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# Macworld

## *Ice cool*

Welcome to the future 

New **colour** iMacs

Giant screens

Save your life!

QuarkXPress tips

**WIN**  
A TOP G3  
PORTABLE

**NO CD?**

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YOUR NEWSAGENT

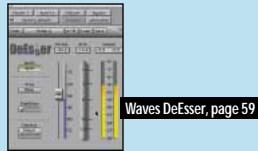
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EXCLUSIVE!

All the new G3 Power Macs tested



Apple has unleashed a stunning set of new Power Macs, combining iMac style with powerful new features, such as FireWire and USB. Macworld Lab tests every new model.

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Plus a year's review and top tips

Macworld read me first

Simon Jary, editor-in-chief



I've got an awful big confession to make. Promise you won't be angry with me, and never speak to me again? It's been hard to live with all these years. My dark secret is a shameful one for the editor of a Mac magazine. I'm allergic to Apple. OK, apples in general. I've had this allergy since I was seven. My throat swells up as if I'd swallowed nettles. It hurts like hell in a greenhouse. I've had check-ups and pills, injections and all sorts of witch-doctory in vain attempts at a cure. But still the mere sight of a juicy Apple sends me into neck-grabbing agonies. This is something of a problem in my line of work. All day I have to stare at the Apple logo, the Apple name, pictures of Apples, and even rumours about Apple. I feel like a real lemon. When it wasn't Macintosh (juicy Californian apple), it was Pippin (tiny apple) or Newton (hit on bounce by apple). When Steve Jobs returned to Apple, he pointed out that the Apple brand was one of the finest in all marketing history – up there with Disney and Coca-Cola. The Apple logo was so strong it didn't even need its multicoloured filling – just the shape was enough to tickle the taste buds of people from Silicon Valley to the Cheddar Gorge. Jobs likened it to Nike's Swoosh, and didn't give a fig about the old rainbow centre. Apple. Says it all. Apple of our eyes. Sweet Apple. Apple pie. Apple... Aargh... stop! I can't breathe... Am I alone in my allergy to apples? I believed I was, and so kept my secret hidden in bravado visits to Apple HQ, Apple Labs, and Apple press conferences. So why have I broken my silence and peeled open my embarrassing hush-hush? I no longer think I'm alone. And I'll let you into a big surprise about who I think has suddenly become allergic too: Steve bloody Jobs. Mr Apple himself. Core! Steve and I already have a few things in common. We share the same initials (SJ), and even have our birthdays on the same day (February 24th). And now we both have an aversion to apples. Not only did Steve have an audibly sore throat throughout his keynote address at the recent Macworld Expo in San Francisco, but he was very nearly berried by a wall of 50 iMacs. Steve introduced the lovely new blue Power Mac G3 and nearly slipped on a banana skin – that big Apple on the side made his throat go all itchy again. Hrrumph...hrrhrm... But the man with the plum job soon perked up when he revealed his cherry amour, the colourful new iMac range. And there wasn't an apple in sight. There was a strawberry, a grape, a tangerine, a lime and a blueberry. But no Apple. He even showed off a pear of new monitors. I could start breathing normal again. For all its brand pizzazz, Apple has had a hard time lately. Before Steve and the iMac, the Apple harvest was a very poor one. But nowadays there's more than enough cider to pass round at happy sales parties. The iMac is the biggest-selling PC in the USA. Scrumpy! So why the quick-step past the apple cart? As a fellow sufferer, my guess is that Jobs knows that his company is no longer 'Apple: inventor of the first PC' or 'Apple: the GUI guys'. Nowadays, Apple is 'The iMac company', synonymous with its most-successful-ever product and detached from its rich and rocky history. Steve Jobs can't be Time's Man of the Year, but his peach, the iMac, easily grabbed Time Digital's 1998 'Machine of the Year'. No contest. Steve knows that the Apple brand is strong enough to hide in the shadows for the time being, while the iMac grabs the headlines. Apple bet its orchard on the iMac and it's not letting sentimentality get in the way of market share and golden, delicious, sustainable profitability. And, for that we – myself more than most – should be very happy indeed. Pip Pip Hooray! ...hrrhrm...

MW

COVER PHOTOGRAPHY BY MIKE LAPE



# Macworld

The ultimate reference guide and news source for the Macintosh market.

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Who...

