

**YOUR MAC HOLIDAY BUYING GUIDE**

Unique Gifts and Clever Projects to Please the Mac Fanatic, page 52

12.2000

# Macworld

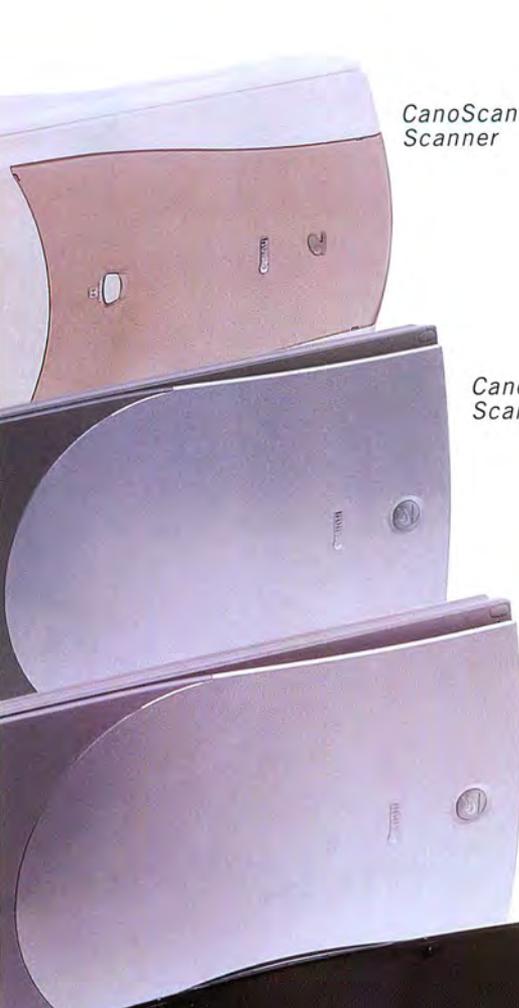
## GETTING A PERFECT OS X

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**New iBooks Score Big:**  
DVD, 466MHz G3, and  
FireWire for \$1,799,  
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**Learn How To:**  
Export Your iMovies,  
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Scan Anything, page 72



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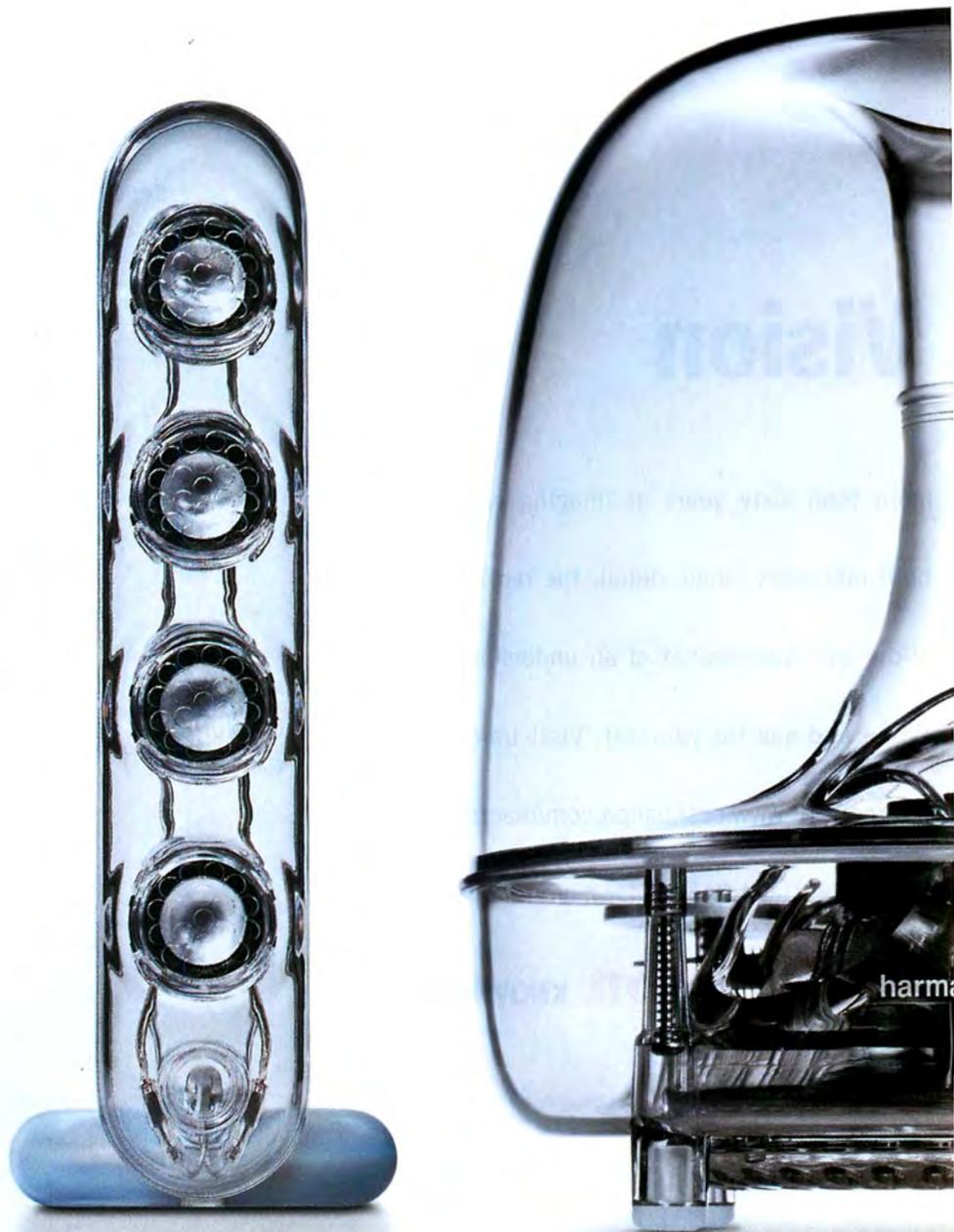
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CHRISTOPHER BREEN Read tips on formatting e-mail, finding old system software, and retaining software updates.

December 2000

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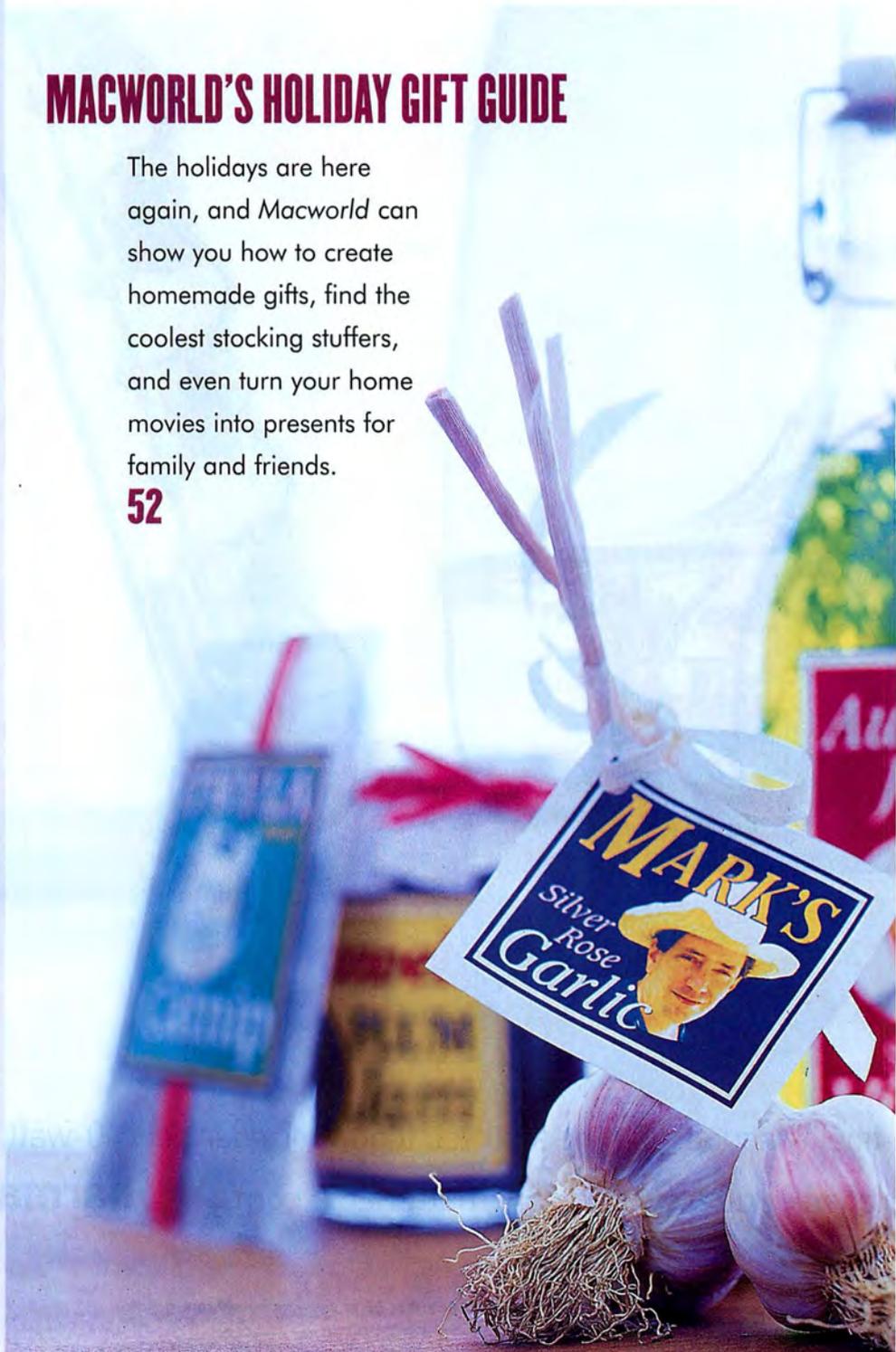
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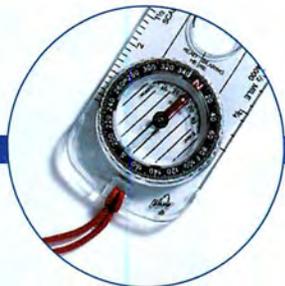
Incorporating MacUser

## MACWORLD'S HOLIDAY GIFT GUIDE

The holidays are here again, and *Macworld* can show you how to create homemade gifts, find the coolest stocking stuffers, and even turn your home movies into presents for family and friends.

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## OS X-Beta Survival Guide

DAVID POGUE AND FRANKLIN N. TESSLER

Now anyone can download a beta version of OS X, a new operating system with both promise and peril. If you're brave enough to explore it, you can avoid the landmines by following our hands-on installation and operating advice.

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### Some Assembly Required

Avoid crowded malls this holiday season by *creating* gifts and decorations on your Mac.

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### Satisfaction Guaranteed

Looking for some cool presents for the holidays? Check out Macworld's pick of great gifts with high-tech flair for everyone on your shopping list.

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### Wrap Up Your iMovies

CHRISTOPHER BREEN Editing and putting together an iMovie is easy and fun. But once you're done, how do you share it with your friends and family? Read our guide to converting your masterpiece into forms that anyone can watch.

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Plus, **Scan Anything** and **Get to the Good Stuff** in *How-to* give you step-by-step instructions for crafting the perfect presents we describe.



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Online-exclusive reviews, news, and opinion on the latest in the Mac universe—in-depth iMovie 2 tutorials, the truth about death and taxes, and more.

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Photograph by Suzanne Roady

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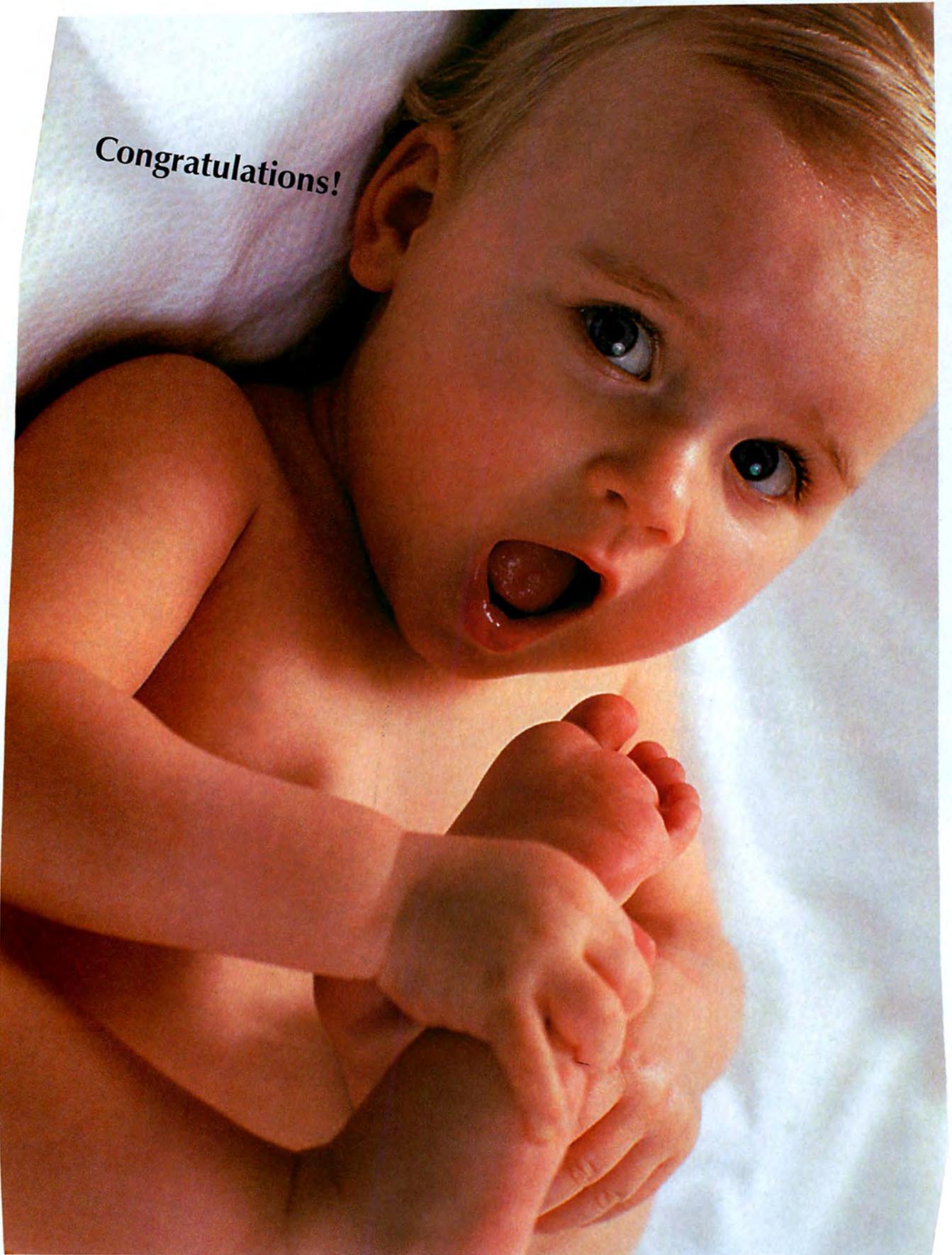
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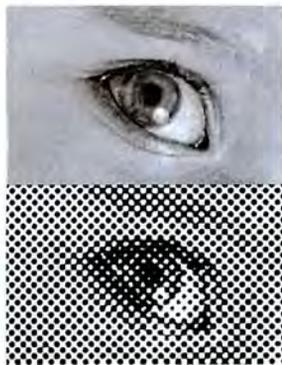


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ANDREW GORE

# Don't Panic!

APPLE'S RECENT STOCK SLIDE IS A STUMBLE, NOT A FALL

Can I really be writing this column again? Just the other day I was joking with some of the *Macworld* editors that the time had come to delete that "Why Apple Isn't Dying" column template. Finally, I'd told them, people could see that Apple had a sustainable business, that whatever fluctuations in the market might come, the Mac had clearly carved itself a space—in both the consumer market, with the iMac and the iBook, and the high-end market, with the G4—and that soon Apple would be able to tie them both together with a robust, easy-to-use, modern operating system. Really, all that remained was for Apple to sustain momentum and, well, not make any major mistakes.

Then Apple's stock took a 50 percent nose dive in one day. Why? Because the company announced that its profits for the latest quarter were not going to meet Wall Street's projections.

Let me stress this point: Apple didn't say it was going to lose money; it just said it wasn't going to make as much money as everyone thought.

And in that moment, the sky started to fall.

So, here I am, days after bragging that I could finally trash that template, dusting it off again.

## Don't Panic Reason No. 1: Everybody's Doing It

Although it would be hard to tell based on some of the predictions of Apple's demise (see "Don't Panic

Reason No. 3"), Apple wasn't the only Big Tech firm to get slammed in September. A number of hardware companies got hammered, including the un-sinkable Intel, which dropped from about \$85 at the beginning of the month to \$40 by the end of the quarter. It was a bad month for hardware. The anticipated surge in education sales didn't materialize, and the average consumer, so overburdened with debt and the sheer exhaustion that can be brought about only by unchecked avarice, took a break when the analysts predicted they'd be spending.

And, in case no one noticed, the entire tech sector has been bleeding for months now. Even Microsoft has been hemorrhaging. Last I checked, Microsoft stock was selling for just a little more than \$50, down from about \$120 at the beginning of the year.

## Don't Panic Reason No. 2: This Is Not Amelio's Apple

Despite what some are saying, there are almost no similarities between Steve Jobs's Apple and Amelio's Apple just three years ago. For example, using industry standard calculations, Apple stock is currently trading at less than a third of its intrinsic value. (Want to see for yourself?

Use the stock-evaluator function of Quicken.com.) The company's debt:equity ratio is the lowest it's been in four years—it was at its highest under Amelio's stewardship—and by every measure of growth, Apple is performing at or above industry standard.

Sounds like a company on the brink to me.

## Don't Panic Reason No. 3: Read with a Grain of Salt

I know this is going to sound a little paranoid, but there are some journalists who have been just waiting

*continues*



PANIC!

for Apple to stumble.

This may come as a surprise to you, but Apple is not the most beloved of technology firms in the media corps. The reasons for this animosity are complex and long-standing, but the result is that some folks in the mainstream media would like nothing better than to stick the knife in, given a chance.

Now, I also believe these folks are in the minority. But combine these with those journalists who remember John Sculley's Apple, when they wrote glowing reports on technology promise after technology promise (remember the Newton?), only to feel like they'd been had. You'll get the sense that there is an undercurrent of distrust when it comes to Things Apple—and perhaps a tendency to be a bit quick on the panic button when anything negative happens.

#### Don't Panic Reason No. 4: There Are Quick Fixes

Apple is no longer in the computer business; it's in the style business. It has successfully managed to become the Gap of technology. And the problem with the style business is that nothing tanks worse than last season's fashion.

The iMac, for all its innovations, is three years old. And no matter how refined the latest design, in today's style-conscious marketplace that's too old. It's time for Apple to come up with something new for consumers. Before you say it: the Cube's not it.

Get something new out for consumers, update the PowerBook line (the latest iBooks make it really apparent how badly Apple's high-end portables need an update), get the Cube down to a more reasonable price, and you've got what amounts to a nice, quick fix.

It's true that, in the long run, Apple will need to expand its product line into new spaces to continue growing. I'm hoping Apple will apply what it's learned about style, functionality and ease-of-use to a new line of wireless Internet devices, preferably with a partner in the cell phone business. The possibilities boggle the mind. But then again, my cell phone is practically grafted to my ear.

#### Don't Panic Reason No. 5: It's Just Too Soon.

This point is so important, it's worth repeating: Apple is still making money. It's got money in the bank, its stock is hugely undervalued, and it still builds some of the most desirable products in computerdom. It's simply too soon to consider the company's latest results anything more than a stumble. And let's face it, the company's got a lot on its plate: the first major OS transition since the Mac shipped, the G4 in need of more megahertz or a worthy successor, a much more complex product line, and a marketplace with a serious case of attention deficit disorder. That's a lot to juggle. It only makes sense that we'd see a few missteps. But one soft quarter is not a disaster.

Let's give Apple at least until next summer. If OS X hasn't shipped, if the company hasn't made some significant updates to the product line, if developers haven't signed up for the new OS, and if Apple hasn't at least given some indication of new directions for the future, well, maybe then it'll be time to worry. ■

ANDREW GORE is *Macworld's* editor in chief. To comment on this column, please visit the Vision Thing forum at [www.macworld.com/columns/visionthing/forum.html](http://www.macworld.com/columns/visionthing/forum.html).

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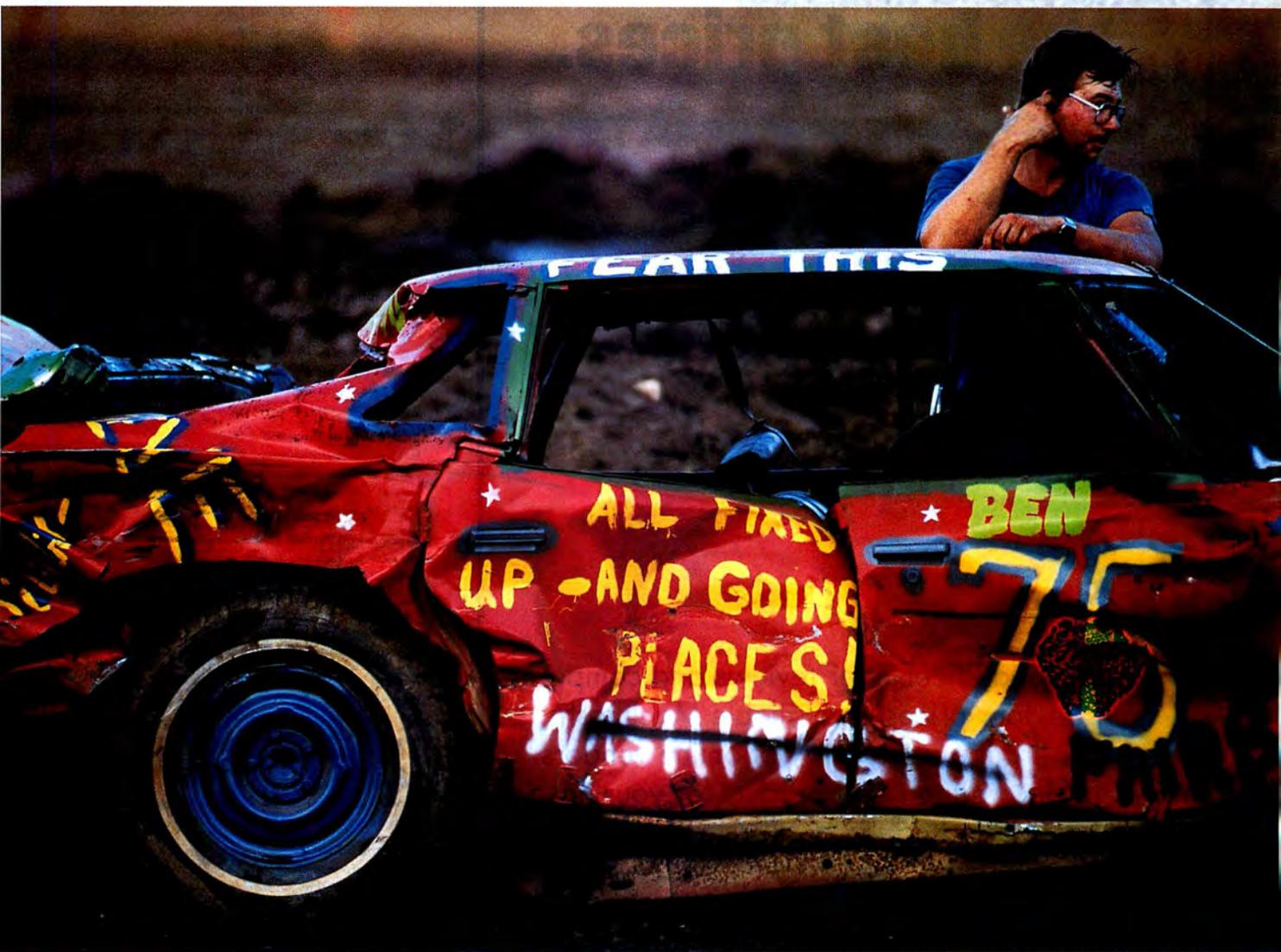
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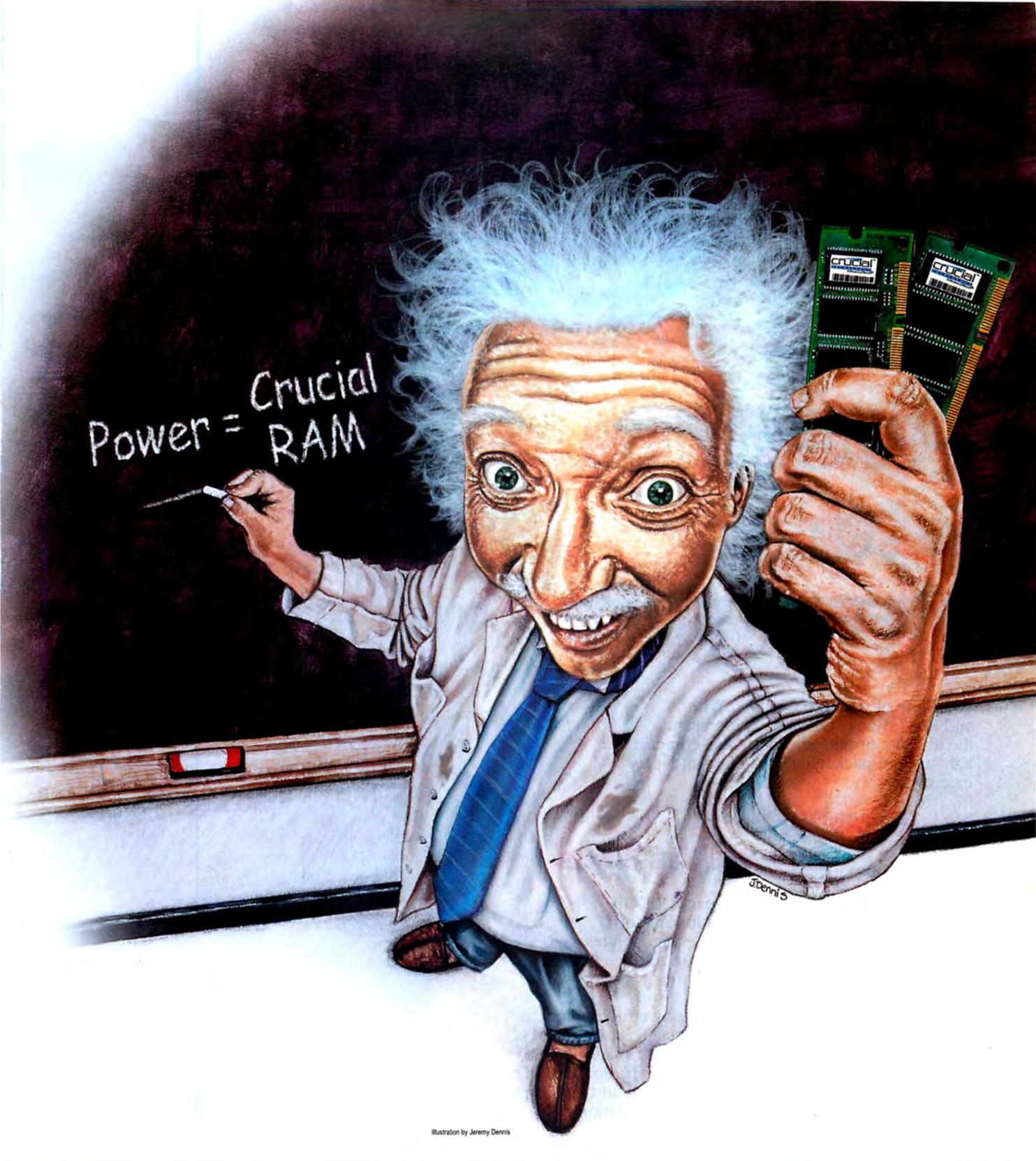


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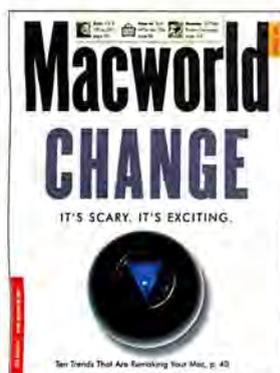
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# Feedback



## Loose Change

For many years I've subscribed to *Macworld* and found your reviews to be informative and helpful in making purchasing decisions. But your current one-column reviews are mostly worthless, especially for expensive products.

You mentioned that some readers thought reading *Macworld* was like doing homework. I can't afford to waste hundreds of dollars on bad products; I need details and comparisons. In other words, I have to do the homework before I make a purchase, to learn all I can. It's too bad that *Macworld* will no longer be my tutor.

**Erin Doak**  
Denver, Colorado

As a longtime reader of *Macworld*, I think the recent redesign is great. I especially enjoyed the interviews with Roger Ebert, Thomas Dolby ("Change," September 2000), and Douglas Adams (*Buzz*, September 2000). I am a fan of all three and hope that you continue to include more real-life articles about famous Mac users describing how they use their Macs.

**Nate Benditson**  
Chicago, Illinois

## No End to Trend

After reading Thomas Dolby's thoughts ("Change," September 2000), I think the music industry is scared of losing control of the pipelines between artists and audiences, and that it's suing Napster to slow down this process.

With new Internet-based technology, middlemen can be eliminated and the prices consumers pay for music can be reduced. However, a fair solution for compensating artists for the use of their intellectual property is needed. Perhaps finding a way to degrade the sound quality of work that does not come from a properly authorized source will make music piracy go by the wayside.

*via the Internet*

## Riding on the Freeway

Your review of Freeway 3.0 disappointed me (*Reviews*, September 2000). For Freeway's target audience—designers—your "cons," although correct, are weighted

with too much importance.

Even for those of us who are more technically inclined, Freeway gives access to just about any customization of HTML that a user may desire. We've found that we can always do what we need with the program—JavaScript, forms, File-Maker databases, and more—and the Freeway actions automate much of the process. I see the world as code, but I'd rather use Freeway for Web design than anything else.

**Joe Muscara**  
Houston, Texas

*There is a significant difference between Freeway's ability to open a dialog box so you can add snippets of HTML or other code to a page, and other programs' ability to open a window and let you review and edit the underlying code for the whole page. Freeway is a good product for people who don't need full code access. People who do need that*  
*continues*

should be aware that Freeway isn't designed for them.—Tom Negrino

### Running a Tab

You described "OS 9's tab menus" ("Change," September 2000), but I cannot find this feature on my computer. Is it a shareware tool or an OS 9 feature?

**Jason Connor**

Richmond, Washington

Bruce Tognazzini was referring to the tabs you can get if you drag a folder window to the bottom of your screen. The tabbed window in the screen shot that accompanied Tognazzini's essay was James Thomson's shareware *DragThing*, available at [www.dragthing.com](http://www.dragthing.com).—Ed.

### What Mac Is That?

Looking carefully at all of *Macworld's* former covers ("Welcome," September 2000), I wondered what kind of Mac was featured on the September 1996 cover. I don't recall ever seeing it for sale.

**Jonathan Daley**

Medina, Ohio

That was a Power Macintosh prototype, created by Macworld and Frogdesign, that existed only on paper.—Ed.

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### C O R R E C T I O N S

The price for QuickTime Pro (*Reviews*, October 2000) is \$30.

Current versions of Hard Disk Toolkit (*Reviews*, September 2000) do support HFS+ volumes.

Our revised rating of the product is . .

## Feedbag

*Glub, glub, glub.* No, that's not the sound of the *Titanic* sinking—it's our *Feedback* editor's mailbox taking on water under the weight of all the mail we got about *Macworld's* redesign.

When you get thousands of letters, e-mail messages, and online forum posts, it's tough to distill the responses, but *Feedbag* is up to the challenge. "I don't want to be entertained," wrote reader Steve Katz, "at least not in the Jerry Springer sense of the word." Well, great. Now what do we do with our January cover story, "Two-timing PowerBook Users and the G4-owning Bikers Who Love Them"?

Reacting to a *Macworld.com* story about the U.S. Navy switching to Windows 2000 for its new shipboard computer systems, one wag noted, "Why do you think *military intelligence* is an oxymoron?" More troubling was a report from an Australian reader about his country's navy: "They're working on a highly expensive submarine project which has produced subs with the same level of stealth as *Metallica*." You mean the subs are calling press conferences and demanding the shutdown of Napster, too? Bummer.

But how do those of us not aboard U.S. Navy vessels make clear our undying love of the Mac? An anonymous reader suggests wearing graphite ribbons on every lapel, "to spotlight the plight of Mac users everywhere." Instead,

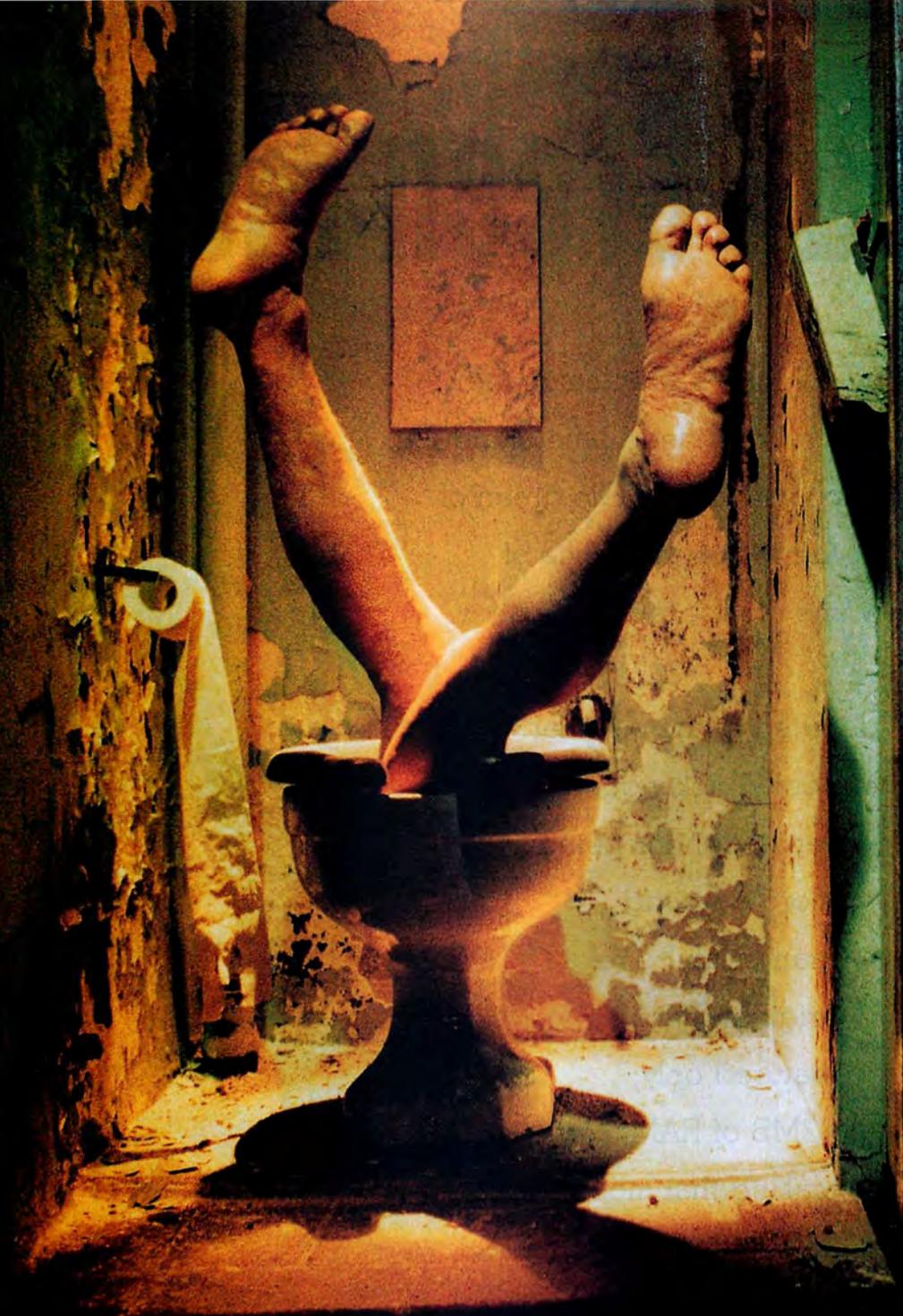
perhaps it's time to don a navy-blue ribbon—for all our sailors who go to sea with their lives in the hands of Bill Gates and a boatload of Windows support technicians.

Be glad, then, that you use a Mac—or at least that you use Mac OS 9. *Macworld* reader Jane reports that she "nearly lost it" when an Apple representative told her that Mac OS X will make the Mac experience more like "the way PC users are used to working." Ahoy, matey! Cap'n Jobs would like a few words with you down by the brig.

If we are truly destined to evolve into PC users, perhaps Apple will one day place a second mouse button underneath that opposable thumb. This would please a reader by the name of "Bababooney," who is so frustrated with Apple's insistence that two-button mice are confusing, he's ready to throw a barrel of Apple Pro Mice out of the nearest porthole: "If Apple is really making Macs for people that stupid, why don't they include drool bibs?"

Maybe with version 2.0, Bababooney.

But let's get back to that redesign. Jonathan Foerster may have summarized reader sentiment best: "Keep this up, and I might start wallpapering my house with your magazine." So long as it's not the bathroom, we'll accept the compliment.



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# Mean Green Machine

The new colors are what catch the eye—the striking deep blue of indigo, the pulsating Day-Glo green of key lime. But the real significance of Apple's new line of iBooks is beneath the surface.

When it debuted in the summer of 1999, the iBook quickly got a

reputation for being more dazzling than dutiful. The original iBook featured only 32MB of RAM, making that model prone to crashes.



## Something Old, Something New

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| September 2000 iBook    | 366MHz | 64MB/320MB                          | 10GB          | ATI Rage Mobility 128 controller with 8MB of SDRAM | CD-ROM           | 56K built-in |
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News,  
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Chatter from  
the World of  
Macs

Apple doubled the iBook's RAM this past spring. And the latest revisions continue to bolster the laptop's power (see "Something Old, Something New").

The standard iBook configuration now includes a 366MHz G3 processor, 64MB of RAM, and 10GB of storage. The iBook Special Edition is even faster, now with a 466MHz G3 processor.

Gamers have plenty to love about the new iBooks. Apple has replaced the ATI Rage Mobility graphics controller with a Rage 128 Mobility chip set—the same graphics processor that ships in PowerBooks.

