORTRAITS

One of the best ways to bring more focus to a subject is to choose an exposure that yields a shallow depth of field. Unfortunately, depth of field is partly a function of focal length, and most small digital cameras have extremely short focal lengths—so you can't get depth of field that's as shallow as what you'd get from of a camera with long lenses. Here, we used our camera's portrait mode to soften the background. You could also use the aperture-priority mode to choose a low f-stop (wide aperture). Then the camera automatically chooses an appropriate shutter speed. If you're not satisfied with the degree of softness in the background, increase the distance between it and the subject.

Choose spot metering if you're in a difficult lighting situation and want to make sure that a specific element in your scene—regardless of its position in the frame—is well lit. For example, if a scene includes patches of bright light and shade but the subject is off to the side, you can use spot metering to meter the subject and then reframe the shot before pressing the shutter button completely.

Fine-Tuning Exposure Once the light meter lands on an exposure, you can choose to either shoot with that exposure or, if you think the shot requires it, adjust the calculated shutter speed or aperture to better serve your photographic intent.



Capturing the Light To get great nighttime shots like this, you'll need a tripod or other stable surface. Use your camera's night mode (usually represented by a crescent-moon icon) or, if your camera offers priority modes, set the shutter speed to about four seconds. And be sure to turn off the flash.

GOLDEN GATE BRIDGE PHOTO BY STORYPHOTO.COM; PARROT AND STATUE PHOTOS BY BEN LONG

For any given light-meter reading, there are many different exposure combinations that result in the same amount of light hitting the camera's sensor. For example, doubling the aperture of a given exposure while keeping the shutter open half as long results in an exposure equivalent to the original. This interrelationship is called *reciprocity* and makes it possible to use different combinations of shutter speed and aperture values to achieve very different results from the same shot.

By altering shutter speed, you can control the camera's ability to freeze motion. Slow shutter speeds render moving images with lots of blur; fast shutter speeds freeze even the fastest action.

If a scene includes patches of bright light and shade, use your camera's spot meter to meter your subject; then reframe the shot before pressing the shutter button completely.

By altering the camera's aperture, you can control the image's depth of field, the measure of which distances are in focus. Aperture is measured in *f-stops*. Because it uses a *smaller* aperture, a high f-stop setting stops more light, thus producing a deep depth of field in which the entire image is in focus.

To create an image with shallow depth of field—for example, where only objects 6 to 12 feet away from the camera are in focus—use a very low f-stop setting. (But remember that because large apertures allow more light, you'll need to use a short shutter speed to get a good exposure.)

By controlling depth of field, you can blur out the background or foreground of the image to focus more attention on the subject (see "Better Portraits").

Using Exposure Modes Some digital cameras let you set both your shutter speed and aperture. But keeping track of these settings can be tedious. To make adjust-

True Colors: Compensating for Automatic Exposure

If your light meter always calculates an exposure that's appropriate for 18 percent gray, how can it accurately calculate an exposure for other colors? The answer is, it often can't.

Say you take a picture of a black statue. Since the light meter assumes that the statue is 18 percent gray, the exposure it calculates will reproduce the black carving as somewhat gray (see "Getting Back to Black"). Similarly, if you were to shoot something white—a field of snow, for example—the light meter would produce an exposure that rendered the snow as slightly gray, rather than truly white.

To restore the blacks and whites in the image, you sometimes need to make adjustments. You'll overexpose to make whites whiter, and underexpose to make blacks blacker. Almost all digital cameras provide exposure-compensation controls, which let you simply dial in an amount of over- or underexposure. With these controls, you don't have to worry about an absolute shutter-speed or aperture value. Instead, you tell your camera to over- or underexpose by a maximum of two f-stops, usually moving in increments of 1/3 of an f-stop.

The amount of exposure compensation you'll need varies, so it's best to *bracket* the shots by shooting multiple images with varying degrees of compensation. To make things easier, some cameras offer an autobracketing feature that shoots a series of images with different exposures whenever you press the shutter button.

Exposure compensation is not just for blacks and whites, though—the color tones in your image can also be changed. Just as white can be made more white by overexposing, bright colors will become brighter (less gray) by overexposing. In general, most colors will appear more saturated if you dial in a tiny bit of underexposure (usually 1/3 of an f-stop will do).

Getting Back to Black With the automatic exposure (left), this black statue appears slightly gray, and background details (such as the columns) are washed out. To get a truer black (right), we underexposed the image by 1/3 of an f-stop.

ing your exposure easier, most cameras offer specialized shooting modes for some common types of situations. Usually selectable from a dial on the outside of the camera or from a menu on the camera's LCD screen, these specialty modes let you specify the settings you care about (for example, shutter speed) and tell the camera to take care of the rest.

Although the number of modes varies from camera to camera, the most common are for portraits, landscapes, sports shots, and low-light images. Each mode features a different priority for the exposure settings. For example, if you set the camera to portrait mode, it automatically selects a wide aperture (and corresponding shutter speed) to reduce depth of field and create a blurry background behind the subject.

A landscape mode typically has a very small aperture, to increase depth of field, and often locks the focus on infinity. These settings ensure that the entire scene will be sharp.

Sports settings prioritize for faster shutter speeds to stop fast-moving action; sand-and-snow settings intentionally overexpose the image to render bright scene elements—such as fresh snow—as the right color.

If you're looking for even more fine-tuned control over your image's aperture or shutter-speed setting, check to see if your camera offers *priority modes*. Rather than choosing the general effect you want, as with exposure modes, priority modes let you select a specific f-stop or shutter speed and tell the camera to do the appropriate calculations for you. For example, shutter priority allows you to select a shutter speed and leaves the choice of aperture to the camera, while aperture priority does the opposite.

The Last Word

If there's one fundamental rule for improving your images, it would be to pay attention to light changes (white balance), overall brightness (ISO), and bright or dark colors in the scene that need to be over- or underexposed. If you keep your eyes open and learn to correctly use your camera's controls, you should be able to capture images that accurately depict your artistic vision. □

BEN LONG is a freelance writer based in San Francisco and the author of *Complete Digital Photography*, second edition (Charles River Media, 2001).