@

<b>Editor-in-Chief</b>	Simon Jary	<a href="mailto:editor@macworld.co.uk">editor@macworld.co.uk</a>
<b>Executive Editor/News</b>	Michael Burns	<a href="mailto:news@macworld.co.uk">news@macworld.co.uk</a>
<b>Executive Editor/Features</b>	David Fanning	<a href="mailto:david_fanning@macworld.co.uk">david_fanning@macworld.co.uk</a>
<b>Executive Editor/Reviews</b>	Lynn Dartnell	<a href="mailto:lynn_dartnell@macworld.co.uk">lynn_dartnell@macworld.co.uk</a>
<b>Production Editor</b>	Sean Ashcroft	<a href="mailto:sean_ashcroft@macworld.co.uk">sean_ashcroft@macworld.co.uk</a>
<b>Reporter</b>	Louise Banbury	<a href="mailto:louise_banbury@macworld.co.uk">louise_banbury@macworld.co.uk</a>
<b>Staff Writer</b>	Andrew Hinkinson	<a href="mailto:andyh@macworld.co.uk">andyh@macworld.co.uk</a>
<b>Art Director</b>	Mandie Johnson	<a href="mailto:mandie_johnson@macworld.co.uk">mandie_johnson@macworld.co.uk</a>
<b>Deputy Art Editor</b>	James Walker	<a href="mailto:james_walker@macworld.co.uk">james_walker@macworld.co.uk</a>
<b>Designer</b>	David Grant	<a href="mailto:david_grant@macworld.co.uk">david_grant@macworld.co.uk</a>
<b>Managing Editor/Online</b>	Gillian Robertson	<a href="mailto:gillian_robertson@macworld.co.uk">gillian_robertson@macworld.co.uk</a>
<b>CD Editor</b>	Vic Lennard	
<b>US Editor</b>	Andrew Gore	
<b>Contributing editors</b>	Peter Worlock, David Pogue, Deke McClelland, Lon Poole, Michael Prochak, Ian Winter, Simon Eccles, Joseph Schorr, Franklin Tessler, Bruce Fraser, Christopher Breen, David Biedny, Matthew Bath	
<b>Group Ad Manager</b>	Anne Ridyard	<a href="mailto:anne_ridyard@macworld.co.uk">anne_ridyard@macworld.co.uk</a>
<b>Advertising Manager</b>	Mustafa Mustafa	<a href="mailto:mustafa@macworld.co.uk">mustafa@macworld.co.uk</a>
<b>Display Sales Executive</b>	Dean Payn	<a href="mailto:dean_payn@macworld.co.uk">dean_payn@macworld.co.uk</a>
<b>Classified Sales Co-ordinator</b>	Matthew Bennett	<a href="mailto:matthew_bennett@macworld.co.uk">matthew_bennett@macworld.co.uk</a>
<b>Classified Sales Executives</b>	James Poulson, Sarah Maher	
<b>Production Manager</b>	Sharon Bird	<a href="mailto:sharonb@idglondon.co.uk">sharonb@idglondon.co.uk</a>
<b>Deputy Production Manager</b>	Richard Bailey	<a href="mailto:richardb@idg.theplanet.co.uk">richardb@idg.theplanet.co.uk</a>
<b>Marketing/Circulation M'ger</b>	Sarah Bagnall	<a href="mailto:sarah_bagnall@macworld.co.uk">sarah_bagnall@macworld.co.uk</a>
<b>Marketing Executive</b>	Jo Brown	<a href="mailto:jo_brown@macworld.co.uk">jo_brown@macworld.co.uk</a>
<b>Publisher</b>	Guy Eaton	<a href="mailto:guy_eaton@macworld.co.uk">guy_eaton@macworld.co.uk</a>

Congratulations to the three winners of *Macworld's* December 1998 competition to get more than £2,000-worth of BT Highway prizes. Mr A Green, Kent; Mr D Muir, Glasgow; and Mr C Patmore, London, will have a year's free connection to the super-fast BT Highway digital communications service. Each wins a BT Speedway ISDN card/terminal adaptor that allows their Macs and existing phones and fax machines link to BT Highway.



**Win a G3 PowerBook and Adobe Publishing Collection by entering your choices for the 1999 Macworld Awards. See page 87.**



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Macworld

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Macworld and Extensis have put together an exclusive offer for Macworld readers. We are giving away the excellent plug-in Intellihance 3.0.2 for Adobe Photoshop completely FREE on our cover CD.

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Try out CorelDRAW 8 and Freeway 2.0 for 30 days and enjoy the massive 40MB demo of Bungie's **Myth II**. With **Internet Explorer 4.5** and the usual mix of demos, shareware, games and updaters, there is something here for everyone. Vic Lennard leads the way.

## Internet Explorer 4.5



Full installers for IE 4.5 and **Outlook Express 4.5**. New facilities include:

- Page Holder Tab – makes it easy to browse from any page containing a list of links.
- Print Preview and Shrink To Fit Printing
- Apple Sherlock Integration
- Forms AutoFill – automatically fills out common form fields on Web pages.
- Appearance Manager Support



Corel DRAW 8

## Corel Graphics 8



CorelDRAW 8 for Power Macintosh is a powerful, comprehensive graphics suite for professional illustration, page layout, photo-editing and raster/bitmap creation. Developed specifically for Mac OS and incorporating many Mac technologies, the suite delivers the latest in design technology, including productivity enhancing features, interactive and integrated tools, and support for Internet publishing.

CorelDRAW 8 for Power Macintosh also includes extensive professional output capabilities and comprehensive Internet functions along with powerful colour handling features. Additionally, the suite includes Corel PHOTO-PAINT 8 for Power Macintosh (packed with powerful, innovative features and tools for image and photo editing, as well as font and media management) plus CorelTRACE 8.

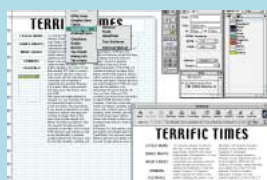
TRY OUT THE SUITE FOR 30 DAYS!