Just as important, Apple has added a FireWire port, a composite video-out port, and iMovie 2 to the new iBooks. Find a DV camcorder that costs less than \$1,000, and you've got a sub-\$3,000 portable movie-making kit.

Not bad for a machine that just a while ago was getting by largely on looks.—PHILIP MICHAELS

## STORAGE Surprise

**Oh yeah.** That other hardware upgrade. Apple isn't making a big deal about it, but the company has also boosted the hard drive capacity of its PowerBooks.

The 400MHz G3 PowerBook has an expanded hard drive capacity of 10GB, up from 6GB. Storage on the 500MHz G3 model jumps to 20GB, from 12GB. And the laptops ship with iMovie 2 installed.

The storage upgrades haven't affected prices: the 400MHz PowerBook still sells for \$2,499, the 500MHz version for \$3,499.

Users who demand massive amounts of storage can plunk down an extra \$500 for Apple's build-to-order model, which boasts 30GB of hard drive capacity and an extra battery and AC adapter—for those times you and your PowerBook are circumnavigating the globe, apparently.

Plenty of differences remain between the two product lines. PowerBooks have extra USB and FireWire ports, as well as more L2 cache space. They have 14.1-inch TFT XGA displays, compared with 12.1-inch TFT SVGA displays on the iBooks. And the 500MHz PowerBook comes with twice the memory—128MB—of the top-of-the-line iBook.—PHILIP MICHAELS

## MAC STUFF

# The Whole Picture

You're back from the deep-sea fishing trip with digital-camera photos of you battling that 35-inch striped bass. But forcing everyone to crowd around your 17-inch monitor to see the pictures doesn't adequately convey the drama. Enter FotoShow from Iomega (800-697-8833, [www.iomega.com](http://www.iomega.com)). After plugging into your Mac via USB, FotoShow works as a Zip 250 drive. Just drag JPEGs off your desktop for easy storage. But FotoShow



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really shines when you can hook it up with a TV to display images in full-screen splendor. FotoShow lets you crop and rotate photos, build slide shows, and remove red-eye with its built-in PictureIQ software. The drive, which costs less than \$300, gets your point across—at business or at home—especially to friends who doubt your fish stories.—ANTON LINECKER

| ETHERNET    | USB | FIREWIRE | VIDEO OUT | DISPLAY SIZE | COLORS               | PRICE   |
|-------------|-----|----------|-----------|--------------|----------------------|---------|
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| 10/100BaseT | Yes | No       | No        | 12.1 inches  | Graphite             | \$1,799 |
| 10/100BaseT | Yes | Yes      | Yes       | 12.1 inches  | Indigo, key lime     | \$1,499 |
| 10/100BaseT | Yes | Yes      | Yes       | 12.1 inches  | Graphite, key lime   | \$1,799 |

## Mac OS X Beta? Later

I've been using the OS X public beta for the past 48 hours—about 24 more than I needed to decide that I'd wait until the real OS X shipped.

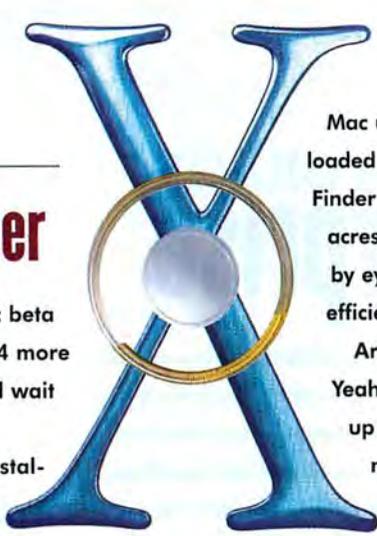
The first thing I did after installation was turn off Aqua's colors. Blue buttons don't really bother me, but I thought the reset might stop that annoying throbbing when they're highlighted. It didn't. I'm clinging to the hope that "Dethrobber" will be an option in the final release.

Then I tried to print a Microsoft Word document on my ink-jet printer. No can do. You see, Word is a Classic app. And my printer is a USB printer. There's no USB-printer support in the Classic environment.

This floors me. After two years of telling everyone to junk their old Macs, junk their serial peripherals, and jump on the USB bandwagon, Apple has the nerve to come out with an OS that doesn't support USB printers!

Since when does *beta* mean "basic functionality is missing, but we're going to ship it anyway because we told you we'd have it out in September and we wanted to make a big splash in Paris"?

Then there's networking. Remember Open Transport? It lets you change your network configuration on-the-fly, great for PowerBooks or for when your DSL line dies. It's not in the OS X beta. Every time you change your network setup, you have to restart. Another step backward.



Finally, there's the Finder. Yo! Apple! Mac users *like* the old Finder. We like spring-loaded folders. We like being able to make Finder windows really skinny. We don't like acres of screen real estate being gobbled up by eye candy. The new Finder is vastly less efficient than its predecessor. Fix it.

Are there things I like about Mac OS X? Yeah. The font panel is cool. Two thumbs up on built-in support for two-button mice. And the force-quit feature is quite handy. As for the rest, I'll reserve judgment until a final version comes out.—HENRY BORTMAN

## COOL STUFF

### The Spy Camera Who Loved Me

If James Bond ever needed a video camera—say to tape a surprise birthday party for Blofeld at S.P.E.C.T.R.E. headquarters—then Q would hand him the Elura 2MC from Canon (800/828-4040, [www.canondv.com](http://www.canondv.com)). The size of a wallet, this 14-ounce MiniDV ultra-

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via FireWire. The only thing that's not small is the Elura 2MC's price tag—\$1,799. So try to return the equipment this time, 007.—ANTON LINECKER



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Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting and repair utility available for your computer. Why would you settle for anything less?



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# Package Different

Like a bubblegum movie's young thug who ditches his leather jacket for fancier duds so he can woo the prom queen, Microsoft wants to change its image with Mac users. That means new logos, new advertising material, and—in the case of Office 2001—new packaging. Instead of packaging the software suite in an oversize box, Microsoft put Office 2001 inside a rounded

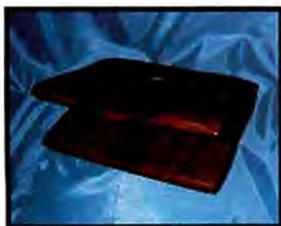
plastic case. With its smoky gray color, the package (designed by Landor Associates) resembles a hollowed-out hockey puck (so *that's* where Apple unloaded those roly-poly mice). The idea, says Microsoft Mac Unit Product Manager Irving Kwong, is to provide "a case that is as stylish as the Macintosh. Not only does the new packaging present Office 2001 in a fun and unique man-



ner, but it is also reusable." True enough, the Office 2001 package can double as a home for your favorite

Microsoft label is removable, in case you're wary of shilling for The Man.—PHILIP MICHAELS

www.Applefritter.com



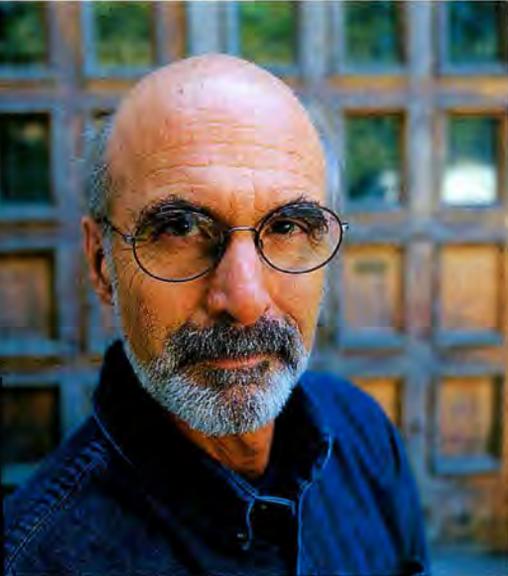
[CLICK HERE](#)

## Macking Out Your Mac

So you've been dying to house that old Power Mac 7600 in a vintage Zenith radio from the 1940s? Hey, who hasn't? Or maybe you took a look at the beat-up Mac SE sitting in the deeper recesses of your closet and thought, "If only I knew how to encase it in Mega Blocks." Join the club, pal. Applefritter.com can tell you how to build the customized Mac of your dreams. The site, a virtual museum for Mac aficionados, features classic, prototype, and limited-edition Macs, such as the Macintosh TV and the Power Express—a G3 machine with six PCI slots. But its main draws are the tricked-out custom builds that, should you try to duplicate them, will void your warranty faster than you can say, "Wozniak wept." Undaunted, Applefritter posts build notes and photographs for the brave of heart so that you, too, can have a G3 stuffed with Christmas tree lights. Even if you're not the fearless type, the site's still worth checking out for the Darth Maul PowerBook, which all the kids will want this holiday season.—MATHEW HONAN



Buzz



EDWARD CALDWELL

## PRO FILE

# Documentary Discount

## Q&A with Jon Else

*Jon Else became a documentary filmmaker to tell stories. But lately, the director of Cadillac Desert and The Day After Trinity: J. Robert Oppenheimer and the Atomic Bomb finds himself spending less time behind the camera. Else sent out 310 funding proposals before he had enough money to produce Cadillac Desert, a film about water in the American West. "More and more of us have found ourselves having to spend more and more time raising money," Else says. "It's a lousy waste of our time." Else hopes technology will set him free. He teaches documentary filmmaking at the University of California at Berkeley's Graduate School of Journalism. The focus: low-budget filmmaking. The tools: cameras and editing applications available to Mac users.—ANTON LINECKER*

**Q:** Is making a documentary now easier or harder than 20 years ago?

**A:** It was a lot easier to raise money 20 years ago, but mechanically it was more difficult. The fact of the matter is that Avid and Final Cut Pro editing is vastly more transparent and flexible than the old film-style editing. And let's not even talk about the nightmare of tape-to-

tape editing, the real dark continent of editing.

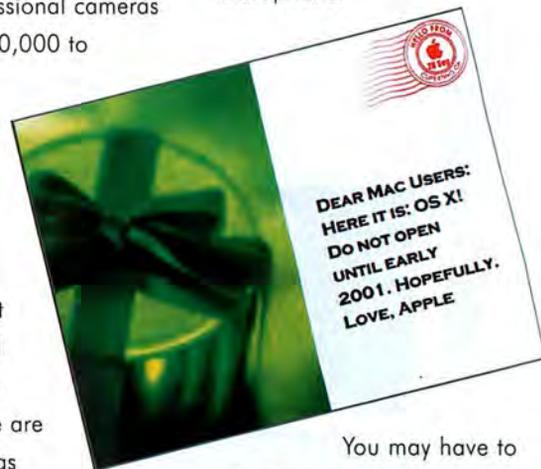
**Q:** How are new technologies affecting documentary filmmaking?

**A:** We see the technology as just a way of getting the door open to less-expensive ways to make some documentaries. It's not rocket science. Every year we get smaller cameras that take better pictures. We're approaching a point where even small-format video, when viewed on television, approaches the quality of 16mm or Super 16. These can be consumer cameras that sell for \$1,000 up to low-end professional cameras that go for \$10,000 to \$15,000. It used to be an Avid system cost \$120,000. Now a complete Final Cut Pro system will run you about \$4,000. There are still some things that the Avid can do that Final Cut can't, but there's about 80 percent to 90 percent of an Avid's capabilities that Final Cut can.

**"We see the technology as just a way of getting the door open."**

**Q:** What is an essential equipment package for today's low-budget documentary producer?

**A:** The consumer cameras are starting to get so good, you can get anything pretty much for \$1,000 and up. In the program at Berkeley we use PD100s, PD150s, VX1000s—the Sony stuff—and also the Canon XL1, which has become a real workhorse, and the GL1, which is a little less expensive. Any of these consumer-prosumer cameras will make astonishing pictures. Then, you need a good external microphone.



You may have to spend a thousand bucks for that. And finally, you need something to edit on. We're going to go with Final Cut Pro because we're working in a professional world.... So how much is that? Six grand for everything?

### More Info:

[www.macworld.com/2000/12/buzz/else.html](http://www.macworld.com/2000/12/buzz/else.html)

What else did Jon Else say about technology's effect on documentary filmmaking? Read the full interview at Macworld.com.

LINK



What inspires the pictures  
that inspire?



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“To me, photography is not just about documenting your subject. It’s about transforming it. If you can find something within you that connects with what you’re shooting, then you’ll be reflected in the pictures you make. That will also lead to a body of work that’s both consistent and unique.”

– David Maisel



**David Maisel** | used the Camedia E-100 Rapid Shot

Lens: 6.8mm [35mm equivalent] with 0.8x wide conversion lens for 5.4mm [28mm equivalent], AF mode - normal  
Exposure: ESP multi-patterned mode, shutter priority (1/650th) at 15 fps, aperture f5.6, ISO 100, auto white balance  
Light: natural dusk (no filtration), hard reflector for fill.

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digital

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### The digital E-100 Rapid Shot



The photo you've been trying to take your entire life may have always been buried between frames two and three. To help capture those hidden moments, Olympus created the Camedia E-100 Rapid Shot.

The E-100 Rapid Shot fires in blistering bursts at speeds up to 15 fps. Shutter speeds are as fast as 1/10,000th of a second. We've even developed a pre-capture mode, to make sure you never miss a shot. And it's all done through a 10x Olympus aspherical glass zoom lens (35-380mm equivalent) with image stabilization and a 2.7x digital telephoto (1080mm equivalent).

We encourage you to ask your Olympus reseller about everything this lightning-fast camera offers. It's our hope the E-100 Rapid Shot will help you see photographic opportunities you've never seen before.

<http://e-100rs.olympus.com>

This is the camera that will change the industry.

With the development of the Camedia E-10 SLR's 4.0 megapixel CCD, even the most advanced lens designs became suddenly outdated. That may sound hard to believe. Until you consider that none were developed with the extra-critical tolerances in mind that such an advanced CCD requires.

As a result, our 14-element, fully multi-coated ED and aspherical glass 4x zoom lens was completely rethought to yield even finer focus and resolution. Combine it with shutter release lag times equal to traditional SLRs, full control and our exclusive TruePic™ technology, and you have a camera like no other.

Would you like pictures like no other? Ask your Olympus reseller all about the E-10 SLR. See what we've done with digital photography. Then go out and see what you can do with it.

<http://e-10.olympus.com>

### The digital E-10 SLR



CAMEDIA

### The P-400 photo printer



The finest digital images deserve to be the finest digital prints. The Olympus Camedia P-400 dye sublimation printer offers true photo-quality, continuous-tone prints and enlargements. All in just 90 seconds. Combined with our E-100 Rapid Shot or E-10 SLR, the P-400 gives you rich, stunning, professional-level prints and enlargements.

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# What's HOT

A QUICK LOOK AT THE WORLD OF TECH

- 1. The latest iBook color: key lime.** *We're holding out for the rhubarb, coconut cream, and lemon meringue iBooks, thank you.*
- 2. Apple goes to Paris to release the OS X beta.** *Launch marred when French protest lack of "Think Different" posters featuring Jerry Lewis.*
- 3. Intel recalls faulty 1.13GHz Pentium III chip.** *On the bright side, anyone adversely affected gets a free set of Firestone tires.*
- 4. Apple sues employee after information about developing products appears online.** *Hope Macworld's legal department still lets us report on Apple's new [redacted] that can [redacted], making your Mac completely [redacted].*
- 5. MP3.com faces \$250 million fine for copyright violations.** *Company plans to raise the money by rebroadcasting baseball games without express written consent.*

The graphics processor developer planned to release only a PCI version to the Mac market. But a version that uses the AGP expansion interface could be available by the time you read this.



## UPDATED

● **BEdit** by Bare Bones Software (781/687-0700, [www.barebones.com](http://www.barebones.com)): **BEdit 6.0** lets users edit multibyte text and offers Open Scripting Architecture support. The \$119 HTML- and text-editing application also supports HTML 4.01, XHTML 1.0, and WML 1.1. Current users can upgrade for \$39.

● **Media Cleaner** by Terran Interactive (800/577-3443, [www.terran.com](http://www.terran.com)): Now called **Cleaner 5**, the updated video-processing software can capture digital video directly from a DV camera, add interactive content, and encode content for use on the Web. The program sells for \$599, the upgrade for \$179.

● **FastTrack Schedule** by AEC Software (800/346-9413/[www.aecsoft.com](http://www.aecsoft.com)): With **FastTrack Schedule 7.0's** customization and automation options, users can track resources and display a project's status in weeks or months. The new version sells for \$299, and a \$99 upgrade is available.

—Compiled by PHILIP MICHAELS

## Product WATCH



## RELEASED

- Build-to-order graphics card options from Apple (800/692-7753, [www.apple.com](http://www.apple.com)) and ATI (905/882-2600, [www.ati.com](http://www.ati.com)): Mac users who buy their Power Mac G4s and G4 Cubes through Apple's online store can have ATI's new Radeon graphics processor card installed for an extra \$100.
- New printers from leading Mac developers: Epson (800/873-7766, [www.epson.com](http://www.epson.com)) is rolling out three four-color USB printers—the \$99 **Stylus Color 777**, the \$149 **Stylus Color 880**, and the \$249 **Stylus Color 980**. IBM (888/746-

7426, [www.ibm.com](http://www.ibm.com)) released the \$399 **Infoprint 12**, a 25-pound USB laser printer. Hewlett-Packard (800/552-8500, [www.hp.com](http://www.hp.com)) is now shipping the \$399 **DeskJet 990C**, the \$399 **PhotoSmart 1215**, and the \$499 **PhotoSmart 1218**. All three printers include 1,200-by-2,400-pixel dpi mode, and the PhotoSmart models have built-in Flash and SmartMedia card slots.



## ANNOUNCED

- An AGP version of the **Voodoo5 5500** graphics card from 3dfx Interactive (888/367-3339, [www.3dfx.com](http://www.3dfx.com)):

## GRAPHIC DEVELOPMENTS

# COREL DRAWS UP MAC BATTLE PLAN

The Chinese use the same character for the word crisis as they do for opportunity. Corel has had enough of the former and would like more of the latter.

But Corel hopes to convince Mac users uneasy about its purchase of Painter, Bryce, KPT, and KPT Vector Effects that it means business. "We want to make sure people see us as a company with a reputation for strong Mac products," says Corel spokeswoman Meredith Dundas.

That's a tall order, given Corel's shaky Mac track record. But the company is trying to back up the talk. It released Bryce 4.1, adding new mapping modes. Painter 6.1 should be out by late fall.

"They prove to users we're strong, we're working with the Mac, you can trust us," Dundas says.

Mac users may not be as encouraged by Corel's decision to release CorelDraw 10 for the Mac in early 2001 while already shipping the Windows version. The company has its reasons—the next Mac will be OS X-savvy, so Corel can't release the product until a final version of the operating system is ready. But Mac enthusiasts take it personally when they have to wait for a product that Window users already have.

Corel also plans major revisions of each of its graphics programs—including the former MetaCreations products—for spring of 2001.

That certainly gives Corel the opportunity to redeem itself in the eyes of Mac users. Now all it has to do is deliver.—PHILIP MICHAELS

BUZZ

# Survival OS X Beta Guide

Explore the Future Safely  
with These Tips for Installing and  
Using the New Mac OS





For years, Mac fans have petitioned Apple for a modern operating system: not just more spaghetti code piled on top of the ancient Mac OS foundation, but something state-of-the-art and rock solid. We've wanted the stability of Unix and the good looks of a Macintosh.

Be careful what you wish for. Apple's new operating system, Mac OS X, is all that. But OS X is unlike any other operating system in Macintosh history, and in its current condition, it requires a great deal of tolerance from the Mac faithful. Although Apple won't release it in final form until spring of 2001, it's

now available as a beta (the final stage of development before a product's release) for you to try.

Running a prerelease OS is like rafting down an uncharted river or hiking through the back country—there's no telling what danger lurks around the next bend. Running the OS X beta has its upsides, however—including a sneak peek at an operating system that will soon radically reshape your Mac experience.

If you're just catching on to this phenomenon, see "Mac OS X Unveiled!" (March 2000) and "X Arrives" (*Buzz*, November 2000) for overviews of the OS. If you're itching to get your hands on the real thing, you can order the \$29.95 Mac OS X-beta CD-ROM from <http://store.apple.com>. But read this two-part article before the package arrives. We'll show you how to prepare for and install the beta, minimize risks, and navigate the unfamiliar territory.





by **Franklin N. Tessler**

From the Roman numeral in its name to its Aqua interface, Mac OS X requires you to think very different. But thinking different doesn't mean throwing caution to the winds. For the best beta experience, you'll need to prep your Mac with certain hardware and software, install the beta in the proper way and place, and understand the new configuration options.

### Check Your Supplies

Apple is taking a huge gamble by releasing OS X to the public before it's done. If the beta is a bug-ridden turkey, Apple could lose the consumer confidence it has recaptured since Steve Jobs's return to the helm. So it's a safe bet that Apple's software engineers have been working overtime to make the OS X beta as stable and reliable as possible.

But before you reach for your credit card, make sure your hardware is up to the job. The OS X beta won't run on all Macs, and it has hefty system requirements. (See "The Right Stuff" for a hardware checklist.) Once you've met those criteria, you should take the following simple steps to forestall problems.

**Don't Install the Beta on a Mac You Can't Live Without** Even if you have backups of your applications and data, reformatting and restoring a hard drive can take hours. It's also important to remember that many peripheral devices—including USB printers and removable media drives—won't work under OS X until vendors release new drivers for them.

**Back Up Your Hard Drive before You Install the Beta** And do it again frequently thereafter. Don't assume that

your existing backups are intact—test them to make sure that files weren't corrupted during backup. If you have Dantz Retrospect (925/253-3000, [www.dantz.com](http://www.dantz.com)), you can use that program's Verify function to check the integrity of your backups. (See "Be Safe, Not Sorry," February 1999, for backup strategies.)

**Install Mac OS 9** If you want to use your current applications in OS X's Classic environment, you must have OS 9 installed. Classic is incompatible with previous versions of Mac OS.

**Protect Your Files** Although you can install the OS X beta on the same hard drive as Mac OS 9, shielding your files by installing the beta on its own hard drive helps ensure their safety (though the beta can't boot from an external FireWire drive). If your computer goes south, you'll be less likely to lose valuable data. (If

Back up your hard drive before you install the OS X beta—and frequently thereafter.

you have a G3 or G4 Power Mac with two ATA drives, you have to install the beta on the *master* drive.)

**Partition Your Drive** If you don't have a second drive, use Apple's

Install with Care



Drive Setup feature to create a separate partition for OS X on your disk. Note that Drive Setup can't partition a drive without reformatting it first.

## Map Your Route

You've backed up and prepared your hard drive, and you're holding the beta CD in your hand. It's time to install.

**Start with C** Insert the CD and restart while holding down the C key. Your Mac will restart from the CD, and the installer will run automatically. (The spinning, colored CD cursor indicates that OS X is loading.)

**Pick a Drive** When the installer prompts you, choose a destination hard drive or volume for OS X. You'll have the option of reformatting the OS X disk in the Mac OS Extended (HFS+) or the Unix File System (UFS) format. Although the beta works with either one, only Mac OS Extended drives show up on a Mac OS 9 desktop, so that's the best option for most users. (If you're installing OS X on the same volume as OS 9, don't reformat; if you do, you'll have to restore all your current files and folders.) When the installation finishes, the installer restarts your Mac.

## Step on the Trail

The first thing you'll notice after Mac OS X starts is the revamped Setup Assistant. Although it resembles its Mac OS 9 counterpart, the OS X version lets you configure more settings.

It offers mostly straightforward options but adds a few new wrinkles.

**Configure Your Network** With OS X's Setup Assistant you can configure your Mac for Internet access via modem, local area network, cable modem, or DSL (Digital Subscriber Line). It's a good idea to open your Mac OS 9 TCP/IP control panel and write down your settings before rebooting into Mac OS X, so you'll have them handy when you get to this screen.

**Set Up E-mail** The Configure Email Settings dialog box lets you enter account information for the Mac OS X beta's e-mail client.

**Define User Accounts** Unlike OS 9's optional Multiple Users feature, Mac OS X's requires that you specify at least one password-protected user

account. If you don't want to type your user name and password every time you start OS X, you can specify a default account using the Login panel under System Preferences (see "Making OS X More Familiar," *How-to*, elsewhere in this issue).

Setup Assistant applies your settings. Once you restart, you're ready to begin exploring the OS X beta.

*continues*

## The Right Stuff

Here's what you'll need to run the Mac OS X beta:

- An iMac, or any Power Mac or PowerBook with a G3 or G4 processor, except the original PowerBook G3 (the limited-release model that came before the Wall Street models). Apple hasn't committed to supporting other PowerPC-based Macs, including those with third-party G3 or G4 processor cards.
- Internal video or an Apple-supplied video card from iXMicro or ATI. If you have more than one monitor connected to your Mac, disconnect the second one before you install the beta.
- At least 128MB of memory. (You might get by with less, but you probably won't be able to run your current OS 9 applications.)
- 1.5GB of free disk space. If you can spare the room, setting aside another gigabyte or two for applications and documents is a good idea.
- Firmware updates for your Mac and other hardware. Some people report they can't run the beta without those updates. Look for the latest installers and instructions on Apple's support site ([www.apple.com/support](http://www.apple.com/support)). Updates may cause their own problems, so give yourself time to recover before you go to the next step in the installation process.



# Explore with Care

by David Pogue

Once you've installed the beta, it's time to take your first steps into the future of the Mac. Just make sure you walk in with your eyes open. The Mac OS X beta is visually stunning, powerful, and stable in situations that would have crashed previous operating systems. But it also lacks a long list of beloved Mac OS features, including the Apple menu, the Application menu, the Control Strip, pop-up windows, the Encrypt command, the Put Away command, Launcher, and several useful control panels. Even Windows' desktop is closer to the traditional Mac OS desktop than Mac OS X's.

The cheat sheet "Where'd Everybody Go?" will help you find the missing elements (or their replacements) as you navigate through the beta. For a more in-depth guide to its geography, including the folder structure, the Finder, Classic, and brand-new applications, read on.

## Get Out Your Compass

The most disorienting aspect of the Mac OS X beta is its folder structure. What lies behind Mac OS X's pretty face is Unix, plain and simple. Your Mac's default name is "localhost," and the System folder contains folders

called Administration, Applications, Documentation, and Library. Poke around, and you'll find files with names such as BSD.pkg and apache.conf.bak.

**New Survival Tools** For the time being, don't knock yourself out trying to decipher the functions of these files and folders. Instead, get acquainted with the new Go menu or the Finder tool bar (see "The Big Picture"), both of which give you direct access to the folders you

Behind OS X's pretty face is Unix, plain and simple.

really care about: Applications, where you'll find most of your Mac OS X programs, and Documents, where Mac OS X programs deposit your work (unless you direct them to a different folder via the Save command). Both of these folders are buried deep in the nested mass of Unix folders, but you can summon them easily from the Go menu. To preserve your sanity, consider putting aliases of your Mac OS 9 applications into this Applications folder, too, so you won't have to go foraging every time you need one of your older programs.

*continues*



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## Window Confusion

The first thing you'll notice is that Finder windows don't work quite like they used to. For example, double-clicking on a folder or disk doesn't open a new window. Instead, you'll see one big window at all times. Every time you

double-click on a disk or folder, its contents will replace whatever was previously visible in the window. Click on the Back button just below the title bar (or press ⌘-B) to return

ity and features as Cocoa or Carbonized programs; if a Classic program crashes, your entire Mac OS 9 bubble may burst. But even then, you don't have to restart the machine; Mac OS X soldiers on.

**Take a Long Launch** To enter the Mac OS 9 world, just double-click on the icon of one of your older programs. Unfortunately, launching a Classic application takes just as long as booting up a Mac OS 9 machine—because that is, in effect, what you're doing. But you'll probably have to wait only once a day; after you've created the Mac OS 9 world, you can leave it running.



If a Classic program crashes, your entire Mac OS 9 bubble may burst.

At that point, using the Classic environment to run OS 9-compatible programs isn't bad. For the most part, programs launch and work as they always have: mostly at full speed and



**The Big Picture**  
In the Mac OS X world, the Apple logo is no longer a menu—it's a mere decal (which disappears in programs that have a lot of menus). The upper left menu identifies the current program and always contains the program's Preferences and Quit commands. The upper right corner shows disks that you've inserted or mounted via a network; your built-in hard drive doesn't appear there unless you make an alias of it.

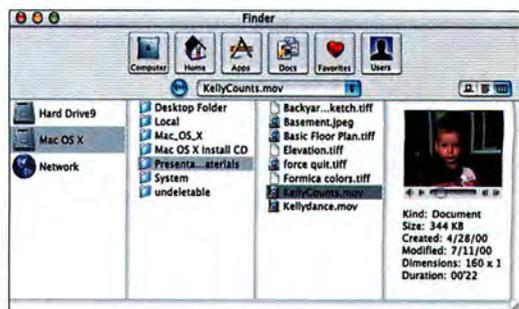
to the previous view. In other words, the Mac OS X Finder works like a Web browser for your hard drive. Unlike a browser, though, it has no Forward button.

If you need to open two windows at once (to move or copy icons, for example), you have several options. You can use the File menu's New Finder Window command to create a second window, option-double-click a disk or folder to open it in an independent window, or choose the Column View option (see "Column View"). To learn how to make every double-click produce a new window, see "Making OS X More Familiar," *How-to*, elsewhere in this issue.

## Back to Mac OS 9

You get the best Mac OS X experience by using programs written for Mac OS X (termed *Cocoa*) or adapted to it (called *Carbonized*). Only these programs offer features such as the Aqua interface and memory protection, which ensures that if one application crashes or freezes, the rest of the Mac zooms merrily along.

**Run 9 in X** You don't have to buy entirely new programs, however. Apple's Classic application lets you run OS 9-compatible programs in their own memory bubble within OS X. Classic programs don't offer the same stabil-



**Column View** The new Column View speeds up folder navigation, makes it easier to see where you are in the folder hierarchy, and cuts down on the time you spend opening and closing folders. It even displays movies and pictures right in the Finder.

largely unaffected by your Mac OS X programs in the background. You will have to make some adjustments: Mac OS 9 programs communicate with your Mac circuitry *via* Mac OS X, so you'll have to do without your AirPort card and USB printer (see "Mac OS Lab Notebook," [www.macworld.com/2000/09/13/lab.html](http://www.macworld.com/2000/09/13/lab.html) for more information. Mundane tasks such as scrolling in graphic-heavy documents can be slow and jerky. Otherwise, Apple's clever engineering lets us have our OS cake and older software too.

## Grab Bag of Apps

As OS X makes its way onto the world's Macs, the biggest disappointment for users will be the lack of OS X-ready programs. But Apple soothes the ache by including some free applications with a standard OS X installation. Many OS X-compatible versions of the old standbys are there (Microsoft Internet Explorer 5, Calculator, QuickTime Player, Key Caps, Sherlock, and Stickies, for example). The Mac OS X beta also comes with a chess game; a basic HTML editor; a couple of simple graphics programs; and utilities for capturing screen images, "pinging" your network, monitoring your laptop battery, and more.

**Incomplete Survival Tools** The meatiest new programs include Address Book (a system-wide contact manager), Music Player (see "Music in X"), and Mail. But they're limited by an ivory-tower design attitude. For example, while Address Book is smoothly integrated with the Mail program, you can't import or export names and addresses. Music Player lacks some features of AppleCD Audio Player; the program can't import CD titles and track names, nor can it use the *continues*

## Where'd Everybody Go?

For a Mac user, using Mac OS X is like coming home from a trip to discover that your spouse has completely redecorated your house. Here are some hints on where to find the features you once knew. Apple has moved or replaced some; the company may yet restore those that are missing.

| MAC OS 9 FEATURE                | WHERE IT IS IN THE MAC OS X BETA   |
|---------------------------------|--|
| About This Computer             | Missing. To find out your system software version, choose About This Mac from the Desktop menu. For memory stats on running programs, go to Process Viewer (Applications: Utilities).                                |
| Appearance control panel        | Missing. To apply a picture to your desktop, choose Desktop & Dock Preferences from the Desktop menu and then click on the Desktop tab.  |
| Apple DVD Player                | Missing.   |
| Apple menu                      | Missing. The Dock has some items that were once in the Apple menu, and dragging items into the Dock is like adding items to the Apple menu.  |
| AppleCD Audio Player            | Replaced by Music Player.  |
| Balloon help                    | Eliminated.  |
| Chooser for desktop printers    | Now called Print Center (Applications: Utilities).   |
| ⌘-shift-3 (to take screenshots) | Replaced. Open the Grab application (Applications: Utilities), go to the File menu, and choose to make your screenshot a Selection (⌘-shift-A), a Window (⌘-shift-W), a Screen (⌘-Z), or a Timed Screen (⌘-shift-Z). |
| Collapse box                    | Eliminated.  |
| ⌘-drag (to scroll windows)      | Replaced by option-drag.   |
| Control panels                  | Found by clicking on System Preferences in the Dock (some control panels are absent from the beta).  |
| Desktop clippings               | Missing. You can still create desktop clippings in the Classic environment, but OS X programs can't accept them.   |
| Disk First Aid                  | Now called Disk Utility (Applications: Utilities).   |
| Disk icons                      | Removables such as CDs and Zip disks can show up on the desktop. To learn how to put a hard drive alias on the desktop, see "Making OS X More Familiar," <i>How-to</i> , elsewhere in this issue.                    |
| Draggable window edges          | You can drag from the top edge but not the sides.  |
| Drive Setup                     | Incorporated into the Mac OS X Installer.  |
| Encrypt command                 | Missing.   |
| Extensions                      | Eliminated.  |
| File Sharing                    | In the Sharing window (click on System Preferences in the Dock).   |
| Fonts folder                    | Now found in the Library folder (System: Library), but you can no longer double-click on a font file to see what the font looks like.  |
| Get Info                        | Now called Show Inspector (under the File menu).   |
| Graphic Calculator              | Missing.   |
| Key Caps, Calculator            | Now in the Applications folder.  |
| Keychain Access control panel   | Now in the Utilities folder.   |
| Multiple Users control panel    | Now in the Utilities folder.   |
| Pop-up windows                  | Eliminated.  |
| Preferences folder              | Nonexistent as we know it.   |
| Restart command                 | Hidden unless you press the option key before opening the Special menu.  |
| Quit command                    | Now in the Applications folder.  |
| Scrapbook, Note Pad             | Missing.   |
| Script Editor                   | Now in the Utilities folder.   |
| Sherlock                        | Now on the Dock.   |
| Sorting triangle                | Double-click on the column heading (such as Name) to sort a list view.   |
| Shutdown Items                  | Missing.   |
| Simple Finder                   | Eliminated.  |
| SimpleSound                     | Missing.   |
| SimpleText                      | Now called TextEdit, located in the Applications folder.   |
| Startup Items                   | Click on System Preferences (on the Dock), click on Login, and then click on Add under the Login Items tab.  |
| Stickies                        | In the Applications folder.  |
| TCP/IP, AppleTalk               | Click on System Preferences (on the Dock), and then click on Network. Note that the AppleTalk default is inactive.   |
| Web Sharing control panel       | Click on System Preferences and then on Sharing. Turn on FTP access for each item you want to share; then enable it using Show Inspector.  |
| Zoom box                        | Now the green dot in the upper left corner of a window.  |



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If you're planning to install the Mac OS X beta for day-to-day use, expect a dose of disorientation. You're installing the beta because you can't wait to live in the Aquafied world of Mac OS X, right? It ain't gonna happen. In fact, you'll probably spend most of your time in the Classic environment, which looks and behaves pretty much like Mac OS 9—though everything runs slower in Classic than it does in true OS 9. (See the results of Macworld Lab's tests at [www.macworld.com/2000/09/13/lab.html](http://www.macworld.com/2000/09/13/lab.html).) And a lot of things don't work.

At best, you'll get bounced back and forth a lot between Mac OS X proper and Classic, because few popular apps will be Carbonized—rewritten to take advantage of OS X—until well into the beta period. See [www.versiontracker.com](http://www.versiontracker.com) for a constantly updated list of Carbonized apps.

In the meantime, here are a few pointers to help you survive the ride.

**Networking** No matter how you configure your network settings in Mac OS 9, Mac OS X will override them with its own settings when Classic starts up. Mac OS 9's networking software, Open Transport, is disabled by OS X. Location Manager may appear to be active in the Classic environment, but it doesn't work. Likewise, you can't use OS 9's Remote Access control panel to make a dial-up connection to the Internet. You have to use OS X's PPP Connect application. And AirPort isn't supported in OS X beta, period.

**Fonts** Mac OS X and the Classic environment don't share a common set of fonts. Your Classic apps will have access to all the fonts you had installed in Mac OS 9, but your Mac OS X apps won't, unless you also install them in the OS X Fonts folder (System: Library: Fonts).

**Extensions and Control Panels** They're not accessible in Mac OS X, and they don't all work when you run Classic apps. Before starting up Classic for the first time, you'll probably want to turn off all third-party extensions and control panels, leaving active only those that were installed on your computer as part of Mac OS 9. Once you get Classic working properly this way, you can start adding back your favorite extensions, checking each one to see if it behaves itself in the Classic world.

**Peripherals** Printers, scanners, mice, and other peripheral devices communicate with your computer through bits of software known as drivers. Well, guess what? Mac OS 9 drivers don't work under Mac OS X, so peripherals need all-new drivers for OS X. Many of these aren't ready. Apple provides some generic drivers for devices such as laser printers, mice, and keyboards, but you'll probably have to wait awhile to use all of the features of all of your peripherals with OS X. Most notably, the Mac OS X beta won't let you print to USB printers from Classic applications.

Don't be disheartened. The OS 9-to-OS X transition is going to be a bit rocky. As long as you're prepared for a bit of bizarre behavior, you'll do fine.—HENRY BORTMAN



shareware NetCD Player to fetch them for you.