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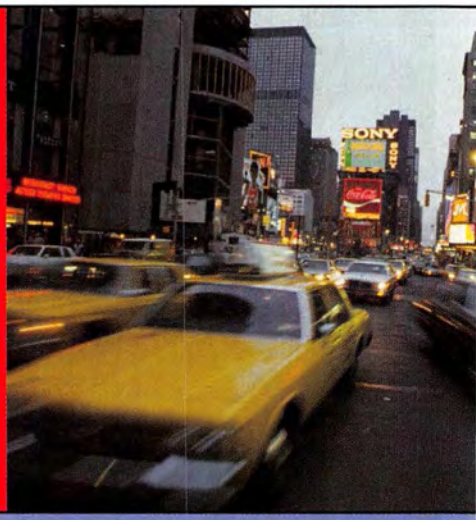

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Jaguar's Printing Power

Some Mac users face a dilemma—they can use either OS X or their printers. Many older printers don't have OS X drivers, and some OS X 10.1 drivers don't work in OS X 10.2. But don't run out and buy a new printer. By taking advantage of CUPS, Jaguar's new core printing technology, you may be able to bring that old printer—and many Windows printers—into the OS X fold.

The Common Unix Printing System (CUPS) was developed in 1999 to provide a standard printing system for all versions of Unix. Apple licensed this open-source technology for Jaguar. It provides a number of useful features, including print spooling, print-job management, network-printer directory services, a Web interface, and PPD (PostScript Printer Description) support. Here's how to take advantage of some new possibilities CUPS brings to the Mac.

Open-Source Software to the Rescue

The people who have been hit hardest by OS X's limited printer support are those using very expensive (costing thousands of dollars) large-format printers that have no OS X drivers. However, Jaguar doesn't officially support even some of the most basic printers—such as older ink-jets; nor does it support dot matrix printers, which people still widely use for carbon-copy printouts. (You can see a list of Jaguar's supported printers at www.apple.com/macosx/upgrade/printers.html.)

ILLUSTRATION BY CHRISTOPH NIEMANN

The first way CUPS can help is if you have a PPD file for an unsupported printer. (The software discs that came with your printer usually provide these files.) You can often get your printer to work just by selecting the PPD file in Jaguar's Print Center utility.

Driver Power However, CUPS' biggest bonus is that it gives users the ability to take advantage of open-source printer drivers, most notably the Gimp-Print driver package. Install the Gimp-Print package and your Mac will instantly support hundreds of additional ink-jet, laser, line, and dot matrix printers.

Although Gimp-Print drivers work well for most applications, they don't work properly with those that generate their own PostScript, including many Adobe applications and AppleWorks. You can solve this problem by also installing a PostScript interpreter, such as the CUPS-compatible ESP Ghostscript. Once installed, ESP Ghostscript works invisibly in the background to allow the Gimp-Print drivers to work with these applications.

Gimp-Print and ESP Ghostscript make an impressive number of older Mac printers fully usable in OS X. You'll also be able to use many printers previously supported only in Windows or on the Mac via a utility such as Strydent Software's PowerPrint ($99; 604/296-3600, www.strydent.com). Currently, there isn't an OS X version of PowerPrint.

You can see a complete list of printers supported by Gimp-Print at http://gimp-print.sourceforge.net/p_Supported_Printers.php3. The site rates each printer by its current level of functionality.

Getting Ready Download the disk-image files for Gimp-Print (I recommend the latest final release rather than a newer prerelease version) and ESP Ghostscript from http://gimp-print.sourceforge.net/MacOSX.php3.

Mount them in the Finder by double-clicking on each disk-image file. If your printer connects to your Mac via USB, you should make sure that the printer is connected and turned on before proceeding with installation.

To install Gimp-Print, double-click on the Gimp-Print package (Gimp-Print 4.2.3.pkg at press time); you'll be asked for an administrator user name and password. Follow the instructions to install the drivers. (Make sure to select your start-up disk when prompted if you have more than one volume.) Follow the same procedure to install the ESP Ghostscript software. Restart after installation is complete.

Setting Up Now that you've added support for your unsupported printer, you need to set it up.

Although you can use CUPS' built-in Web interface (which I'll discuss later) to set up printers, using Jaguar's Print Center utility is easier (you'll find this in Applications: Utilities: Print Center).

If your printer uses USB, hold down the option key and click on the Add button in the Print Center toolbar. You'll see the standard dialog box for adding a printer, but the pop-up menu at the top of the window will include an Advanced option—select it. Click on the Device pop-up menu, and your printer should appear at the bottom of the list. (If it doesn't, make sure it's turned on and connected.)

You can rename your printer, but don't change the device URL. Click on the Printer Model pop-up menu to select the printer manufacturer, and then select the printer model or name in the Name window. For the PPD file of a printer that's not listed, select the Other option in the Printer Model pop-up menu, and then browse directly to the PPD file. If this file is located on your printer's software CD or floppy disks, copy it to your hard drive first. Click on the Add button to finish.

TCP/IP Printing If your printer or print server is available over TCP/IP, use Print Center to set up an IP printing queue. First you'll need the IP address and queue name of the printer or print server.

Click on the Add button in the Print Center toolbar; then select IP Printing from the pop-up menu at the top of the window. Enter the IP address of the printer or print server in the Printer's Address field, and enter the queue name in the field below. Click on the Printer Model pop-up menu and select the printer manufacturer; in the Model Name window, select the printer model or name (or select Other from the Printer Model menu to select a specific PPD file). Click on the Add button to finish.

Some unsupported AppleTalk printers (and LocalTalk printers using a LocalTalk-to-Ethernet adapter) are also supported via Gimp-Print. To set up one of these, use the instructions for setting up a USB printer. You'll find the printer listed in the Device menu in the Advanced setup window. You can even print to a shared printer connected to a Windows computer via OS X's built-in Samba support. (Samba provides built-in Windows networking compatibility.) Follow the instructions for setting up a USB printer, but after selecting the Advanced option, select Windows Printer Via Samba from the Device pop-up menu. Enter the URL of the Windows printer or print server in the Device URL field.

A printer supported by the Gimp-Print drivers works just as you would expect. In most print dialog boxes, you'll find printer-specific features (such as multiple printer trays) in a Printer Features panel available via the Options pop-up menu.

Rough Edges Gimp-Print isn't a commercial product, and it comes with no guarantees. Some printers may not work perfectly—for example, a particular driver might not support all of a printer's features.

That said, the open-source community is usually responsive to reports of bugs and quite helpful when problems come up. Check out the FAQs and support forums on the Gimp-Print site (http://gimp-print.sourceforge.net/p_FAQ_OS_X.php3 and http://sourceforge.net/forum/?group_id=1537, respectively).