Corel PHOTO-PAINT 8

## Freeway 2.0

Freeway 2.0 is the stunning Web page layout and site design application for Mac OS from SoftPress Systems. With Freeway 2.0, you can exercise your creative skills without restriction to create great-looking Web sites, and in this exciting new version, you can do more than ever before. Freeway 2.0 now offers you the ability to work with advanced Web design features including HTML 4.0 layers, Cascading Style Sheets, frames and much more! Learn about Freeway's features in the Freeway User Guide.

The Freeway 2.0 trial is fully functional for 30 days from installation.



Freeway 2.0 lets you add text and graphic rollovers and multimedia with Flash, Director and QuickTime actions.

Facilities include:

- Unique, intuitive page layout interface
- Automatically generates text as anti-aliased GIF graphics – on the fly!
- Converts imported graphics to the correct Web format automatically
- See reviews page 46

## Myth II: Soulblighter



Myth II: Soulblighter boasts numerous improvements to the Myth game engine and added features that improve gameplay. In Myth II destruction reigns supreme. Castle walls will crumble under a barrage of Dwarven mortar fire. Drawbridges will lower before your besieging army. Flaming arrows will rain down from battlements, lighting the ground beneath you. Dark wizards will hurl deadly sorceries at your ranks, scattering even your bravest warriors.

Myth II: Soulblighter is a unique strategy game, set in a 3D world of dangerous alliances and ancient evil, where all beings tremble before the wrath of Soulblighter, cruellest and most cunning of the evil Fallen Lords.

The demo contains a tutorial, two single-player scenarios and one multiplayer map. The multiplayer game allows two game types: Last Man on the Hill and a new game, Assassin. The multiplayer game can be played by up to 16 people via LAN, direct TCP/IP connection or for free over bungie.net.

## Also on the CD

**APPLE** (in the System Utilities folder)

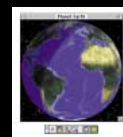
- 6 updates including:
- Apple Video Player 1.7.2
  - AppleShare Client Setup

**NETWORK**

- AFP Bridge

**MATH & SCIENCE**

- 7 items including:
- InstantCalc
  - Newton's Aquarium 1.1 demo
  - Planet Earth 2.0.1



**COMMS & INTERNET**

- 18 applications including:
- LetterRip Pro 3.0.4
  - NetCD 1.5.PPC
  - Shockwave Installer

**EDUCATION**

- 2 applications including:
- Master Spell

**FONTS**

- Nu Sans 8.1 TT (demo) plus registered versions of Nu Sans 8.5

**GRAPHICS**

- 6 programs including:
- BladePro 2.1.2
  - GraphicConverter 3.5



- Tracer 2.2.2

**INFO**

- 8 items including:
- 1984 OLM Xmas
  - Apple Wizards - January 1999
  - About This Particular Mac 5.01
  - Bartender's Friend 1.5



**ICONS & PATTERNS**

Myth and World of Copland icons from IconFactory plus three utilities and more icons.

**SOUND & MUSIC**

- Three applications including:
- PlayerPRO 5.0.1
  - The Musician 3.0.0

**ANTI-VIRUS**

Three items for your data's continuing protection.

**UTILITIES**

- 8 categories comprising over 40 useful tools for your Mac including:
- Address Pad 1.0.1
  - Alpha 7.1
  - CD Finder 2.6
  - FinderPop 1.7.6
  - Master Spell 4.0
  - Program Switcher 4.5.3
  - QuickEditor 6.0
  - Smart Scroll 3.2

**UPDATERS**

- This month's dedicated updaters folder includes over 80MB of patches to bring many popular applications bang up-to-date, including:
- Conflict Catcher 8.04
  - Creator2 1.1.3
  - FWB HDT 3.0.1
  - MarkzTools III v7.2
  - Norton AntiVirus (01/99)
  - PhotoTools 3.0.2
  - SAM (01/99)
  - Studio Vision Pro 4.2
  - Stuffit Deluxe 5.0.2
  - Virex (01/99)

**Shareware** Many programs on this CD are shareware, which means that if you keep them and use them for more than the allowed time (usually about 30 days) then you must pay for them. Treat shareware as budget-priced commercial programs – support shareware authors so that they continue to provide high-quality programs for the Mac.

**Install Me** Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

### ■ British Mac OS 8.1 updaters

If you haven't upgraded from Mac OS 8.0 and are too scared to move to 8.5.1, then use these to upgrade to later versions.

### ■ Acrobat Reader 3.01

Install this version to be able to read many of the on-screen manuals. This also installs Adobe Type Manager 4.0.2.



### ■ QuickTime 3.0.2

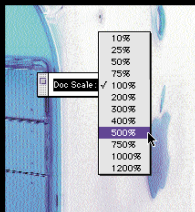
Many of the demos need this installed. It gives you new versions of QuickTime and the MPEG, VR, Musical Instruments and PowerPlug add-ons.