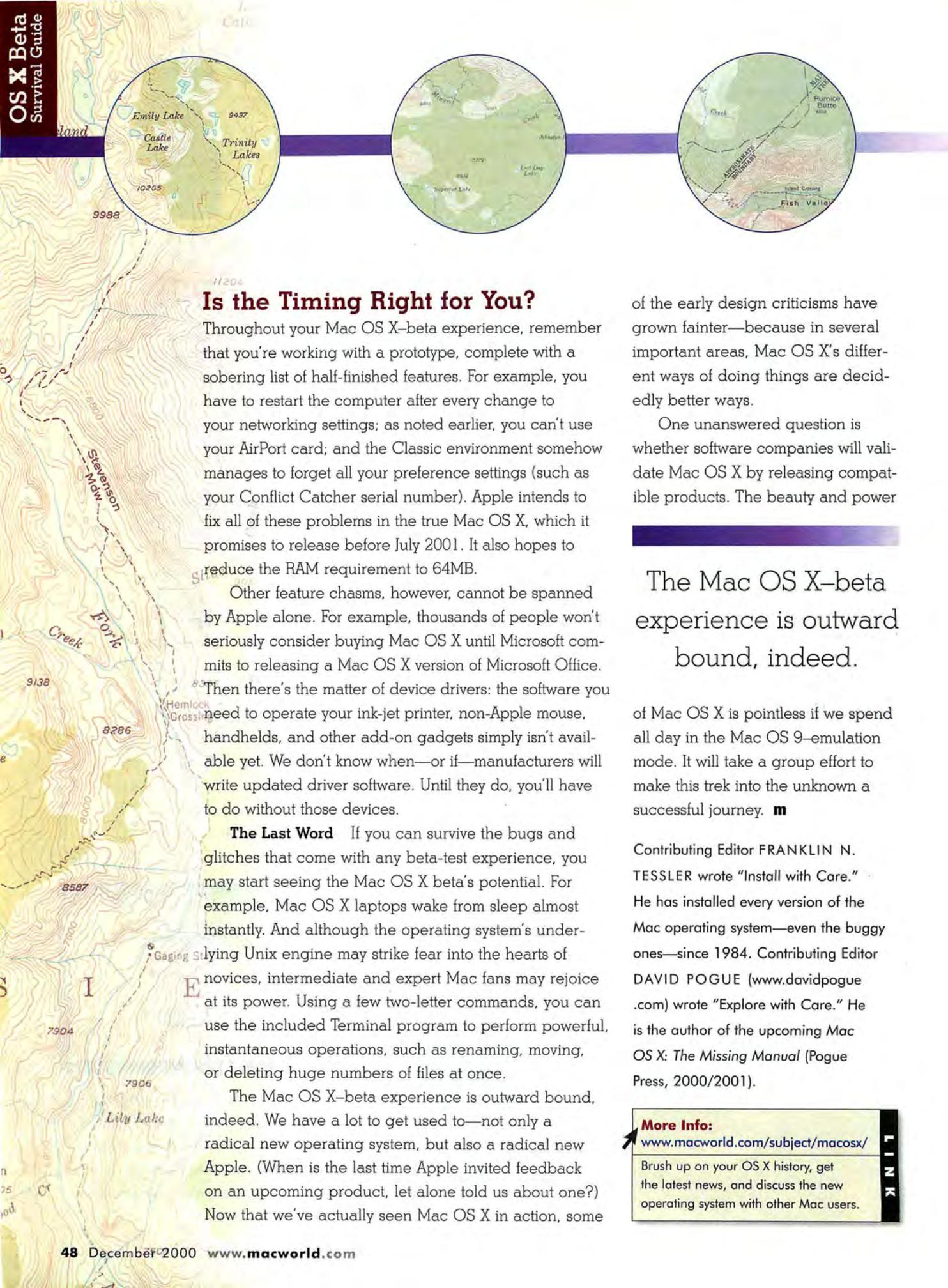
The Mail program is a slightly better bet. Thanks to OS X's refined text-smoothing technology, your messages look as though they've been typeset by somebody with a lot of class (even when the contents come from spammers with lousy spelling). The program offers multiple mailboxes, HTML formatting, and in-window viewing of picture attachments. But there's no mail filtering, and once again, Mail can't import anything (such as messages) from other e-mail programs.

In short, Mac OS X's bundled programs seem to be interim software, designed to help you hobble through some semblance of a daily Mac work routine while the world awaits the arrival of Mac OS X-savvy third-party software.

*continues*



**Music in X** Apple has finally made a pocket-size gadget—too bad it's only on the screen. The new Music Player program lets you build playlists of MP3 files or audio CDs. Once you've set up your playlist, you can hide the track list.



## Is the Timing Right for You?

Throughout your Mac OS X–beta experience, remember that you’re working with a prototype, complete with a sobering list of half-finished features. For example, you have to restart the computer after every change to your networking settings; as noted earlier, you can’t use your AirPort card; and the Classic environment somehow manages to forget all your preference settings (such as your Conflict Catcher serial number). Apple intends to fix all of these problems in the true Mac OS X, which it promises to release before July 2001. It also hopes to reduce the RAM requirement to 64MB.

Other feature chasms, however, cannot be spanned by Apple alone. For example, thousands of people won’t seriously consider buying Mac OS X until Microsoft commits to releasing a Mac OS X version of Microsoft Office. Then there’s the matter of device drivers: the software you need to operate your ink-jet printer, non-Apple mouse, handhelds, and other add-on gadgets simply isn’t available yet. We don’t know when—or if—manufacturers will write updated driver software. Until they do, you’ll have to do without those devices.

**The Last Word** If you can survive the bugs and glitches that come with any beta-test experience, you may start seeing the Mac OS X beta’s potential. For example, Mac OS X laptops wake from sleep almost instantly. And although the operating system’s underlying Unix engine may strike fear into the hearts of novices, intermediate and expert Mac fans may rejoice at its power. Using a few two-letter commands, you can use the included Terminal program to perform powerful, instantaneous operations, such as renaming, moving, or deleting huge numbers of files at once.

The Mac OS X–beta experience is outward bound, indeed. We have a lot to get used to—not only a radical new operating system, but also a radical new Apple. (When is the last time Apple invited feedback on an upcoming product, let alone told us about one?) Now that we’ve actually seen Mac OS X in action, some

of the early design criticisms have grown fainter—because in several important areas, Mac OS X’s different ways of doing things are decidedly better ways.

One unanswered question is whether software companies will validate Mac OS X by releasing compatible products. The beauty and power

The Mac OS X–beta experience is outward bound, indeed.

of Mac OS X is pointless if we spend all day in the Mac OS 9–emulation mode. It will take a group effort to make this trek into the unknown a successful journey. ■

Contributing Editor FRANKLIN N. TESSLER wrote “Install with Care.” He has installed every version of the Mac operating system—even the buggy ones—since 1984. Contributing Editor DAVID POGUE ([www.davidpogue.com](http://www.davidpogue.com)) wrote “Explore with Care.” He is the author of the upcoming Mac OS X: *The Missing Manual* (Pogue Press, 2000/2001).

**More Info:**

[www.macworld.com/subject/macosex/](http://www.macworld.com/subject/macosex/)

Brush up on your OS X history, get the latest news, and discuss the new operating system with other Mac users.

LINK

I'd heard a lot of buzz about ATI's new RADEON™ MAC EDITION, it's stunning 3D acceleration, 32MB DDR graphics memory and flexible display support. I wondered, would this graphics accelerator really make designing, easier and faster? Wow! it didn't take long to find out. RADEON™ MAC EDITION, rendered the most complex 3D elements faster than I'd ever seen, even when working in 32-bit true color! My projects literally sprang to life with incredible detail and realism. But RADEON™ MAC EDITION isn't all work and no play. The 3D gaming — on my lunch break of course, is just as incredible with noticeably faster frame rates. With the fastest rendering speeds available, animations are fluid and life-like. Plus, I can hook up to a TV for a big-screen experience. 3D rendering performance, awesome gaming and display flexibility make RADEON™ MAC EDITION one wicked card! BRING IT ON...



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Ever felt like the whole world was against you?  
You're about to experience déjà vu.

As if Mother Nature wasn't enough to deal with, now the number competitors you must climb over to get to the top just increased by a few million. Introducing 4x4 Evolution, the first game with internet connectivity for heavy-duty off-road competitions between Sega Dreamcast, PC, and Mac users simultaneously. The world is far from a level playing field.



These screens were taken from the PC version.



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**WHETHER YOU WANT TO MAKE IT, BUY IT, OR JUST WRAP  
IT UP, CHECK OUT OUR GIFT-GIVING IDEAS**

# Macworld's HOLIDAY GIFT GUIDE

It's almost here—the time of year when sleigh bells jingle, fires crackle, and tinsel becomes scarcer than a bug-free copy of Windows 2000. But if the dread of long checkout lines and an empty bank account has you feeling less than cheerful this holiday season, *Macworld* can help. We'll show you how to avoid the crowds with five

fun holiday projects you can make at home. And so your creations don't resemble the lopsided clay angels you gave your mother when you were eight, we've included loads of tips and techniques to ensure perfect results. But in case you do feel like braving the malls (online or off), we searched through hundreds of products and found seven gift ideas sure to please every Mac user on your shopping list. So stop fretting, pour yourself a nice big cup of hot chocolate, and settle back with *Macworld's* fourth annual Holiday Gift Guide.



photography by **SCOTT PETERSON**

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5 FUN PROJECTS YOU CAN MAKE WITH YOUR MAC

# SOME ASSEMBLY REQUIRED



**REMEMBER THE SENSE OF WONDER** you felt as a kid during the holidays? Everything seemed bright, warm, and infused with magic. Now that you're older, it can be hard to feel that same awe amid the jostling elbows at crowded malls and the lackluster customer service of online shopping. This year, recapture the holiday spirit by bringing back a childhood tradition: homemade gifts. With a little imagination and your trusty Mac, you can create unique presents and decorations to delight your family and friends—and have fun along the way.

by **KELLY LUNSFORD**



## Seasonal Table Settings

Add a festive touch to your holiday-dinner fare this season with personalized linens. Scan winter berries, ornaments, or even strings of colored lights directly into your Mac; then combine them in a graphics program to create your design. (For tips on scanning 3-D objects, see "Scan Anything," *How-to*, elsewhere in this issue.)

Before you print your design onto iron-on transfer paper, flip the image in your graphics program so it appears backward. Experiment to find the best temperature and pressure by first ironing the design onto scrap fabric. When you're satisfied with the results, transfer your image onto plain cloth napkins, table runners, or place mats.—Artist: AMY CONGER

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**TOOLBOX** Gather up holiday objects for your design, a flatbed scanner (see *Reviews*, elsewhere in this issue), image-editing software, a color ink-jet printer, iron-on transfer paper, a clothes iron, and cloth table linens.

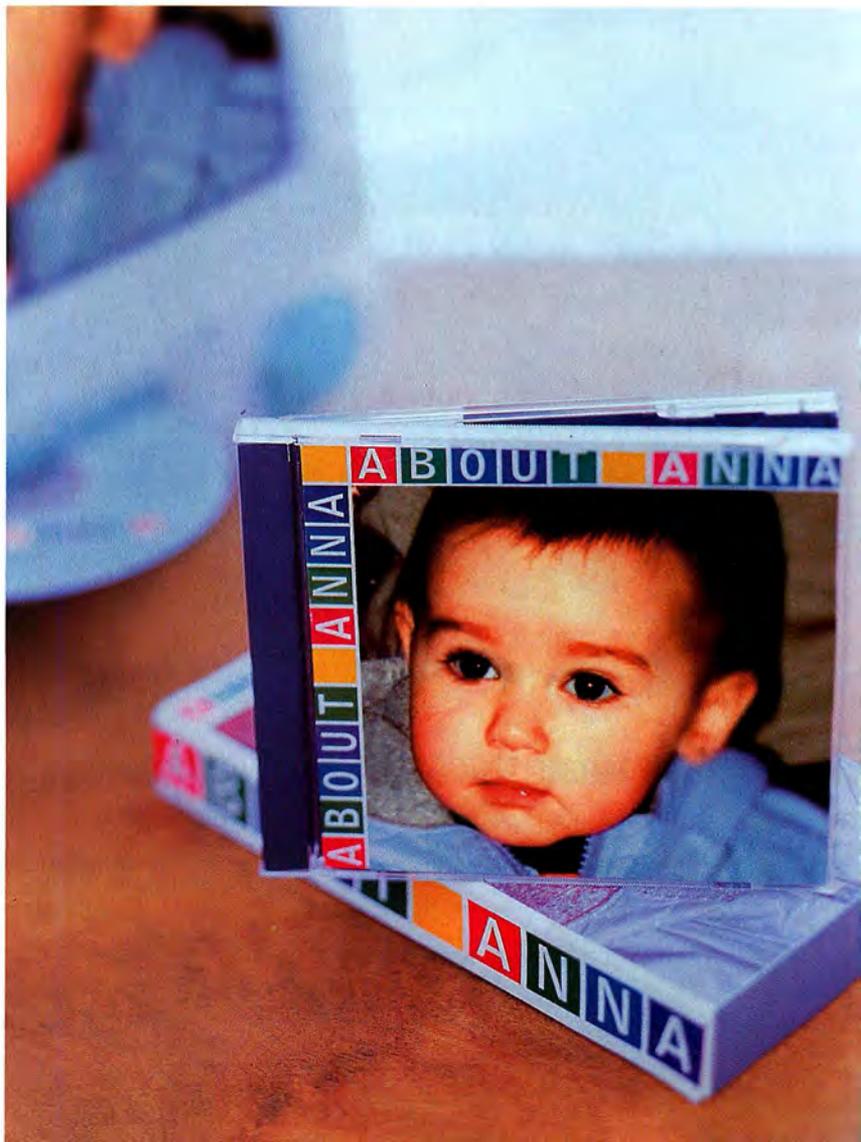
## Now Playing

Share special moments with distant friends and family by producing your own home movies. Thanks to the release of iMovie 2, Apple's \$49 video-editing software ([www.apple.com](http://www.apple.com)), you don't have to have a Hollywood budget to produce enjoyable movies—complete with a soundtrack and titles. (For tips on preparing and exporting your iMovies to the Web, a CD, or back onto videotape, see "Wrap Up Your iMovie," *How-to*, elsewhere in this issue.)

Send your movie off in a CD jewel case or VHS tape box you designed with your image-editing program. Add a title, cast list, and description of the movie—even fake reviews from movie critics. You can buy paper specially designed for CD and tape cases at paper-supply stores or from Web sites such as Neato ([www.neato.com](http://www.neato.com)).—Artists: ELEANOR AND DAVID LEISHMAN

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**TOOLBOX** You'll need a digital camcorder (using an analog camcorder requires extra equipment—see instructions at [www.macworld.com/2000/09/04/imovie.html](http://www.macworld.com/2000/09/04/imovie.html)) and Apple's iMovie 2 software.



**TOOLBOX** For your box designs, you'll need a graphics program that can position text upside down, decorative fonts, and a color ink-jet printer. Also collect a ruler, small boxes, photo-quality ink-jet paper, and spray glue.



## Creative Containers

You spent a lot of time searching for the perfect gift, so why not make the package as special as what's inside? Place small presents in boxes printed with good tidings, prayers, or photographs. You don't have to be a professional artist to create these simple boxes. Here, text serves as the main design element. Some decorative fonts, such as Webdings and Zapf Dingbats, even include stars, snowflakes, or other small illustrations you can combine with text to add seasonal flavor. You can find scores of unusual fonts on the Web (see "Batteries Not Included").

Arrange the top and sides of your box lid in a graphics program such as CorelDraw 8 LE. Then print the design on glossy photo paper, cut it out, and glue it to your box. To protect the surface and give the box a sheen, lightly brush varnish over the top and sides.—Artist: KELLY LUNSFORD

*continues*

**TOOLBOX** For this project you'll need digital copies of family photographs, Adobe Photoshop (the \$609 full version or \$99 Limited Edition), photo-quality ink-jet paper, and a color ink-jet printer.



## Picture-Perfect Presents

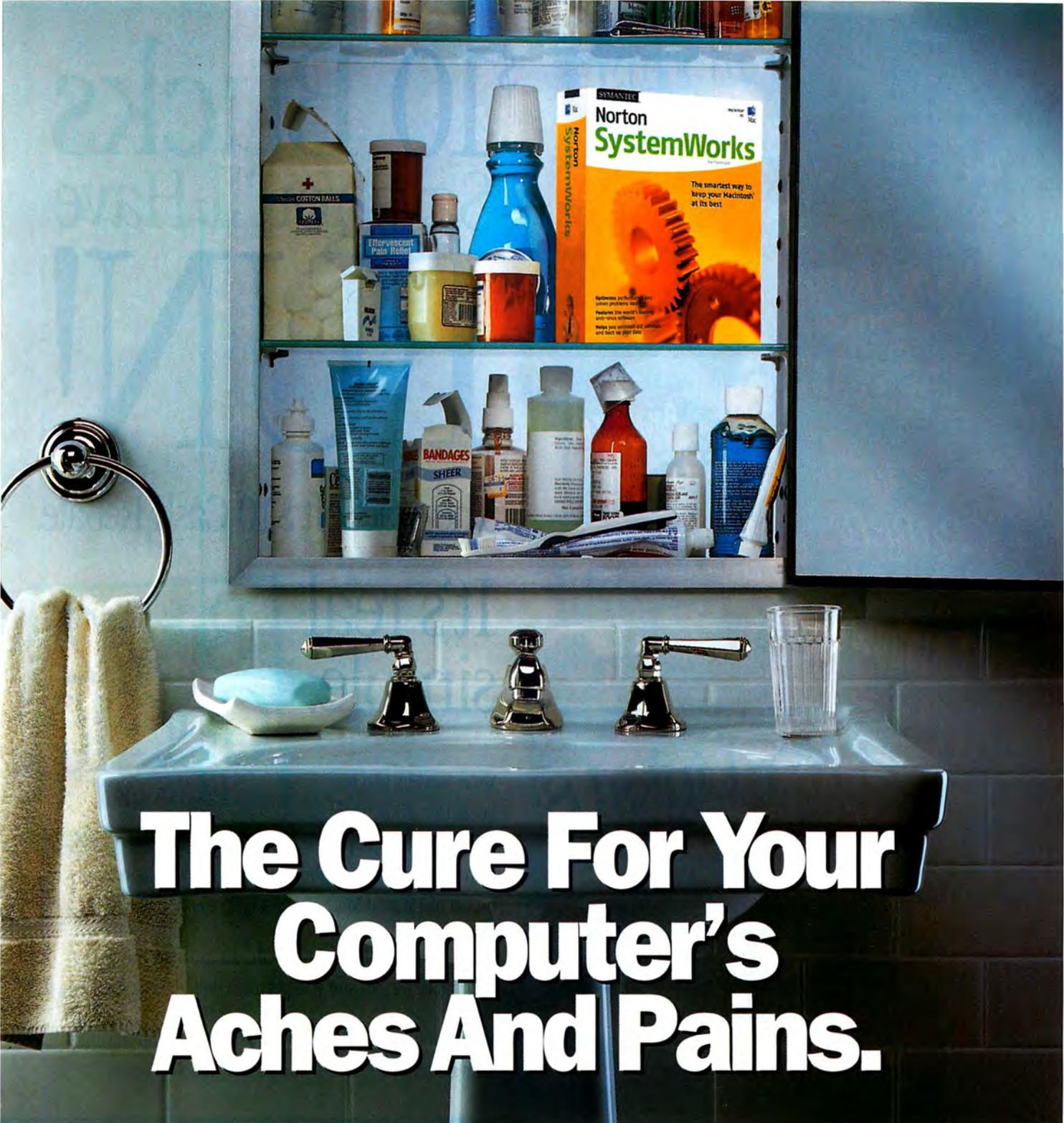
Since calories don't count during the holiday season, it's the perfect time to share your talent in the kitchen or garden. And instead of using plain jars or bottles, give your famous homemade goodies the attractive and personal labeling they deserve—featuring yours truly, of course.

For these projects, we used Adobe Photoshop LE's Quick Mask tools to extract the faces we wanted from the backgrounds we didn't. (For step-by-step instruction on removing a photo's background in Photoshop, see "Get to the Good Stuff," *How-to*, elsewhere in this issue) Once you've separated the subject from the rest of the photo, you can place it on different scanned backgrounds or in your hand-drawn designs.—  
Artist: ELEANOR LEISHMAN  
*continues*

**More Info:**  
[www.macworld.com/2000/12/features/giftguide.html](http://www.macworld.com/2000/12/features/giftguide.html)

Go to Macworld.com for more information on these projects and for other holiday fare.

LINK



# The Cure For Your Computer's Aches And Pains.

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## Holiday Cards That Pop

Your holiday greetings will stand out from the crowd on these handmade pop-up cards.

Though creating the cards isn't difficult, producing several at once can be time consuming and tedious. Fortunately, your Mac can speed and simplify the process. Instead of creating each card from scratch, use your favorite graphics program to perfect your pop-up design. You can quickly customize each card with different background colors, illustrations, and photographs. Then personalize your message to each recipient.

Printing from a proven template ensures perfect results every time. Now you're ready to cut, paste, and add finishing touches to your cards. (To see how our artists made these pop-up cards, go to [www.macworld.com/2000/12/features/popup.html](http://www.macworld.com/2000/12/features/popup.html).)—Artist: DAMORE JOHANN DESIGN

## Batteries Not Included

Whatever you need in the way of inexpensive images, hard-to-find fonts, or unusual project ideas, chances are it's available online. To help you sort through the clutter, *Macworld* scoured the Web for useful—and unusual—art supplies that won't break the bank. Here's what we found.

**Paper Supplies** [www.edps-nj.com](http://www.edps-nj.com) This Web site is a creative person's shopping heaven. It has everything from basic photo and transfer papers to more unusual choices such as ink-jet vellum paper and printable wood veneers. The site even offers ideas and directions for creative projects.

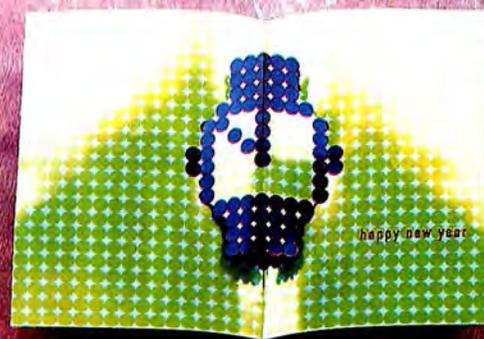
**www.ink4art.com** Another fabulous site for paper products, this catalogue includes greeting cards, canvas paper, sticker paper, and "Inky Shrinky"—the amazing clear film that shrinks when exposed to high heat (ah, the memories).

**www.avery.com** Here you can find labels of nearly any size, shape, or color you can imagine.

**Fonts** [www.myfonts.com](http://www.myfonts.com) This site has a tremendous selection of display and text fonts, with frequent specials starting as low as \$10. You can also track down that mystery font you saw in a magazine: just upload a scanned copy of the font, and the site will find the closest matches in its database.

**Clip Art** [www.clip-art.com](http://www.clip-art.com) Free clip art that's actually attractive is rare on the Web, but this site has thousands of fun images, free for the taking. Choose from themes including holidays, animals, and sports.

**Stock Photography** [www.corbis.com](http://www.corbis.com) Beautiful photos are a bargain for the home crafter here. Download images from the "personal use" collection for \$3 each, or browse the extensive royalty-free gallery (prices start around \$20).—LOTUS ABRAMS



**TOOLBOX** You'll need a color printer and heavy laser card stock for your pop-up-card design. (Most consumer printers can handle paper as heavy as 90 pounds, but check your printer's manual for specific limits.) To assemble your cards, you'll want to have on hand an exacto knife, spray mount, and a ruler.

Associate Editor KELLY LUNSFORD provides tips and ideas for creating handmade crafts with the Mac in her "Homemade Mac" column on [Macworld.com](http://Macworld.com).

# SATISFACTION GUARANTEED

## 7 GIFTS TO PLEASE EVERYONE ON YOUR LIST



photography by  
Scott Peterson

### For the Commuter

Does anyone on your gift list like listening to music on-the-go? The Aiwa HP-CN5 noise-canceling headphones (\$36) are designed for use in noisy environments, such as airplanes or subway cars. Outside each earpiece is a small microphone that "listens" for noise and attempts to counteract it. The price may seem high for headphones, but for someone who needs to cut out noise, these could be the perfect gift.—JONATHAN SEFF

Aiwa, 800/289-2492, [www.aiwa.com](http://www.aiwa.com)

### For the Lover of Adorable Space Aliens

Filming short desktop videos and taking quick still photos to e-mail to friends and family is easy with iRez's Kritter USB Web cam (★★★½; *Reviews*, August 2000; \$100). It produces smooth video, and its image quality is superior to that of other similarly inexpensive video cameras. You can choose from blue, orange, black, or ice to match Apple's current Macs. Be sure to download the latest driver software from iRez to get the best-possible image quality.—BRETT LARSON

iRez, 480/922-0044, [www.irez.com](http://www.irez.com)



## For the Audiophile

Home computers, quite frankly, were not designed with good sound in mind. I'd rather listen to music blaring from my clock radio than

suffer through the noise that comes out of even the slot-loading iMacs, with their pair of Harman Kardon

speakers. Enter **Harman Kardon SoundSticks** (★★★★½; *Reviews*, November 2000; \$200). Harman Multimedia and Apple Computer teamed up to create a system that's cutting-edge in sound quality and style. It includes a booming bass module that also powers two satellite speaker sticks—each with four 1-inch transducers for cleaner sound than you can get from a single speaker.—JONATHAN SEFF

**Harman Multimedia,**  
**877/266-6202,**  
**www.harman-multimedia.com**



## For Grown-Ups

Time to kiss the hockey-puck mouse good-bye and say hello to the sleek and sturdy **Apple Pro Mouse** (★★★★; *Reviews*, October 2000; \$59). For the adult hand, this mouse is more comfortable and precise than its predecessor. It uses a beam of light and an optical sensor to detect movement.—ADRIENNE ROBILLARD

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



*continues*



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and Get Aladdin's  
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## **Don't Get Caught With a File You Can't Open.**

Oh the things that happen to files before they reach your Mac. They're compressed to save space. They're created in versions of software you might not have. They may even originate on (gasp) a Windows® machine. And unless you have MacLinkPlus Deluxe 12.0, your odds of opening those files fall somewhere between "slim" and "none". Because only MacLinkPlus can translate and open documents no matter where they come from. So you don't have to worry about file types, document formats, or high-falutin' stuff like Binhex encoding. All you do is double-click. And the file opens. What could be easier?

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1-800-808-4825

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ELECTRONICS

## For the Data Pack Rat

Anyone who needs to archive data, back up drives, or burn music onto CDs will cherish your gift of a CD-RW drive. While you're at it, choose one that already sports a nice wrapper: the **CD Revo Cyclone CD-RW Drive for USB** (★★★★½; *Reviews*, November 2000; \$295), encased in your favorite iMac colors or in metallic gray. With a built-in handle and the hot-pluggable USB interface, it's ready to travel.

But don't expect to get read times above 6× (because of USB's bandwidth limitations); you'll want to use an internal CD-ROM drive for intensive tasks such as installing software. Despite the limitation, this drive is a particularly useful gift.—JAMES GALBRAITH



**Cyclone Duplication, 949/470-4795, www.cdcyclone.com**

## For the Art Collector

Don't get them the same old clip art. Try out **Art Explosion 750,000** (\$200), a collection of three-quarters of



a million royalty-free images. Among them are fine art; technical symbols; vector and raster images; photographs; Web graphics and animations; and last but not least, 1,800 fonts from Agfa and Bitstream. You can use the images—which range from 72 to 300 dpi—with popular programs such as Adobe PageMaker and Photoshop, Microsoft Word, and QuarkXPress.—ADRIENNE ROBILLARD m

**Nova Development, 800/395-6682, www.novadevelopment.com**

## For the Animal Lover

Dress your input device in its furry finest (whenever you're not using it) with a **Mouse House** (\$4). Available in gray or pink.—BONNIE HUIE

**American Covers, 800/800-9525, www.americancovers.com**



### More Info:

[www.macworld.com/reviews](http://www.macworld.com/reviews)

For more gift ideas and to see full reviews of the mouse-rated products in this article, visit Macworld.com.

LINK

# WRAP UP YOUR iMOVIE

by CHRISTOPHER BREEN

**YOU'VE HAD A LONG YEAR:** the 16-hour labor; the invigorating midnight feedings; that first word (which you're sure was "daddy"); and the first birthday party, where you learned that babies don't know the meaning of *sharing*. Now you've reached the moment that really matters—dishing out the painstakingly edited iMovie footage of your parental odyssey to your kith and kin, just in time for the holidays.

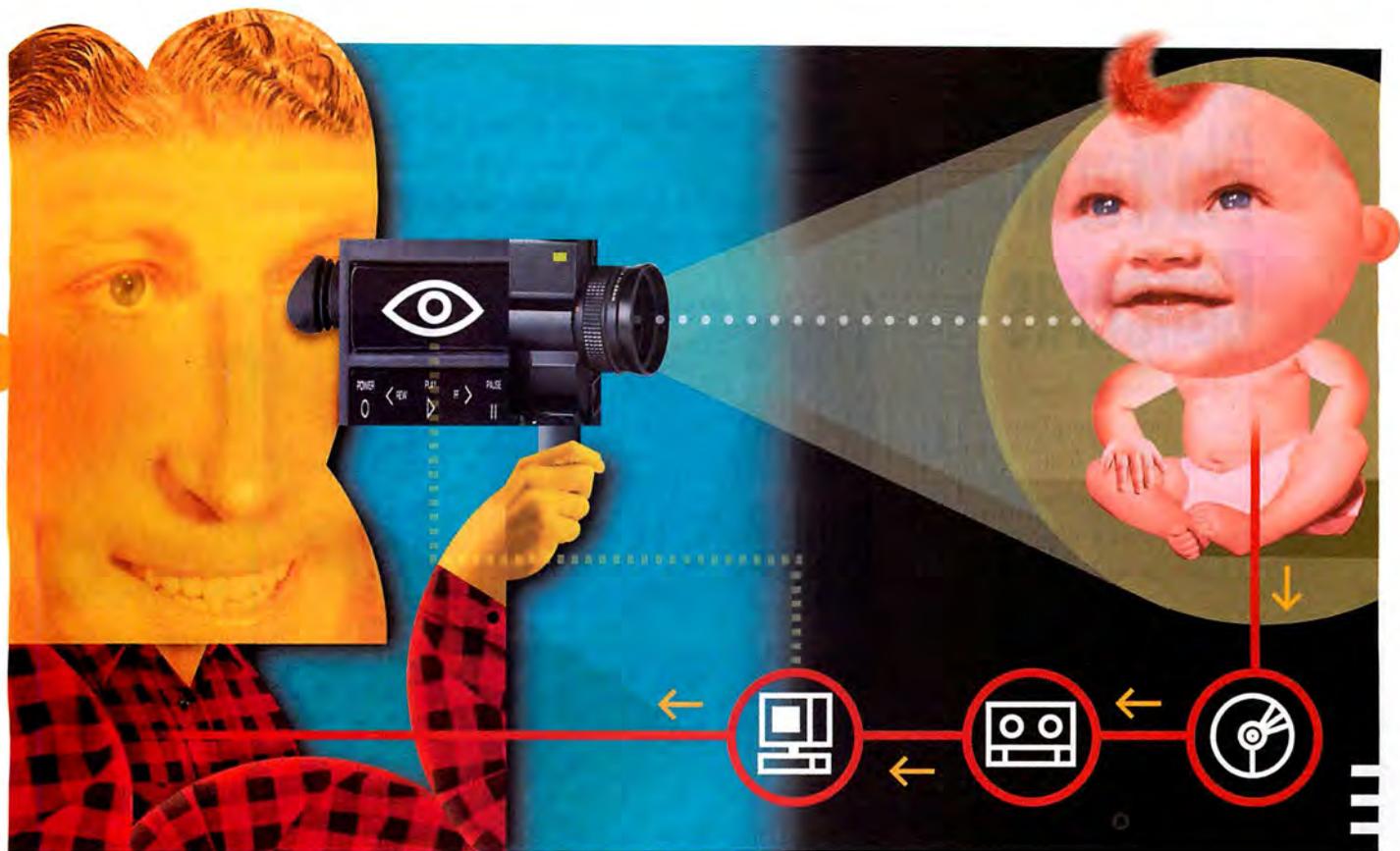
Yet during the past year you've learned to be cautious. Have you compressed your video enough that the Des Moines crowd will be able to view your Web-based work over their 56K modem connections? Will the CD-ROM you've burned for Aunt Vilma play on her PC? And how

likely is it that an oft-used VHS tape will survive repeated play in Cousin Tricia's ancient VCR?

Relax. You've got enough on your mind as it is. We'll show you how best to transfer your iMovie to the medium of your choice—the Web, a CD-ROM, or videotape—in steps easy to absorb even after months of interrupted sleep.

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### The Web You Weave

When it comes to sharing your iMovies with family and friends, the Web provides the greatest exposure for your video vision. After all, it's a cinch to send folks your Web page's address through e-mail, plus you'll save a bundle on postage, VHS tapes, and CD-ROM discs. Unfortunately, all your efforts will remain unwatched if you don't address two issues—storage and bandwidth.

**The Problems** iMovie creates movies in the QuickTime format, and uncompressed movies are gargantuan—a full-screen QuickTime movie (that's 720-by-480-pixel resolution) at 30 frames per second (fps) requires around 30MB of hard disk space for each second of video. It would be difficult to post a five-minute movie at this resolution—and no Web connection would be fast enough to play it. To create a Web-friendly iMovie, you must reduce the movie's file size and make your movie viewable over a dial-up connection. Doing so isn't difficult, but you'll need to take some care while producing the movie and look beyond iMovie's default Export settings.

**Shoot for the Web** If you know your movie is going straight to the Web, avoid unnecessary motion in your video—pans or rapidly moving objects, for example—and use a tripod when you can. Most video compressors don't handle motion well, causing artifacts to appear in areas where the camera or your subject jinks from place to place.

Next, keep your shots simple. Many video compressors work by describing areas of a scene rather than the state of each pixel. For example, it takes far fewer bytes to relay that "the top half of the screen is white for the next 60 frames" than to detail the color of each pixel in every frame of the video. You'll gain greater savings from your compressor—and your Web videos will look better—if you shoot against a plain, unchanging background. When shooting on the seashore, for example, choose a background of beach, sky, and distant water, instead of the rolling surf.

**Edit for the Web** Remember that your files will be smaller if you cut extraneous material. iMovie titles, for example, usually look washed

*continues*

# Cross-Platform Concerns

Apple has taken great care to make QuickTime compatible with both Mac OS and Windows. Despite Apple's efforts, differences that will affect your movies remain. When preparing your iMovies for the PC, keep these tips in mind:

**1 Lighten Up** Due to differing display settings, movies that look great on a Mac **A** are dark when played on a Windows machine **B**. iMovie doesn't allow you to adjust for monitor variations, but you can make your iMovie look better on a Windows PC by clicking on iMovie 2's Effects button, selecting the Brightness/Contrast option, and using the Brightness slider to make your iMovie lighter. Regrettably, there's no perfect compromise—the movie will be either a bit too bright for a Mac or a little too dark for a PC.



out and unfocused on the Web, so cut them from your video and post the information as text on your Web page instead.

Also, avoid transitions in which the background shifts dramatically—fades and dissolves, for example. After your file is compressed, you won't see a smooth transition from one scene to another. Whenever possible, use quick cuts rather than fades and dissolves.

**Export for the Web** When you select the Export Movie command from iMovie's File menu and choose the Export To QuickTime option, you'll spy the Web Movie Small option in the Format pull-down menu. This setting will produce Web-friendly iMovies. But you can also create a Web movie that takes up less storage space and begins playing before it's completely downloaded by selecting the Expert option and changing the settings in the Expert QuickTime Settings window. Follow along:

The first thing to do is change your codec (compressor-decompressor). In

the original iMovie, the default codec for the Web Movie Small option was the Sorenson Video codec. For iMovie 2, Apple chose the H.263 codec because it compresses more quickly than the Sorenson Video codec. But Apple had it right the first time. Although the Sorenson Video codec takes longer to compress video and demands more processing power from the computers that view your movie, it produces better-looking video than H.263—particularly when you've created a movie for fast Internet connections.

Next, for greater storage-space savings, click on the Audio Settings button and select the Mono option—doing so cuts the size of the audio track in half and will usually suffice.

Finally, click on the Prepare For Internet option in iMovie 2's QuickTime Expert Settings window and select Standard Web Server. This causes your movie to begin as soon as QuickTime feels it has enough data to play the movie from beginning to end without interruption.

**Final Touches** If you intend to make your iMovie viewable by those accessing the Web with a 56K modem, you should make additional changes.

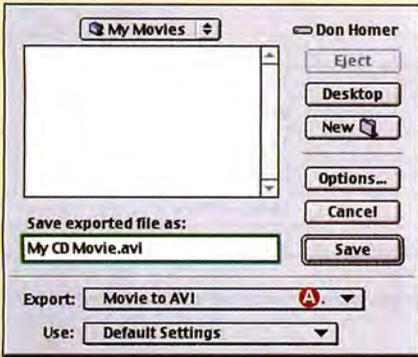
Reducing the frame size and fps rate makes for a slimmer movie. Setting an appropriate data rate—around 5 KBps (kilobytes per second) for a 56K modem—helps ensure that your movie won't skip.

Spacing *keyframes*, the reference frames that detail the state of each pixel in a frame, far apart also reduces file size. Inserting a keyframe every second will help ensure smooth video with the Cinepak codec—a predecessor to Sorenson Video—but other codecs, such as Sorenson Video, perform better when a keyframe occurs only every ten seconds or so. To read our recommendations for a movie that will be viewed over a 56K modem connection, see "A Smaller Web Movie."

**Beyond Exporting** Now that your iMovie is prepared for Web viewing, where on the Web do you put it? Nearly every ISP (Internet Service Pro-

# 2

**When in Rome** We understand that QuickTime is one of the finest video formats around, but not every Windows user has a copy of QuickTime on his or her hard drive. While you can insist that your Windows pals download and install a copy of QuickTime ([www.apple.com/quicktime](http://www.apple.com/quicktime)) on their



PCs in order to view your CD-ROM-based iMovies, it may be easier to simply include both QuickTime and AVI—Windows' Audio Visual Interleave format for video—versions of your work on the CD. To create an AVI version of your movie, open the movie in QuickTime Pro, select Export from the File menu, and choose the Movie To AVI option **A**.

# 3

**PC Compatibility** Insert a Mac-formatted CD-ROM disc into a PC's CD-ROM drive, and the PC will do little more than shrug its virtual shoulders and refuse to mount the disc. For your disc to be recognized by a Windows machine, you must format the CD-ROM as an ISO 9660 disc. The OEM version of Adaptec's Toast 4 (800/442-7274, [www.adaptec.com](http://www.adaptec.com))—the CD-R creation application that ships with nearly every current CD-R writer—allows you to create only Mac-formatted discs.

| Format              |    |
|---------------------|----|
| Mac Volume          | ⌘1 |
| Files & Folders     | ⌘2 |
| ✓ ISO 9660          | ⌘3 |
| Mac/ISO Hybrid      | ⌘4 |
| Audio CD            | ⌘5 |
| CD-i                |    |
| Video CD            |    |
| Enhanced Music CD   |    |
| Disc Copy           |    |
| Disc Image          |    |
| Multitrack CD-ROMXA |    |
| Audio Tracks        | ⌘A |

To create PC-compatible discs, you must pay \$80 for Toast 4 Deluxe.

vider) will provide you with a modicum of storage space (usually between 2MB and 10MB) for a personal Web page. You can use an editing program to create and upload a Web page that contains your iMovie.