Under New Management

Open-source driver support may be the hidden gem of Jaguar's new reliance on CUPS, but CUPS brings other benefits. It adds the ability to manage printers and print queues via a Web interface. Go to http://127.0.0.1:631 (which is simply port 631 on your own Mac), and you'll see a CUPS administration screen (see "Remote Control").

From here you can manage printers, start and stop print jobs, and configure printer classes. (A *printer class* is a group of printers that act as a pool. Documents go to the first available device in that class.)

Web Access You can access this management screen *remotely* using a Web browser on another computer. This is handy for network administrators diagnosing problems from afar. Simply type http://*ipaddress*:631/ (where *ipaddress* is your computer's IP address) in the Address field of any Web browser. (If your computer is behind a firewall, make sure port 631 is open.)

This remote access works even if Web Sharing is turned off. Therefore, if you *don't* want others to see your print-management Web interface (including the names of documents you've printed recently), block port 631 with a firewall. You won't be able to access the management features, either.

Troubleshooting Tool Don't overlook another nice touch—the ability to print a test page to verify connectivity and driver support. When you're having problems printing, use the Print Test Page feature to figure out whether the printer is connected and functional. If the test page prints successfully, the problem most likely lies in the application. Read up on CUPS' Web-based management abilities in the CUPS manual that's built into OS X (http://127.0.0.1:631/sam.html).

A Cup Half Full

Jaguar's CUPS-based printing architecture is a lot like OS X itself: it brings the benefits of open-source and Unix technologies to the average Mac user. Users of unsupported printers may find that CUPS and Gimp-Print save them the cost of a new printer. For everyone else, CUPS opens the door to more control over your printers than Apple has ever before provided. □

Remote Control
CUPS gives you the ability to manage printers, print queues, and printer classes right in your Web browser—and that's particularly handy if you're a system administrator.

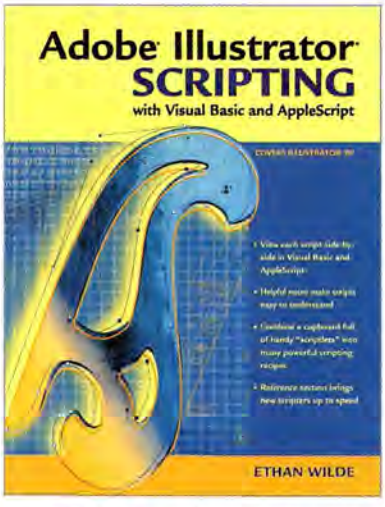
DAN FRAKES is the author of the upcoming book *Mac OS X Power Tools* (Sybex, 2003).

GRAPHICS BY ETHAN WILDE

Automate Illustrator

When you think about the work you do in Adobe Illustrator 10, there's a good chance you'll realize that you spend most of your time doing similar tasks over and over again. In fact, you'll probably notice that the time you spend placing and replacing images, correcting errors in text, and preparing files for printing often reduces the time you have available for doing creative work. Wouldn't it be great if you had an assistant—one who wouldn't mind doing most of the boring, repetitive tasks for you?

Illustrator's built-in scripting and automation support can give you that kind of help. Think about your daily work, and ask yourself whether any repetitive tasks are threatening to drive you crazy—the tasks that spring immediately to your mind are probably good candidates for scripts.



Fully Illustrated
This article is an excerpt from *Adobe Illustrator Scripting with Visual Basic and AppleScript* (Peachpit Press, 2002), by Ethan Wilde. You can find the book at www.peachpit.com or your local bookstore.

With just a small investment of time, you can write an AppleScript for Illustrator that will automate many of your least-favorite time-consuming tasks. (For an AppleScript primer, see "Amazing AppleScript," December 2002.)

But before you start scripting, you'll always ask yourself two key questions: "In what conditions do I need to do the task?" and "What are the steps involved?" Once you fully understand the process you go through, you'll be better prepared to write your script.

Looking at Illustrator's Objects and Commands

You can view the objects and commands available in Illustrator from inside your scripting system.

1. Start Illustrator and then Apple's Script Editor. The latter comes with all Macintosh systems. If you can't find the Script Editor application, you'll have to reinstall it from your Mac OS system CD.

2. In Script Editor, choose File: Open Dictionary. Script Editor displays an Open File dialog box.

3. Find and then select the Illustrator application, and click on OK. Script Editor displays a list of Illustrator's objects and commands. You'll also be able to see the properties and elements associated with each object, as well as the parameters for each command.

Writing a Script for Illustrator

We'll begin scripting Illustrator by making new things. The most basic activities in Illustrator are the creation of documents and objects—this script will jump right in and do both by making a new document with a text-art object in it.

1. Open Script Editor.

2. Enter the following script. As you look through it, you'll see how to create and then address each object in turn. The AppleScript command specifies the object that will receive the next message we send.

```
tell application "Adobe Illustrator 10"
  set myDoc to make new document
  set myTextArt to make new text art item in myDoc
with properties { contents:"I Like Illustrator",
  position:{10, 10} }
  end tell
```

3. Run the script. Illustrator will create a new document, add a text-art item at position (200, 200), and set the text to *I Like Illustrator.*

Adding Features to Your First Script

Next, you'll create a new script that makes changes to the Illustrator document you created with your first script. Don't worry if you've closed the Illustrator document without saving it—just run your script to create a new one.

The second script demonstrates how to get the active document, get the width of that document, and resize the text-art item to be half the document's width.

1. In Script Editor, choose File: New to create a new script.

2. Enter the following code:

```
tell application "Adobe Illustrator 10"
  set myDocWidth to width of document 1
  set width of text art item 1 of document 1 to
myDocWidth/2
  end tell
```

Unit Conversion to Points

Illustrator scripts use points. Here's how to make the conversion.

UNIT CONVERSION	FORMULA
centimeters	28.346 points = 1 centimeter
inches	72 points = 1 inch
millimeters	2.835 points = 1 millimeter
picas	12 points = 1 pica
Qs	0.709 point = 1 Q (1 Q = 0.23 millimeter)

3. Save the script.

4. Make sure you have the document created by the original script open, and then run the script.

Using Measurement Units and Coordinates in Scripts

Illustrator always uses points as the unit of distance measurement. One inch is equal to 72 points. Even if you change the current document ruler's unit of measurement, Illustrator still uses points when communicating with your scripts.