# Macworld QuarkXPress 4 Bible

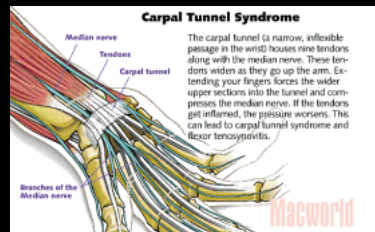


Our second CD is a massive collection of XTensions, demos, scripting tools and shareware from the **Macworld QuarkXPress Bible**, available from our Reader Offers (page 116). As well as 50 useful XTensions for QuarkXPress we've included three extensions that turn QuarkXPress into a Web-publishing tool: Astrobyte BeyondPress, Extensis CyberPress and HexMax HexWeb.



**Macworld** has also created an animated tour of how to avoid Repetitive Stress Injury (RSI). Tips on how to use your input devices correctly and reduce the chances of developing this painful condition.

Shareware includes: Aaron, Kaleidoscope and Graphics Converter PopChar Pro and Program Switcher and loads more...



## Serious Demos

### Creative Office v3



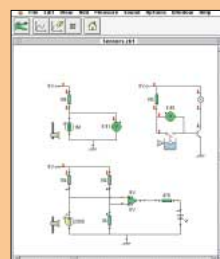
Creative Office v3 can help you manage your creative business. The demonstration copy is set up to 'belong' to a fictional agency called 'AB Creative', an agency that sells services (time costs) and buys in products. The company uses Creative Office to keep client and supplier lists, produce sales estimates (quotes) for prospective clients, track the progress of jobs, log all time spent on jobs, and all the other typical day-to-day jobs.

This demonstration version is limited to 500 companies, 500 people and 500 documents. Networking is disabled (the demo is single user only) and document layouts may not be edited.

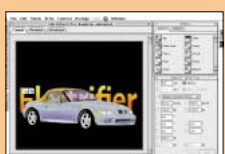
### Crocodile Clips 3

Crocodile Clips 3 is an easy-to-use electro-mechanical simulator, ideal for school and college courses, industrial training and learning at home. See simulated designs behave like the real thing - motors and gears turn, bulbs glow and springs stretch. Turn up the power to see gears turn faster and bulbs glow brighter but beware - too much power and your components will explode.

The demo allows you to draw your own circuit but you cannot save, copy paste or add more than three electrical components, one mechanical component and a probe. In addition, you cannot print out your designs.



### Electrifier Pro



Electrify your Web site with an amazing range of content - animation, digitized sound, synthesized music (MIDI), video, 3D, VR, and over 150 special effects - to produce a truly compelling Web experience.

Features include: drag-&-drop authoring and seamless integration with popular tools. Test Electrifier Pro for 30 days from installation.

## Games World

Ares



Aside from **Myth II**, Games World has three other demos. **Ares 1.0.1** is a fusion of action and strategy and allows for head-to-head network play over a local network or the Internet. **Cloudz** is a hyperactive game, set far above in the sky. Experience a world where gravity is biased and

things aren't quite normal - and Bullseye Software's **Flying Circus** will have you flying a World War I airplane! There's this month's Top Dozen shareware games plus the latest version of Codebook.



Mac Chess



Royal Flush



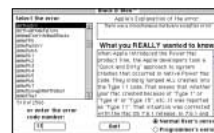
Cloudz



BS's Flying Circus

### Other demos include:

Black & Bleu 1.0b



CD SpeedTools 3.9.3

Consultant 2.55

DCSMaker 2.5.9

MindExpander

QuarkImmedia 1.5

Renaissance Compressor



### Macworld CD catalogue

Courtesy of Mark Pirri's superb DiskTracker program, **Macworld** brings you a searchable catalogue of all our CDs from 1997 and '99 - almost 98,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (1.1.4) is also included - don't forget to register if you find our library useful.



### FAULTY COVER CD-ROM?

If your cover CD doesn't seem to work as it should please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work then please email Gillian Robertson at [gillian\\_robertson@macworld.co.uk](mailto:gillian_robertson@macworld.co.uk)

If your cover disc is broken and you want a replacement CD, please call Emileigh Borrett on 0171 831 9252 or send an email to: [emileigh\\_borrett@macworld.co.uk](mailto:emileigh_borrett@macworld.co.uk)



## Gold at end of the

Steve Jobs lets the good news roll at Macworld Expo.

Steve Jobs opened his keynote at the 1999 Macworld Expo in San Francisco with a bang, by announcing that Apple had just enjoyed its fifth consecutive profitable quarter. And CEO Jobs had more surprises for the 4,000-plus audience, including five new colours for the iMac.

The first surprise was a new range of professional desktop Macs. With a top speed of 400MHz, provided by PowerPC G3 chips using a new copper process from IBM and Motorola, the range is shipping now in a revolutionary new case design. With four carrying handles and translucent polycarbonate blue and white body, the new design also boasts what Jobs referred to as the "simplest access ever": a side



door that drops down at the pull of a latch, allowing extremely simple access to all internal components. The new Macs can provide up to 1GB of RAM, and over 100GB of internal storage. Four PCI slots are also featured in the new range, comprising of three 33MHz 64bit slots and one high-speed 66MHz 32bit slot. Graphics performance is boosted by a 128bit Rage Pro card from ATI, which features 16MB of video graphics memory.