But there's an easier way: Apple's iTools. Apple provides 20MB of storage space with each free Mac.com account, along with tools that make it easy to upload your iMovie. If you need additional storage, you can purchase 100MB, 200MB, or 400MB of space for \$100, \$200, or \$400 a year, respectively. Just go to [www.apple.com](http://www.apple.com) and click on the iTools tab to sign up for a Mac.com account, mount and open your iDisk (a virtual hard disk), and drag the iMovies you want to display to the Movies folder. Then click on the Create iMovie button, select a background, and click on the Edit Page button. Click on the Choose button to select one of the movies in your iDisk's Movies folder, and finally, click on the Apply button to place the movie on the page.

## A Discful of Delight

A Web page offers wonderful exposure, but let's face it—it's not the kind of thing you can wrap up in colorful paper and send to Grandma on the occasion of her 112th birthday. For more-tangible and better-looking results, burn your iMovie onto a CD-ROM.

**The Problems** Find out what kind of computer and CD-ROM player your disc will be played on. Aunt Vilma's PC won't be able to read your Mac-formatted CD-ROM (see the sidebar "Cross-Platform Concerns"). And the Export settings you've used may produce a disc that plays just fine on a 12x CD-ROM player but not on Uncle Fred's 1x player. If you're burning a disc for a slower CD-ROM player, consider dropping the data rate (from 200 Kbps to 100 Kbps, for example) and resolution (from 320 by 250 pixels to 240 by 180 pixels).

**Shoot for CD-ROM** Your best work will be clearer on CD-ROM—and so will your worst, so pay attention to things such as lighting and audio

when recording your footage. Use your camcorder's backlight control to make backlit images discernable, for example, and watch for odd shadows and reflections of you and your camcorder in windows and mirrors. For "talking head" shots, use a clip-on or wireless microphone instead of the camcorder's built-in mic.

**Export for CD-ROM** iMovie 2's CD-ROM Movie Medium export setting will produce an adequate CD-ROM movie in nearly all cases. We'd suggest just a couple of minor tweaks:

First, change the compressor from the H.263 codec to Sorenson Video. You might also be tempted to change the audio codec to QDesign Music 2, but severe compression is unnecessary for the storage capacity of a CD-ROM disc.

When compressing any movie, however, it's a good idea to combine a demanding codec—one that requires a lot of processing power—with one that's less demanding. Both the

Sorenson Video and QDesign codecs require a robust processor for decompression, and using the two in a single movie can drag down less-powerful computers. If you're creating movies for slower computers, consider combining Sorenson Video with IMA 4:1, or QDesign Music 2 with Cinepak.

If you're interested in reducing your movie's file size without compromising video quality, you can select a mono soundtrack. For our CD-ROM recommendations, see "A Smaller CD-ROM Movie."

**Beyond Exporting** To create a CD-ROM disc, you need a CD-R burner. Must you pungle up hundreds of dollars to buy your own? No. Some branches of printing services such as Kinko's ([www.kinkos.com](http://www.kinkos.com)) can burn a CD-ROM for you at a cost of around \$11 a disc.

### Direct to Video

The fact that you're reading *Macworld* hints that you have a Mac of your own. Regrettably, not everyone has a computer, much less a Mac. Most people do have a VCR, however, and sending a tape, though old-fashioned, may be the best way to share your movies with your nearest and dearest.

While moving your iMovie to tape isn't difficult, the following tips will help you produce better-looking movies.

**The Problems** A VHS tape has only so much life in it, and a tape that's recorded every episode of *Friends* is going to be stretched and worn. If your iMovie is important enough to dub to tape, it's important enough to place on a *fresh* tape.

**Prepare for Tape** In all likelihood, your Mac doesn't bear an S-Video or Composite Video port, so you'll need to use your digital camcorder as a go-between when transferring your iMovie to your VCR. Use a fresh tape

## A Smaller CD-ROM Movie

|                             | iMOVIE 2'S CD-ROM MOVIE MEDIUM DEFAULT SETTINGS | RECOMMENDED SETTINGS |
|-----------------------------|---|----------------------|
| Video codec                 | H.263   | Sorenson Video       |
| Resolution (in pixels)      | 320 × 240                                       | 320 × 240            |
| Frames per second           | 15  | 15                   |
| Keyframes                   | N/A *   | 75                   |
| Data rate (Kbps)            | N/A *   | 100                  |
| Audio codec                 | IMA 4:1   | IMA 4:1              |
| Bit rate                    | 16  | 16                   |
| Resolution                  | 22.05kHz  | 22.05kHz             |
| Channels                    | Stereo  | Stereo or Mono       |
| Prepare For Internet option | Off   | Off                  |
| * N/A = not applicable.     |   |                      |

## A Smaller Web Movie

|                             | iMOVIE 2'S WEB MOVIE SMALL DEFAULT SETTINGS | RECOMMENDED SETTINGS   |
|-----------------------------|---|------------------------|
| Video codec                 | H.263                                       | Sorenson Video         |
| Resolution (in pixels)      | 240 × 180                                   | 192 × 144              |
| Frames per second           | 12  | 7.5                    |
| Keyframes                   | N/A *                                       | 75                     |
| Data rate (Kbps)            | N/A *                                       | 5                      |
| Audio codec                 | QDesign Music 2                             | QDesign Music 2        |
| Bit rate                    | 16  | 16                     |
| Resolution                  | 22.05kHz                                    | 22.05kHz               |
| Channels                    | Stereo                                      | Mono                   |
| Prepare For Internet option | Off   | On/Standard Web Server |
| * N/A = not applicable.     |   |                        |

in your camcorder, too—not only because of tape wear but also to prevent you from accidentally erasing your iMovie's original footage.

**Export to Tape** String the necessary video and audio cables between your camcorder and VCR (for cleaner video, use S-Video if you have it), and then press the record button on your VCR and the play button on your camcorder. That's it.

If you're dubbing multiple VHS copies of your iMovie, record each copy from the camcorder to the VHS recorder rather than copying from one VHS recorder to another. VHS-to-VHS recording incurs a "generation loss"—meaning that quality degrades when copying between two analog devices.

### The Last Word

Exporting your iMovies to various formats may not be as difficult as raising a child—or even shooting and editing the film in the first place—but everyone can use a little help from iMovie's Export settings.

Now the kid—bathed, fed, and swaddled—is ready to be shown off to the grandparents. With the help of these tips and techniques—and a few elusive hours between feedings—your video should likewise be ready for viewing. **m**

Contributing Editor CHRISTOPHER BREEN uses many of these iMovie techniques when producing Breen's Bungalow, a video feature that appears each month on *Macworld's* CD-ROM.



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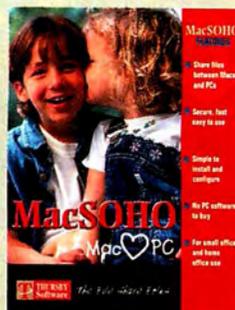


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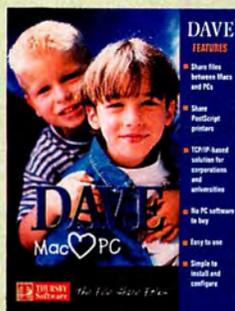
[www.thursby.com](http://www.thursby.com)

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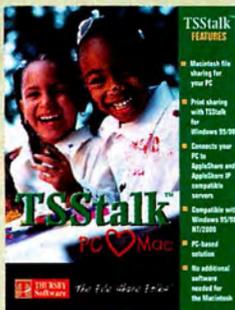
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# Scan Anything

## Use Your Scanner to Capture Three-Dimensional Objects

Scanners are designed for scanning flat pieces of paper, but don't let that stop you from experimenting with three-dimensional objects. As long as you observe a few common-sense precautions, you can scan anything lightweight enough to rest on your scanner's glass. Take a look around your house, your backyard, or your street—interesting objects abound, both natural and manufactured. Dried flowers, leaves from the garden, knickknacks, decorative cloth, tools, office supplies: all are fair game.

While it's easy to find scannable material once you start looking, 3-D items can pose some challenges. For instance, handling light and shadow gets a little tricky when you have to leave your scanner lid open. And setting something wet or crumbly on your expensive machine could be risky. Here are practical tips for scanning just about anything, including the oversize, the shiny, the translucent, and even the messy.

For instructions on using Adobe Photoshop to cut out undesirable backgrounds, see "Get to the Good Stuff," elsewhere in this section. And if you'd like some inspiration on ways to use your scans in crafts for the holidays or anytime of the year, have a look at "Some Assembly Required," part of "Macworld's Holiday Gift Guide," elsewhere in this issue. **m**

JANET ASHFORD is a coauthor of six books on computer graphics, including *Start with a Scan: A Guide to Transforming Scanned Photos and Objects into High Quality Art*, Second Edition (Peachpit Press, 2000). Her Web address is [www.jashford.com](http://www.jashford.com).

**Backgrounds for Thick Items** Many objects are too thick to fit beneath your scanner lid, and scanning with the lid up produces a dark background behind your primary object. You can remove this background in an image-editing program—or you can prevent the problem by covering objects with paper, cloth, or board.



Lay a large sheet of bright white paper or poster board over the object to produce an image with a light background **A**.

If the resulting background looks uneven **B**, try creating a three-sided temporary lid out of white foam-core board **C**. Make your cover just tall enough to fit over the object—the closer to the scanner glass the better—and wide enough to straddle your scanner. This type of lid works best for objects no taller than 3 inches.



You can brighten a scan's background **D** by shining a lamp between the scanner and your custom lid, aiming at the white board surface.

# 2

## Light for Transparent Objects

Transparent or translucent objects may appear dark in your image, especially if the scanner lid is up during the scan. Add a white background or a light source to lighten both the object and its background.

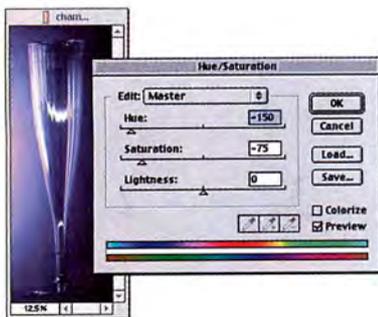


Flat, transparent objects—pieces of stained glass, translucent tissue paper, or gel designs—will scan well if you place a bright white background on top of them before scanning. If still more illumination is needed, try shining a light through a piece of tracing paper placed on top of the object.



For a larger item, such as a wine glass, a background may not reflect enough light; you'll get an image that's dark and lacking detail. Try aiming a light source horizontally across the object (a tensor lamp or an aluminum shop light works well). Put the light as close to the object as you can, but be sure to keep the lightbulb out of the scan area to avoid distortion.

Incandescent light sources can cast a reddish color on a glass object. To correct this, open the scan in Adobe Photoshop, go to the Hue/Saturation dialog box, and move the sliders until the color is in a more natural-looking blue range.



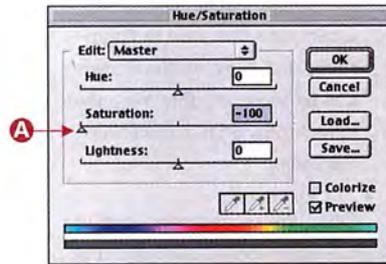
# 3

## Color Editing for Metallic Objects

Silver spoons, gold necklaces, shiny new wrenches, and even glittery trout can reflect the light that scanners emit, creating a rainbow effect. You can get rid of these high-lights in Photoshop by desaturating your scan and then adding color to your image.



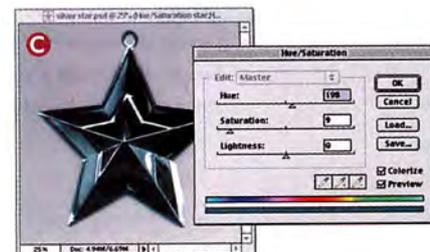
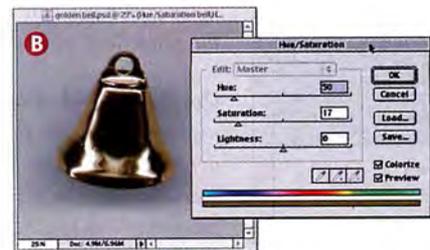
Original scans, including color distortion



Open the Hue/Saturation dialog box (Image: Adjust: Hue/Saturation) and set the Saturation slider (A) all the way to the left to remove the color. The scan will look like a black-and-white photo. For objects made

of stainless steel, this gray-scale version may look truest to the original.

Scans of silver or gold items will look best if you add back some color. Select the Colorize option to restore color to the gray-scale image; then adjust the sliders to find a color you like. Try golds, yellows, or ochers for gold objects (B), and blues for silver objects (C).



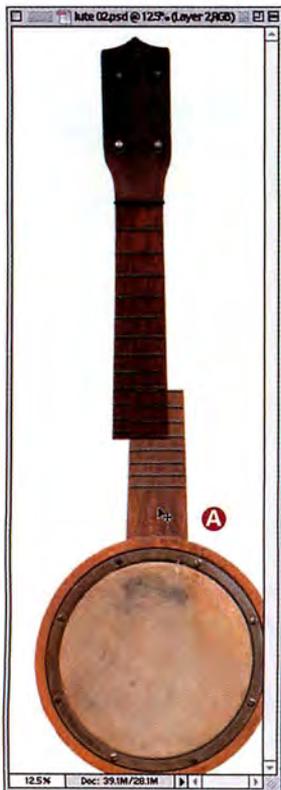
continues

# 4

**Sections for Large Objects** Items that are larger than your scanner's image area—your old trumpet from high school, a bouquet of flowers, or the catch of the day—can be scanned in pieces and reassembled in an image-editing program.

# 5

**Protection from Messy Objects** Take care when scanning wet items (such as a pear slice) or dusty ones (such as pinecones). Have cleaning supplies handy to make sure that your scanner's works don't get damaged and that future scans will be free of spots and dust.



First, scan the oversize object in sections. Be sure to orient the object the same way for each scan, so the direction of the light matches in your final image.

Save each scan separately. You may wish to get rid of any unwanted background color before proceeding.

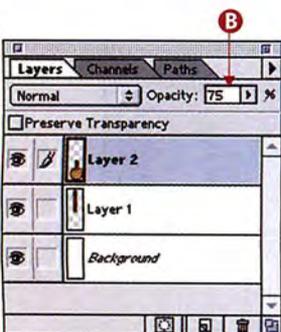
Open your first scan in Photoshop, and increase the canvas size to accommodate the entire object (plus a little maneuvering room).

Open the second scan, and use the Move tool to click and drag the image from one document to the other **A**. Then position the second image so that it overlaps the first exactly. You may have to rotate the image a little to make it match.

**TIP:** Setting the Layer opacity to less than 100 percent **B** will allow you to see both layers at the same time.

Use the Marquee or another tool to select and delete most of the duplicated image on the second scan, leaving only a small amount of overlap.

Repeat these steps for any remaining sections of your image. If necessary, use the smudge tool to blend the edges.



ILLUSTRATIONS BY JOHN FARNSWORTH

To protect your scanner from moisture, cover the scanner glass with a piece of clear acetate.

If items you want to scan are dusty or chaffy, clean them first: rinse a dusty leaf and let it dry, or shake popcorn in a sifter to remove small bits. After scanning, clean the glass promptly.

Supplies to keep near your scanner include a soft cloth, window-cleaning solution, paper towels, and an aerosol can of pressurized air (check your local camera shop).



# state-of-the-digital-art



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# Get to the Good Stuff

## Easy Steps to Removing Backgrounds from Photos

You and your little one have canned jam to give as holiday gifts. You've used your Mac to create a gift label, and all that's left to do is placing your child's smiling face into it. You've already scanned your most angelic picture of him, but the photo is of a summery scene that just doesn't suit December's jam jars.

No problem. Using the Layer Mask feature in Adobe Photoshop 5.0 and above and Photoshop LE (800/833-6687, [www.adobe.com](http://www.adobe.com)), you can digitally cut your cutie out of that background with greater accuracy than any pair of scissors affords.

Understanding the Layer Mask feature is easy when you think about its name. Before you paint a wall, you generally *mask* the baseboards with tape or paper. Layer Mask similarly obscures some parts of an image, but instead of covering them, Layer Mask makes those parts invisible. And because the image still exists behind the mask, you can easily restore portions of it if you cut out too much.

Once you mask the background, your perfectly silhouetted subject fits into your label, and your work of art is ready to print for the gift basket. **m**

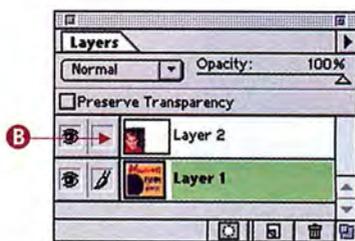
GENEVIEVE MARGHERIO ([gm@genevieve.net](mailto:gm@genevieve.net)) is partial to masks, both as a designer at Chicago's interactive agency Generator ([www.generator.net](http://www.generator.net)) and as someone born on Halloween.

**1 Prepare to Mask** Before you begin surgery to remove the background from your photo, place the scanned image on a new layer above the label you've created in Photoshop.

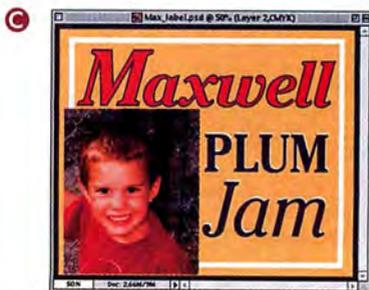
In Photoshop, open both the image you've scanned and the label you've created. Within the scanned document, select the Marquee tool from the Tools palette (or press M) and drag the mouse to create a box around the part of the photo you want to keep. In my example, I'm concentrating on the head and shoulders of a boy I'll call Cousin Max.



Switch to the Move tool (press V) and drag your selection onto the label document **A**. Photoshop will automatically create a new layer to accommodate the selection **B**.



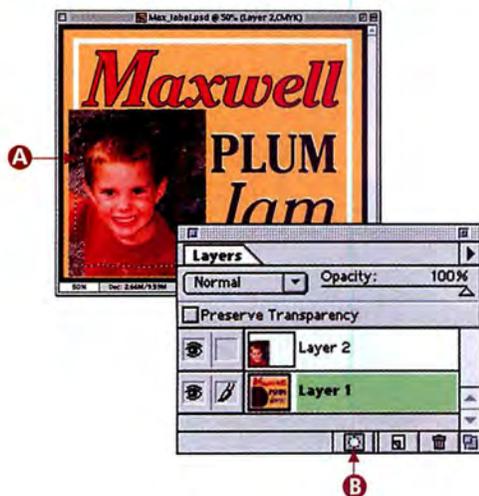
Make sure you've selected the new layer, and then use the Move tool to position the selection over the label **C**.



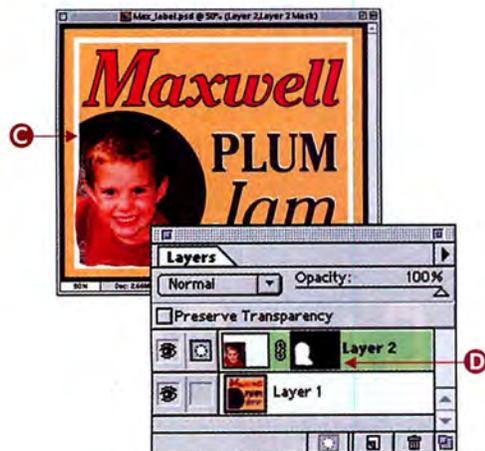
Now you're ready to mask the portion of the photo that you don't want to appear—in this case, everything except Max's head and shoulders.

# 2

**Create a Loose Outline** Before you do any intricate cutting, rough in the outline you'll want around your subject.



Choose the Lasso tool from the Tools palette (or press L), and click and drag to draw a loose outline around your subject **A**. Next, click on the Add Layer Mask button at the bottom of the Layers palette **B**.



The part of the photo that wasn't selected disappears **C**, and a black-and-white icon indicating the presence of a layer mask appears in the Layers palette **D**, next to the icon of the photograph. Though it looks as if you've erased part of your photograph, nothing has actually been deleted—it's only hidden behind the mask.

# 3

**Zoom In** To accurately trim a complicated shape (such as Max) out of a busy background, you'll need to pay attention. Focus on detail by looking very closely at your image before you cut.



Select the Zoom tool (press Z) and drag a box around a small portion of the photograph to enlarge it **A**. If you've sufficiently zoomed in on your photo, you should be able to see individual pixels—the tiny colored squares that make up images on a screen.



This makes it easier to determine where your subject ends and the background begins. Here I can see which pixels make up Max's hair and which make up the fence pole behind him **B**.

As you draw around your subject in the next step, you'll zoom in and out to gauge which bits of the photo to keep and which to mask. To zoom out, hold down the option key and click on your image with the Zoom tool.

**TIP:** To zoom in, press ⌘-plus (+); to zoom out, ⌘-minus (-).

continues

“HOUSTON...”

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## THE FASTEST WEB CAM ON EARTH

Orange Micro is first to market with the iBOT, a FireWire-based desktop video camera. iBOT harnesses the speed and power of FireWire unmatched by the slower USB-based web cams. In fact, the inexpensive iBOT uses the same IEEE 1394 technology built into pricey DV camcorders costing over 7 times as much. Orange Micro's iBOT is the desktop video camera for the rest of us,

providing crisp, clear video at a price you can afford. (640x480 @ 30 fps)

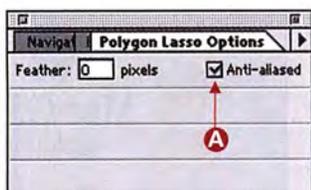
The iBOT supports all known software for the following applications: simple video editing, presentations, video teleconferencing, video e-mail, and video monitoring / surveillance. The iBOT pro version includes a microphone and additional free software.



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# 4

**Cut It Out** The Layer Mask is in place, you've zoomed in, and it's time to pick up your Lasso tool to perfect the outline of your subject.

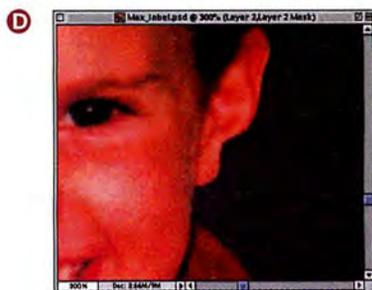


Select the Polygon Lasso tool (shift-L). In the Polygon Lasso Options window (Window: Show Options), select Anti-aliased to cut with a smooth edge **A**.

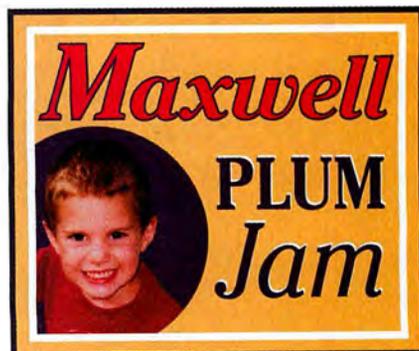
The Polygon Lasso tool lets you define precise points in your outline by clicking on them. (The regular Lasso tool relies on the less-exact movements of the mouse.)



Press D to set the Tool palette color swatches to default values. Then, using the Polygon Lasso tool, draw around the part of the photo you want to hide **B**. Press the delete key to add your selection to the layer mask and make it invisible **C**.



If you mask too much of your image **D**, you can restore a portion to visibility by selecting it with the Polygon Lasso tool and then pressing option-delete **E**.



When you've finished refining your mask, choose Save A Copy from the File menu and choose the TIFF format. This will collapse your layers into one and save the combined image while preserving your layered version. Now you're ready to print.

# Making OS X More Familiar

## Customize the Beta to Act and Feel More Like OS 9

Mac OS X illustrates Apple's readiness to embrace a modern operating system. With features such as protected memory, preemptive multitasking, and the powerful Unix just below its surface, OS X provides functionality that OS 9 and its predecessors can't touch.

But in reworking Mac OS from the ground up, Apple turned the way you interact with your operating system inside out. The user interface is now a very different—some might say frightening—thing.

Fortunately, there are ways to make OS X look, feel, and act more like the Mac OS you've been using since the days when Reagan was in the White House and most things cost, well, less than they do today.

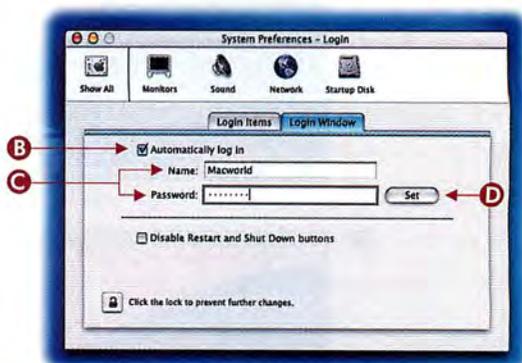
We'll show you how to make OS X a bit more familiar by automating the log-in process, changing the look of Finder views, and more. **m**

Armed with a bottle of Extra Strength Tylenol, Lab Analyst GIL LOYOLA spends his days learning the intricacies of OS X. Associate Editor JONATHAN SEFF is still too scared to install the OS X beta on his computer.

**Automate the Log-in Process** OS X requires you to log in each time you boot up your computer. But just as you save your passwords for e-mail programs, you can automate the log-in process as well.



When starting up OS X, you're confronted with the new Login screen **A**. Users of OS 9's Multiple Logins feature may be used to something like this, but if you're the only one who uses your Mac, this added security measure can be more trouble than it's worth.



Choose System Preferences from the Desktop menu. Click on the Login panel, and choose the Login Window tab. From there, select the Automatically Log In option **B** and enter your name and password **C**, just as you would when logging in to OS X. Finally, be sure to click on the Set button **D**; if you don't, your information will not be saved. Now you won't be prompted to log in every time you start your Mac.

# 2

**Hide the Dock** The new Dock feature in OS X is a convenient way to see what applications are running and an easy place to store off-used (or minimized) files. But you might not want it around—for a number of reasons. In addition to having an unfamiliar look, the Dock slows down scrolling in Classic applications.



OS X's Dock **A** is similar to Windows' Taskbar. It shows open programs and holds items such as documents and sound files. If you don't like it, you can hide it.



Select **Dock & Desktop Preferences** from the **Desktop** menu, and choose the **Dock** tab. Next, select the **Auto Hide And Show** option **B**. Now when you move your mouse pointer over the bottom of your desktop, the Dock will pop up temporarily (you'll need it for dragging items to the Trash, which is at the right end of the Dock) but will disappear when the cursor moves away.

# 3

**Change the View Setting** OS X's Finder has several viewing options, and the newest is a stranger to most Mac users. Its hierarchical interface is vaguely similar to that of Windows. Luckily, Apple responded to early complaints and added two more-familiar options.



In Apple's newest Finder view, clicking on your hard drive's icon **A** displays a vertical list of its contents in a box on its right **B**; clicking on a folder in that list opens another box farther right **C**; and so on. This makes your location easy to figure out at a glance.



If you prefer a more conventional look **D**, select the **Icon view** **E** from the Finder tool bar.



You can also choose the **List view** **F**, to see folders and programs **G** as they would appear in OS 9's List view. (In case you were wondering, OS 9's Button view is gone for good.)

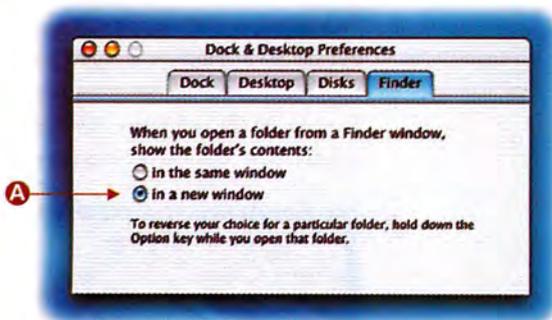
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# 4

**Open a New Window** In Mac OS X's Finder, windows function differently: only one window's contents are visible at a time. Double-clicking on a folder, for example, replaces your window's contents with those of the folder you just opened. But there's a quick fix.

*Viewing the contents of only one folder at a time is something you can get used to. But this amnesiac feature can make it difficult to remember where you came from and to navigate around your computer.*

*In the Dock & Desktop Preferences window, click on the Finder tab. Select the In A New Window radio button **A**.*



*Voilà! Windows will revert to their familiar stacking behavior **B**. You can even reverse the settings for individual folders by holding down the option key while opening a window.*



# 5

**Drag Icons to the Desktop** One thing you'll notice about the OS X desktop is the absence of icons. Except for the Dock, the desktop is completely empty. But you can make your desktop look and act like cozy ol' OS 9.

*Over the years, we've gotten used to dropping files and folders (or their aliases) onto the desktop. But in OS X, not even the hard drive is accessible from the desktop **A** on start-up.*



*To put an alias of your hard drive on the desktop (where it belongs!), simply drag and drop it from the Finder **B**. To get an alias of a folder or program onto the desktop, drag the icon while holding down the ⌘ and option keys. Unfortunately, you can't bring the Trash icon to the desktop—Trash is accessible only through the Dock.*



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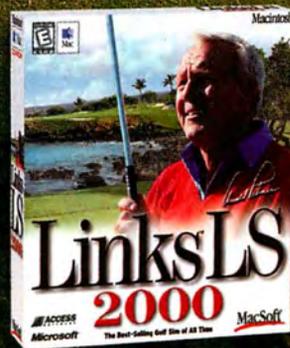
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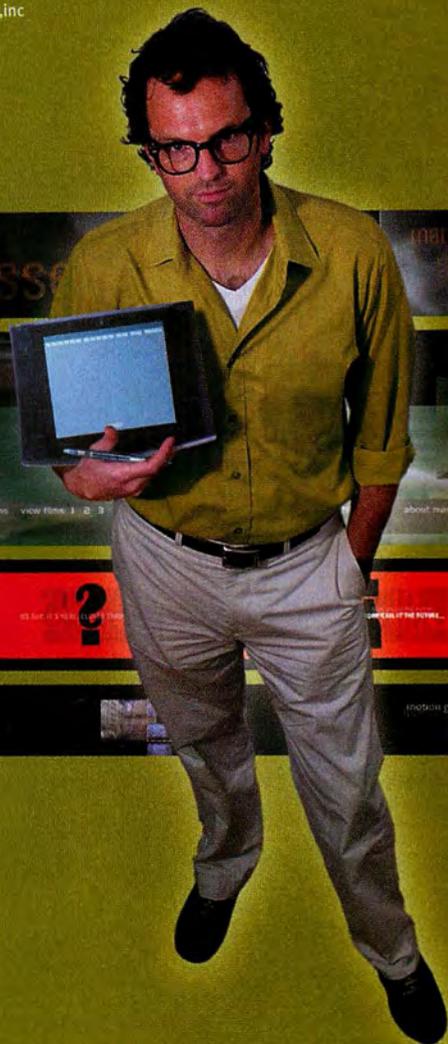
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# Mac 911



Well, I admit it. I was starting to worry. Three *Mac 911* columns under my belt already, and not once had the word *ResEdit* appeared among my allotment of vowels and consonants. It is therefore with a huge *whoosh* of relief that I include the term *ResEdit* not once, not twice, but a dozen times in this very column. In addition to demonstrating how you can

use ResEdit to reveal the unseen, I offer advice on finding system software for Macs of yesteryear and insight into the do's and don'ts of formatting e-mail.

## Old Soldiers Never Die

**B**efore the main course, let's whet our appetites with the curious case of Dave Robbin of Hutchinson, Minnesota, whose nostalgic notions caused him to grab one of the 512K Macs his school was unloading. Pleased as Dave was with his new-old Mac, he was stymied by the fact that this ancient beast inexplicably came with an 800K system floppy disk—when the 512K Mac accepts only 400K floppies. Dave turned to *Mac 911* to learn where he might find the system software he needs in a form he can use.

While Apple provides system software as old as version 6.0.3 at [ftp://ftp.info.apple.com/Apple\\_Support\\_Area/Apple\\_Software\\_Updates/English-North\\_American/Macintosh/System/Older\\_System\\_6.0.3](http://ftp.info.apple.com/Apple_Support_Area/Apple_Software_Updates/English-North_American/Macintosh/System/Older_System_6.0.3) is far too modern for a rickety 512K. But fear not, Dave. Just point your browser to the Mac 512 User Group at [www.mac512.com](http://www.mac512.com). This site, maintained by one G. Younk, focuses on antique Mac models and provides old versions of the Mac OS either via download or on floppy disks (yup, even 400K ones).

## Fancy (but Occasionally Forbidden) Formatting

**W**e'll now cleanse our palates with the story of Joe, a visitor to the Mac 911 Forum, who wonders under what circumstances one should format e-mail as HTML rather than plain text.

Here's the dope, Joe: HTML formatting lets you style your e-mail messages—complete with color, bulleted lists, and text alignment. However, not all e-mail clients handle HTML well—your words may appear as unformatted text or even as attachments, and messages that contain colored backgrounds and text tend to open slowly. Those who maintain mailing lists (such as the Mac Managers List) so abhor HTML that any message sent to these lists with such formatting promptly bounces back to the sender.

That said, I've had no trouble with HTML formatting. If, like me, Joe resists the most-blatant frippery—colored elements in particular—and avoids obvious bad moves such as sending HTML text to mailing lists, he should feel free to format as he chooses.

## Retaining Software Updates with ResEdit

**J**eff Seal of Salt Lake City asks how he might keep a copy of the files that Mac OS 9's Software Update control panel retrieves from Apple's site. The Software Update control panel is so efficient that it not only down-  
*continues*

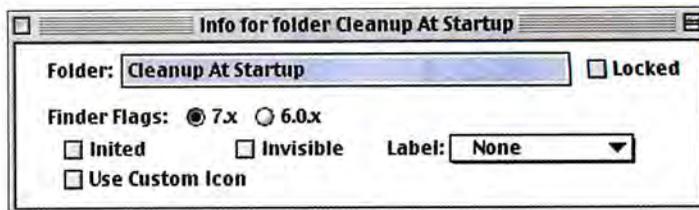
loads and installs updates but also cleans up after itself by deleting the installer files afterward. Jeff would like to retain these installers and transfer them from his office Mac—where a T1 line makes downloading huge files a stroll in the park—to his home Mac, where downloading the same updates via his 56K modem becomes a trial. Although Apple makes it difficult to glom onto these installers, it's not impossible if you have a copy of ResEdit and know how and when to force-quit an application.

Begin by downloading a copy of ResEdit from the Apple Software Updates page (<http://asu.info.apple.com>). Launch ResEdit, and when an Open dialog box appears, click on Cancel. Now select Get File/Folder Info from ResEdit's File menu, navigate to the root level of your start-up drive, locate the Cleanup At Startup folder, and click on the Get Info button. The dialog box that appears contains an option labeled Invisible (see "Making an Appearance"). Deselect this option, close the window, save your changes when prompted, and quit ResEdit.

When you next explore your start-up drive, you'll see the now-visible Cleanup At Startup folder, where the Software Update control panel stores update files.

Now run Software Update and download the files you need. Once the files have downloaded and installed, Software Update displays a dialog box with one option: Restart. If you wish to retain the installers, you must circumvent this dialog box by pressing shift-⌘-option-esc to force-quit the Software Update control panel.

Answer yes in the dialog box that asks if you really want to force-quit Software Update; with any luck, the Finder will eventually appear. (For a frightening list of what can happen if your luck runs out, see the next paragraph.) Open the Cleanup At Startup folder, and you'll find oddly numbered folders that contain the installers for the updates Software Update just downloaded. Copy them to some variety of removable disk



**Making an Appearance** To reveal invisible items, such as the Cleanup At Startup folder, deselect the Invisible option in this ResEdit window.

(a Zip, for example), truck the disk home, and run the installers on your home Mac.

I'd be remiss if I didn't mention the following:

- Force-quitting an application can leave your Mac in an unstable state. There's a slight chance that performing this trick will corrupt some item on your hard drive. It's far safer to wait until Apple posts stand-alone versions of updates online, usually a week or two after they first appear in Software Update.
- ResEdit is a powerful tool that, if used carelessly, can seriously mess up your Mac. If you aren't sure what you're doing—and don't have a complete backup of your hard drive—stay away from ResEdit.
- If the installers won't run properly, download TomeViewer from VersionTracker ([www.versiontracker.com](http://www.versiontracker.com)) and extract the update files from the Cleanup At Startup folder.

## Update

Contrary to assertions in my September column, James Walker's fine Acrobat shareware extension PrintToPDF allows you to create PDF files of sheet music. While PrintToPDF can't embed fonts, it can render selected fonts as bitmaps—at 288 dpi—instead of as text.

Several readers noted that, in October's column, I left out a solution for changing the default keyboard shortcut—⌘-tab—to switch between applications. Go to Apple's Help Center (under the desktop's Help menu), search for *application switcher*, click on the Switching Between Open Programs link, select Help Me Modify The Keyboard Shortcuts, and follow the on-screen instructions. **m**

Contributing Editor CHRISTOPHER BREEN offers Mac tips and tricks each business day via the Daily Tips and iTips newsletters. Visit <http://lists.macworld.com> to subscribe.

Share tips and discuss Mac problems with other Mac users in the Mac 911 Forum ([www.macworld.com/subject/mac911](http://www.macworld.com/subject/mac911)). Also send tips by e-mail to [mac911@macworld.com](mailto:mac911@macworld.com). We pay \$50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*.

Shareware and freeware mentioned in *Mac 911* is available from the Macworld Online software library ([www.macdownload.com](http://www.macdownload.com)).

## Tip of the Month

If you want to create a group mailing list in your e-mail client, you don't need to have the names in your address book. I selected and copied 52 names in an AppleWorks document and then pasted the names into a new group. It worked perfectly.

**Janet Mobley**  
Santa Rosa, California

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**Pros:** Improved graphics and processor performance; includes FireWire, iMovie 2, and video-out; cheaper than earlier models.

**Cons:** Heavy; modest RAM.

**List price:** \$1,499

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**Rating:** ★★★★★<sup>1/2</sup>

**Pros:** Very fast; great value; includes FireWire, iMovie 2, video-out, and DVD-ROM drive.

**Cons:** Heavy; modest RAM.

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## MACWORLD'S BUYING ADVICE:

If you need a portable and you're on a budget, the iBook is hard to beat—it delivers value not even consumer PC notebooks can match. But the best value in Apple's portable line is the 466MHz iBook SE, with performance comparable to a PowerBook's for \$600 less.



NOSON

There are many things I could have imagined saying about Apple's new low-cost portables: surprisingly fast, feature-rich, great value, attractive design. But black-light active? Not only is Apple's latest rev to the iBook line the best value the company has ever offered in a portable package, but if you get the new key lime flavor—available only through the Apple Store (<http://store.apple.com>)—the plastic also glows under a black light.