Your scripts will need to perform any unit conversions needed to represent your measurements as points. For example, to move the current selection to a position 2 inches to the right of and 6 inches above its current position, you'd use the following script:

```
tell application "Adobe Illustrator 10"
translate selection delta x (2*72) delta y (6*72)
end tell
```

If your script depends on adding, subtracting, multiplying, or dividing specific measurement values for units other than points, it will need to convert between the units numerically (see "Unit Conversion to Points").

For example, to use English measurements such as inch values for coordinates or measurement units, your script will need to multiply all inch values by 72 to convert to points, since there are 72 points in an inch. To use metric measurements such as centimeters, your script will need to multiply all centimeter values by 28.346, since there are 28.346 points in a centimeter.

Coordinates

Illustrator uses simple two-dimensional geometry to record the position of objects in a document. The coordinates the program uses are the same as those in the traditional geometric-coordinate system you learned about in school.

The horizontal component of a coordinate pair (or *point*) is referred to as *x*, and the vertical component is referred to as *y*. You can see these coordinates in the Info palette when you select or create an object in Illustrator.

Illustrator scripting uses a special class called a fixed point to receive and return coordinate data. The fixed point is represented as a list of two items in AppleScript. The first item is the *x* coordinate; the second is the *y* coordinate. The position of an object in a document is described with a fixed point.

In AppleScript, a fixed point with an *x* coordinate of 5.0 and a *y* coordinate of 10.2 is represented as a list that looks like this: {5.0, 10.2}.

More Info:

www.apple.com/applescript/
For advice straight from the source, free scripts, and tutorials, check out Apple's AppleScript page.
http://macscripter.net
Find more news and resources at MacScripter.net.

The Zero Point

The zero point (0, 0) for coordinate numbering in Illustrator is in the lower left corner of the document. On the horizontal axis, coordinates to the right of the ruler's zero point are positive numbers, and on the vertical axis, coordinates above the zero point are positive. A document's *page origin* defines the lower left corner of the document's printable region as a fixed point.

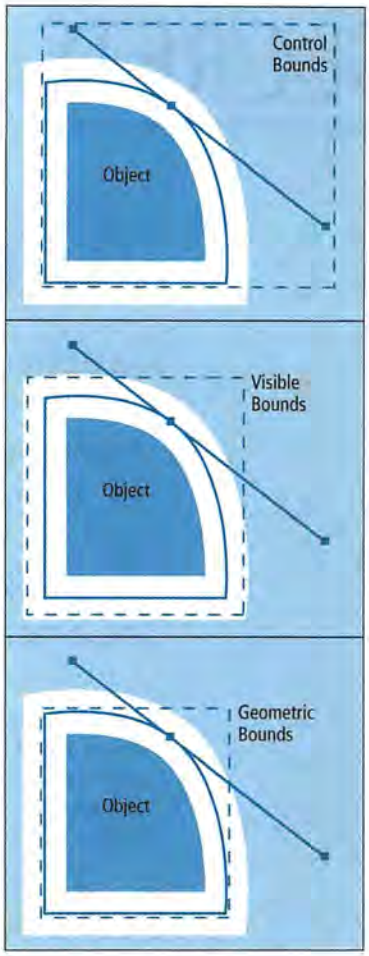
To work with rectangular coordinates where there is a pair of *x* and *y* values, Illustrator uses the special class called a fixed rectangle. This class is composed of a list with four items in AppleScript. The coordinates of a fixed rectangle in order are left, top, right, and bottom.

In AppleScript, a fixed rectangle with a left top corner of (5.0, 200.0) and a right bottom corner of (100.0, 20.0) is represented by a list that looks like this: {5.0, 200.0, 100.0, 20.0}.

Position, Width, Height, and Bounds

Every object, or page item, in a document has a position described by a fixed point and a width and height. The maximum value allowed for the width or height of a page item is 16,348 points.

Every page item also has three properties that describe the object's overall size using fixed rectangles (see "Well within Bounds"). The geometric bounds of a page item are the rectangular dimensions of the object excluding stroke widths. The visible bounds of a page item are the dimensions of the object including any stroke widths. Finally, the control bounds define the rectangular dimensions of the object including in- and out-control points. □



Well within Bounds
Before you start manipulating Illustrator objects with your scripts, you need to understand these three properties that describe page items.

ETHAN WILDE is a cofounder of Mediatrope (www.mediatrope.com), an award-winning multimedia firm in San Francisco.

Alternate Reality

Aside from the gelatinous exterior, nothing separates human from amoeba so much as the bipedal form's desire to blaze its own path. Because the majority of my readers belong to the less slimy species, this month's *Mac 911* examines alternate ways to open e-mail attachments, block network traffic by closing specific ports, and slow down scrolling. I also take a close look at the usefulness of the Mac OS X Developer Tools disc, creating e-mail autoreplies, and a common login problem.

Alternate Application

When I double-click on a PDF created in Acrobat that's attached to a message in Jaguar's Mail application, the attachment opens in Acrobat. I prefer to open the file in Preview. Is there a way to do so easily?

Bill Jeffreys, *Iowa City, Iowa*

ILLUSTRATION BY LEO ESPINOSA

Two ways to accomplish this spring to mind. The first requires that you access Preview via drag and drop. This is easily done if you have a copy of Preview in the Dock, in a DragThing dock ($25; www.dragthing.com), or as an alias on your desktop. You just drag the file onto the Preview icon, and it will open in Preview.

The second way is to control-click (or click with the right mouse button if you have a third-party mouse with multiple buttons) on the attachment. When you do, a contextual menu that contains an Open With command appears. This command sports a submenu that lists the applications Mac OS believes can open the file (however, this list occasionally includes some that don't have a prayer of reading the file properly). Just choose Preview from the submenu, and the PDF opens in Preview. (You can also *permanently* reassign a file type to a specific application by holding down option while in the contextual menu and choosing Always Open With.)

You can also use the Open With command to scan attachments for viruses (see "The Attachment Method"). If your antivirus application doesn't appear in the submenu, select the Other command at the bottom of the submenu, navigate to your cootie killer, and choose Open in the navigation pane. The antivirus application will scan your file. Once you're assured of its cleanliness, you're welcome to open the file with another application that appears in the Open With submenu.

Thwarted Port

OS X 10.2's firewall allows me to block all ports except those used by specified services. However, I don't see an option to block a specific port. Is there a way to do this?

Gary Mindlin Miguel, *Macworld.com forums*

The idea behind the interface found in the Firewall portion of the Sharing system preference is to deny access to all services by default and then allow you to choose access to common services such as Web sharing, file sharing, remote access, and FTP access. If you click on the New button in the Firewall window, you can selectively open other ports. But the opposite isn't true—you can't leave everything open and then selectively close ports.