A 400MHz Power Mac G3 was tested against a new Compaq DeskPro EN with a Pentium II/450 running a 25MB Photoshop file. The Mac left the Pentium machine standing, finishing standard graphics tests 20 seconds before its rival. Jobs revealed that when tested with the BYTEmark integer index processor tests, the new 400MHz Mac scored 13.3, compared to the 6.2 score of

## rainbow

the 450MHz Pentium II. Then, testing a Pentium II machine equipped with the PC industry standard Voodoo II games graphics card against the new 400MHz Mac's ATI Rage Pro card, Jobs and Schiller ran Quake on the two machines. Under the same demo, the Mac returned 68 frames per second (fps) over the Pentium's score of 50fps.

Still on the graphics front, Jobs announced that Apple had just licensed OpenGL, the 3D graphics library from Silicon Graphics. Apple will integrate the technology into future releases of the Mac OS, said Jobs (see page 25 for more details).

### All change

Back on the hardware side, Jobs revealed that the new Mac range features three separate I/O technologies. The most dynamic and long awaited was FireWire, an Apple I/O technology that would be built in to all new Macs.

Jobs demonstrated the high-speed capabilities, stability and versatility of FireWire with digital video cameras, hot-swapping the devices and running live footage of himself between two DV cameras. He also demonstrated a 6GB FireWire portable hard disk from VST. As well as being hot swappable, the drive does not require a power supply, termination or switches, such as the older SCSI devices required. The drive, which has a US March shipping date, has no UK pricing yet, but already a half-inch thick version is planned for June. Jobs described the chocolate bar-sized drive as "small enough to fit in your pocket."

Jobs said that the new Macs also feature built-in USB and 100Mbit/second ethernet. Gigabit ethernet is also available as an option.

Moving on from the Mac range, Jobs unveiled three new monitors in the Studio Display range. One is a 15-inch £699 Flat Panel LCD display, with updated colours, while the other two are completely restyled. Both CRT models and featuring USB, the monitors come in 21-inch and



17-inch configurations, with styling matching the new G3 desktop range. The 21-inch Apple Studio Display has a Trinitron screen with a maximum resolution of 1,600-x-1,200 at 85Hz. The display also features full-colour calibration and uniquely stores its own factory-set ColorSync profile. This allows it to automatically adjust its electron beam over time ensuring that the monitor is always fully calibrated. The 17-inch Apple Studio Display (see picture, page 16) has a maximum resolution of 1,600-x-1,200 pixels at 60Hz, but does not feature the same wealth of features as its sibling. This is however reflected in the price: £319 for the 17-inch, and £939 for the 21-inch.

Jobs then moved on to software and the launch of the Mac OS X Server - a feature-rich server solution built around a Unix-based Mach kernel

continues bottom of next page

**Macworld**  
BEST of SHOW

## iMac at heart of soaring profits

Apple continued its financial winning streak last month when the company announced a profit of \$152 million for the first fiscal quarter of 1999.

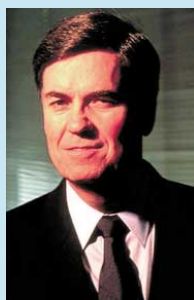
The numbers reflected year-over-year unit growth of 49 per cent, spurred by sales of 519,000 iMacs in the quarter, which ended December 26, 1998. During his keynote, CEO Steve Jobs announced that the figure has now climbed to 800,000 iMacs sold.

"The performance is outstanding," said New York analyst Lou Mazzucchelli. "It looks like the company is off to a good start in 1999."

The results compare to a net profit of \$47 million for the same quarter of 1998. Revenues for the quarter were \$1.7 billion, up 8 per cent from the same quarter a year ago, and unit sales were up 54 per cent year over year. Meanwhile, gross margins were 28.2 per cent, up from 22.4 per cent for Q1 '98. Chief Financial Officer Fred Anderson (above) said the margins were the largest Apple had enjoyed in four years.

### Up there with Dell

Inventories had fallen to \$25 million (about two days' worth), representing a 94 per cent decrease from the same quarter a year ago. The announcement that Apple ended the quarter with two days' worth of inventory was



a surprise, Mazzucchelli said. "If they can keep it between four and six days, that will put them with the best of the Wintel vendors" such as Dell and Compaq, he said. Anderson said sales of G3 PowerBooks and iMacs were the

"key drivers" of Apple's strong numbers. By contrast, he said, sales of Power Mac G3s were down.

Anderson said that while the company's iMac credit deal was a success, it didn't contribute significantly to total sales of the consumer systems.

Anderson lauded Apple's performance overseas, especially in Europe, which represented 27 per cent of unit sales for the quarter. Japan and the Asia/Pacific markets represented 13 per cent and 5 per cent, respectively. Anderson said the relatively low Japanese numbers reflected the region's economy but insisted "response to the iMac has been incredibly strong" there.

In other revelations, Anderson said the

company is selling retailers iMacs in "five-packs" that represent each of the five new colours introduced at last month's Macworld Expo in San Francisco.

While he declined to provide details, Anderson said the company has contingency plans to deal with differences in popularity among the various colours and will allow retailers to order single colours soon.