Psychedelic qualities aside, the new iBook and iBook Special Edition (SE) are remarkable values. The iBook—which can be had in a more muted blue (indigo) than previous models as well as the Day-Glo green—delivers 366 MHz of processor speed, both a FireWire port and a USB port, a 10GB hard drive, and

64MB of RAM. It has a built-in 56K modem, 10/100Base-T Ethernet, and even composite video-out via a clever cable adapter that plugs into the headphone jack—all for \$1,499. That's \$100 less than the previous iBook model.

But the real deal in the iBook line is the SE. Available in key lime and the familiar graphite, the iBook SE has all the enhancements of the iBook plus a 466 MHz G3 and a DVD-ROM drive for a mere \$1,799. Compare that with the 400 MHz PowerBook (*Reviews*, June 2000), which was slower than the iBook SE in our tests but costs \$600 more, and suddenly the SE's price tag seems modest indeed.

### Much Faster

When *Macworld* reviewed the first iBook, we had many complaints,



almost all of which Apple has addressed with this latest generation of iBook.

Chief among those complaints was performance. I'm happy to report that the new iBooks are much speedier than their predecessors, thanks to two key improvements: 256KB of Level 2 cache built into the G3 processor, and a state-of-the-art ATI Rage Mobility 128 chipset in place of the poky 2-D and 3-D graphics controller earlier versions shipped with. Don't underestimate the importance of the new Rage controller: the iBook is the sweetheart of school-age children everywhere, and we all know how much today's games push the envelope on graphics performance. (We're sure it'll help out with math homework, too.)

When we ran the new models through their paces, both performed much faster than previous generations, and the SE was even faster when running Quake and SoundJam (see "The Fastest iBooks Yet").

About the only time we weren't impressed with the iBooks' speed was when they ran iMovie—which is unfortunate, since the inclusion of a FireWire port and iMovie 2 is sure to tempt buyers looking for an inexpensive, mobile video-editing station. Speeds were comparable to those of an iMac or a PowerBook, but slow compared with a G4. For example, it took four hours to export a five-minute iMovie project as a 640-by-480 QuickTime movie, using the Sorenson compressor.

Another of our major complaints with the original iBook was RAM—it shipped with only 32MB. Today's models all ship with 64MB of RAM, which is sufficient to run one or two applications and seems a good compromise to get the standard iBook price under \$1,500. However, with

the SE I really wanted more RAM, especially when I was working with iMovie. As most Mac users know, more RAM allows you to run more and bigger applications, and it makes your Mac run faster. We imagine most SE buyers, being a bit less price sensitive, will probably upgrade their RAM by 64MB anyway, so why not include it at the outset?

But sufficient RAM is about the only thing missing from the SE, which in all other respects surpassed our expectations for a consumer portable. And as long as buyers are prepared to upgrade, they shouldn't find the modest RAM an impediment.

### Feature Rich

No one expects much from an inexpensive portable; mostly, we just want it to run some basic applications, deliver reasonable battery life, and not crash too often. By these measures, the new iBooks significantly exceed expectations.

Both models still come with a 12-inch active-matrix display with a maximum resolution of 800 by 600 pixels. While the makers of some cheap PC notebooks are opting for 13-inch passive-matrix displays, we're happy to see Apple sticking with 12 inches and the clarity of active matrix. At least until Apple

can find a way to offer 14-inch displays that reasonably support higher resolutions for under \$2,000, we see no point in abandoning the 12-inch screen.

And iBooks continue to surpass PowerBooks in battery life: the units we tested delivered about three and a half hours of use with moderate power-saving measures, compared with the PowerBook's average of two hours per battery. The only hitch is, it's still a challenge to get into the iBook's battery bay to swap a power pack.

We also take issue with the iBooks' weight. At nearly seven pounds, the iBook SE is a hefty load. Even the iBook without DVD weighs more than six and a half pounds—about a half pound heavier than the PowerBook.

These quibbles aside, the new iBooks—with their speedy G3s, updated ATI graphics controllers, sizable hard drives, FireWire ports, and active-matrix screens—are an incredible value. The iBook SE, in fact, may just be the best value of Apple's portable line, and perhaps of any notebook, Mac or otherwise. An who else but Apple gives you a computer that glows under a black light?—ANDREW GORE

| The Fastest iBooks Yet  |               |                |           |
|---|---------------|----------------|-----------|
|   |               |                |           |
| Reference systems in italics. Best results in bold.<br>■ Shorter is better. ■ Longer is better. | SPEEDMARK 2.1 | SOUNDJAM 2.5.1 | QUAKE III |
|   | Overall Score | MP3 Encode     | Normal    |
| Apple iBook Special Edition 466MHz FireWire   | <b>104</b>    | 3:25           | 22        |
| Apple iBook 366MHz FireWire   | 93            | 4:13           | 19        |
| Apple iBook 300MHz  | 68            | 4:36           | 4         |
| Apple PowerBook 400MHz FireWire   | 99            | <b>3:18</b>    | <b>23</b> |
|   | Better ▶      | ◀ Better       | Better ▶  |

Speedmark scores are relative to those of an iMac 350MHz (1999), which is assigned a score of 100. SoundJam scores are in minutes:seconds. Quake scores are in frames per second. We tested each system with Mac OS 9.0.4, 64MB of RAM, and a default system disk cache of 2MB. We set displays to 800 by 600 pixels (1,024 by 768 for the PowerBook) and 24-bit color. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using a default setting of 128 Kbps in SoundJam. (For more information on Speedmark, visit [www.macworld.com/speedmark](http://www.macworld.com/speedmark)).—Macworld Lab testing by Gil Loyola

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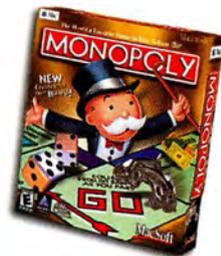
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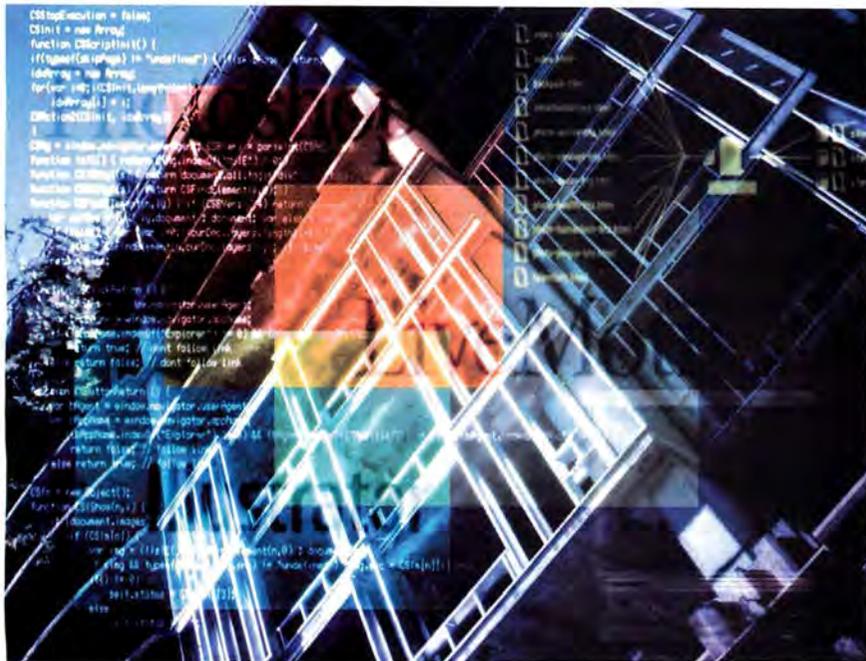
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PHILIP KAAKE

Once an application reaches version 5, you expect it to be strong and capable, with no rough edges. That's just what you get with Adobe GoLive 5. The qualities that have attracted legions of Web designers, such as a powerful design environment and excellent site-management features, have been strengthened; integration with Adobe's other world-class tools, including Photoshop, helps GoLive handle almost any Web chore with aplomb. Yet the devil is in the details, and some troubling particulars with this upgrade may cause you to pause when reaching for your checkbook.

## Helping Hands

As expected, GoLive 5 offers a slew of new features. Particularly welcome is 360Code, a tool that lets you create

code in GoLive, tweak it in another editor, and return it to GoLive without having the program rewrite your source code. Also welcome is the ability to view the layout and the page's source code simultaneously in separate windows.

It's clear that some of Adobe GoLive's new features, such as 360Code, are intended to help the program play catch-up with Macromedia Dreamweaver 3 (*Reviews*, April 2000). In other cases, GoLive has taken a good Dreamweaver feature and made it much better. For example, Dreamweaver introduced the concept of putting an image layer in the background of a document to use as a guide; Adobe takes that idea a step further by letting you

*continues*

## ADOBE GOLIVE 5

**Rating:** 

**Pros:** Improved code and graphics handling, table tools, and site management; WebDAV version control.

**Cons:** Doesn't produce standards-compliant code; mediocre documentation; limited extensibility.

**List price:** \$299

**Company:** Adobe, 800/833-6687, [www.adobe.com](http://www.adobe.com)

## MACWORLD'S BUYING ADVICE:

GoLive is a remarkably powerful program, one that hasn't sacrificed its ease of use as it has become more capable. Version 5's 360Code tool, "smart objects," WebDAV support, and site-management features bring a new level of convenience to Web development teams. Whether you'll find it to be a worthwhile upgrade depends on your extensibility requirements and your tolerance for its lack of standards compliance.

cut out parts of that tracing image and turn them into floating boxes (dynamic HTML elements) that become part of your Web page.

GoLive now has Photoshop's Save For Web image optimizer built in, so you can prepare your graphics for the Web without leaving the program. You can now import native Photoshop files and make each Photoshop layer a GoLive floating box; you can even apply different optimization settings for each layer as it's being imported. GoLive also lets you take files from three of Adobe's other products (Photoshop, LiveMotion, and Illustrator 9) and place them as "smart objects."

Double-clicking on a smart object opens the file in the source application, and changes in the source cause the copy of the file in the Web page to be updated. If you resize a smart object, it's automatically reoptimized—a big time-saver.

The new Table palette is another time-saver. You select cells, rows, or columns by clicking on a miniature map of the table in the palette. You can apply color and text styles to the map, and you can save your own styles for reuse.

### Not Standard Enough

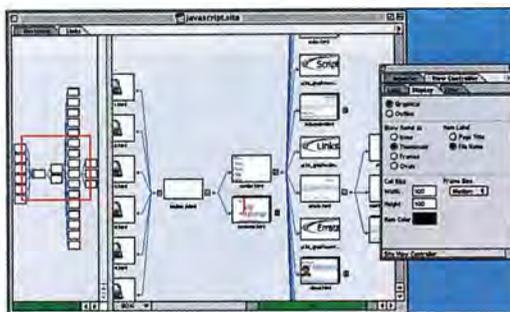
There's no excuse for a professional Web production tool not to create standards-compliant HTML. Compliance makes pages display predictably across computing platforms and makes them more readily accessible by people with disabilities. Yet pages created with GoLive 5 don't pass the HTML 4.01 validation test at <http://validator.w3.org>.

Can you make GoLive produce compliant pages? Sure—you just have to manually create a page that passes the validation test, save it as stationery, and tell GoLive to use the stationery for each new file. And

make sure you don't use features like GoLive's layout grids, which use proprietary code to work their magic.

### Big Guns for Big Jobs

With big sites and big development teams becoming the norm, the requirements for site management keep ratcheting up, and GoLive's



**View from a Height** One of GoLive 5's many site-management improvements is the addition of multiple panes to the site view window.

answer is support for the industry-standard WebDAV (Web Distributed Authoring and Versioning). More robust than Dreamweaver's version control, WebDAV lets team members check pages in and out of the WebDAV server and stage sites before uploading them to production servers.

The program's site-design tools are also improved. You can diagram a whole site before you build a single page, as well as design new sections for existing sites, by creating placeholders that you later fill with content. GoLive 5 lets you work on a new design without disturbing your existing site, then move the new pages into production when they're ready.

GoLive's Dynamic Link feature lets you create database-backed content using an ODBC-compliant database server or Microsoft's Commerce Server ASP. You connect GoLive to one or more dynamic content servers, use GoLive's Dynamic Link palette to build a sample SQL query, and then bind database fields to table or form fields. You can preview the final output using GoLive's Show In Browser

feature, and interact with a Web page the way an end user would. Web programmers will find the live-testing feature useful but will be frustrated by the inability to edit and test server-side scripts from within the development environment. GoLive also lacks built-in support for MySQL, mSQL, and Postgres, the three open-source databases popular with Web developers.

One of Dreamweaver's standout features is its support for customization and extensibility via JavaScript, XML, and C or C++. With these programming languages, you can add to or modify any Dreamweaver menu, object, dialog box, or palette. Nonprogrammers

can easily customize Dreamweaver by using its History feature to record a series of actions and turn them into new commands. In terms of user customization, GoLive still lags behind Dreamweaver. You can't customize menus, menu items, or keyboard shortcuts, and you can't rearrange items on the program's tool palettes. There's also no equivalent to Dreamweaver's end-user ability to save steps as a command. And GoLive can't match Dreamweaver for extensibility: programmers can add custom menus or other objects but can't change the built-in interface.

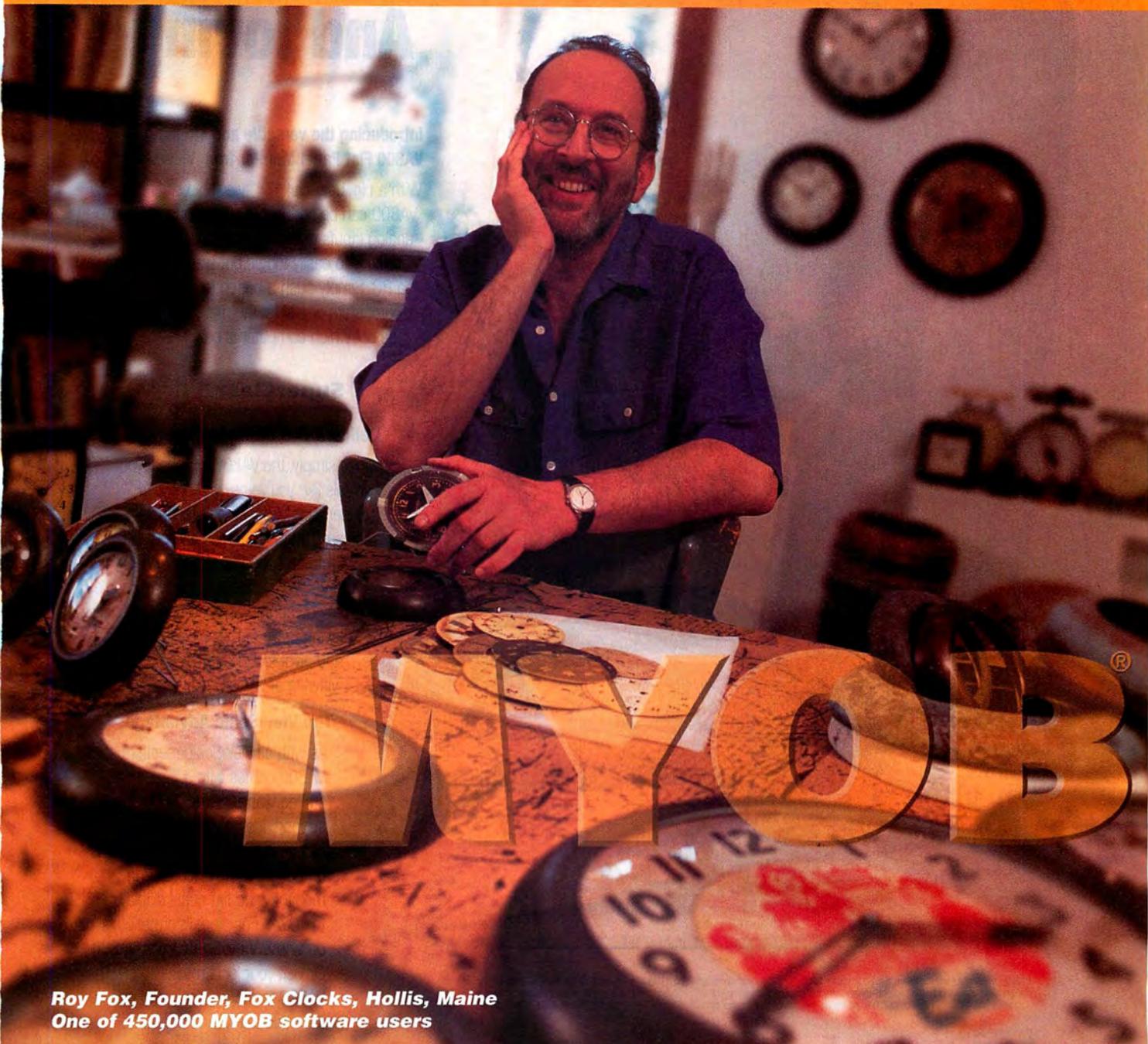
Previous versions of GoLive were rightly criticized for their bloated, hard-to-follow documentation. Version 5's manual is shorter but hardly an improvement. If you're new to GoLive, plan on buying a third-party book to help you get the most out of this complex and powerful program.—TOM NEGRINO

Mel Beckman and Steven Shmerler provided additional research.

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# Flash 5

Web Animation and Authoring Tool Matures  
but Still Lacks Accessibility



**Exploring Flash** Flash 5's Movie Explorer feature (lower right) offers a big-picture view of a movie's structure and assets. Also visible: Flash 5's new positioning guides and tool panels.

These days, it's hard to surf the Web without being flashed. Macromedia Flash-based animations—and even entire sites—are all the rage, thanks to Flash's bandwidth-friendly design and Web users' ability to view Flash content without downloading additional software.

Since its 1996 release, Flash has evolved from a simple animation format into a platform for developing entire Web sites. Flash 5 continues the trend. From its revamped interface to its enhanced authoring and workflow features, Flash 5 is the most impressive release yet.

However, Flash movies that use some of the program's most powerful features can be played only with

Flash Player 5—the latest version of the Flash plug-in and *not* the version most Web users have.

That doesn't mean Flash designers should put off upgrading. Flash 5 still exports to the Flash 4 format, and there are enough new productivity-boosting features in Flash 5 to make it an immediate must-have for Web motion-graphics designers.

## A Flashier Interface

Flash 4's user interface was rough around the edges (*Reviews*, October 1999), but version 5's is much better. Macromedia reorganized the program's menus; spruced up its tool panels; and most significant, improved the interface consistency between

*continues*

## FLASH 5

**Rating:** 

**Pros:** Superb interface and workflow improvements; powerful programming capabilities.

**Cons:** Using some features requires new player; no accessibility features.

**List price:** \$399; Flash 5 Free-Hand 9 Studio, \$599

**Company:** Macromedia, 800/326-2128, [www.macromedia.com](http://www.macromedia.com)

## MACWORLD'S BUYING ADVICE:

Flash 5's workflow enhancements accurately reflect the way designers use Flash, and its ActionScript programming improvements open up new possibilities for advanced interfaces, games, and online experiences. Until Flash Player 5's installed base grows, designers will have to use caution when employing some features, but they can benefit right now from its productivity aids and streamlined interface. Flash 5 is a superb upgrade.

Flash and its cousins Dreamweaver, Fireworks, and FreeHand.

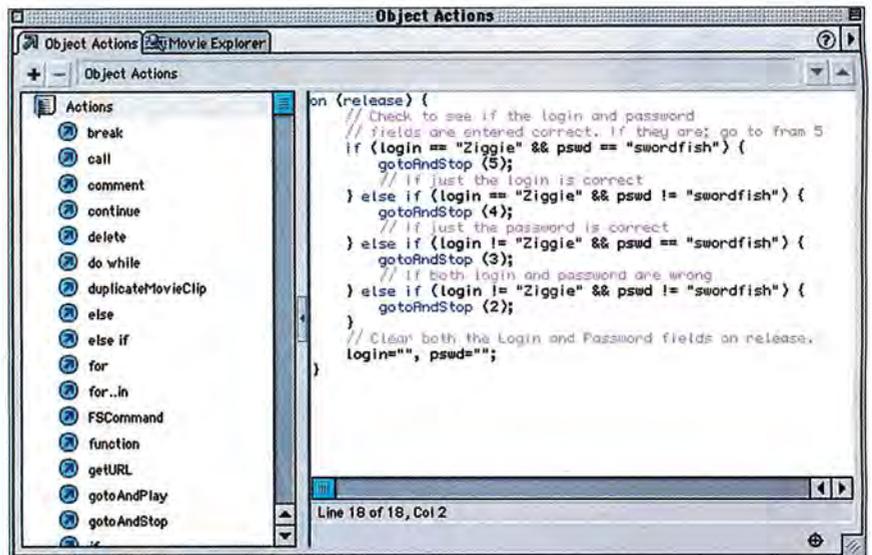
Flash's relatives are replete with customizing features, and Flash 5 catches up here, too. You can't reorganize Flash 5's menus as you can Dreamweaver's, but you can customize keyboard shortcuts. The program even offers a variety of built-in shortcut sets that match those of other applications, including Adobe Photoshop and Illustrator.

Speaking of Illustrator, designers will welcome Flash 5's new pen tool, which allows users to draw Illustrator- and FreeHand-style Bézier curves. Flash 5 retains version 4's brush and pencil tools, which work in the same unique (and often bizarre) way.

Many Flash designers have been using FreeHand for its superior illustration tools, taking advantage of FreeHand's ability to export files to the Flash format. Flash 5's ability to directly import FreeHand 9 documents eliminates this export step. At the same time, though, Flash 5 lacks the many file-optimization goodies that FreeHand's Flash-export feature provides. Flash designers may have to tweak their design processes, optimizing FreeHand-drawn elements after importing them into Flash.

### Libraries and Explorers

A complex Flash site can comprise multiple Flash movies, which may use the same assets—identical buttons, graphics, and sounds, for example. With Flash 5, designers can create shared libraries whose assets are available to all the Flash movies in the site. Some designers I talked to say this could halve the size (and download time) of complex Flash sites. Alas, a project using shared libraries needs Flash Player 5, so designers eager to reach the largest audience will have to forgo their use until the new player's popularity reaches critical mass.



**ActionScript** With Flash 5's new scripting environment, you can create scripts by choosing options from the Object Actions panel or by simply pecking them in yourself.

Flash 5's new Movie Explorer feature, on the other hand, provides immediate productivity benefits. Movie Explorer depicts a project's structure using a hierarchical, outline-style view. You can quickly scan for assets, examine scripts, and search for items.

### ActionScript and Beyond

Flash 4's ActionScript programming language helped establish Flash as a platform for developing advanced interactivity. But Flash 4 scripting lacked much of the power of a "real" programming language, and often hacks and workarounds were needed to accomplish complex tasks.

In Flash 5, ActionScript has grown up. Macromedia has reworked the language, using syntax and control structures similar to those of the ubiquitous JavaScript.

ActionScript newbies can still create code by choosing from pop-up menus and option lists, but advanced coders can also peck scripts directly into Flash 5's Actions panel or import them from text editors such as BBEdit. A new Debugger window lets you monitor the contents of variables and properties. And ActionScript now supports XML-based data transfer to and from a server. This lets a Flash movie

communicate with a server to receive content updates and send back information. (XML is another feature that requires the Flash 5 player.)

Other Flash 5 improvements will help in creating dynamic projects. Text boxes can interpret several HTML 1.0 tags, including hyperlinks and font tags, and Flash movies can load HTML from a remote server at runtime. Therefore, a Flash movie can grab and display HTML-based content as necessary, providing up-to-the-minute updates. Flash 5 is also more tightly integrated with Macromedia Generator, a five-figure add-on that generates Flash movies on-the-fly.

### Missing the Flash

Even with this revision, Flash 5 lacks features that would enable blind and other disabled users to navigate Flash interfaces. Macromedia says it's working to address accessibility issues. Until it does, designers who want to build Flash-based sites must decide whether it's worth leaving out a small but growing population of Web users.

This doesn't diminish Flash 5's many enhancements. But now that Flash has matured into a platform for site development, the time to become inclusive has arrived.—JIM HEID

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# USB Flatbed Scanners

Nine New Models Show Off

Advanced Technology



The Agfa SnapScan e50 (top) and Microtek ScanMaker X12USL

If someone had told me five years ago that I'd be really impressed by the output from a \$200 flatbed scanner, I would have been skeptical. But technology sometimes progresses much faster than we expect, and flatbed scanners are a case in point. Macworld Lab recently looked at nine flatbed scanners with prices ranging from \$169 (for the Agfa SnapScan e40) to \$349 (for the Microtek ScanMaker X12USL) and obtained impressive results across the board—at least for reflective scanning. Eight of the scanners capture 1,200 pixels per inch (ppi), while the ninth, the Epson Perfection 1640 SU, boasts the highest resolution in its class at 1,600 ppi. All have USB ports (the Canon CanoScan N1220U is the only one that draws power from USB), and the Epson Perfection 1640 SU

and the Microtek ScanMaker X12USL also offer SCSI connectivity.

## Not Just for Photos

The scanners fall into two broad classes. One is intended for general office use, offering quick and convenient ways to scan to e-mail, the Web, faxes, an OCR (optical character recognition) application, or an image editor, via programmable buttons on the scanner. The Agfa SnapScan e50, the Hewlett-Packard ScanJet 5300c and 5370c, and the Microtek ScanMaker 4700 all fall into this class. The more-traditional scanners include OCR software, and all except the Umax Astra 4000U feature software control panels for automatic scanning to a variety of destinations.

Three of the scanners—the SnapScan e50, the ScanJet 5370c, and

*continues*

## MACWORLD'S BUYING ADVICE:

All the scanners we tested produce decent output, but three stand out from the pack. Both the Canon CanoScan N1220U and the Agfa SnapScan e50 deliver excellent scans with no hassles. The Canon is tiny—small enough to be portable—but draws its power from the USB port, and the Agfa offers easy integration with a variety of applications through its programmable buttons. (If you don't need these functions, opt for the cheaper e40, which delivers scans of equal quality.) Sophisticated Photoshop users who want to work with high-bit scans—when restoring old prints, for example—will find that the Microtek ScanMaker X12USL delivers very good images along with the productivity features of the less-expensive scanners.



## USB Flatbed Scanners Compared

| COMPANY         | PRODUCT            | MOUSE RATING | LIST PRICE | CONTACT                           | BIT DEPTH                             | INTERFACE           | AUTOSCAN              | SIZE (IN INCHES) | PROS  | CONS   |
|-----------------|--------------------|--------------|------------|-----------------------------------|---------------------------------------|---------------------|-----------------------|------------------|---|--|
| Agfa            | SnapScan e40       | ★★★★         | \$169      | 877/330-4414, www.agfa.com        | 42-bit internal/24-bit external       | USB                 | Image/copy/e-mail/OCR | 8.5 × 11.7       | Excellent color and sharpness.                                | Scans are a little noisy.  |
|                 | SnapScan e50       | ★★★★         | \$199      | 877/330-4414, www.agfa.com        | 42-bit internal/24-bit external       | USB                 | Image/copy/e-mail/OCR | 8.5 × 11.7       | Excellent color and sharpness.                                | Scans are a little noisy; transparency adapter is marginally useful.                   |
| Canon           | CanoScan N1220U    | ★★★★         | \$199      | 800/652-2666, www.ccsi.canon.com  | 42-bit internal/24-bit external       | USB                 | Image/copy/fax        | 8.5 × 11.7       | Excellent color; tiny footprint.                              | Draws power from USB.  |
| Epson           | Perfection 1640 SU | ★★★★½        | \$299      | 800/463-7766, www.epson.com       | 42-bit internal/24-bit external       | USB/SCSI            | Image/copy/e-mail/OCR | 8.5 × 11.7       | Very good color; high-bit output.                             | Higher resolution doesn't deliver more detail; misregistration between color channels. |
| Hewlett-Packard | ScanJet 5300c      | ★★★          | \$249      | 800/722-6538, www.hp.com          | 36-bit internal/24-bit external       | USB/parallel        | Image/copy/e-mail/fax | 8.5 × 11.7       | Good automation features.                                     | No ColorSync support.  |
|                 | ScanJet 5370c      | ★★★          | \$299      | 800/722-6538, www.hp.com          | 42-bit internal/24-bit external       | USB/parallel        | Image/copy/e-mail/fax | 8.5 × 11.7       | Good automation features.                                     | No ColorSync support; transparency adapter is marginally useful.                       |
| Microtek        | ScanMaker 4700     | ★★★★½        | \$279      | 800/654-4160, www.microtekusa.com | 42-bit internal/external              | USB                 | Image/copy/e-mail     | 8.5 × 11.7       | Good automation features; ColorSync support; high-bit output. | Expensive; transparency adapter is marginally useful.                                  |
|                 | ScanMaker X12USL   | ★★★★         | \$349      | 800/654-4160, www.microtekusa.com | 42-bit internal/external              | USB/SCSI-2 (25-pin) | Image/copy/e-mail     | 8.5 × 14.0       | Very good color; ColorSync support; high-bit output.          | Expensive.   |
| Umax            | Astra 4000U        | ★★★          | \$199      | 800/562-0311, www.umax.com        | 36-bit internal/42-bit external (BET) | USB                 | None                  | 8.5 × 14.0       | High-bit output.  | No ColorSync support; no integration with office applications.                         |

the ScanMaker 4700—include a transparency adapter for scanning 35mm slides and negatives, but we were much less impressed by these scans. Only the SnapScan e50's transparency scans had reasonable color fidelity (the 5370c's were oversaturated with blocked shadows, and the ScanMaker 4700's had a strong green cast).

All three scanners are limited by their native resolution, which allows for an approximately 1,000-by-1,500-pixel scan from a 35mm original. This would do in a pinch for scanning film for the Web or for making small (3-by-5-inch) prints, but scanning 35mm film on these machines is clearly a marginal proposition.

Some of the scanners offer optional transparency adapters that can handle larger film formats. We didn't test these, but the limited

dynamic range of these scanners suggests that the results would be equally disappointing.

### Great Color from ColorSync

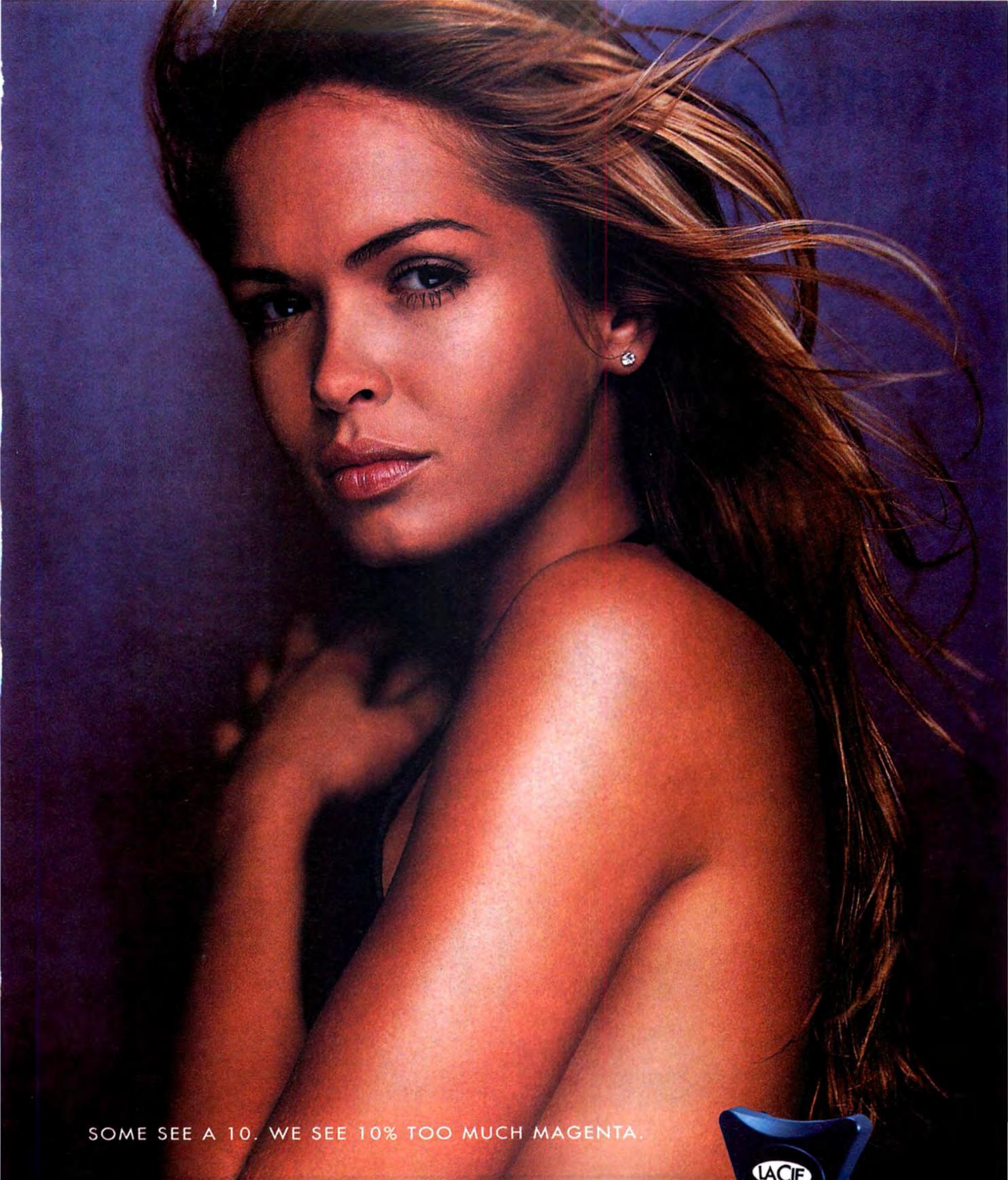
As for reflective scans, we found that all the scanners are capable of producing excellent tone and color—if you're prepared to do some work. But a few of the models we tested do so with almost no intervention, thanks to Apple's ColorSync color-matching technology (which some scanner vendors are finally beginning to support). The Hewlett-Packard and Umax scanners don't use ColorSync, so it's somewhat more difficult to get good color from them. Illustrating the power of ColorSync, the Canon scanner produced arguably the worst result when we didn't use ColorSync and one of the best results when we did.

Scanners that do use ColorSync implement it in different ways: the

Agfa scanners use ColorSync to scan to your monitor's RGB and embed your monitor profile in the scan. The Canon scanner also scans to monitor RGB but doesn't embed a profile. Scanning to monitor RGB works well if you're dealing primarily with non-color-managed applications—those that simply send the RGB numbers in the file to the screen. The Epson and Microtek scanners embed the scanner profile in the image, a better approach if you use color-managed applications that recognize embedded profiles.

The Hewlett-Packard models, which lack color-management features, produced oversaturated scans with a pronounced red cast. Hewlett-Packard's scanners are designed to produce sRGB output—the company is a major proponent of the sRGB

*continues*



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**On the Bleeding Edge** The Agfa SnapScan e40 (left) produced the sharpest results. The Hewlett-Packard ScanJet 5300 (middle) produced a red fringe along the edge of the knife blade, because the red channel was noticeably fuzzier than the green and the blue. The Epson Perfection 1640 SU (right), despite its 1600-ppi resolution, didn't resolve any more detail than the 1200-ppi scanners and also produced a red fringe along the knife blade.

color space, which is designed to represent the "average" uncalibrated Windows monitor. Unfortunately, since Windows displays generally have a higher gamma than Mac displays, sRGB images look dark on a Mac. Therefore, the sRGB option is turned off by default in the Mac driver and a different gamma curve applied, exacerbating one of sRGB's less desirable properties—a tendency to shift blues toward purple.

The Astra 4000U's VistaScan driver supports Umax's proprietary MagicMatch, a color-management solution (based on old Kodak technology) that Umax has used for about five years. Frankly, we've never been able to get good results from MagicMatch even when we could get it to run.

If you want good color with no hassle, your best bet is one of the ColorSync-aware scanners. But if you're a more sophisticated user who plans to do substantial image editing

in a color-managed application, you may be better off with one of the scanners that delivers high-bit files to Adobe Photoshop. All the scanners capture at least 36 bits per pixel internally, and most capture 42, but only the Umax and Microtek scanners let you save all those bits on output. You get much better results editing images at the scanner's full bit depth, with less chance of posterization or color banding. However, if you can access the high-bit data only through the scanner driver, you must do major editing in the driver rather than after the fact in an image editor.

### The Sharper Image

Where sharpness is concerned, not all 1,200-ppi scanners are created equal. When we zoomed in on a fine detail of an image—the serrated edge of a knife blade—we saw that the scans from both Agfas were noticeably sharper than the others, followed by those of the Umax and

the Microtek ScanMaker X12USL. The Agfa scans were so sharp, we suspect the scanner applies some sharpening automatically; they were also noisier than the others, reinforcing that theory. The Microtek ScanMaker 4700 output was the least sharp, though it wasn't objectionably soft. Both Hewlett-Packard scanners were fuzzy in the red channel, producing some red color-fringing along the edge of the knife blade—a more difficult condition to correct than overall softness.

You might expect the 1,600-ppi Perfection 1640 SU to resolve more detail, but it doesn't—it just produces a bigger file. In fact, the Epson lagged behind the others in terms of sharpness and displayed some color-fringing along high-contrast edges (in this case, due to misregistration between the three color channels—about two pixels at 1,600 ppi).—BRUCE FRASER



**Both Ends of the Spectrum** The Canon CanoScan N1220U (left) and the Agfa SnapScan e40 (second from left) both produced excellent scans that we were able to simply convert to CMYK for print. The Umax Astra 4000U (third from left) scan was rather unsaturated, particularly in the reds (look at the red pepper). The result from the Hewlett-Packard ScanJet 5300 (right) looks similar to the Umax scan, but it actually has the opposite problem—the reds are so oversaturated that they turned orange when we converted the scan to CMYK in preparation for printing.

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# Quicken Deluxe 2001

Useful Features Make This Year's Model  
a Solid Financial Performer

## QUICKEN DELUXE 2001

**Rating:** ★★★★★

**Pros:** Bill detection; improved online banking and integration with Quicken.com.

**Cons:** Still missing important features available in Windows versions.

**List price:** \$60

**Company:** Intuit, 800/446-8848, [www.quicken.com](http://www.quicken.com)

### MACWORLD'S BUYING ADVICE:

The purpose of a financial program is to keep you organized and prevent transactions from falling through the cracks. Better bill tracking and smoother online banking accomplish this upgrade's goal and justify the price of admission. With no flashy interface changes (as last year's release had), Quicken Deluxe 2001 delivers what most people will want: stable operation and better compatibility with online services.