To close individual ports, you must either use a firewall utility such as Brian Hill's $25 Brickhouse (http://personalpages.tds.net/~brian_hill/brickhouse.html) or Pliris Software's $35 Firewalk X 2 (www.pliris-soft.com/products/firewalkx/index.html) or use Terminal to dig down into OS X's built-in firewall.

Both Brickhouse and Firewalk X are available in demo form, so I'll let you determine how easy each is for you to use. (I find Brickhouse's interface more intuitive.) Let's now turn our attention to Terminal.

With the firewall switched off, launch Terminal, type `sudo ipfw show`, and enter your password when prompted. Something along the lines of `65535 47378 7565485 allow ip from any to any` will appear in the

command line. This indicates that the firewall is not engaged. Now go back to the Sharing system preference and turn on the firewall by clicking on the Start button. Return to Terminal and once again type sudo ipfw show. Several lines of text appear, prominently featuring the words deny and allow. The deny entries are ranges of ports that are now blocked. The allow entries indicate ports that are now open (for example, port 548, for file sharing, may be listed).

If you wish to add to the list of denied ports, type sudo ipfw add 0 deny *protocol* from any to any *port number*. For example, if you wanted to block udp port 3464, you'd enter sudo ipfw add 0 deny udp from any to any 3464 and press return. When packets attempt to reach your Mac via udp port 3464, the firewall will turn them back.

Slower Scroller

I have a Power Mac G4 running OS 9.2. The windows on my Mac scroll much too quickly. Is there a way to throttle back the scrolling speed?

Doug Bloomfield, *Silver Springs, Maryland*

You can put on the brakes with Marc Moini's $12 Smart Scroll (www.marcmoini.com/smartscroll.html). In addition to placing a speed governor on scroll bars, it provides you with a wide variety of arrow choices.

I've yet to hear anyone complain that windows scroll too quickly in OS X, which may explain why there are no similar utilities for Apple's latest operating system. I have, however, received numerous messages indicating that many find window scrolling too slow in OS X. For those of you thus afflicted, here's a tiny tip: To scroll quickly up or down a single page, option-click on the appropriate scroll arrow.

Tools of the Trade

I purchased a copy of Jaguar and opened the box to find a gray disc labeled "Mac OS X Developer Tools." What exactly is this and what can I do with it?

"Watson," *Macworld.com forums*

As the name implies, the Developer Tools disc is intended mostly for those who want to develop applications for OS X 10.2. That doesn't mean, however, that mere mortals can't find some useful tidbits on the disc. For example, if you follow the path Developer: Applications: Extras, you'll find Sketch, a simple Java-based graphics application. This folder also includes an OS X–native version of SimpleText—handy if you long for a *really* simple text editor that can record audio tidbits. Also among the inhabitants of this folder is WorldText, another text editor that offers greater typographic control than TextEdit and the ability to embed media within its documents.

In the Developers: Applications folder is Pixie, a program that allows you to zoom in on areas of the desktop and copy what you see—useful if you want to edit icons at the pixel level (or just see how they're made). And you can use PackageMaker (also in the Applications folder) to create installer packages.

For people who'd like to take a crack at programming their own applications but who aren't versed in the ways of C++, there's AppleScript Studio, a collection of applications (including Project Builder, Interface Builder, and Script Editor) for creating AppleScripts that use elements of OS X's Aqua interface. To see some useful (and whimsical) examples of what you can do with AppleScript Studio, find your way to Developer: Examples: AppleScript Studio, and open one of the project folders. Then double-click on the .pbproj file within to launch Project Builder, and click on the hammer icon to compile the project. Once compiled, the application appears in the build folder in the host project folder.

The Attachment Method Control-clicking on an attachment allows you not only to open it with any compatible application (top), but also to scan it with your antivirus program (bottom).

TIP OF THE MONTH

New in OS X 10.2 is the ability to burn multiple-session CDs. Here's how to make use of this feature:

Launch the Disk Copy application (found in the Utilities folder inside the Applications folder) and select New from Disk Copy's File menu to create a new image (a blank image, an image that mirrors a device, or an image from a folder or volume). Once you've created the image, select Burn Image from the File menu. In the After Burning section of the resulting Burn Disc window, make sure the Allow Additional Burns option is selected. Click on the Burn button to burn the contents of the image to the CD.

Repeat this procedure to burn additional images to the disc. Each session will appear on the desktop as a separate CD.

Ronald C. F. Antony, *Providence, Rhode Island*

Canned Response

I'd like to set up Outlook Express to send an automatic response that says I am out of the office. How would I do this?

Greg Eckert, *Macworld.com forums*

You create autoreplies with rules (or, in Eudora-speak, *filters*). But before I tell you how to do this, I must caution you against the evil of the autoreply loop. This

continues

UNSOLICITED ADVICE

If you've tried to burn an Audible.com file longer than 74 minutes in iTunes 3, you've undoubtedly encountered the frustrating warning that tells you the operation cannot proceed because the file you want to burn exceeds a CD's recordable length. So how do you transfer your Audible.com books to CD? Just so:

Create a new playlist in iTunes and drag your Audible.com file from the Library to this playlist. Open the playlist and click once on the file's title. Now press ⌘-I to produce the Song Information window. Click on the Options tab and enter 1:14:00 in the Stop Time field—this tells Disc Burner to burn only the first 74 minutes of audio (the amount you can safely burn to a CD-R) to the disc. Click on OK, click on the Burn CD icon, insert a blank CD-R when asked to, and once again click on Burn CD to record the audio to disc.

To record the next 74 minutes of audio, follow the same procedure, but this time enter 1:14:00 in the Start Time field and 2:28:00 in the Stop Time field. Repeat for each succeeding 74 minutes of audio.

occurs when your autoreply meets another autoreply and the two bounce back and forth until hell freezes over. The following procedure will help you create an autoreply that can defeat those loops.

To create the rule in Outlook Express or Entourage, select Rules from the Tools menu and click on the New button in the upper left corner of the Rules window. In the resulting Edit Rule window, select Any To Recipient from the pop-up menu in the If portion of the window, and enter your e-mail address in the Contains field. In the Then portion of the window, select Change Subject from the first pop-up menu and Add Prefix from the second one, and then type the phrase My Autoreply in the field that appears next to the Add Prefix pop-up menu. Click on the Add Action button in the Then portion of the window and select Reply from the first pop-up menu. Now click on the Reply Text button; in the Reply Text window that appears, type an appropriate response: for example, I'm repelling a pack of rabid wolverines at the moment. I'll reply to your message when the bandages come off. Click on OK to close the Reply Text window and save the text, and then click on OK again in the Edit Rule window to save the rule.