On the Mac OS front, Anderson said upgrade revenues totalled more than \$45 million for the quarter. Mac OS 8.5 sales have been impressive.

### Paint it black

In mid-October 1998, Apple recorded a fourth-quarter profit of \$106 million. The earnings marked the company's first year in the black since 1995, when it earned more than \$400 million on sales of \$11 billion.

In April of last year, Apple announced its second straight quarterly profit, earning \$55 million on revenue of \$1.4 billion. Apple attributed the results for the second fiscal quarter, which ended March 27, to strong G3 hardware sales and to a continued decrease in expenses.

A year ago, Apple reported revenues of \$1.6 billion and unit sales of 635,000 for the first quarter of fiscal 1998.

MW

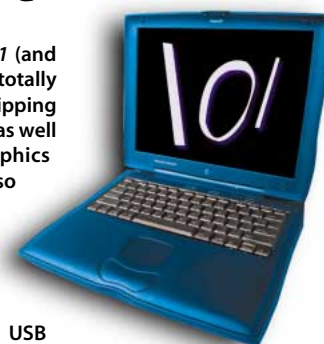
## Smart money on Wall Street

Apple is apparently going full tilt to release speed-bumped "Revision 3" (code-named *Wall Street*) PowerBook G3s, with other portables slated for later this year.

At time of writing, the new PowerBook line is reported to ship with copper G3 processors at speeds of 300 to 400MHz, with a 66MHz system bus. 10/100BaseT ethernet is rumoured to be built-in, with FireWire and USB PCMCIA cards available as build-to-order options. High-end models are reported to be fitted with hard drives of up to 12GB, with RAM expandable to 256MB or more, using new SO-DIMMs.

Further ahead, Apple is set to ship a completely

redesigned über-PowerBook, codenamed *101* (and *Lombard*). The 101 is reportedly based on a totally new logic board to the Wall Street range, shipping with FireWire and USB connectivity built in, as well as a low-power 128-bit RAGE ATI graphics accelerator on the motherboard. 101 will also feature the newest copper PowerPC G3 processors. As for the consumer portable, code-named *P1*, reliable sources are sure at time of writing that it will preview at Macworld Tokyo this month. The P1 will be thin and light, with a 12-inch screen and USB connectivity. Prices are expected to be around the £900 mark.



MW



# Punters catch Expo buzz

Upbeat vendors praise 'best Macworld Expo for years'

**Macworld**  
BEST of SHOW

Apple's storm of announcements was repeated by vendors on the Expo show floor, making the San Francisco show one of the most upbeat for years. Companies from almost every area of interest had something new to show. The most high profile release was from Connectix, with its Virtual Game Station. The Sony PlayStation emulator, demonstrated by Jobs in his Keynote speech, was a huge hit on the show floor. The emulator, not yet pegged for a UK release, will let users of any factory-standard G3 Mac run PlayStation games. The program supports third-party keyboards, mice, game pads and joysticks, and users can modify the function of buttons and keys.

Roy K McDonald, president and chief executive officer of Connectix, said Connectix sold out all its copies of Virtual GameStation during the Expo. Since the show, however, Sony has slapped a lawsuit on Connectix accusing the software company of infringing on its copyrights and

intellectual property, and "circumventing" the PlayStation's anti-piracy policy. Connectix replied by shipping a version 1.1 update featuring additional security technology.

"As a software developer and publisher," said McDonald. "Connectix strongly opposes the use of illegal copies of our product or PlayStation titles. We have developed technology specifically designed to prohibit the use of pirated PlayStation titles with Connectix Virtual Game Station."

Following Apple's move, with the launch of the new G3 Macs, to remove SCSI from the logic board, Adaptec (01276 854 500) introduced two SCSI cards that will let users attach its legacy peripherals.

Adaptec said its new cards, the £99 PowerDomain 2930U and the £49 Adaptec SCSI Card 2906, are faster than Apple's previously built-in external SCSI port, which was not accelerated and had a maximum data transfer rate of 5 MB per second. The 2930u, an Ultra SCSI-3 card, is aimed at desktop computer users

# who need to connect its SCSI peripherals, such as Iomega Jaz, CD-R, DVD and Ultra SCSI-3 drives and arrays. The card will provide data transfer rates as high as 20MB per second, the company said, and, like standard SCSI, it will connect as many as seven devices. It will also let a Mac start up from an external drive. Adaptec's second card, the 2906 Fast SCSI-2 board, will ship primarily for peripherals such as Iomega Zip drives and scanners. It will offer twice the speed of regular SCSI and the capability to attach as many as seven peripherals. The card will not allow computers to start up from an external drive, but both cards will support the old SCSI manager and SCSI Manager 4.3.

## Fun fun fun

It was also good news for Mac gamers at the Expo. Bungie released the long-awaited 3D-fantasy war game Myth II: Soulblighter at the show, as well as showing a demo of its next game, Oni (See Macworld, January, page 25). MacSoft, (Softline, 0181 401 1234) was debuting at this Expo the first game built with the Unreal engine since Unreal itself. Klingon Honor Guard features 19 unique missions on 7 Star Trek worlds and costs £34.