Last year, Intuit shook up Quicken Deluxe for the Mac with an interface overhaul and big changes under the hood that made the program compatible with new online-banking standards, if slightly buggy (*Reviews*, December 1999). This year's version, Quicken Deluxe 2001, makes it easier to pay bills, bank online, and plan for the future. Between improvements to the program and closer integration with Quicken.com, this upgrade is worthwhile for most users, especially those who don't own last year's model.

### Bill Payment Breakthrough

The best features in the new version are improved handling of bills and proactive bill reminders. These begin when you upgrade to Quicken Deluxe 2001: in the process of converting your data file, the program flags repeated payments (or deposits) as bill candidates, suggesting that you turn them into scheduled transactions. These transactions don't have to be for the same amount every month—they just have to be regular.

Once you've turned bill candidates into scheduled transactions, you can work with them in the new Upcoming Bills And Scheduled Transactions window, choosing to either pay a bill or skip a payment (see "Bills on the Horizon"). Quicken tells you when a bill is overdue, and it's very useful (though more than a little depressing) to see a list of all

the bills you'll need to pay over the next month.

This expanded awareness of bills extends to Quicken's Billminder feature, which notifies you of impending bills when you start your Mac or launch Quicken.

Another noteworthy feature is global find and replace, which lets you search all (or a subset) of your accounts at once; previously, you had to search each account separately to find a particular transaction. The ability to replace results across all accounts makes it easier to fix errors and inconsistencies, such as a payee name that was entered in different ways over time.

### Snuggling Close to the Web

Intuit continues to integrate the desktop program with its extensive financial Web site, Quicken.com. You can now upload and store all your account balances in a secure, password-protected area on Quicken.com, and you can export your investment portfolio to the site, to take better advantage of its news and securities-analysis features.

While it's great being able to access your financial picture from anywhere that you have Web access, some people will be understandably uncomfortable with the privacy implications. Keeping your most intimate financial information on someone else's servers is a leap of faith that some are not yet ready to make.

| Upcoming Bills and Scheduled Transactions |               |                        |           |  |
|---|---------------|------------------------|-----------|--|
| Upcoming Bills                            |               | Scheduled Transactions |           |  |
| Payee                                     | Next Due Date | Account                | Amount    |  |
| <b>Overdue Bills</b>                      |               |                        |           |  |
| BUY Fidelity Growth & Income              | 9/8/00        | 401k reserve           | -108.17   |  |
| <b>Due Bills</b>                          |               |                        |           |  |
| <b>Upcoming Bills</b>                     |               |                        |           |  |
| Citibank Mortgage                         | 10/1/00       | Main Checking          | -1,736.44 |  |
| Pacific Bell                              | 10/1/00       | Main Checking          | -25.04    |  |
| Pet Club                                  | 9/20/00       | Main Checking          | -32.33    |  |
| Rosewood HOA                              | 10/1/00       | Main Checking          | -225.00   |  |
| <b>Deposits</b>                           |               |                        |           |  |
| Paycheck                                  | 9/8/00        | Main Checking          | 2,455.89  |  |
| <b>Other Scheduled Transactions</b>       |               |                        |           |  |
| 80ATM                                     | 9/8/00        | Main Checking          | -80.00    |  |

Buttons: Scan for Bills... Edit Don't Pay Pay Now

**Bills on the Horizon** Quicken Deluxe 2001 scans your finances for regular payments and lets you turn them into scheduled transactions in a snap.

But I applaud the way Intuit has pushed its financial planning and analysis tools onto Quicken.com, where they can be more readily updated and they can draw on the latest financial news. For example, the Home Affordability Planner uses the daily national average of mortgage

interest rates to give you an idea of what kind of home you can afford.

Another useful feature that takes advantage of Quicken's improved Internet integration is automatic notification about software updates. Whenever you go online with Quicken, it checks to see if a new version is avail-

able—a click launches your Web browser and brings you to the update's download page. Other improvements include a longer list of financial institutions offering online banking and bill payment; better investment-research capabilities; and a feature that gently nags you about upcoming tax payments and suggests possible deductions.

These additions are useful and welcome, but Quicken for the Mac remains Intuit's neglected child, never receiving the development time and attention lavished on Quicken for Windows. There's still no Macintosh Home & Business version, depriving Mac-based entrepreneurs of this easy-to-use payables, receivables, and invoicing solution. And Quicken Insights, a window that gives you an overview of your financial situation, still pales next to its Windows counterpart.—TOM NEGRINO

supermodel



# iMac and iMac DV

Latest Models Offer Good Performance  
at Tempting Prices

## iMAC

**Rating:** ★★★★★

**Pros:** Good performance; attractive price; worthy keyboard and mouse.

**Cons:** Skippy software bundle.

**List price:** \$799

**Company:** Apple Computer, 800/692-7753, [www.apple.com](http://www.apple.com)

## iMAC DV

**Rating:** ★★★★★

**Pros:** Better performance; attractive price; worthy keyboard and mouse.

**Cons:** Skippy software bundle.

**List price:** \$999

**Company:** Apple Computer, 800/692-7753, [www.apple.com](http://www.apple.com)

## MACWORLD'S BUYING ADVICE:

If you're a first-time buyer seeking a reasonably priced computer (and one that runs Mac OS), the iMac and iMac DV are for you. With prices this good, these machines will tempt even veteran Mac users.

Apple has added two enticing options to its consumer lineup—low-price iMac and iMac DV models that offer the elegant design of the original, plus a functional mouse and keyboard. First-time Mac buyers will find the \$799 iMac (available only in indigo) a terrific bargain. For those interested in editing digital video on the cheap, the \$999 iMac DV is likewise tempting.

The indigo iMac is a more vibrant blue than the blueberry and Bondi models that came before it, and the iMac DV—which also comes in indigo—adds a richer red (ruby) to Apple's color palette. But although the colors and prices are new, these iMacs are nearly identical to earlier models. Like the blueberry iMac, the new iMac bears a 350MHz processor and lacks the iMac DV's FireWire and video-out ports and AirPort capability. The



ARNOLD TOSEJO

new 400MHz iMac DV differs from earlier DV models in its inclusion of a CD-ROM drive instead of a DVD-ROM player. Both iMacs ship with a much smaller collection of software than previous iMacs did.

Our lab tests revealed that the new models deliver performance similar to that of their predecessors, although the new iMac measured slower in our Speedmark tests (this may be accounted for by the differences among hard drives and ROM versions).—CHRISTOPHER BREEN

## Mo' Better Blues



| Reference system in italics. Best results in bold.<br>— Longer is better. — Shorter is better. | SPEEDMARK 2.1 | QUAKE III | SOUNDJAM 2.5.1 |
|--|---------------|-----------|----------------|
|  | Overall Score | Normal    | MP3 Encode     |
| Apple iMac G3/350 (2000)   | 97            | 21        | 4:34           |
| Apple iMac DV G3/400 (2000)  | <b>105</b>    | <b>23</b> | <b>3:55</b>    |
| Apple iMac G3/350 (1999)   | 100           | 22        | 4:36           |

Better ▶

Better ▶

◀ Better

Speedmark scores are relative to those of an iMac 350MHz (1999), which is assigned a score of 100. SoundJam results are in minutes:seconds. Quake results are in frames per second. We tested each system with Mac OS 9.0.4, 64MB of RAM, a default system disk cache, and virtual memory enabled for all tests except SoundJam encoding. We set displays to 1,024 by 768 pixels and 24-bit color. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using a default setting of 128 Kbps in SoundJam. Speedmark is a suite of common tasks (see [www.macworld.com/speedmark](http://www.macworld.com/speedmark)).—Macworld Lab testing by James Galbraith



# KnockOut 1.5

## KNOCKOUT 1.5

**Rating:** ★★★★★

**Pros:** Fast; does a great job of masking complex objects and shapes.

**Cons:** Somewhat difficult to learn; no Photoshop–plug-in version.

**List price:** \$280; download, \$239

**Company:** Corel, 800/772-6735, [www.corel.com](http://www.corel.com)

### MACWORLD'S BUYING ADVICE:

Like any good tool, KnockOut takes time to learn, but no application does a better job of creating masks that involve complex objects such as smoke, hair, and transparent surfaces. If you do a lot of compositing work, KnockOut is a must.

If you've ever composited two images in an application such as Adobe Photoshop, you know how time-consuming and tedious selecting an area from one image for compositing with another can be. The first version of KnockOut (*Reviews*, January 1999) was a great solution to even the most difficult masking problems, and Corel's KnockOut 1.5 (produced by Ultimatte) offers some simple new tools that make building complex masks even easier.

As with version 1, you define a mask by painting two paths—one inside the object to be masked, the other outside. KnockOut analyzes the area between these paths to build a mask that eliminates your

selection's background. The new Loupe Zoom tool makes drawing a precise path easier by magnifying the image as you make your selection. And you can now test the accuracy of your mask more easily by inserting another image or color plate behind it.—BEN LONG



**One-two Punch** You can create complex masks in KnockOut 1.5 by outlining the inside and outside of an object.

superpowers



# Palm m100

Entry-Level Handheld Is Ideal for New Users  
but Offers Pro Features

## PALM M100

**Rating:**  4 1/2

**Pros:** Comfortable design; inexpensive; Mac desktop software is included.

**Cons:** Small screen; Expense and Mail programs omitted.

**List price:** \$150

**Company:** Palm, 800/881-7256,  
[www.palm.com](http://www.palm.com)

### MACWORLD'S BUYING ADVICE:

The m100 may be a consumer-level device, but it boasts most of the professional features that have made Palm OS the dominant handheld operating system. If you've considered purchasing a Palm organizer for your favorite Mac novice, the m100 is your best choice.

The entry-level, \$150 Palm m100 handheld organizer might seem to suggest that Palm has cut corners to be able to match the price of the Handspring Visor ; "Anywhere, Everywhere, Everything Palm," July 2000). But the m100 proves to be a better device than even the most ardent techno-elite would like to admit—especially for users who are new to the world of handheld computing.

The m100's appearance makes it easy to pick this handheld out of the Palm lineup. Slightly taller and wider than the Palm V and with a curved shell, the slate-colored m100 is lightweight and comfortable in your hand. (You can add a removable faceplate in one of five bright colors for \$20.) It includes a HotSync cable instead of an upright cradle, reducing desktop clutter and enhancing portability; however, you'll still need to purchase a USB or serial adapter to connect it to your Mac.

If you've ever used a handheld, you'll notice Palm's main concession to price: compare the slightly smaller than 2-by-2-inch plastic screen with other Palms' 2 1/4-by-2 1/4-inch glass screens. Even so, the display is crisp (the resolution is the same as in previous models) and workable. The plastic cover flips up and over the top of the device to rest flat against its back, not perched halfway like an automobile hood. And the built-in speaker is significantly louder than

those in previous models, so you may actually hear the alarms you set.

The m100 includes only 2MB of memory and can't be flash-upgraded (as most other Palm devices can)—in other words, it can't be upgraded beyond Palm OS 3.5.1. However, that's plenty of memory for basic functions, and expandability isn't an essential consideration for the m100's target audience.



SUZANNE ROADY

Functionally, the m100 works like every other Palm OS-based device, with a few notable exceptions. The Note Pad application allows you to write or draw on the screen as if it were a Post-it note and then synchronize to a similar Note Pad application (included) on your Mac. The omission of the Expense and Mail programs is vexing, but the Macintosh Palm Desktop software is included—something Palm should have been doing all along.—JEFF CARLSON

# CopyAgent 1.0

## COPYAGENT 1.0

**Rating:** ★★★★★

**Pros:** Smart folder copying; speedier network copying.

**Cons:** No notification if destination lacks sufficient space for copy; allows only manual file selection for scheduled copies.

**List price:** \$40

**Company:** Connectix, 800/950-5880, [www.connectix.com](http://www.connectix.com)

### MACWORLD'S BUYING ADVICE:

Despite minor flaws, CopyAgent 1.0 is an indispensable utility that deserves to be built into Mac OS. It's that good.

Even we Mac fanatics must admit that our favorite OS sometimes isn't very smart. Copy a folder to a destination that contains another folder with the same name, and the Finder duplicates everything—even if the contents are almost identical. Connectix Speed Doubler 8 solved this problem by copying only items that had changed, but it was never updated for Mac OS 9. In response to user requests, Connectix resurrected many of Speed Doubler's most-compelling features in a new utility called CopyAgent.

When you copy a folder using the Finder, CopyAgent's enhanced Replace dialog box presents you with two additional options: SmartReplace copies only new or changed items,

and Synchronize updates both folders so that they contain the most recent versions of all the items. If there isn't sufficient room to complete the copy, CopyAgent quits without copying anything—a bug that Connectix plans to fix in an update.

CopyAgent can save you a significant amount of time if your source folders contain hundreds of files. The Network Copy extension saves you even more time when you copy folders over a network. And CopyAgent lets you schedule copies in advance—a good way to back up important data—though you have to add items to the copy queue manually. And because CopyAgent doesn't filter files, it can't replace a dedicated backup utility.—FRANKLIN N. TESSLER

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# Illustrator Plug-Ins

Filters Add Effects and Efficiency  
to Illustrator's Toolbox

## FILTERIT 3.0

**Rating:** ★★½

**Pros:** Fabulous replication effects.

**Cons:** Some features irrelevant in Illustrator 9; no printed manual.

**List price:** \$129

**Company:** CValley, 949/727-9161,  
[www.cvalley.com](http://www.cvalley.com)

## VECTOR STUDIO 1.0

**Rating:** ★★★★★

**Pros:** Powerful distortion capabilities and selection management; good documentation.

**Cons:** Needs slight RAM increase in Illustrator 8.

**List price:** \$130

**Company:** Virtual Mirror, 415/472-3359, [www.virtualmirror.com](http://www.virtualmirror.com)

## MACWORLD'S BUYING ADVICE:

If you're looking for distortion tools, Vector Studio's Morph brushes and Envelope Mesh tool make it the best choice. Otherwise, both packages contain unique, well-implemented effects. Most of Vector Studio's plug-ins are also available à la carte, giving you even more buying options.

**A**lready bored with the new features in Adobe Illustrator 9.0? Two new plug-in packages should cure your ennui. Although Filterit 3.0 and Vector Studio 1.0 share a bit of common ground, each package provides additional time-saving tools and intriguing effects for die-hard Illustrator users.

### Crooked Paths

It's in the area of path distortions that these packages overlap, and Vector Studio comes out on top. Filterit's Roughening tool disrupts paths' smoothness effectively, but Vector Studio gives you several specialized brushes, with descriptive names such as Scallop, Crystallize, and Wrinkle, for the job. Filterit's Warp and Wave tools are intuitive and easy to use when you're distorting entire objects, but Vector Studio's Envelope Mesh tool offers the ultimate in precision, letting you reshape objects by dragging external and internal mesh points.

The Gradient Texture tool is another Vector Studio standout, creating vector-based textures that resemble bitmaps yet remain resolution-independent. But Vector Studio's most indispensable filter is the Selection Hat, which lets you save and recall any selection—a lifesaver in complex files.

The handiest tool among Filterit's touted "eighty-two

effects" ("twenty" would be a more reasonable count) is the AlignPoints tool, which earns its name with only a couple of mouse clicks. But Filterit really shines with plug-ins that replicate objects in orderly or disorderly patterns. The MetaBrush tool and live effects—such as Tiling, Explosion, and Galaxy—offer stunning and complex designs. There are a couple of let-downs, however: the Fade tool simulates transparency by fading copies of an object to a color you select, but this seems antiquated next to Illustrator 9's true transparency abilities. Likewise, Illustrator 9's live Drop Shadow makes Filterit's Live Shadow superfluous.

Vector Studio requires that you increase Illustrator 8's default RAM by a modest amount, but otherwise both packages run smoothly in versions 8 and 9. Vector Studio's manual is well written; Filterit lacks printed documentation, and its built-in help is rife with errors.—GALEN FOTT



**Morph and Windy** Exhale is one of Vector Studio's dynamic Morph brushes; others used here are Inhale, Wrinkle, and Swirl.

# Videodelic

## VIDEODELIC

**Rating:** ★★★★★

**Pros:** Creates beautiful images; interactive.

**Cons:** Timeline not as useful as it could be.

**List price:** \$249

**Company:** U & I Software,  
650/364-0556,  
[www.uisoftware.com](http://www.uisoftware.com)

### MACWORLD'S BUYING ADVICE:

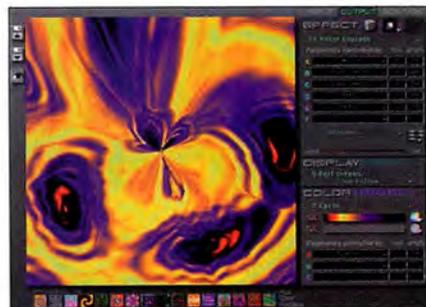
Videodelic is a unique program capable of creating rich, interactive, psychedelic video images. Musicians with a visual bent, multimedia artists, and computer DJs will find it particularly attractive.

U & I Software, creator of innovative applications such as MetaSynth and ArtMatic, has released another imaginative multimedia tool—Videodelic, a real-time video-art synthesizer. Like ArtMatic (*Reviews*, June 2000), Videodelic lets you create swirling, psychedelic images; the difference is that Videodelic is far more interactive than ArtMatic, allowing you to control images' movement and color in real time.

The building blocks of your Videodelic projects are still images, QuickTime movies, and live video streams, but you'll barely recognize the sources once Videodelic is finished with them. The program twists, tints, melts, and manipulates source material in fascinating ways using

effects and filters.

In Videodelic's timeline, you can string together effects, add an audio soundtrack, and export your work as a QuickTime movie. Unfortunately, to play from a particular spot in the project, you have to scroll the timeline to the point where you'd like to begin playing.—CHRISTOPHER BREEN



**Far Output** You apply filters and effects in Videodelic's Output window.

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GRAPHICS SYNTHESIZER GETS ANIMATION CONTROLS

# Studio Artist 1.5

**Rating:** 

**Pros:** Unmatched effects and image-cloning features.

**Cons:** Complex, somewhat un-Mac-like interface.

**List price:** \$329

**Company:** Synthetik Systems, 888/808-4188, [www.synthetik.com](http://www.synthetik.com)

**Macworld's Buying Advice:**

With its complex, often un-Mac-like interface, Studio Artist 1.5 may baffle those with a short attention span—you need to spend some time with this program to get a feel for it. Once you do, though, you'll find it contains some of the most powerful digital painting tools available.

Synthetik Systems' Studio Artist is about as different from other paint programs as it is from a can of paint. Billed as the world's first graphics synthesizer, the program offers an astounding array of tools and effects for creating still images and complex animations, and version 1.5 adds the ability to animate the properties of brush strokes over time. But Studio Artist's unique tools are accompanied by a unique interface; to become proficient in this program, you have to be willing to log many hours with it.

## Painting in Patches

Studio Artist's interface uses a music-synthesizer metaphor. You brush effects onto your canvas using *patches*, which range from natural-media effects to hallucinatory swirls. More than 600 patches are included—and you can build your own.

But the program's most impressive feature is its ability to clone an image: it can sample the color in an image and then use that color to paint a second

image using the currently selected patch. You can easily turn a photo into a watercolor, for example, by painting over the image using the watercolor patch. Unlike other programs, such as Corel's Painter, that offer cloning features, Studio Artist uses complex algorithms that clone intelligently.

One of the best features in Studio Artist 1.0 (; *Reviews*, November 1999) was its ability to turn QuickTime movies into animations. Version 1.5 goes a step further with a sequencer that lets you animate the parameters of your patches over time to create wild, ever-changing paint effects.

The new Texture Synthesizer offers an overwhelming assortment of controls for creating textures. Using the synthesizer and the new animation features, you can render everything from complex morphs to psychedelic, swimming textures and colors. Another new feature, a set of 3-D-lighting tools, lets you control how light interacts with a painted surface to create textures and complex lighting effects that would otherwise require an art degree and years of training.—BEN LONG



**Auto Sunflowers** Studio Artist's auto-painting engine does an incredible job of generating strokes that follow the lines, contours, and forms of an underlying image.

# PowerCADD 2000

## POWERCADD 2000

**Rating:**  4 1/2

**Pros:** Slick, quick 2-D drafting environment.

**Cons:** Many cool features available only as extras.

**List price:** \$795

**Company:** Engineered Software, 336/299-4843, [www.engsw.com](http://www.engsw.com)

### MACWORLD'S BUYING ADVICE:

If I were teaching a beginning CAD course, I'd use PowerCADD 2000 because it produces first-rate drafting results with minimal frustration. The 2000 version has the friendliest learning curve of any Mac CAD program, it has enough new features to justify upgrading, and it produces impressively artistic results.

**P**owerCADD has long been a favorite of newcomers to computer-aided design. It's probably the only serious CAD program you can teach yourself in an afternoon, without a manual. It's actually fun to use, because it gets your drawing right the first time without requiring dozens of annoying little fix-ups. It supports graphic elements that will probably remind you more of Adobe Illustrator than of a CAD program; although it's 2-D only, it's not just for making blueprints.

Two new features in the latest version, PowerCADD 2000, are real improvements: the Tool palette now expands so you can see all the draft-

ing tools at once, and you can view a thumbnail preview of each drawing before you open it via the File menu.

Another plus in this version is a Table tool, which lets you add tables and parts lists to drawings. There's also a flashy new Gradient Fill tool that allows you to add a gradient fill to any closed shape—an impressive effect, although it's not clear how drawings with gradient fills translate to clunky old AutoCAD.

### Thin on Trappings

What's a bit objectionable is the number of goodies Engineered Software has left out of PowerCADD 2000, making them available as extra-cost plug-ins. Two libraries

# DiskWarrior® has than



1999 Macworld Editors' Choice Awards Winner, Utility Software. "DiskWarrior is an excellent ax to add to your disk-repair and -maintenance arsenal. DiskWarrior's ease of use, speed, and new method of fixing disk problems make it a powerful disk-maintenance product."



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for mechanical engineering are \$79 each, and some very nice architectural engineering libraries go for up to \$129 each. The versatile WildTools drafting plug-in—which features great tools for filleting, drawing Bézier-type curves, and creating instant architectural drawing elements—costs \$189. One could argue that these goodies *should* be extra, but making that case for the \$150 DXG file (AutoCAD) translator is harder. Imagine buying a word processor that required you to purchase an add-on translator for Microsoft Word. A little generosity on Engineered Software's part would be welcome.

Compared with Nemetschek's VectorWorks (♦♦♦♦♦, *Reviews*, June 1999), PowerCADD is more intuitive, and it can produce fancier 2-D drawings with less effort. On the other hand, it can't match Vector-



**Show and Tell** With PowerCADD 2000, you can expand the Tool palette to display the entire set of drafting tools with a single click.

Works' 3-D features, DXG translation, scripting language, and group/collaboration support. VectorWorks is a better choice for

bigger shops; PowerCADD 2000 is ideal if you're drafting on your own.—CHARLES SEITER

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## InterMapper 3.0



**Rating:** ★★★★★

**Pros:** Lower entry price; SNMP trap handling; customizable probes and Web display; excellent support.

**Cons:** None.

**List price:** From \$295 (10 devices) to \$1,595 (unlimited devices)

**Company:** Dartware, 603/643-2268, [www.dartware.com](http://www.dartware.com)

**Macworld's Buying Advice:**

InterMapper 3.0 does it all, and new pricing makes the program affordable for even small networks. It's a must-have for any network administrator.

Dartware's InterMapper 3.0 gives you more bang for less buck than any other network manager on the market, delivering network mapping, monitoring, and graphing; Web viewing; and alert notification through an easy-to-navigate interface. Version 3.0's enhancements are legion: the program captures SNMP traps, supports custom network probes, monitors environmental sensors, controls Web access by user, and lets you customize its Web display. Even more valuable: Dartware listens to its customers and updates its product expeditiously. But the company's genius lies in its ability to add new features without muddying InterMapper's clear, functional countenance.—MEL BECKMAN

## Suitcase 9



**Rating:** ★★★★★ 1/2

**Pros:** Easy-to-use interface; good sorting abilities.

**Cons:** Inconsistent automatic font activation.

**Company's estimated price:** \$100

**Company:** Extensis, 800/796-9798, [www.extensis.com](http://www.extensis.com)

**Macworld's Buying Advice:**

Veteran Suitcase users may be disappointed with version 9's inconsistent font activation. But if the previous version's interface was vexing you, this Suitcase may be just the ticket.

Extensis Suitcase's user interface has never been one of its strong points—until now. The revamped interface in Suitcase 9.0.1 makes it easier to add, view, sort, and activate font sets. A new Unified window lets you view and sort fonts easily, either alphabetically or by name, foundry, or suitcase. The window can also be tailored to alternately hide or show sets, fonts, and previews singly or in concert.

Suitcase 9 can activate fonts individually. You create and load new font sets via menu commands or by dragging and dropping. As with version 8, you also get Suitcase XT, an XTension for QuarkXPress.—ANDREW SHALAT

*(Note: Macworld's parent company, Mac Publishing L.L.C., is an investor in Extensis's parent company.)*

## B4



**Rating:** ★★★★★ 1/2

**Pros:** Exquisite sound; great interface; CD includes Windows version.

**Cons:** Copy-protected.

**Company's estimated price:** \$199

**Company:** Native Instruments, 800/665-0030, [www.native-instruments.com](http://www.native-instruments.com)

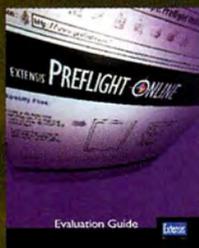
**Macworld's Buying Advice:**

Plenty of hardware-based B3 mimics are available, but they start at about \$1,000. B4 sounds as good as any B3 mimic and costs a lot less. It's a stunning triumph in software synthesis.

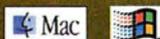
Since its introduction in 1955, the Hammond B3 organ has become a mainstay of music genres ranging from jazz to blues to gospel to rock. Hammond stopped building B3s in 1974, and a B3 in good condition fetches several thousand dollars. Now you can turn your Mac into a B3 with Native Instruments' B4. This software synthesizer uses sophisticated modeling techniques to re-create the B3's distinctive, beefy sound—complete with rotating Leslie speaker—with astonishing accuracy. Better still, you can control every sound parameter from a MIDI sequencer program or hardware controller. You can also tweak sounds in real time using B4's true-to-life interface.—JIM HEID



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## PlayerPro 5.6



**Rating:** ⭐⭐⭐

**Pros:** Complete music player; inexpensive.

**Cons:** Confusing interface; inadequate documentation.

**List price:** \$69

**Company:** Quadmaton, 888/833-3622, [www.quadmaton.com](http://www.quadmaton.com)

**Macworld's Buying Advice:**

Although it's a fine music player, PlayerPro is a confusing compositional tool. Download the free version from Quadmaton's Web site to try before you buy.

Antoine Rosset's venerable music-editing application PlayerPro has two distinct functions. It's a versatile music player that allows you to play common file formats such as MIDI, WAV, SND, and AIFF as well as rare file types such as S3M, MED, and SM. It's also a music editor that lets you create the compact MOD music files that were popular on the Amiga platform.

Although playing a music file with PlayerPro 5.6.2 is a straightforward operation, creating and editing MOD files is anything but. PlayerPro mimics the interface elements of MIDI sequencers, but the process of entering music isn't intuitive, and the sparse electronic documentation does little to help you learn how to assemble compositions.—CHRISTOPHER BREEN

## Deus Ex 1.0



**Rating:** ⭐⭐⭐⭐

**Pros:** Well plotted; elaborate, dynamic story line.

**Cons:** Vast resource requirements; no multiplayer option.

**List price:** \$40

**Company:** Aspyr, 888/212-7797, [www.aspyr.com](http://www.aspyr.com)

**Macworld's Buying Advice:**

If you have the slightest interest in the conspiracy-theory genre—and your Mac has the resources (at least 64MB of RAM)—you'll find that Deus Ex is an engrossing adventure.

Deus Ex's designers have borrowed successfully from the *X-Files* school of storytelling—a long, overarching story line broken into smaller episodes—to make a game that will keep you occupied for many hours. As an agent for an antiterrorist coalition, your goal is to ferret out and retrieve a purloined plague antidote. You can play Deus Ex as a shoot-'em-up or as a sneakier game, avoiding guards instead of blasting them into their component electrons. The choices you make throughout the game—even trivial ones—affect how the plot continues. The graphics are good, there is plenty of gadgetry, and the levels are large—but the compelling story line is what makes Deus Ex a truly great game.—STEPHAN SOMOGYI

For these reviews:

[www.macworld.com/2000/12/reviews/online.html](http://www.macworld.com/2000/12/reviews/online.html)

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# The Game Room



Much has been written about the unholy abomination, the ugly stain upon the national soil that is the Ill-Chosen Holiday Gift. Every time that a child opens a present and discovers a pair of sensible slacks, that a husband unwraps a metric socket-wrench set, or that a wife receives any sort of electric depilatory product, the act resonates. The Arctic ice cap weakens and cracks.

The birds mope in the trees, not knowing why their songs come out with such difficulty. The dolphins take note and wonder if the time isn't ripe to finally seize their destiny as the planet's dominant intelligence.

All because some friend or relative just didn't *think*. Gifts are a big responsibility, even in the gaming arena. So look at these suggestions. They all fulfill the elements of the Three *I*'s of Cool Gifts: Improbability, Ingenuity, and "I gotta try this right now!"

Surely there can be no more-certain sign of success than when your nephew opens your gift and dashes straight upstairs to his computer, completely forgetting about that bicycle-shaped package next to the tree.

There's no shortage of USB input devices in my office. I get to try 'em all. Each has its strengths and weaknesses, but Miacomet's Real Feel Pool Shark (\$30; [www.miacomet.com](http://www.miacomet.com)) is utterly hopeless as a mouse substitute. I mean, completely. Which is OK, because you're meant to grasp it on your tabletop and stroke a pool cue through it, lending an air of verisimilitude to billiards sims.

You gotta admire this thing. It's not like a flight-sim joystick, which is studded with controls and buttons for weapons but can still be used as a generic game controller. The Pool Shark is good as an accessory for only one Mac game—MacSoft's Real Pool. But it elevates the game to an entirely new level. As a devoted patron of my

neighborhood's Free Cheese Pizza With An Hour's Table Rental pool room, I'm familiar with the sensations of the game, and this thing is frighteningly good.

Of course, stroking a pool cue is probably far too tangible an act to faithfully replicate, but the feedback is good, and the correlation between the stroke you deliver through the Pool Shark and the resulting impact in the simmed table is spot-on. Most importantly, when you return to a "real" table after a few weeks simming around, shooting will seem wonderfully familiar, and you'll be scamming free drinks off your friends all night.

I'd be thrilled if someone gave me Digital Leisure's DVD edition of *Dragon's Lair* (\$50; [www.digitalleisure.com](http://www.digitalleisure.com)). The generations that preceded mine get all nostalgic about big cars and doped-out musicians who died foolishly. But we grew up on *Star Wars* and video games. Even fifteen years later, Don Bluth's line of cel-animated laser-disc coin-ops still gets my heart pumping and my hands twitching—*Left, left, sword! Right, up!*—to guide Dirk the Daring through the castle to save the sexy-as-Cinemax-after-10 p.m. Princess Daphne from the dragon.

Though the cinema-quality animation is ultimately far more evocative than Quake's, we're talking early-eighties tech here: you don't so much control Dirk as cue him. In each scene, there are moments when you must cue him to

*continues*

move in any of four directions or to use his sword. Of the three Bluth discs available from Digital Leisure, *Dragon's Lair II: Time Warp* is the champ, with the mostest and bestest animation and a lot more humor than the original.

So I'd love it as a gift. Although if I'd actually paid \$50 of my own dough for it expecting more than a nostalgia trip, I'd feel a little ripped off. Game play bites. On DVD there's a lag between your cues and Dirk's actions, with often fatal results. And though the DVD works in almost any stand-alone player, compatibility is spotty in computers; it played in a Power Mac G3 with an MPEG card but not on my PowerBook G3's DVD drive. But here's the good news if you'll be shopping for Class of 2001 graduation gifts: Digital Leisure has announced a Mac DVD-ROM edition, to be released early in 2001.



**Dirk Slays** In *Dragon's Lair*, you play through a classic early-eighties animated video-game adventure via your DVD player.

How exciting is a new pair of headphones? Not very. Koss's Sportapro (\$30; [www.koss.com](http://www.koss.com)) headphones don't even come in iMac colors, but their physical design makes them world-beaters—they're a magic bullet for folks who find themselves gaming in places other than the "sweet spot" of their home-theater setup. They're the only headphones I've seen that both deliver the maximum sound of a good game track *and* are practical for travel.

You can wear them as you do regular headphones. You can swing the headband back and wear them as a set of around-the-neck phones (and unlike Sony's set, these are adjustable, so no longer must hat-fanciers with enormous heads struggle under the tyranny of ill-fitting headphones). You can fold the Sportapro headphones one way and roll them up into a ball for storage, or you can fold them another way, and they'll slip into your satchel perfectly flat. And there's a mute button built into the cord.

My first order of business when I check into a hotel is to replace the set of headphones that got busted during the flight over. But I hope these Sportapro headphones, thanks to their durability and storage flexibility, will be the last I own . . . until I leave them in a cab somewhere. The best endorsement I can give them is that almost all the fellow geek travelers I've recommended them to have bought 'em for themselves and then for their friends.

Yes, people, all of this buying-gifts-for-others business can be dreadfully tedious, particularly if you're a heartless bastard for whom the potent lessons of *Mr. Magoo's Christmas Carol* meant nothing.

So it might be a good idea to add a game bundle such as Bungie's *Mac ActionSack* (\$20; [www.bungie.com](http://www.bungie.com)) to your shopping cart. It's an awful choice for an experienced gamer (I'd liken it to giving Roger Ebert a DVD of

this great old movie that you're sure he'll like . . . *Casablanca*), but it's a winner for new iMac owners who have never played any of the games in the Marathon series. In addition to the complete trilogy, there are three examples of Early Bungie.

But back to the heartless-bastard angle. See, the recipient doesn't have to *know* that this is a six-game set. So if you never got around to play-

ing *Marathon Infinity*, just help yourself to the disc.

See? There's a lot of great hardware and software out there for the gifting. If you're an aunt, however, I understand that the motivation to give a kid clothes might be too stubbornly intertwined into the RNA to suppress. OK, so at least give a great T-shirt. How about this one, my current fave-of-the-week: a simple study in navy and white that reads, "Macintosh for productivity. Linux for development. Palm for mobility. Windows for Solitaire." How can you resist? It's only \$13 from MacSurfshop ([www.macsurfshop.com](http://www.macsurfshop.com)).

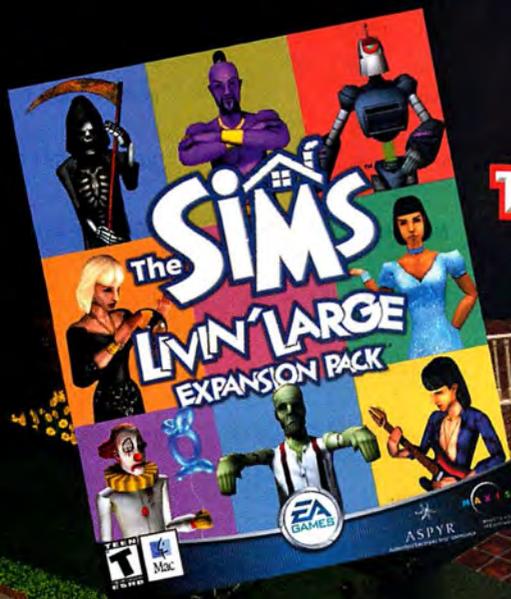
So when you shop this holiday season, choose wisely. Even if none of my game-related suggestions strike a chord, don't just lash out and buy any old thing that's end-capped at Best Buy for \$20.

The fate of the planet hangs in the balance, for the dolphins bide their time and make their plans even as we speak. And thanks to the silly machinations of those bleeding-heart so-called "animal rights" activists, we're forbidden from launching a preemptive strike against our future enslavers before they've mastered the use of tools. ■

Veteran Mac columnist ANDY IHNATKO ([www.andyi.com](http://www.andyi.com)) wishes to advise our future dolphin masters that he always buys the dolphin-safe brands of tuna.

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Macworld Conference & Expo/San Francisco 2001 will showcase an unprecedented array of more than 500 exhibiting companies, thousands of new products and innovations, mind-opening training, and real-world solutions for the computing professionals, creative professionals, educators and home-users alike. As diverse as the Mac platform itself, the show floor offers hands-on demonstrations to help you evaluate and purchase products, services and solutions for your particular needs.

Our world-renowned conference programs will equip you with the knowledge and solutions you need to stay ahead in this thriving and highly competitive marketplace! The conference agenda will help you develop your Macintosh skills, master the most popular software application and provide in-depth education on some of the most exciting topics in Macintosh computing today. As Mac OS X nears its official release, Macworld Conference & Expo/San Francisco 2001 is pleased to present comprehensive training classes on this major upgrade to the Macintosh operating system.

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Tuesday, January 9, 2001

#### **Macworld/Pro & Macworld/ Users Conference Programs**

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#### **MacBeginnings Sessions**

January 9 – 11, 2001

#### **Exposition Hall**

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**Tuesday, January 9**

**9:00 am - 10:30 am**

TBA

**Wednesday, January 10**

**10:30 am - 11:30 am**

*Kevin Browne, General Manager, Macintosh Business Unit, Microsoft Corporation*

**Thursday, January 11**

**9:00 am - 10:00 am**

*Rob Burgess, CEO, Macromedia*

\* Keynote Presentations are open to conference and workshop attendees only. Seating is on a first-come, first-served basis.

## Show Highlights

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Be sure to visit and view the winning images of the Macworld Conference & Expo Digital Art Contest. Now in its third year, the Gallery will display thirty creative digital art portraits from both student and non-student categories. Finalists were chosen by a respected panel of judges from the digital art community. Please visit [www.macworldexpo.com/gallery](http://www.macworldexpo.com/gallery) for more information or to view past year's winners.

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### Guided Expo Tours of Macworld Conference & Expo

Knowledgeable guides will help you find what you're looking for! After rave reviews this July in New York City, we're bringing the Macworld Conference & Expo Guided Expo Tours to San Francisco!

Whether you are a new attendee to Macworld Conference & Expo, or a returning Mac user, the Apple User Group volunteers can help you find the products, services, solutions and companies you want to see. These knowledgeable guides will have the entire show mapped out, will assess your needs and escort you right to what's hot, help you find seats for demonstrations, and bring you to the people who have answers to your questions. We urge you to take advantage of this wonderful service!