Create a new rule. In the If portion of the window, select Subject from the first pop-up menu and Contains from the second, and enter My Autoreply. In the Then portion of the window, select Move Message and a destination mailbox. Save this rule and move it to the top of your rules list so it has first priority.

This rule looks for replies containing the subject heading you created. If such a message comes to you in the form of an autoreply, your e-mail app will move it rather than reply to it, breaking the loop.

To make an autoreply effective, you must also create a schedule for your Mac to automatically log on to the Internet to send and retrieve mail. Select Schedules from the Tools menu. Determine how often you want the Mac to check e-mail by selecting the appropriate option from the pop-up menu in the When portion of the Edit Schedule window. In the window's Action portion, select Receive Mail from the first pop-up menu and your e-mail account from the second pop-up menu. Click on the Add Action button, and choose Send All from the pop-up menu that appears next to the second action. Click on OK to save the schedule.

Both Apple's Mail and Qualcomm's Eudora have similar capabilities. In Mail, select Preferences from the Mail menu, click on the Rules button in the resulting window, and click on the Add button to add a new rule. In Eudora, select Make Filter from the Special menu and click on the Add Details button to access the options for creating an autoreply.

To avoid setting up a never-ending autoreply loop, include a phrase unlikely to be found in a typical e-mail message (something like "kill autoreply loop") somewhere in the body of your reply. Now create a new rule that deletes any message with that phrase in its body. Place this rule at the top of your rules list so it will have first priority. If you receive an autoreply to your autoreply, the message will be deleted before your e-mail client has a chance to reply to it.

Login Jam

I just installed OS X 10.2 on my Power Mac G4 and noticed that after the system boots up, the menu bar doesn't appear. The telephone icon, the volume icon, and the clock are in evidence, but they appear against a blue background. When I click the mouse, the menu bar appears. What's going on?
Philip Ellis, *New York, New York*

You'll notice this behavior when a hidden application—the Palm Desktop Background application, for example—that you've configured to launch at start-up runs in front of the Finder. An easy way to diagnose the problem is to log out of OS X, log back in, and after entering your user name and password in the login screen, press return and hold down the shift key. This disables login items (much as holding down the shift key at start-up disables extensions in OS 9). If the menu bar appears as it should when the Mac fully boots, a login item is getting in the way.

You can pin the tail on the errant login item by launching System Preferences, clicking on the Login Items icon, removing one item at a time, and logging out and back in again, but it may be easier to reorder the login items by dragging an item from the middle of the list down to the bottom. Juggling a few of these items will likely move the culprit out of the way. □

Contributing Editor CHRISTOPHER BREEN is the author of *Secrets of the iPod*, second edition (Peachpit Press, 2003).

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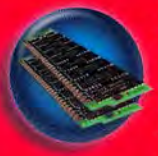

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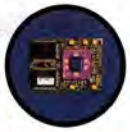

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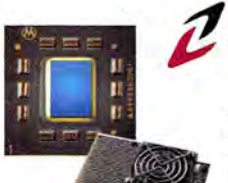

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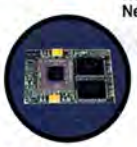

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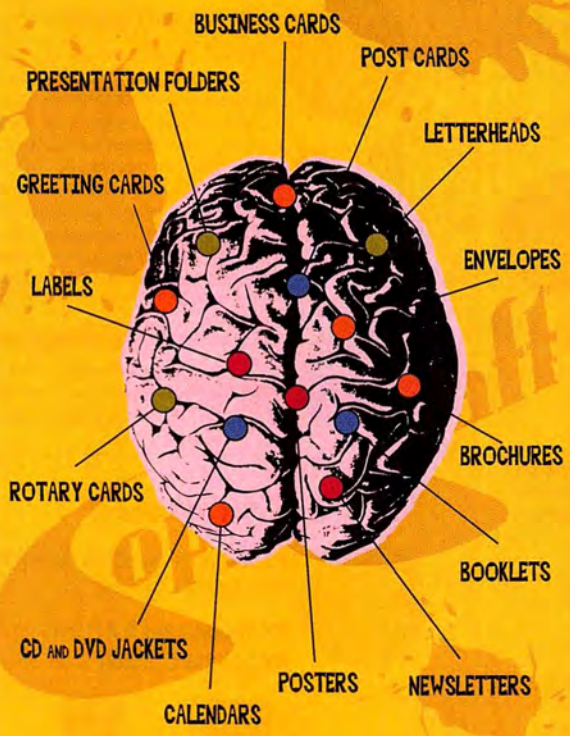