Other games MacSoft ported from the PC in time for the show were Civilization II: Gold Edition and Age of Empires, both world-building 'god-games' shipping for £34, and Falcon 4.0, a £34 flight simulator (Softline, 0181 401 1234).

Terran Interactive (CU, 0181 358 5857) unveiled VideoPrism, a new colour enhancement application for digital video. Developed by the Delta E, VideoPrism combines colour-management techniques within a QuickTime 3 effects filter and applies both colour-correction and effects to video clips.

VideoPrism offers paradigm change in colour for video, with instant, real-time playback. Multiple effects and undos, clip-level correction capability, and a host of colour tools such as curves, levels, replace colour, autostretch and cast adjustment, are also provided.



**Show offs**  
Macworld Expo show-goers went to any lengths to promote their products.



# Gold at the end of the rainbow

continued from page 17

previously intended to be seen in Rhapsody.

Mac OS X Server includes a version of the industry standard Apache 1.3.3 Web server, a Mac version of WebObjects 4.0 - Apple's application development environment, as well as tools for developing Java and BSD 4.4 (the Unix specification).

The Unix core means it can network with workstations using Network File System (NFS), a Unix standard. The client version of Mac OS X, expected at year's end, will also support NFS, easing Macintosh integration into Unix-based networks.

The Server also allows net booting, meaning that multiple machines can boot off the same version of the Mac OS running on the Server. Jobs demonstrated this function as well as hosting streaming QuickTime video

over the Internet, with the help of a video wall of around 50 iMacs. The NetBoot feature is a boon for administrators wishing to use Macs

as network computers: The operating system for each client is stored on a server and downloaded on start-up. Jobs said this would save administration time and prevent users from modifying system setup.

## Till death do us part

Jobs then spoke of Apple's relationship with Microsoft, in particular the recent testimony Apple gave in the Microsoft antitrust trial.

"It's like a marriage," he said. "99 per cent of the time we talk - about products. One per cent of the time we argue about multimedia. If that was a marriage in life it would be pretty good going."

Jobs was then joined by Ben Waldman, General Manager of Microsoft's Macintosh Business Unit. Waldman demonstrated new features of Internet Explorer 4.5 and Outlook Express 4.5, as well as an Internet Portal site for Microsoft's Mac customers called Mactopia (see page 30).

The main release, IE 4.5, now features such Mac-only attributes as drag-&-drop install, adjustable print preview, an autofill macro for filling in personal information on forms, closer integration with Apple's Sherlock search engine, and greater image control.

Jobs then listed new games that would be appearing on the Mac in the near future, such as Tomb Raider III, Quake II, Heretic II, Sim City 3000, Quest for Glory 5 and Battlezone. He

introduced John Carmack, co-founder of Id Software, who demonstrated the OpenGL driven graphics of Quake Arena, a previously unseen new game that, due to Apple's new advances in graphics, was being developed simultaneously on the Mac and PC.

"Apple has finally got its act together with 3D graphics and acceleration," said Carmack, adding that PC licensees of the Quake Arena game engine would automatically receive the code for developing Mac versions of their games.

To round off the keynote Jobs unveiled new 266MHz iMacs, with 6GB hard drives, in five new colours. The new £779 iMacs come in Strawberry, Lime, Tangerine, Grape and Blueberry - and have keyboards and mice to match. See page 17 for all five delicious colours.

"With a consumer computer," said Jobs, "buyers don't want to know about processor speeds and other 'mumbo-jumbo'. They say, 'I want to express myself, and have the colour I want.'"

He concluded, "One of the key questions people will be asking when you buy a computer in the future is 'what's your favourite colour?'" - **Michael Burns** MW

Read Macworld's exclusive test results of every new Power Mac G3 model in our in-depth feature, starting on page 64.

## HAL helps Jobs with keynote



At Macworld Expo, Steve Jobs' keynote opened with the aid of HAL, the computer from 2001: A Space Odyssey. HAL announced in calm, self-satisfied tones that the Mac does not suffer from the Y2K or millennium bug problem that the rest of the world's computers are currently rapidly approaching.

"HAL is the perfect spokesperson to address the Y2K issue because he lives in the year 2001 and can speak from experience," said Steve Jobs, Apple's interim CEO.

After its debut, the 60-second HAL piece was turned into a commercial, available for downloading from its web site ([www.apple.com](http://www.apple.com)).

At this year's Super Bowl, which is expected to draw an audience exceeding 100 million viewers, HAL will appear during the first commercial break.



# GoLive buy-out Adobe's Net gain

**A**dobe has announced that it has bought the privately-held Web publishing software company GoLive, for an undisclosed sum.

Under the deal, Adobe will take control of all of GoLive's assets, including GoLive CyberStudio and the forthcoming team-based publishing suite, GoLive Web Publishing System.

Bruce Chizen, Adobe's executive vice president for products and marketing said the acquisition "gives Adobe the only full suite for professional Web design and publishing."