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### Special Interest Boulevards

Throughout the Special Interest Boulevard at Macworld Conference & Expo/San Francisco 2001, you'll find Mac developers who specialize in the following types of products:

- Digital Media
- Small Business
- Sci-Tech
- Assistive Technology
- 3D
- Edutainment

### Music & Audio Showcase

This highly-enjoyable area will feature developers showing the latest Mac products and tools for music and audio creation, production, and processing; mastering; CD authoring; MP3 creation and publishing; music education, and the latest innovations in music and audio networking. But that's not all; the Music and Audio Theater, sponsored by Apple, will feature live concerts, all of which showcase the Mac's musical and audio prowess in action.

### Macintosh Gaming Area

The Macintosh is the hottest new gaming platform around! Discover the latest Mac Gaming products from the top Mac publishers within the Macworld Conference & Expo Gaming Area. This area also offers the Mac Gaming Theater, where you'll see the latest, greatest games for the Mac. You can partake in exciting hands-on demonstrations of the games in action. And when you decide you need to have one of the games being demonstrated, be sure to visit the on-site games retail area. If you're a fan of Mac games (and who amongst us isn't?), you're not going to want to miss the Mac Gaming Theater, sponsored by Apple.

### MacBeginnings!

To help you get even more out of your time at Macworld Conference & Expo, we've put together a lineup of educational sessions that are **free and open to all registered Macworld Conference & Expo attendees!** We'll be presenting tips, techniques and perspectives on the hottest topics in the industry, all presented by experts in their fields.

MacBeginnings Sessions include:  
*Your Guide to Macworld Conference & Expo/San Francisco 2001*  
*Macintosh 101*  
*The Desktop Movie Revolution*  
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## Pre-Conference Workshops

**Tuesday, January 9**

**12:00 pm - 7:00 pm**

The week begins with 13 astounding, full-day workshops that provide in-depth training on key products and technologies. You can find full workshop descriptions at [www.macworldexpo.com](http://www.macworldexpo.com).

- WA** Practical Introduction to Mac Networking
- WB** Integrating Professional Publishing Tools
- WC** Managing Shared Macintosh Computers with Apple Macintosh Manager
- WD** The QuickTime Professionals Workshop
- WE** Your First Mac OS X Workshop
- WF** Getting Started with AppleScript
- WG** JavaScript and Dynamic HTML Wizardry
- WH** The Filemaker Workshop
- WI** Web Video Revolution Workshop
- WJ** Final Cut Pro
- WK** Getting Started in Interactive Development
- WL** Web Animation Essentials, Tools and Techniques
- WM** PDF Secrets for Print or Web
- WN** Secrets of Shooting Great Video

## Macworld/Pro Conference Program

The Macworld/Pro conference agenda presents topics of interest to the computing professional who relies on the Macintosh as his/her platform of choice. A new conference agenda has been developed offering the most sophisticated training available on Mac networking, digital video (with an emphasis on QuickTime), professional publishing, Mac systems administrations for large organizations, and detailed technical presentations that take you inside Mac OS X.

## 5 Macworld/Pro Tracks: Networking

This track presents techniques and technologies associated with deploying Macintosh LANs, WANs, and Internet/Intranet access. These technical presentations take you inside the protocols and services you encounter when deploying connected Macintoshes. Get the most of your network or make it state of the art — these tactical sessions will show you how.

- Sessions Include:
- Mac Networking Update*
  - Real-World Network Management with the MacOS*
  - On the Trail of Network Problems*
  - Securing Your Internet Connection*
  - The Evolution of Macintosh Networking*
  - Network Security in a Mac OS X Environment*
  - Network Managers Forum*

## Digital Video

Streaming media is the next big thing for Internet media and Apple technology provides the best tools to produce and deliver the highest quality content. Attend sessions in this track to hear from industry experts and top practitioners how to use the tools you'll need to create quality material and deliver it to your viewers. You'll also gain an insight into the future of professional digital video and broadcast topics with special presentations on Motion Graphics, Digital Television and more.

- Sessions Include:
- QuickTime for Broadband Networks*
  - Editing Voice and Music: Power-User Tips for the NLE Operator*
  - QuickTime for the Web*
  - QuickTime Compression Secrets*
  - QuickTime Interactivity*
  - Introduction to Special Effects on the Macintosh*
  - The Mac as a Platform for Mainstream Media Innovation*

## Professional Publishing

Sessions in this track provide advanced training on key Macintosh tools that differentiate the Mac platform. AppleScript, WebObjects and PDF are featured.

- Sessions Include:
- Play Nice with Your Service Bureau*
  - Expediting Your Workflow with Remote Soft Proofing*
  - Dynamic PDF Generation on your Web Server*
  - Color Management*
  - Dynamic Messages/Narrow Pipe*
  - Business Transformation and Web Migration*

## Mac OS X

Macworld Conference and Expo is pleased to present the first technical educational curriculum on Apple's new operating system — Mac OS X. Designed for systems administrators and managers of large installations, sessions in this track take you inside the technology and exposes the issues, tips and details required for installing, managing and running this incredible new platform.

- Sessions Include:
- Java Advantages in Mac OS X*
  - Mac OS X, Quartz and PDF — the Real Story*

## Mac Manager

The Mac continues to be a platform in transition. Organizations that depend on the Mac OS now are facing new software and hardware options that require a considerable amount of strategic planning to ensure successful deployment. This track features sessions that look at the needs of organizations using the Mac and present the methods, practices and technologies that are defining the role of the Macintosh manager.

- Sessions Include:
- Becoming a Successful Mac Manager, Part 1 — Business Issues*
  - Becoming a Successful Mac Manager, Part 2 — Tips, Tools and Techniques*
  - Advanced AppleScripting*
  - Linux Options for PPC*
  - The Truth About Emulation*
  - Backup Strategies for Mac Managers*
  - The Java Report*

Visit [www.macworldexpo.com](http://www.macworldexpo.com) for complete schedule and program updates!

## Macworld/Users Conference Program

The Macworld/Users Conference continues to be one of the best educational values anywhere offering 80 conference sessions on a variety of exciting topics all presented by industry experts. Get your first taste of Mac OS X, learn all about making Desktop Movies, Digital Photography and get tips on using your favorite applications. We've also got special programs geared towards Educators, Musicians and Small Business Owners.

### Wednesday, January 10

- S01 *Your First Mac OS X Class*
- S02 *Mac OS X Strategies for Small Business*
- S03 *Apple Staff Development On-line*
- S04 *iMovie*
- S05 *Welcome to the Internet*
- S06 *Making Music in the New Millennium*
- S07 *Day in the Life of a Mac Photojournalist*
- S08 *Photoshop and ImageReady: From Ho-hum to Wow! in 60 Seconds*
- S09 *Mac OS Update*
- S10 *Why Crashes Happen and What to Do about Them*
- S12 *Macintosh Telephone Assistant*
- S13 *Internet and iTools for Educators*
- S14 *Shooting Great Video*
- S15 *Modem, DSL, Cable Modem or ISDN — Which is for Me?*
- S16 *Making Music in the New Millennium*
- S17 *The Best Image for Your Byte*
- S18 *3D Animation: An Introduction*
- S19 *AppleScript Primer*
- S20 *PalmPilot & Macintosh — A Match Synched in Heaven*

- S21 *A Mac User's Survival Guide on Working with Windows Clients*
- S23 *The Digital Grade Level: Its Emerging Ramifications and Findings*
- S24 *Creating Custom Soundtracks for Your Desktop Movies*
- S25 *Getting Started with MP3*
- S26 *In a PowerBook Groove: The Live Performance Laptop*
- S27 *Choosing a Digital Camera*
- S28 *Stretching the Capabilities of FileMaker Pro*
- S29 *Internet Power The Mac Way with iTools*
- S30 *Mysteries of the System Folder Revealed*

### Thursday, January 11

- S31 *Troubleshooting Mac OS X: Get Ready!*
- S32 *Vision Thing Live!*
- S33 *Four Thousand Macs on a Network Without Using Novell or NT: How and Why to Run on all Mac Educational Network*
- S34 *Editing Techniques for iMovie 2*
- S35 *Power Surfing: Hanging 10 in CyberSpace*
- S36 *Beginners Guide to Music on the Mac*
- S37 *Making a Life While Making a Living*
- S38 *Learn What's New in Microsoft Office 2001 for Mac*
- S39 *Introduction to QuickTime™*
- S40 *Best of the Macworld Mac Secrets*
- S42 *How to Make Your Old Mac Stuff Work with Your New Mac Stuff*
- S43 *Building an Online Education Solution*
- S44 *Making Movies with the QuickTime Player*
- S45 *Broadband: Is it the Wave of the Future?*

- S46 *A Virtual Studio Revolution*
- S47 *Guerrilla Marketing for eCommerce Startups*
- S48 *Communicate and Take Control of Personal Information with Microsoft Entourage 2001*
- S50 *Upgrade Your Mac and Live to Tell About It*
- S51 *Backing Up's not Hard to Do*
- S52 *Web Site Do's and Don'ts*
- S53 *Mac Lab Management Made Easy*
- S55 *Webmaster Focus: JavaScript and Dynamic HTML Wizardry*
- S56 *Myths and Facts about Digital Audio*
- S57 *A Mac User's Survival Guide for Working with Windows Clients*
- S58 *Photoshop Power Shortcuts*
- S59 *An Introduction to Macintosh User Groups*
- S60 *How to Digitally Archive Your Family History*

### Friday, January 12

- S61 *Taking Control of Your Mac*
- S62 *Macworld's Ultimate Powerbook Tips*
- S63 *Applied iMovie for Education*
- S64 *Science Education*
- S65 *QuickTime Streaming for Learning*
- S66 *Create Local, Promote Global*
- S67 *Putting Your Small Business on the Web*
- S68 *Just Flash It!*
- S69 *Your Wireless Future*
- S70 *PalmPilot & Macintosh — A Match Synched in Heaven*
- S71 *Macworld Conference & Expo Gaming RoundUp*
- S72 *Keep Your Mac Healthy*
- S73 *Digital Storytelling in K-8 Classrooms*
- S74 *Macs in the Law Office*
- S77 *A Small Business Intranet Construction Kit*
- S80 *The Care and Feeding of Hard Disks*

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### Hotel Reservation Instructions:

- Book on-line using [www.macworldexpo.com](http://www.macworldexpo.com) and receive immediate hotel confirmations!
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A credit card deposit of one night room and tax is required at time of booking for all hotels. Hotel accommodations and rates are based upon availability and valid until December 14, 2001, at which time they are subject to change. Rates are subject to 14.45% state and local tax per room, per night, and are not included in rates above. Exclusive discounted hotel rates are only available through ETMI.

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ETMI offers discounted midweek rates on United Airlines and American Airlines to San Francisco with savings up to \$1,500.00 per person!

Call ETMI Monday – Friday at 1-888-442-7683 from 9:00 am – 7:00 pm EST.

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For your convenience, you may also call the airlines directly as noted below. Please make sure to mention the tour code to take advantage of these low fares.

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American Airlines  
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Title

Company

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(If applicable)

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Telephone  Ext.  Fax

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Check here only if you DO NOT wish to receive product information or news from Macworld Conference & Expo, it's exhibitors or industry-related third parties via email.

## 2. Registration Package Selection & Fees

Pre-Conference Workshops: January 9, 2001, Conference Programs: January 10 - 12, 2001 Exposition: January 9 - 12, 2001.  
All Conference Sessions Keynote Addresses are on a first-come, first-served basis with the exception of the Pre-Conference Workshops.

| WORKSHOP                 | PACKAGE                           | INCLUDES   | ON OR BEFORE DEC 11 | AFTER DEC 11 |
|--------------------------|-----------------------------------|--|---------------------|--------------|
| <input type="checkbox"/> | <b>Super Pass</b>                 | Pre-Conference Workshop, Macworld/Pro Conference Sessions, Macworld/Users Conference Sessions, Lunch, Keynotes, MacBeginnings Sessions, Exhibits | \$1,095             | \$1,195      |
|                          | <b>Macworld/Pro Conference</b>    | Macworld/Pro Conference Sessions, Macworld/Users Conference Sessions, Lunch, Keynotes, MacBeginnings Sessions, Exhibits                          | \$845               | \$895        |
|                          | <b>Macworld/Users I</b>           | Macworld/Users Conference Sessions, Keynotes, MacBeginnings Sessions, Exhibits   | \$195               | \$245        |
| <input type="checkbox"/> | <b>Macworld/Users II</b>          | Pre-Conference Workshop, Lunch (Workshop Day ONLY), Macworld/Users Conference Sessions, Keynotes, MacBeginnings Sessions, Exhibits               | \$525               | \$575        |
| <input type="checkbox"/> | <b>Workshop</b>                   | Pre-Conference Workshop, Lunch (Workshop Day ONLY), Keynotes, MacBeginnings Sessions, Exhibits   | \$395               | \$445        |
|                          | <b>Exhibits ONLY (Jan 9 - 12)</b> | Exhibits and MacBeginnings Sessions ONLY.<br><small>(Does NOT include admission to the Keynotes)</small>   | \$10                | \$25         |

## 4. Payment Information (You will be charged for all registrations received including duplicates)

Payment must accompany form for registration to be complete. **DON'T PAY FOR THIS EVENT TWICE!** You will be charged for all registrations received and will not be refunded for duplicate registrations. Please use one method of registration only. PO's are not accepted. All Registration fees are non-refundable and credentials are non-transferable. A \$20 fee will be charged for all returned checks.

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Card Number  Expiration Date

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- Mail To** Macworld Conference & Expo/San Francisco, P.O. Box 3321, Boston, MA 02241-3321. Through 12/11/00 ONLY.
- Fax To** 805-654-1676. Faxed registration forms must include credit card information. Through 12/11/00 ONLY.

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Go to [www.macworldexpo.com](http://www.macworldexpo.com) for complete details.

Please check here if you have any special needs that require attention.   
(Attach a written description of your needs.)  
Check here if you qualify for the student/educator discount.  
Check here if you wish to register for 4 Super Passes and receive the 5th FREE! (All forms must be received together by mail/fax ONLY)

### PRIORITY CODE

**A-MW6N**

Register online with your Priority Code to receive a Free Expo Pass, if registered by December 11, 2000.

## 3. Attendee Profile

(Must be filled out to process your registration)

**For what purpose are you purchasing/evaluating products and services?**

- For My Company/Organization/Dept
- For Myself as a Consultant/Sole Proprietor
- For Myself as a Consumer
- For Myself as an Educator

**What is your industry?**

- Aerospace
- Architecture/Construction/Process Industries
- Arts & Entertainment
- Banking/Finance/Insurance/RE
- Business/Professional Services
- Computer Reseller/VAR/WAD/Service
- Consulting
- Education: K-12
- Education: Higher Ed
- Education: Other
- Engineering/R&D
- Gaming/Game Development
- Graphic Design/Creative Services
- Government/Military
- Health/Medical/Pharmaceutical
- Independent Software Vendor
- Manufacturing (Computer Industry)
- Manufacturing (Non-computer Industry)
- Marketing/Sales/PR/Communications
- Media/Publication/Broadcasting
- Non-profit Organization
- Printing/Publishing Association
- System Integrator
- Transportation/Utilities
- Website Admin/Content Development
- Web Design
- Other

**What is the size of your organization?**

- Under 50
- 50-99
- 100-499
- 500-999
- 1000 & Over

**Which personal computers do you use?**

(Check all that apply)

- Powerbook G3
- PowerMac/PowerMac G3
- PowerMac G4/G4 Cube
- iMac
- iMac DV/DV+/Special Edition
- iBook
- IBM PC or compatible desktop
- IBM Laptop/Notebook
- Other

**What is your role in making purchases?**

- Final Decision Maker
- Specify Products or Vendors
- Recommend Product or Vendor
- No Role

**What is your annual purchasing budget?**

- \$0 - 25,000
- \$25 - 100,000
- \$100 - 500,000
- \$500 - 1,000,000
- > 1,000,000

# We'll Beat Any Price!

on any Mac Computer. Call for details.

**UMAX** Astra  
1200S SCSI  
Scanner  
only **\$49<sup>99</sup>!**  
#94312 Call for details.

**EPSON** Stylus Photo  
870 Printer  
only **\$299<sup>99</sup>!**  
\$100 mfr. mail-in rebate  
when you buy an Epson Photo  
printer and any digital camera.  
#57323 Call for details.

100MB USB Zip Drive  
only **\$69<sup>99</sup>!**  
#58759  
iomega  
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Dual Processor Power Mac G4s  
450MHz \$2,495 + EXTRA 128MB RAM FREE!  
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NEW iMacs  
starting at  
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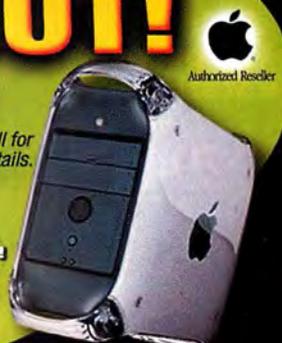
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**Power Mac G4 Cube**  
**\$1,794!**  
Call for details.

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500MHz \$2,494 save \$1,000!



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Have your RAM professionally installed by one of our factory-trained technicians for only \$30. Ask for #2214. Visit our Web site: macmall.com for more Viking memory. Prices are valid at time of press & are subject to change due to market fluctuations. Please call for most current pricing.

|        |                   |                       |
|--------|-------------------|-----------------------|
| #52913 | 64MB PC100 SDRAM  | \$146 <sup>99</sup>   |
| #52914 | 128MB PC100 SDRAM | \$276 <sup>99</sup>   |
| #52915 | 256MB PC100 SDRAM | \$528 <sup>99</sup>   |
| #58576 | 512MB PC100 SDRAM | \$1,384 <sup>99</sup> |

## Hot Peripherals!

### OLYMPUS

**D-460  
Zoom  
Digital  
Camera**

your price  
**\$499**  
#951256



**QPS Que!Fire Drive  
8x4x32 FireWire  
CD-RW**

your price  
**\$319<sup>95</sup>**

#52867  
Price reflects  
\$30 mfr.  
mail-in rebate.



### BELKIN

**USB Video  
Bus for Mac**

your price  
**\$74<sup>99</sup>**  
#54469



**4-Port USB  
Mini Hub  
Plus  
Graphite**

only  
**\$24<sup>99</sup>**  
#64201



**Airport  
Base Station**  
only

**\$294**  
#57373



#57369 Airport Card \$99<sup>99</sup>

# The New iMac!



## 350MHz G3 Processor and Stereo Sound!

Check out the affordable new iMac. It has a faster processor and a bigger hard disk so you can quickly surf the Internet, send and receive e-mail, whip out your homework assignments and play CDs on its Harman Kardon Odyssey audio system.

### Processor and Memory

- 350MHz G3 PowerPC processor
- 64MB SDRAM; support up to 1GB
- 7GB Ultra ATA hard disk drive
- Slot-loading 24X speed CD-ROM drive

### Display

- Built-in 15" (13.8" viewable image size)
- Resolutions up to 1024 x 768

### Communications

- Built-in 56K V.90 modem
- 10/100Base-T Ethernet
- 2 USB ports

### Extras Include:

- Apple Pro Keyboard and Pro Mouse
- Mac OS 9 ● AppleWorks
- Bugdom ● Nanosaur



350MHz iMac

only **\$799**

#951155 (Indigo only)  
64MB RAM, 7GB HD, 24X CD-ROM Drive, 56K modem

Own this iMac for as low as \$23/month with the NEW MacMall EZ Payment Plan!

# Make Your Own Movies!

## iMac DV—Your Personal Movie Studio!

The era of Desktop Movies has arrived! Assemble an all-star cast from among your friends and family. Then

with your DV camcorder, your new iMac DV and iMovie 2 software, you're ready for action.

### Luscious new colors!

Ruby or Indigo? It's your choice with the iMac DV Model!

### Includes USB and FireWire ports!

- 400MHz G3 PowerPC processor
- 64MB SDRAM; Support up to 1GB
- 10GB Ultra ATA hard disk drive
- Slot-loading 24X speed CD-ROM drive
- Built-in 15" CRT (13.8" viewable size)
- Two FireWire and two USB ports
- Apple Pro Keyboard and Pro Mouse



Own this iMac for as low as \$28/month with the NEW MacMall EZ Payment Plan!

400MHz iMac

only **\$999** #951066 (Indigo)  
#951065 (Ruby)

64MB RAM, 10GB Hard Drive, 24X CD-ROM Drive, 56K modem



All new Macs come standard with the Apple® Pro Optical Mouse and the Apple® Pro Keyboard.

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2. Click on "Shopping Cart"
3. Enter part# in "Catalog Express"
4. Click on "Proceed to Checkout"



**macmall.com 1-800-217-9492**

# New iMac DV+

**Now with iMovie 2!**

With the iMac DV+, you can slip the latest DVD title into the slot-loading drive and watch it on a brilliant 15" built-in display. And with the new Theater Mode, your viewing experience is positively cinematic, with high-fidelity playback of full-screen video.

**Awesome Performance!**

- 450MHz G3 PowerPC processor
- 64MB SDRAM; support up to 1GB
- 20GB Ultra ATA hard disk drive
- Slot-loading 4X DVD-ROM drive
- Built-in 15" CRT (13.8" viewable size)
- ATI RAGE 128 Pro with 8MB of SDRAM
- 10/100Base-T Ethernet (RJ-45)
- Apple Pro Keyboard and Pro Mouse

Own this iMac DV for as low as \$37/month with the NEW MacMall EZ Payment Plan!



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450MHz iMac DV+  
**only \$1,294** #951060 (Indigo)  
 #951064 (Sage)  
 #951062 (Ruby)  
64MB RAM, 20GB Hard Drive, 4X DVD-ROM Drive, 56K modem

# The Fastest iMac Ever!

## The NEW iMac DV Special Edition!

For those looking for even more, there's the new iMac DV Special Edition, the fastest, most powerful iMac ever. And it comes with iMovie 2!

**Desktop Movie Studio!**

- 500MHz G3 PowerPC processor
- 128MB SDRAM; Support up to 1GB
- 30GB Ultra ATA Hard Drive
- Slot-loading 4X speed DVD-ROM drive
- Two FireWire ports and two USB ports
- 10/100Base-T Ethernet
- Built-in 15" CRT (13.8" viewable size);
- Integrated Harman Kardon audio system
- Apple Pro Keyboard and Pro Mouse
- Mac OS 9 ● AppleWorks

500MHz iMac DV  
**only \$1,494**

#951063 (Graphite) #950988 (Snow)  
128MB RAM, 30GB Hard Drive, 4X DVD-ROM Drive, 56K modem



Own this iMac DV Special Edition for as low as \$42/month with the NEW MacMall EZ Payment Plan!

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**Palm m100**

Small and light!

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Mfr. reconditioned.



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Delivering more power and flexibility than ever before!  
 upgrade today for only

\$178<sup>99</sup> #951597  
Sys. req.: PPC, 24MB RAM, 30MB HD

## MacMall Exclusive!

**USB Digital Camera for only \$79!**

- True 640 x 480 resolution
- Perfect for electronic use
- USB & video connection
- Stores 32 photos
- Built-in flash
- Video enabled
- TV output
- Self-timer



**only \$79<sup>99</sup>** Call for details!  
 With any \$200 purchase! (after \$20 mfr. mail-in rebate)  
 Hurry, supplies are limited! Price of camera and shipping charges do not apply to minimum requirement.

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Now you can have low fixed monthly payments on consumer purchases of \$750 or more with the new MacMall EZ Payment Plan. It's fast and easy to apply for, and there are no application fees or prepayment fees. Call your Account Manager today, or apply online! You can complete your purchase in just minutes—and have your order tomorrow!

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Upgrades for Your  
Power Mac G4!

**VIKING**  
COMPONENTS

Have your RAM professionally installed by one of our factory-trained technicians for only \$30. Ask for #2214. Visit our Web site: macmall.com for more Viking memory. Prices are valid at time of press & are subject to change due to market fluctuations. Please call for most current pricing.

|         |                  |                       |
|---------|------------------|-----------------------|
| #813179 | 64MB SDRAM DIMM  | \$138 <sup>99</sup>   |
| #813177 | 128MB SDRAM DIMM | \$266 <sup>99</sup>   |
| #813178 | 256MB SDRAM DIMM | \$507 <sup>99</sup>   |
| #58576  | 512MB SDRAM DIMM | \$1,384 <sup>99</sup> |

## New Power Mac G4 Cube!



The Power Mac G4 Cube is the first computer to come standard with an optical mouse, for precise control on almost any surface. Bring hi-fidelity sound to music with the included Harman Kardon speakers.

Own this Power Mac G4 for as low as \$50/month with the NEW MacMall EZ Payment Plan!



New Apple®  
Power Mac G4 Cube  
only \$1,794  
#951069



At less than one quarter the size of most PC's, the Power Mac G4 Cube delivers awesome performance. With the power of the Velocity Engine, the G4 processor can calculate over one billion instructions per second! You'll have more than enough power to make Desktop Movies, be a desktop publisher, play 3D games and watch DVD movies right on your monitor!

### Virtual Silence

Cooled without a fan, the Power Mac G4 Cube runs in virtual silence. You can truly appreciate the crystal clear audio quality of the Harman Kardon speakers that are included. Bring hi-fidelity sound to music, movies, and games!

### Less Is More!

In another first, the G4 Cube connects to your display in an entirely new way, thanks to a bit of nifty engineering. It's called the Apple Desktop Connector (ADC), and it reduces desktop clutter even further by combining power, video and USB signals on a single slim cable.



All new Macs come standard with the Apple® Pro Optical Mouse and the Apple® Pro Keyboard.

### Outstanding performance

- 450MHz PowerPC G4 processor with Velocity Engine
- 1MB of backside level 2 cache
- 64MB of high-performance memory
- 20GB Ultra ATA/66 hard disk drive
- DVD-ROM drive with DVD-Video playback
- Harman Kardon speaker system
- ATI RAGE 128 Pro graphics card with 16MB of graphics memory, Apple Display Connector, and VGA connector

### Elegant design with a small footprint

- No-fan cooling system maintains a quiet working environment
- Apple Display Connector for easy display hookup and reduced desktop clutter
- Optical mouse for precision cursor control; works on nearly any surface and features a unique design that makes clicking extremely comfortable

## Advanced Display Technology!

|   |  |   |
|---|--|---|
| <p>Apple 22" Flat Panel Cinema Display<br/>your price \$3,999<br/>#951070</p>  | <p>New 17" Apple® Flat Screen Studio Display<br/>your price \$499<br/>#951071</p>  | <p>New Apple 15" Flat Panel Studio Display<br/>your price \$999<br/>#950991</p>  |
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**New Apple Power Mac G4 Available with Dual Processors!**

With either single or dual processors, the Power Mac G4 delivers up to twice the fire-power of previous G4 models.

**Supercomputer Performance!**

- 450 or 500MHz dual PowerPC G4 processor(s) depending on configuration
- 128 or 256MB of SDRAM
- Supports up to 1.5GB of PC100 SDRAM
- 30 or 40GB Ultra ATA/66 hard drive
- DVD-ROM drive or DVD-RAM drive

New Apple® Power Mac G4

starting at **\$2,494** #950986  
*Monitor sold separately.*



Own this Power Mac G4 for as low as \$70/month with the NEW MacMall EZ Payment Plan!

**Call Us Today or Visit [www.macmall.com](http://www.macmall.com) for Up-to-the-Minute Promotions and Deals!**

| Order   | MHz    | RAM   | HD   | Cache | Drive   | Modem | Networking       | Price   | or as low as |
|---------|--------|-------|------|-------|---------|-------|------------------|---------|--------------|
| #950986 | (2)450 | 128MB | 30GB | 1MB   | DVD-ROM | 56K   | Gigabit Ethernet | \$2,494 | '70/mo*      |
| #952964 | (2)500 | 256MB | 40GB | 1MB   | DVD-ROM | 56K   | Gigabit Ethernet | \$3,194 | '88/mo*      |
| #951067 | (2)500 | 256MB | 40GB | 1MB   | DVD-RAM | 56K   | Gigabit Ethernet | \$3,494 | '98/mo*      |

**Single Processor G4!**

The newest version of the Power Mac G4 is also available with a single 400MHz processor. It gives you the features of the dual processor models at a lower price: ATI RAGE 128 Pro graphics card, built-in USB and FireWire,



Monitor sold separately.

| Order   | MHz    | RAM  | HD   | Cache | Drive   | Modem | Networking       | Price   | or as low as |
|---------|--------|------|------|-------|---------|-------|------------------|---------|--------------|
| #951068 | (1)400 | 64MB | 20GB | 1MB   | DVD-ROM | 56K   | Gigabit Ethernet | \$1,594 | '45/mo*      |

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 AOL Keyword: MacMall **Mention your Priority Code: #ZMWDOC3**

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only **\$198<sup>99</sup>** #952775

**LaCie 8x4x32 External FireWire CD-RW Drive LACIE**



only **\$349<sup>99</sup>** #56665  
 #52201 Toast 4 Deluxe \$79<sup>99</sup>

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**Now Available!**

All the essentials. Made easy. Made for the Mac. upgrade for only

**\$254<sup>99</sup>** #849861

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- True 640 x 480 resolution
- Perfect for electronic use
- USB & video connection
- Stores 32 photos
- Built-in flash
- Video enabled
- TV output
- Self-timer



only **\$79<sup>99</sup>** Call for details!  
 With any \$200 purchase! (after \$20 mfr. mail-in rebate) Hurry, supplies are limited! Price of camera and shipping charges do not apply to minimum requirement.

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|        |                  |                     |
|--------|------------------|---------------------|
| #57816 | 64MB SDRAM DIMM  | \$147 <sup>99</sup> |
| #57817 | 128MB SDRAM DIMM | \$283 <sup>99</sup> |
| #57818 | 256MB SDRAM DIMM | \$856 <sup>99</sup> |

## Hot Peripherals!



**Internal Zip Drive for 1999 and New 2000 Model PowerBook G3s**

only  
**\$199<sup>99</sup>**

#57669  
with CPU purchase.



**Newer FireWire 2Go**

only  
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#48032



**PowerBook G3 Battery (Apple)**

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#47086

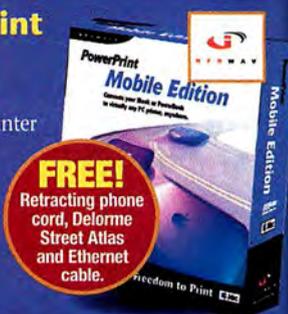


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Print to any printer on the road!

only  
**\$99<sup>99</sup>**

#76252



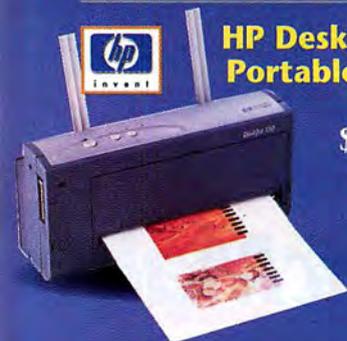
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Retracting phone cord, Delorme Street Atlas and Ethernet cable.



**HP DeskJet 350C Portable Printer**

only  
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#61359



# New Model PowerBooks!

**Speeds up to 500MHz!**

With up to 20GB storage capacity, the PowerPC G3 processor delivering speeds of up to 500MHz, plus room for up to 512MB of RAM and 3D graphics acceleration, the new PowerBook packs a tremendous wallop!

**Outstanding performance and stunning design!**

### Processor and Memory

- PowerPC G3 processors up to 500MHz
- 1MB backside level 2 cache
- Up to 10 hours of battery life through dual lithium-ion battery capability (requires additional battery)
- 64 or 128MB SDRAM standard with support for up to 512MB
- Fast Ultra ATA/66 hard drive up to 20GB

### Wired & wireless communications

- Support for AirPort wireless networking with built-in antenna and card slot
- Built-in 56K modem with V.90
- Built-in 10/100BASE-T Ethernet

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New PowerBook® G3 Series

**\$2,494**

#952730

starting at  
or as low as \$70/month with the **NEW MacMall EZ Payment Plan!**

### Desktop movies to go

- Easy-to-use iMovie 2 software included
- Two FireWire ports
- 14.1" display with 8MB of video RAM
- Support for dual-display mode

### Versatile expandability

- Hot-swappable expansion bay for hard drive, DVD, Zip or SuperDisk drive
- 5.7 lbs. (6.1 lbs. with battery and DVD)

| Order   | MHz | RAM   | HD   | Cache | Drive   | Modem | Networking   | Price   | or as low as |
|---------|-----|-------|------|-------|---------|-------|--------------|---------|--------------|
| #952730 | 400 | 64MB  | 10GB | 1MB   | DVD-ROM | 56K   | 10/100Base-T | \$2,494 | \$70/mo*     |
| #952731 | 500 | 128MB | 20GB | 1MB   | DVD-ROM | 56K   | 10/100Base-T | \$3,494 | \$98/mo*     |

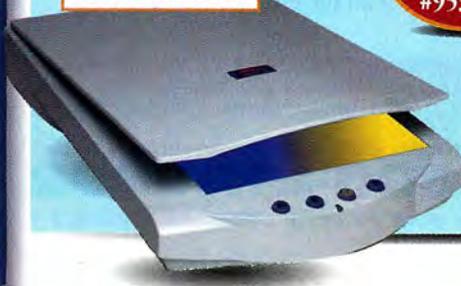
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Buy one Umax Astra 3400 Scanner and get a Lexmark Z22 printer FREE!

### Astra 3400 Features:

- 600 x 1200dpi; 9600dpi max.
- 42-bit internal color
- 8.5" x 11.7" max. scan area

**UMAX**



**both for only \$99<sup>99</sup>†**  
#953258



### Z22 Printer Features:

- Up to 1200 x 2400 dpi resolution
- Up to 6.5 ppm; 3.5 ppm color
- Thermal inkjet technology
- USB and parallel interface

†Price after rebate. \*Printer free after \$80 mfr. mail-in rebate.

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3. Enter part# in "Catalog Express"
4. Click on "Proceed to Checkout"



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# New iBooks up to 466Mhz!

## The iMac To Go Now Has Movies To Go!

The new Indigo iBook's hard disk capacity has grown 60% to 10GB. That extra disk space will come in handy for making your own desktop movies with iMovie 2!

**Outrageous Performance!**

- 366MHz PowerPC G3 processor
- 64MB SDRAM; exp. to 320MB
- 10GB Ultra ATA hard disk
- 24X CD-ROM
- 12.1" TFT active-matrix display

366Mhz Indigo iBook

**\$1,494**

now only

#952732 Indigo or as low as **\$45/month** with the **NEW MacMall EZ Payment Plan!**



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**Diamond Rio 500**  
only **\$251.99**  
#51368



**KEYSPAN**

**Digital Media Remote**

only **\$49.99**  
#51342



**Par Technology Kritter USB Camera**

only **\$98.99**  
#56642



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## The New iBook Special Edition!

Now with DVD!

Looking for top performance? Check out the iBook Special Edition!

**The Fastest iBook!**

- 466MHz PowerPC G3 processor
- 64MB of SDRAM; supports to 320MB
- 10GB hard disk ● 6X DVD-ROM

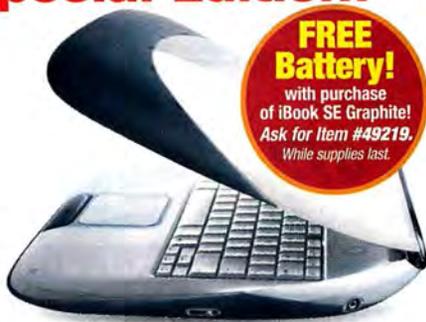
466MHz iBook Special Edition with DVD

**\$1,794**

only

#952733

or as low as **\$50/month** with the **NEW MacMall EZ Payment Plan!**



**FREE Battery!**

with purchase of iBook SE Graphite! Ask for Item #49219. While supplies last.

The DVD-ROM drive lets you watch movies on either the iBook screen or on a standard television!



**Airport Base Station**  
only **\$294**  
#57373



#57369 Airport Card \$99.99

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Packed with great features for easier financial management!

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#849561

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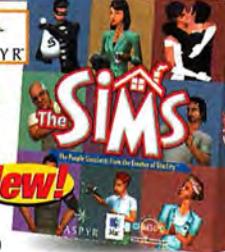
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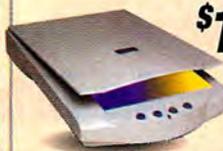


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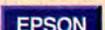
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Item #UT11664

\*Rebate coupon available at [www.warehouse.com/rebate/connect](http://www.warehouse.com/rebate/connect), or call us at 1-800-390-0706 to request one. Offer good 8/21/2000-11/20/2000.

## USB Floppy Drive

Available in 7 colors!

Only **\$84.95**

Item #DR12164

Imation Mac Neon 3.5" Disk 10-pack, only \$5.99 (only 59¢ each!), item #MED0540.

## HP DeskJet 935c Color Printer

Only **\$199.95**

Item #PR16225

• USB compatible only  
• 9ppm blk; 7.5ppm clr • PhotoREt III technology  
Black Ink Cartridge, only \$29.99, item #67208.

## USB iMac USB Hubs



White Hub only **\$39.99** each

Item #VW64296

• Color-coordinates with any iMac color!  
• Other colors available, call for details

KEYSPAN

## UMAX Astra 2200 Color Scanner

As low as **\$99.95\*** after \$20 rebate

Item #IN8143

• USB and SCSI interface

Price AFTER manufacturer's \$20 mail-in rebate. Before rebate: \$119.95. Rebate coupon available at [www.warehouse.com/rebate/umax](http://www.warehouse.com/rebate/umax), or call us at 1-800-390-0706 to request one. Offer expires 1/31/2001 or while supplies last.



36-bit Color!

UMAX

PAGE 3 OF 8

# FREE+ 64MB RAM Upgrade

## NEW iMac / 350MHz

Indigo: Item #CPU1649

**\$799!**

Business Lease only \$25/mo.†

FREE+ 64MB RAM UPGRADE

Ask for item numbers AAP1150 and INSTL10.



This entry-level iMac is the one you want for surfing the Internet. You get a faster processor, a bigger hard drive, and a built-in Harman Kardon Odyssey audio system!

### Features:

- 350MHz PowerPC G3 Processor
- 64MB SDRAM (exp. to 1.0GB)
- 7.0GB Ultra/ATA Hard Drive
- 24X (maximum) CD-ROM Drive
- 56K V.90 Internal Modem
- 15" Display (13.8" Viewable Image Size)
- Two USB Ports
- Apple Pro Keyboard and Optical Mouse

## NEW iMac DV / 400MHz

Indigo: Item #CPU1650

**\$999!** ea.

Business Lease only \$29/mo.†

Ruby: Item #CPU1651

FREE+ 64MB RAM UPGRADE

Ask for item numbers AAP1150 and INSTL10.