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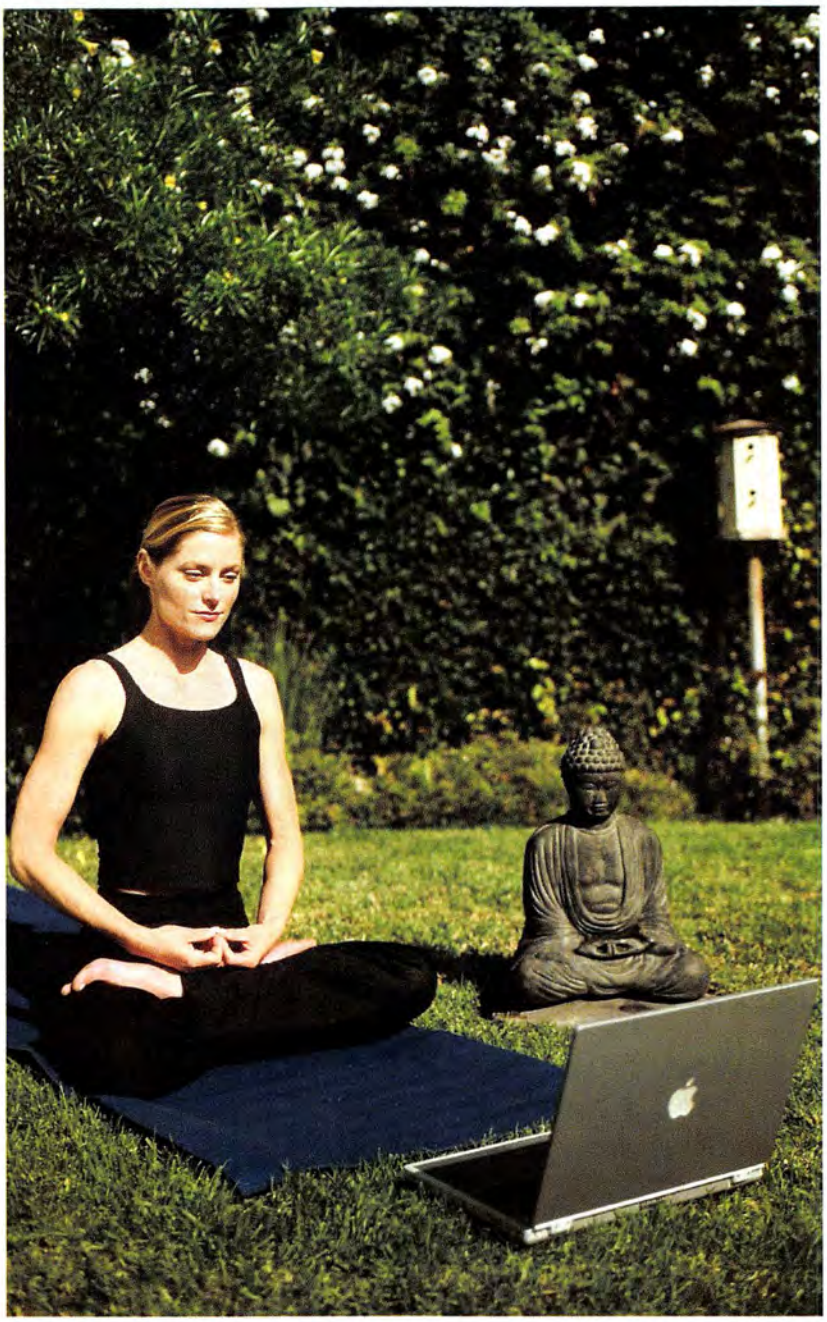

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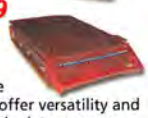

FireVue™ FireWire Hot-Swap Case Kits offer versatility and low cost transportable data storage. You simply buy the kit and as many extra bays to hold all the storage you need. Perfect for video production jobs, just dedicate a drive and bay for every job. With the low cost of IDE storage this system is one of the most cost effective "on-line" storage systems available.

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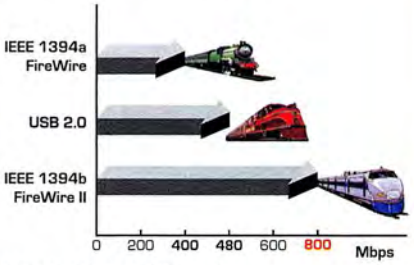

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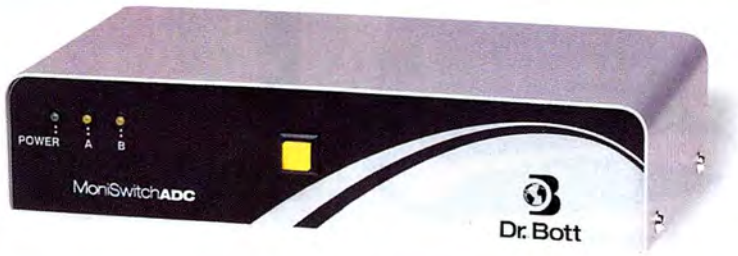

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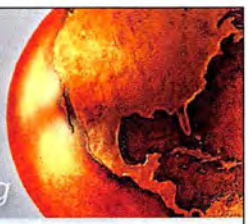

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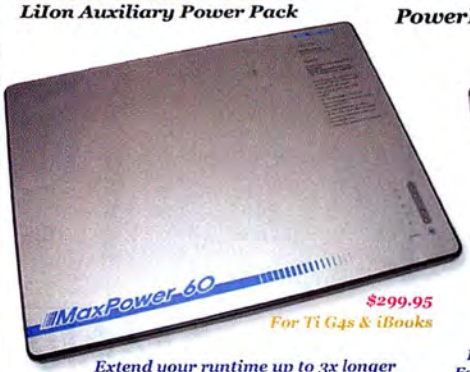

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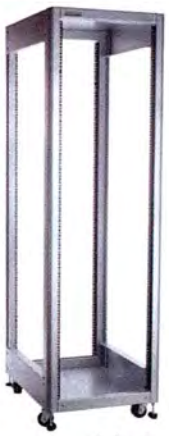

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1/4pg Postcard dimension size 4.25"x 5.5" or 2.75"x 8.5"	4/1	$130	$130	$190	$340
	4/4	$170	$170	$260	$470
1/2pg Postcard dimension size 5.5"x 8.5" or 4.25"x 11"	4/1	$190	$190	$340	$650
	4/4	$260	$260	$470	$850

100lb Cover Cardstock C/2/S Gloss

Grade 1 Sheet - 175 line Kodak film included.

		2500	5000	10000	15000
1/4pg Postcard dimension size 4.25"x 5.5" or 2.75"x 8.5"	4/1	$120	$160	$310	$440
	4/4	$130	$190	$350	$490
1/2pg Postcard dimension size 5.5"x 8.5" or 4.25"x 11"	4/1	$160	$310	$595	$850
	4/4	$190	$350	$640	$910

100lb Gloss Book (text) C/2/S

Grade 1 Gloss Sheet - 175 line Kodak film included.

		1000	2500	5000	10000
One sheet dimension 8.5"x 11" – This can be folded as a trifold, half fold, etc. Folding additional	4/0	$199	$280	$445	$690
	4/4	$295	$395	$550	$895
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	4/4	$430	$550	$895	$1395
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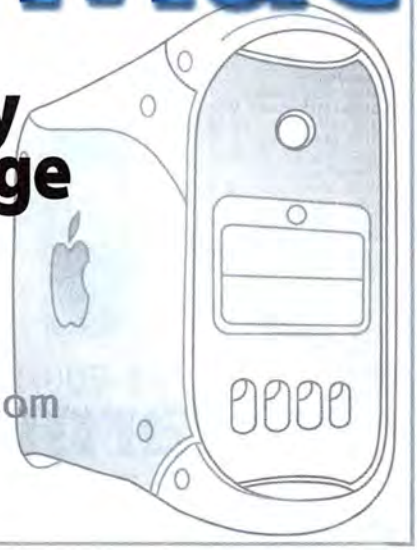

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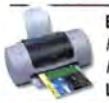

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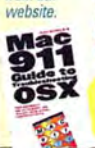

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is elegant, and its tools are useful alternatives while Watson's will inspire you to stop using the Web altogether for your eBaying, Googling, and Amazoning.