The iMac DV takes you beyond the Internet and into the home movie business. Featuring iMovie 2, the iMac DV brings desktop video editing to an under-\$1000 iMac.

### Features:

- 400MHz PowerPC G3 Processor
- 64MB SDRAM (exp. to 1.0GB)
- 10.0GB Ultra/ATA Hard Drive
- 24X (maximum) CD-ROM Drive
- 56K V.90 Internal Modem
- 15" Display (13.8" Viewable Image Size)
- Two USB Ports/Two FireWire Ports
- Apple Pro Keyboard and Optical Mouse

## iDOCK 2 USB MULTIPOINT HUB



- Floppy drive
- Swivel Base for iMac
- 4 USB ports
- 2 Serial ports
- 1 ADB port

Only **\$259.99**

Item #DEH4620

Includes 3.5" floppy drive!



## SPRING CLEANING 3.0

FREE\*

with any purchase from MacWAREHOUSE

Item #ZZZ1760

- Get the trash out of your Mac to help prevent system crashes!
- Uninstall old software fast!
- Improved interface!
- Faster searches!

\*\$3.95 shipping and handling applies. Shipped in promotional packaging. Hurry! Offer good while supplies last.



## Orbit USB for Mac

Only **\$49.95**

Ask for item #INP1761

- Designed for iMacs and USB Power Mice
- Fits the natural shape of your hand • Manufacturer's 5-year warranty



KENNINGTON

## Stylus Color 777 Printer

Only **\$99.95**

Ask for item #PR16408

- 8ppm black • 6ppm color • 2800 x 720 dpi



## DSC-S30 Cyber-Shot Digital Camera

Only **\$499.95**

Ask for item #IN8611

- 1.3 megapixel optical res. • 2" LCD
- 3x optical/6x digital zoom • 4MB memory stick



SONY

Order online at: [www.warehouse.com](http://www.warehouse.com)

# ing at just \$799!

• Connectix • Sony • VST • Epson • Farallon • Microsoft

## when you buy any iMac!

Ask for item numbers AAP1150 and INSTL10.

### NEW iMac DV+ / 450MHz

Indigo: Item #CPU1652

**\$1299!** ea.

Ruby: Item #CPU1653

Business Lease only \$38/mo.<sup>§</sup>

Sage: Item #CPU1654

**FREE†**  
64MB RAM  
UPGRADE

Ask for item numbers AAP1150 and INSTL10.



### NEW iMac DV Special Edition / 500MHz

Graphite: Item #CPU1655

**\$1499!** ea.

Snow: Item #CPU1656

Business Lease only \$44/mo.<sup>§</sup>

**FREE†**  
64MB RAM  
UPGRADE

Ask for item numbers AAP1150 and INSTL10.



The iMac DV+ featuring iMovie 2, enables you to watch the latest DVD title in Theater Mode with its DVD-ROM drive.

#### Features:

- 450MHz PowerPC G3 Processor
- 64MB SDRAM (exp. to 1.0GB)
- 20.0GB Ultra/ATA Hard Drive
- DVD-ROM • 56K V.90 Internal Modem
- 15" Display (13.8" Viewable Image Size)
- Two USB Ports/Two FireWire Ports
- Apple Pro Keyboard and Optical Mouse

iMac DV Special Edition has it all — iMovie 2, Theater Mode, a 500MHz G3 processor, and a 30.0GB hard drive!

#### Features:

- 500MHz PowerPC G3 Processor
- 128MB SDRAM (exp. to 1.0GB)
- 30.0GB Ultra/ATA Hard Drive
- DVD-ROM • 56K V.90 Internal Modem
- 15" Display (13.8" Viewable Image Size)
- Two USB Ports/Two FireWire Ports
- Apple Pro Keyboard and Optical Mouse

†Free 64MB RAM upgrade AFTER MacWAREHOUSE \$100 mail-in rebate. Price before rebate is \$129.95. Installation fee of \$29.95 is required. Rebate coupon is available at [www.warehouse.com/rebate/macwarehouse](http://www.warehouse.com/rebate/macwarehouse) or call us at 1-800-390-0706 to request one. Offer not valid on the purchase of any reconditioned iMac. Offer expires 11/30/2000. MacWAREHOUSE reserves the right to terminate this offer at any time.

### NEW MICROSOFT OFFICE 2001: MAC EDITION

Personal productivity applications designed specifically for the Mac.

Microsoft Office 2001 includes:

- Microsoft Word 2001
- Microsoft Excel 2001
- Microsoft PowerPoint 2001
- Plus, Entourage e-mail and personal information manager

Microsoft Office 2001 Upgrade VW74556 ..... \$269.95

Microsoft Office 2001 Full Version VW74557 ..... \$439.95

Ownership of any prior version of Office, Word, Excel, or PowerPoint is required for upgrade.

Upgrade for only **\$269<sup>95</sup>**

Item #VW74556

**Microsoft®**



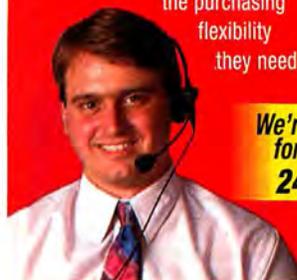
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- ▶ Service **Government**
- ▶ Support **Education**
- ▶ Satisfaction **Home**

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• Order by phone or online 24 hours a day, 7 days a week. Either way, you'll receive fast service, backed by an experienced tech support staff.

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### EtherMac iMac iPrint Adapter with built-in PhoneNet!

Only **\$94.99**

Item #DEP1900



- Connects your iMac to LocalTalk printers and other Macs
- Easy plug-and-play installation **Farallon®** Ethernet iPrint Adapter for StyleWriter, only \$74.99, item #DEP1739.

### Canon ZR-10 Digital Video Camera

Only **\$899.95**

Item #IN8604



- 10X Optical/200X Digital Zoom
- Image stabilizer
- 2.5 LCD screen

**Canon**

PAGE 4 OF 8

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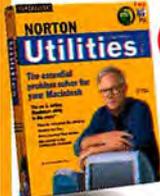
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# Apple PowerBook G3

• Fuji • TDK • Apple • PowerLogix • Imation • Keyspan • Hewlett-Packard

## Norton Utilities 5.0



Only **\$99.95**

Item #UT11546

- Prevents computer disasters
- Speeds recovery from emergencies

SYMANTEC

## USB Twin Serial Adapter



Only **\$79.99**

Item #DAD1637

KEYSPAN

- Supports up to 1Mbps per port
- Compatible with Apple StyleWriters and personal LaserWriters

## NEW! Palm m100 Connected Organizer

MAC SOFTWARE INCLUDED IN BOX

Only **\$149**

Item #BND3947

- Includes HotSync Cable
- Convenient clock positioned for at-a-glance timekeeping



## Olympus D-460 Zoom Digital Camera



Only **\$399.95**

Item #IN8582

- 3X optical zoom
- Up to 1280 x 960 dpi

OLYMPUS

## SupraExpress V.90 56K Modem

Only **\$78.99**

Item #DMD3503

- 56K ITU Standard
- 230Kbps throughput
- Voicemail/Caller ID

\*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

DIAMOND

PAGE 5 OF 8

# HP LaserJet Printers

As low as

**\$769.95!**

Black Toner Cartridge (2100): Item #PA1871, only \$99.95

## HP LASERJET 2100M

- Prints 10ppm
- 1200 dpi resolution
- HP PostScript Level 2
- LocalTalk connectivity

Item #PR14691



HP LaserJet 2100 shown.

## HP LASERJET 4050N

~~\$1479.95~~  
- \$200 mfr's mail-in rebate  
Only **\$1279.95\***

Lease It for \$43/mo.  
Item #PR14947

- Prints 17ppm
- 1200 dpi max. res.
- 133MHz RISC processor
- Ethernet 10/100Base-TX

Black Toner Cartridge (4050): Item #PR13025, only \$85.99

## HP LASERJET 5000N

Only **\$2049.95**

Lease It for \$59/mo.  
Item #PR13443

- Prints 16ppm
- Up to 1200 dpi max. res.
- Prints sizes 3"x 5" thru 11"x 17"

Black Toner Cartridge (5000): Item #PR13742, only \$139.99

## HP LASERJET 8000N

Only **\$2549.95**

Lease It for \$74/mo.  
Item #PR13724

- Prints 24ppm
- Up to 1200 dpi max. res.
- 133MHz RISC processor

Black Toner Cartridge (8000): Item #63223, only \$155.99

## HP LASERJET 8100N

- Prints 32ppm • 1200 dpi

Item #PR14315 ..... Lease It for \$84/mo. ....

**\$2899.95**

Black Toner Cartridge (8100): Item #PA1662, only \$178.99

\*Price AFTER manufacturer's \$200 mail-in rebate is \$1479.95 - \$200 rebate = \$1279.95. Rebate coupon available at www.warehouse.com/rebate/HP or call us at 1-800-380-0766 to request one. Offer valid from 7/10/2000 - 10/31/2000.

## MAC OS 9.0.4

Only **\$99.95**

Item #SYS1068

- Sherlock 2: Easily find people, news, and shopping on-line!
- Easy-to-use, functional interface
- Additional FireWire® and USB support

\*Tools is a bonus to Macintosh® users running the Mac OS 9.0 or 9.0.4 operating system, and can be accessed at www.apple.com. See box for details.

**BONUS!**  
Tools from Apple  
with purchase of  
Mac OS 9.0.4!



## VIEWSONIC GS790



Ideal for graphics applications!

- 19" (18" viewable image size)
- 22 HOR
- 1600 x 1200 @ 76Hz
- Short depth design

Only **\$419.95**

Item #MT3318



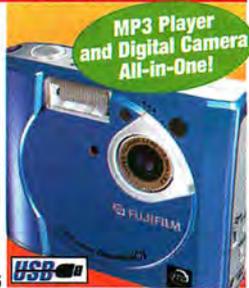
## NEW! FINEPIX 40i DIGITAL CAMERA

Only **\$699.95**

Blue: Item #IN8802

- 2.4 megapixels
- Captures pictures, movies and music
- Includes tethered remote, headphones, and rechargeable battery kit!

FinePix 40i Digital Camera (Silver) IN8805.....\$699.95



## IOMEGA 100MB ZIP DISKS

100MB Zip Disks only **\$8.99** each, in 20-pack

Item #BND3616

100MB Zip Disk (20-pack) BND3616 .....\$179.80



## TDK All Speed CD-Rs

Only **49¢** each, in 100-pack spindle

Ask for item #ME8906

- 74 min.
- 650MB

TDK



## PowerLogix iMac Upgrade

500MHz G3 with 1MB Backside Cache

Only **\$499**

Ask for item #DRI4150

- Installs in minutes
- Force utility included

PowerLogix



## Apple PowerBook G3 Battery

As low as **\$139.95**

Ask for item #ACC3728

- Lithium-Ion
- ACC3728 (fits new 1999/2000 models) .....\$139.95
- ACC3307 (fits 1998 models) shown .....\$199.95



Order online at: [www.warehouse.com](http://www.warehouse.com)

# — up to 500MHz!

• Palm • Iomega • Olympus • Symantec • Targus • ViewSonic



## New! Apple PowerBook G3s

- Up to 500MHz PowerPC G3 processor
- Up to 128MB PC100 SDRAM (expandable up to 512MB)
- DVD-ROM drive
- Up to 20GB Ultra ATA/66 hard drive
- iMovie 2 software
- 1MB Backside Level 2 Cache
- 14.1" active-matrix display
- Support for optional AirPort card for wireless connection to your network or the Internet
- Two 400Mbps FireWire® ports
- Two 12Mbps USB ports

**PowerBook G3/400MHz processor**  
 • 64MB SDRAM • 6.0GB Ultra ATA/66 HD • DVD-ROM  
 • 14.1" active-matrix display

**\$2499**

Item #CPU1641  
 Lease It for \$73/mo.\*

**PowerBook G3/500MHz processor**  
 • 128MB SDRAM • 12.0GB Ultra ATA/66 HD • DVD-ROM  
 • 14.1" active-matrix display

**\$3499**

Item #CPU1642  
 Lease It for \$102/mo.\*



**Up to 500MHz**

### NEW! SPECIAL EDITION iBOOK

- 466MHz PowerPC G3 processor
- 64MB SDRAM (exp. to 320MB)
- 10.0GB Ultra ATA/66 hard drive
- DVD-ROM
- 56K modem
- 12.1" Active-Matrix Display
- iMovie 2

**Only \$1799**

Lease It for \$52/mo.\*

Item #CPU1644



Cool graphite color!

### NEW! INDIGO iBOOK G3

- 366MHz PowerPC G3 processor
- 64MB SDRAM (exp. to 320MB)
- 10.0GB Ultra ATA/66 hard drive
- 24X max. variable CD-ROM
- 56K modem
- 12.1" Active-Matrix Display
- iMovie 2

**Only \$1499**

Lease It for \$44/mo.\*

Item #CPU1643



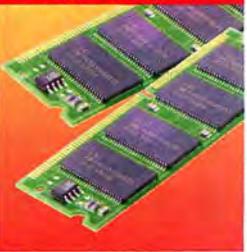
### POWERBOOK G3 PC100 MEMORY

- New PC100 100MHz memory upgrades for 400MHz and 500MHz G3s

**64MB PowerBook G3 Memory**  
**\$169<sup>95</sup>** each

Item #CHP1064

Memory prices subject to change.



### AIRPORT CARD & STATION

- Transmits up to 150 feet
- Speeds up to 11MB per second

**AirPort Card for PowerBook/iBook, only \$99**

Item #DEC4142

AirPort Base Station for iBook (shown)  
 Item #DEB2777 .....\$299



Wireless Internet Access!

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### 120MB USB SuperDisk Drive



**Only \$149<sup>99</sup>**

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**IMATION**

- Reads and writes 3.5" floppies
- USB & Hot-Swappable

120MB SuperDisk Media 10-pack, only \$99.90 (only \$9.99 ea.), item #BND3239.

### Targus Universal Notebook & Printer Case

**Only \$69<sup>95</sup>**

Item #AC28478

- Two individual padded compartments that measure 11" x 13" x 2.5"



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# NEW Adobe Photoshop

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## NEW! Olympus C-3000 Zoom Digital Camera



Only **\$799<sup>95</sup>**

Item #IN8732

- 3.34 Megapixel
- USB connectivity
- 3X optical/7.5X digital zoom lens
- 15 resolution modes

**OLYMPUS**

## 64MB SmartMedia Cards

Only **\$149<sup>95</sup>**

Item #MY12482

- Digital film for digital cameras
- Compatible with new digital cameras with SmartMedia slot



## NEW! HP ScanJet 5370Cse

Only **\$299<sup>95</sup>**

Item #IN8767

- 42-bit color
- 1200 x 2400 optical dpi
- USB or parallel interface
- HP PrecisionScan Pro software



## PowerUser 8x CD-Rs



Only **39¢ ea.**  
(in 50-pack, only \$19.50)

Item #BN7866

**POWER USER**

While supplies last.

## Sony Digital FD85 Mavica

Only **\$699<sup>95</sup>**

Item #IN8614

- 1.3 megapixel
- 3x Optical/6x Digital Zoom
- 4x Quick access floppy disk drive
- 2.5" Solar LCD monitor



MPEG/Voice recording modes included

**SONY**



**PAGE 7 OF 8**

# Power Mac G4 Prices Reduced Up to \$500 Off Now as low as **\$1299!**

While supplies last.



- Up to 500MHz G4 processor
- Up to 256MB SDRAM
- Up to 27.0GB hard drive
- DVD-ROM or DVD-RAM drive
- 1MB Backside Level 2 Cache

Save \$100!

**400MHz G4 processor/64MB SDRAM** (exp. to 1.5GB/10.0GB Ultra ATA/66 hard drive/DVD-ROM/56K modem)

Item #CPU1574 ..... Was: \$1399 NOW: **\$1299**

While supplies last. **Business Lease only \$38/mo.**

Save \$200!

**450MHz G4 processor/128MB SDRAM** (exp. to 1.5GB/20.0GB Ultra ATA/66 hard drive/DVD-ROM/56K modem/100MB Zip drive)

Item #CPU1575 ..... Was: \$1999 NOW: **\$1799**

While supplies last. **Business Lease only \$52/mo.**

Save \$500!

**500MHz G4 processor/256MB SDRAM** (exp. to 1.5GB/27.0GB Ultra ATA/66 hard drive/DVD-RAM/100MB Zip drive)

Item #CPU1576 ..... Was: \$2899 NOW: **\$2499**

While supplies last. **Business Lease only \$73/mo.**



G4/450MHz, CPU1575, only \$1799

Monitors sold separately.

## 17" APPLE STUDIO DISPLAY

With **Diamondtron CRT!**

- 17" (16" viewable) Diamondtron CRT
- 0.25mm aperture grille pitch
- 1600 x 1200 @ 60Hz max. resolution

## NEW LOW PRICE!

Was: \$349  
Now only **\$299**

Item #MON1044

While supplies last.



## MACINTOSH G4 SERVER

- 400MHz PowerPC G4
- 128MB SDRAM (exp. to 1.5GB)
- 20.0GB Hard Drive • DVD-ROM
- AppleShare IP 6.3

## NEW LOW PRICE!

Was: \$2999  
Now only **\$1999**

Item #CPU1582

While supplies last.

Save \$1000!



## SONY DCR-PC100 VIDEO CAMERA

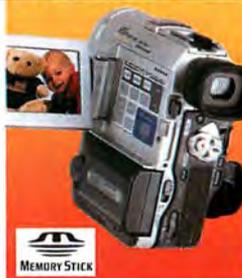
**SONY**

- 10x Optical/120x Precision Zoom
- 2.5" Precision SwivelScreen™ LCD
- 1/4" CCD

## NEW LOW PRICE!

Was: \$1999.95  
Now only **\$1799<sup>95</sup>**

Item #IN8595



## VIEWSONIC GS815 21" MONITOR

NEW!



Ideal for graphic applications!

- 21" (20.0" viewable image size) monitor
- 1920 x 1440 @ 80Hz max. res.
- .21mm horiz. dot pitch
- Space saving, short depth design

Only **\$859<sup>95</sup>**

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## Macromedia Flash 5

Upgrade only **\$139<sup>95</sup>**

Ask for item #UPG1303

Flash 5 Full Version, only \$389.95, item #COM1360.



## EPSON ELP 5700i Laser Printer

Only **\$349<sup>95</sup>** after mfr's \$50 mail-in rebate

Ask for item #PR15675

- 8ppm • Up to 1200 dpi • USB Mac only
- \*Price BEFORE mfr's mail-in rebate is \$399.95 - \$50 rebate = \$349.95. Rebate coupon in box. Offer expires 1/31/2001. Toner Cartridge, only \$89.95, item #PA2603.



## MacSense XRouter Cable/DSL Sharing Switch

Only **\$179<sup>99</sup>**

Ask for item #DEB2814

- Supports Mac, PC, and UNIX
- Built-in 4-port 10/100 Switch
- Connect up to 250 users using one ISP account and a cable/DSL modem

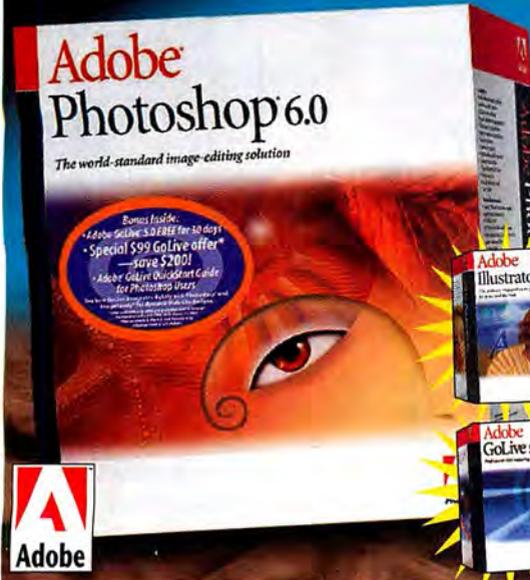


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# 6.0 Upgrade for only \$179<sup>95!</sup> Item #UPG1306

• Epson • ATI • Sony • Adobe • Macromedia • IBM

## NEW Adobe Photoshop 6.0



Upgrade only \$179<sup>95!</sup> Item #UPG1306

- Tighter integration with ImageReady 3.0
- Resolution-independent vector output
- New layer management

Photoshop 6.0 Full Version Item #GRA3486 ..... \$599<sup>95</sup>

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Adobe Illustrator 9.0 Upgrade Item #UPG1248 ..... \$149<sup>95</sup>

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GoLive 5.0 Upgrade Item #UPG1254 ..... \$99<sup>95</sup>

GoLive 5.0 Full Version Item #COM1343 ..... \$289<sup>95</sup>

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- Digital film for storing pictures
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8MB Storage Card only \$29<sup>95</sup>

Item #MY7648

48MB Storage Card only \$99<sup>95</sup>

Item #MY10017

Digital film for your digital camera!

PCMCIA Adapter Item #EX8129 ..... \$12.95

### RAGE ORION ACCELERATOR



- Provides outrageously fast 128-bit 3-D gaming

Only \$99\* after mfr's \$30 mail-in rebate

Item #DRI3234

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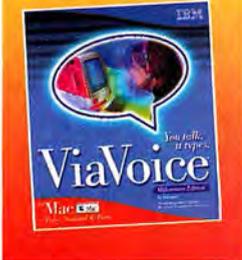
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ViaVoice IBM.

- Powerful speech recognition software
- Understands simple, natural, continuous speech!
- Easy installation means you'll be up and running in no time!

Only \$74<sup>95</sup>

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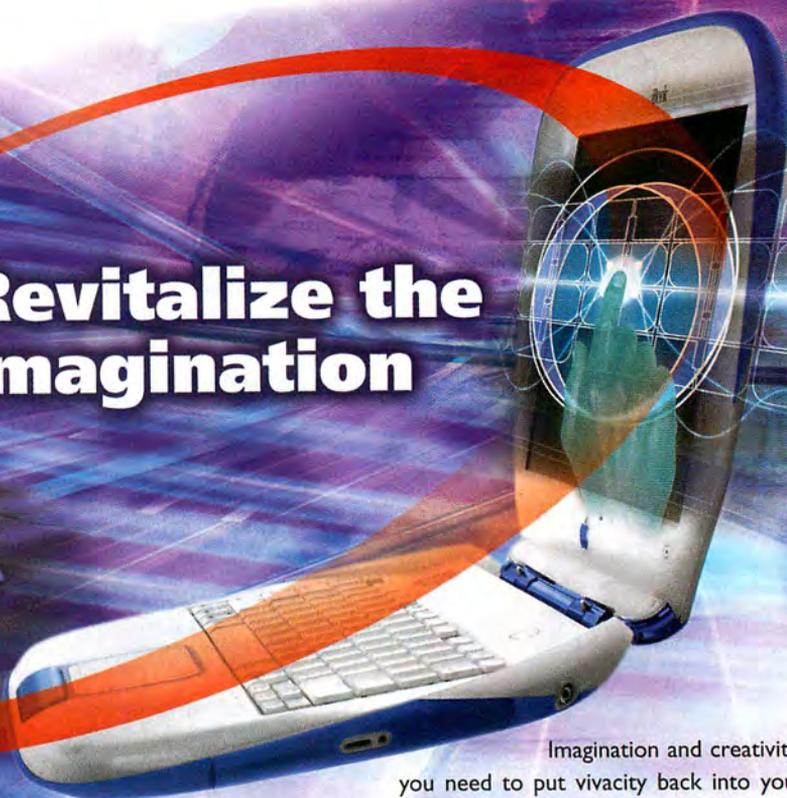
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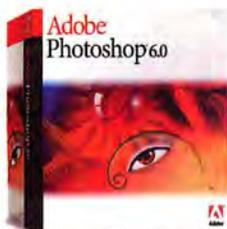
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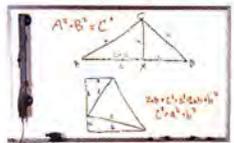
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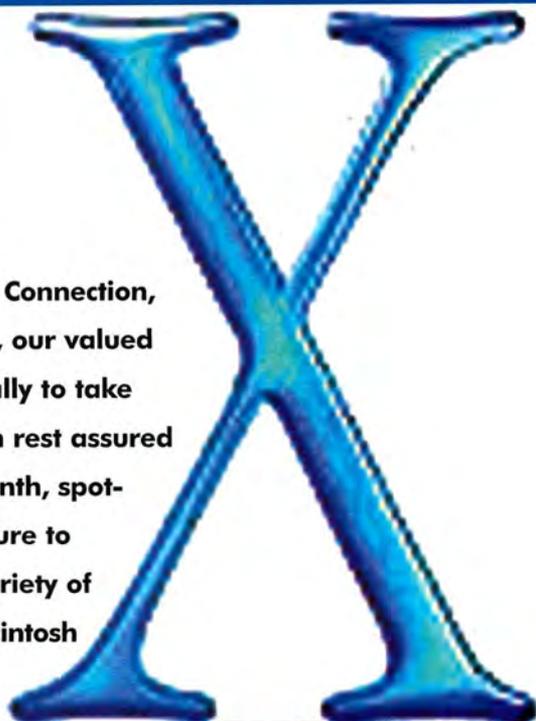


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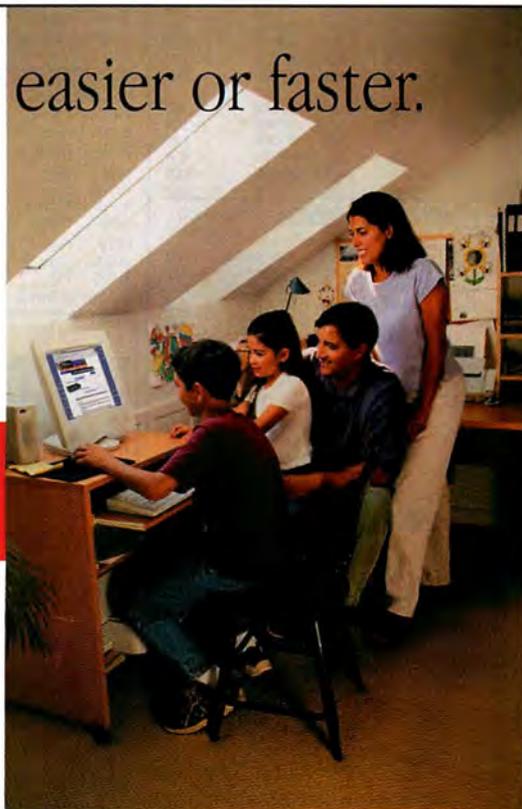


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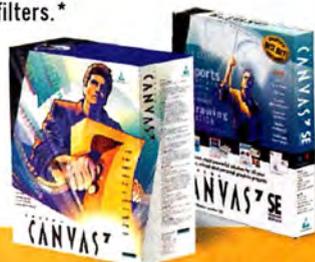
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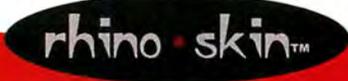
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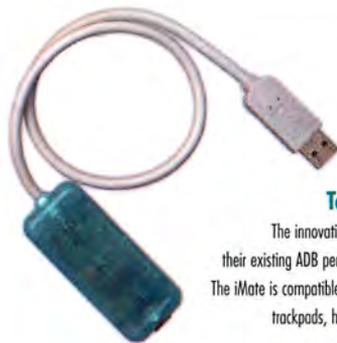


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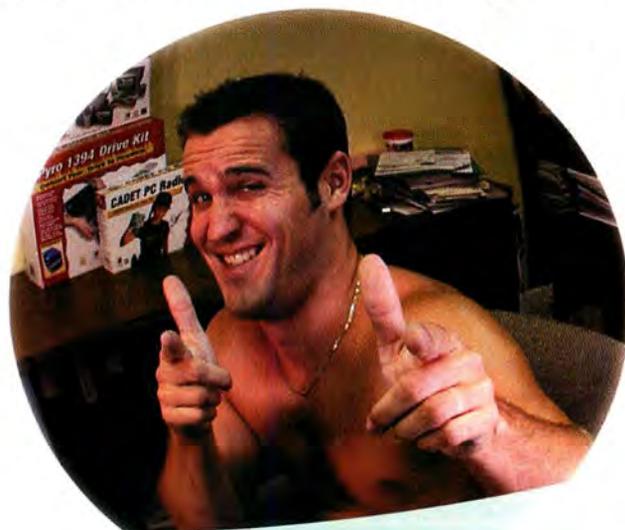
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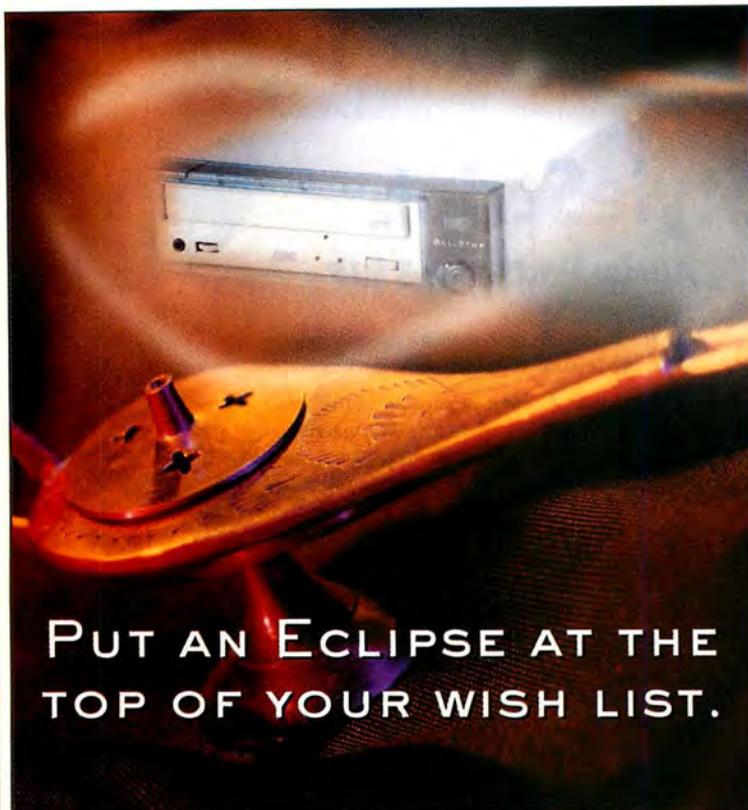
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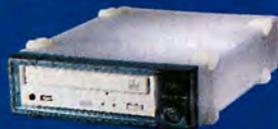
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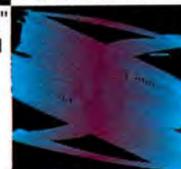


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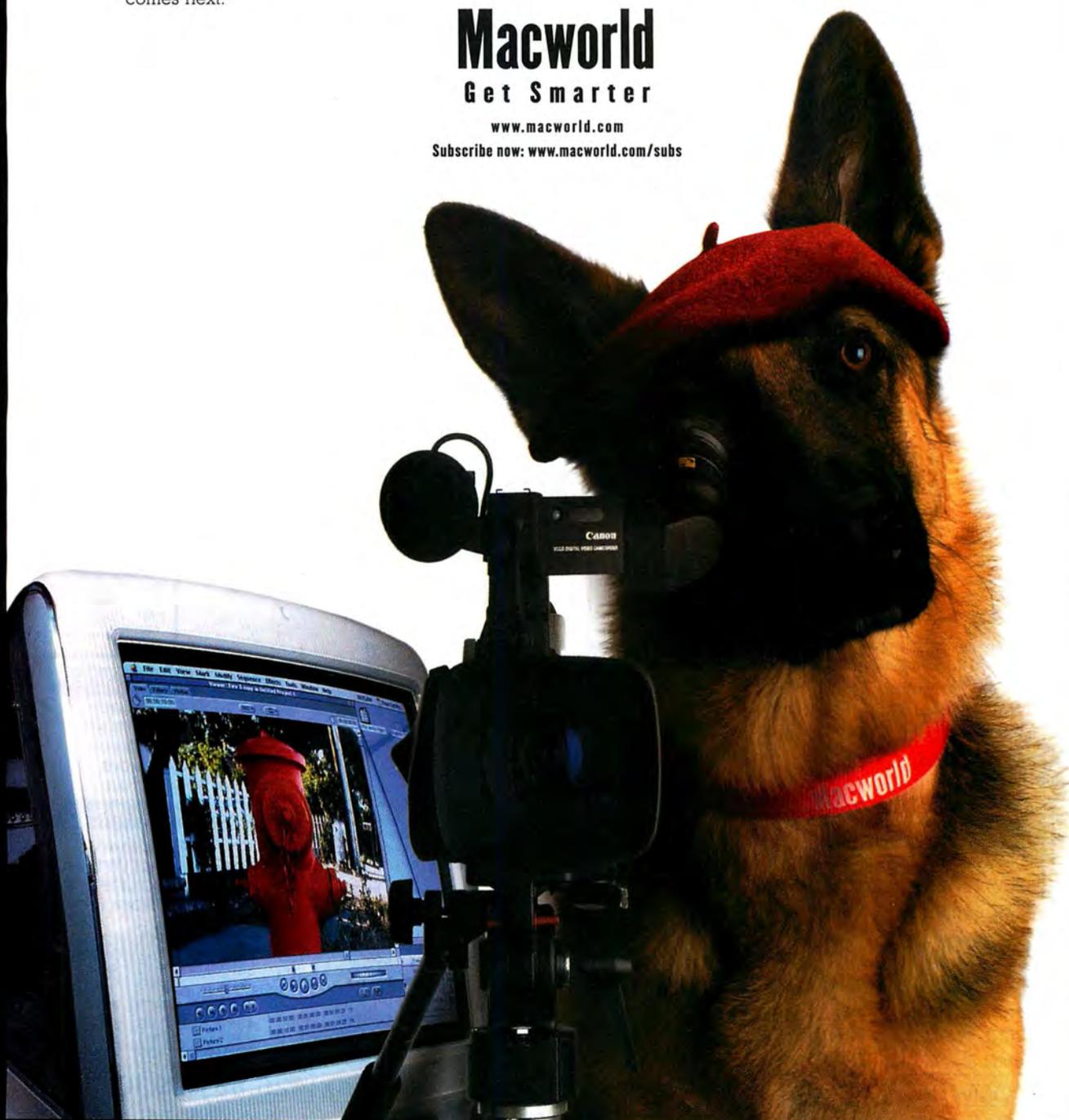
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continued from page 192

Brother from using the TV camera over the toilet.

But scary-sounding high-tech paranoia schemes have been foisted upon us before, and they almost never pan out. Remember the Y2K bug? There were people digging bomb shelters in Montana, for heaven's sake, and a lot of publishers got rich on what turned out to be a marketing scam, for all practical purposes. So far, the theft-of-privacy threat remains mostly in the realm of the theoretical and the someday.

### Spam and Privacy Tragedies

I'm not claiming that there are no downsides to living in a database nation. Junk e-mail, for example, is a true annoyance.

Nor do I need reminders of the real, if isolated, tragedies caused by the abuse of personal information: the credit-report error that haunts someone for years, the wife beater who tracks down his ex-spouse's new address, or the AIDS patient who's denied a job because of medical records. These stories are genuinely upsetting.

But there are costs to fearmongering, too. I know people who have turned off their browsers' cookies (preference files for Web sites) out of paranoia—and who therefore have to type out convoluted user IDs and access codes with every visit to a restricted site. Thousands of people refuse to buy anything online—never mind that their credit card numbers are at infinitely greater risk of being stolen at a gas station or restaurant. I know a guy who pays for everything at stores, in cash, for fear of giving any private information to anyone. But take it from someone whose credit card company refunds 2 percent of his annual purchases: that kind of paranoia can cost you.

Look, I don't want Big Business to invade every corner of our lives. I'll back any law against sending spam, sharing medical records, or collecting our personal data without telling us. My issue is with the marketing of privacy hysteria. There are different ways to lose your privacy—and not all are scary. **m**

DAVID POGUE ([www.davidpogue.com](http://www.davidpogue.com)) is a coauthor of the forthcoming *Piloting Palm*, the story of Palm Computing (O'Reilly).

Opinion

The Desktop Critic

DAVID POGUE

# Take My Privacy, Please

COULD SOMEBODY REMIND ME WHY WE'RE PANICKING?



**H**ey, want to have an instant best-seller? Write a book about the loss of privacy in the Information Age. Want to sell newspapers? Run a headline about how the evil Software Conspiracy tracks our every move. Movie? Novel? Party conversation? With high-tech surveillance, you've got yourself a winning theme.

I don't dispute that some tracking is going on. Our phone calls, credit card transactions, and plane reservations have been recorded on some computer somewhere, for years. No, what I'd like to know is, what—in practical, nonhysterical terms—is *wrong* with this kind of data collection? Reporters, moviemakers, and publishers have glommed on to the invasion-of-privacy thing because it sells, but the thinking never seems to go much further than *They're watching you*.

So, aside from our visceral negative reactions, what's the downside? The few possibilities I've come across revolve around these arguments:

- **We'll be targeted by marketers.** If you visit Amazon.com, you're greeted by ads for books in categories you've bought from recently. When you do a search for car information on Yahoo, the results page may offer a car ad at the top of the screen.

The writing is on the wall: Pretty soon, they'll send us ads *targeting our interests!*

And the problem is . . . ? I say, bring it on! If I have to look at advertising, why not see ads for

products that interest me, for heaven's sake? My interests are Macs, gadgets, Broadway musicals, magic, tennis, books, kids—let the targeting begin!

No, our problem is that not *enough* ads are aimed at specific audiences. When companies spend millions to show me ads for SUVs and adult diapers, they're wasting their dollars and my time.

- **We'll be caught.** Nobody wants to get caught being naughty. People hate the thought that their criminal, extramarital, or pornographic interests might one day come to light.

In my book, that's a pretty flimsy reason for championing privacy. If you want only to cover up violations of the law—moral, marital, or other—your problem isn't the threat of losing privacy; it's living in a society that has laws and a conscience.

- **Our information will be made public someday.** No doubt about it: life as a political candidate or celebrity is no picnic. Thanks to massive databases that shadow our every life event, public officials are open to scrutiny by every reporter and opponent.

On the other hand, aren't we better off knowing about Richard Nixon's deception, Gary Hart's affair, Bill Clinton's draft dodge? Whether you're a supporter or an opponent, knowing is better than not knowing.

- **It's just creepy.** It *is* creepy to think that someone is watching us. It makes us nervous, fuels dramatic opinion columns, and keeps the producers of *Big*

*continues on page 191*

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# Yeah, we're one of those obnoxious over-achieving families.



Turbo Mouse: Runs successful Internet start-up.



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