Watson's fans are rabid and legion, so I don't fear for the product's future. But just think about this for a moment: Without any visible competition for iTunes, iDVD, iMovie, et cetera, how can we be sure that we're getting the best software possible? OK, yeah, they're better than Windows apps, but here in my office I've got a 1962 pamphlet on foot care that's better than a lot of the software that comes with Windows. When Apple owns the product category, innovation is subject not to competition, but to the priorities of Apple.

Beyond Competent

Let's get back to DVD Player. In many ways, it's the weakest program Apple gives away. It slavishly duplicates the function of the component under my TV without ever thinking, "Hey, wow, I've got the resources of a whole computer to exploit." How about letting me insert my own bookmarks, so I can always zip straight to the line where Chief Marge tells Lou that she's not sure if she agrees with his police work? How about if every time I eject a disc, the program remembers where I left off and takes me right there the next time I insert it, even if that's months later?

> I've got a pamphlet on foot care that's better than most Windows software.

How about if a single menu item took me to a Sherlock 3 DVD tool that assembled production information from the Internet Movie Database, reviews from RottenTomatoes.com, and related movies from the same filmmakers—all in one window? What if the player could silently extract subtitles during playback and index a time-coded transcript? I could type Lee Harvey Oswald during the film *Bull Durham*, and two seconds later, boom—I'm watching Kevin Costner standing in Susan Sarandon's parlor, laying out his entire belief system for her.

Which brings up the most troubling issue of all. Why *can't* DVD Player take a frame capture? It's not a technical issue or even a legal issue. It's a *political* issue. Apple removed this feature from DVD Player to avoid offending the delicate sensibilities of the Motion Picture Association of America.

We're Mac users. We expect to get the marketplace's most-innovative hardware and software, and we usually do. When I bump my head on iDVD's limit of 90 minutes per disc, I simply think that this is the price of free software. But when I learn that I can't do something fundamental for an absurd nonreason, I start wondering whether the price of free software is too high. □

Contributing Editor ANDY IHNATKO's distrust of freebies apparently doesn't extend to the cheese and luncheon-meat samples available on Saturdays at area supermarkets.

ANDY IHNATKO

Is It Wrong to Complain about Apple's Free Software?

i Is the Loneliest Number

THE MOST IMPORTANT PART OF MY DAY, SPIRITUALLY speaking, is 9 a.m. In the winter months here, you can amble out to the deck with a 32-ounce tumbler of Coke and enjoy the last slips of sunrise, without having the experience contaminated by the noise of my neighborhood's newly retired titans of industry, who now browbeat and intimidate their lawns instead of their employees. The muffins at the gas station are fresh, there's a whole page of comics I haven't read yet, and every time I watch a former sitcom actress confidently tell Regis Philbin that she knows more about health, fitness, and nutrition than 130 years of medical science have to offer, I feel as though I've learned something valuable about the human race.

Yes, 9 a.m. is a very spiritual time. I'm filled with peace, serenity, and a sense of heightened clarity. This frame of mind allows me to accept that I'm probably not going to figure out anytime soon what's making my Mac act all petulant, and that I might as well just go to bed already.

The other day, the name of my pain was Apple's DVD Player program. I needed to take some frame grabs from the movie *Fargo* to send to an artist friend of mine, and while I knew that previous versions of DVD Player couldn't do this, I was hoping that the problem had been fixed in the most recent version. Then I was thinking that I could find a way to bamboozle the OS into doing it. Finally, I got myself another soda, cracked my knuckles, and started messing around with the command line.

The next day, I threw in the towel: I hooked up a PC and had my frame grabs in seconds.

Rich Uncle Steve

Throughout its modern history, Apple has been like that rich uncle who never had any kids of his own. Every time we turn around, Uncle Steve offers us another awesome-cool new toy to play with, for free. The hits started with iMovie and have continued uninterrupted through iCal and iSync, a combination whose simplicity and integration with Mac OS has made iCal the first desktop-based appointment book I've returned to after something shiny distracted me from it.

But I'm starting to worry that all these freebies aren't good for us after all.

The market for Web browsers has collapsed to just two products, with good reason: the Mozilla family is great and free, and Internet Explorer is great, free, *and* preinstalled on all Macs. In an environment like that, you'd have to be full-on barking mad to invest time and money in the creation of a new commercial browser—though having met the people who make OmniWeb (www.omnigroup.com), I say "full-on barking mad" only to indicate the sort of positive, maverick determination that earns you a place on an Apple "Think different" poster.

The problem is that competing with Great and Free won't necessarily earn you enough dough to keep the company break room stocked with non-generic brands of snacks and beverages. Great and Free is the 9,000-pound elephant that sends all potential competitors scrambling out of the pool as soon as they spot him on the diving board.

And OS X has Great and Free apps five or six times over. There's no reason for anyone to try to develop a consumer-oriented video-editing app—iMovie has got that covered. Ditto for simple DVD authoring and iDVD. Why try to sell a product that creates and maintains a digital-music library when Apple has put iTunes in every Dock? Even if these programs were sold under shrink-wrap at $80 a throw, they'd be world beaters. As free parts of Mac OS, they do the job—and then they climb into a fleet of star destroyers to make sure that the amino acids on neighboring planets don't get any bright ideas.

> Maybe all these freebies aren't good for us after all.

Here's a more specific worry: When Apple gives away an Aquafied Internet-services tool like Sherlock 3, why try to sell Watson?

Karelia Software (www.karelia.com) has done gangbuster business with its Watson utility. A single-user license costs $29, but never in my life have I allowed so little time to pass between a trial download and an online registration. And never since have I evangelized an app to people as though the safety of our nation's blood supply were riding on it. When I saw the first screen shot of Sherlock 3, I assumed that Apple had simply created Sherlock 3 the same way it had created iTunes: the company restickered a great existing app, having realized that writing a great piece of software takes a lot longer than writing a cashier's check.

But that's not what happened. Sherlock 3 would seem like a miraculously great program if Watson didn't exist. Sherlock is merely competent where Watson is efficient, its interface is simple where Watson's

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