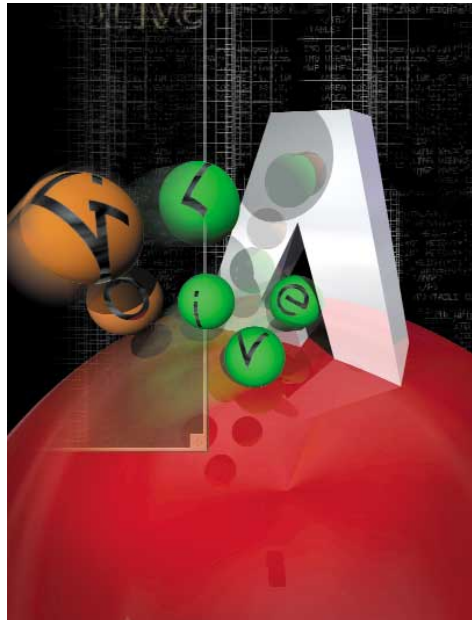
He added that the combination of CyberStudio and Precision Graphics Markup Language – a Web graphics standard Adobe proposed to the World Wide Web Consortium – together with the company's page layout technologies, will put Adobe on top of the professional Web publishing market. GoLive has two versions of CyberStudio in circulation – the Professional Edition and the Personal Edition.

According to Adobe, CyberStudio Professional Edition outsells its closest competitor, Macromedia Dreamweaver, by two to one. Chizen said the company is evaluating whether to continue the development of CyberStudio Personal Edition, as it overlaps with Adobe's own consumer-oriented Web tool, PageMill.

The CyberStudio development team, based in Hamburg, Germany, will join the company, according to Adobe. Andreas Poliza, CEO of GoLive, will take up a new position to focus on the company's corporate Internet strategy.

Poliza told *Macworld* that GoLive had been approached with takeover bids several times before by other companies, but all had been rejected. GoLive and Adobe had been working together for several months before the end of last year, so when the bid came, it seemed a good fit.

Poliza said he thought that GoLive was in the strongest position it had held in its three year existence when the Adobe deal went through, but that the market was likely to change.



JAMES LAWRENCE WALKER

## Creative software giant in Web-publishing coup

"The product is strong now but we will need something more, six months down the line, to face competitors that will have products that include high-end graphics capabilities" he said.

"Working with Adobe, we can achieve that, and beat the competition. It's a natural fit for the companies' technologies and a win-win situation for the deal's main beneficiaries – our customers."

Further details of the acquisition will be announced at the Seybold seminars, to be held in in Boston this spring.

MW

## Macworld BEST of SHOW

### Expo launch for After Effects 4.0

Macworld Expo saw the launch After Effects 4.0, the new version of the Adobe video effects software (see *Macworld*, February News).

Prices start at £500 for the Standard bundle, with the Production Bundle costing £1,000. Upgrades from version 3.0 are available for £139. Upgrades from the Standard Version 3.0 to Production Bundle 4.0 cost £369 until April 30 after which the cost will rise to £60.

Adobe has also announced a new collection of Web page creation software for £125, with a customer saving of £33.

The Adobe Web Bundle incorporates PageMill 3.0, the company's Web page authoring and site management software, and ImageStyle 1.0, the Web graphics design software. Both applications cost £79 each.

**Adobe, 0181 606 4001**

## Mac Encarta days numbered

**M**icrosoft says it will not update its Encarta reference products for the Mac in 1999 and may scrap the Mac version entirely. The company says it doesn't know what to do with Encarta for the Mac and won't decide until this summer.

Mark Young, group marketing manager of Microsoft's Reference Business Unit, which includes Encarta, told *Macworld* that the company "did not revise Encarta 98 for the Mac" for a 1999 edition. Contrary to other news reports, however, Young said Microsoft will support Encarta 98 for the Mac

throughout this year. Development of future Mac versions of the reference software, such as Encarta 2000, have not been decided, Young said.

"After evaluating feedback, we decided instead to put development resources into a cross-platform Web site that everyone could use," he said, a decision that he attributed to a drop in education sales and increased requests for more content on the Encarta Web site and other online resources.

Microsoft, 0345 002 000

MW



## lomega scoops SyQuest's assets

**I**omega has announced that it is buying the assets of former rival, SyQuest.

lomega will pay \$9.5 million for SyQuest's assets, including intellectual property and inventory, pending court approval.

Meanwhile, SyQuest customers can get technical support, parts, and repairs online. SyQuest's Web site was down briefly in November after the company filed for reorganization under Chapter 11 (US bankruptcy laws). The site ([www.syquest.com](http://www.syquest.com)) now sports a FAQ (frequently asked questions) list directing users to technical support, repairs, and even sales.

lomega, however, will not support or market SyQuest's products, says Fred Forsyth, president of lomega's professional products division.

"We're not assuming any warranties or responsibilities for products in the channel or customers' hands, or any that we get in inventory."

But lomega believes it can use some SyQuest technology in its own products. "SyQuest has been building rigid disk drives based on cartridge technology for many years," says Fara Yale, chief analyst at Dataquest. "SyQuest obviously has something lomega can use."

— Peggy Watt  
lomega, 0800 973 194  
Syquest, [www.syquest.com](http://www.syquest.com)

# Grim news floods Gates

**B**y any measure, January was not a good month for Microsoft. First, the company was found to have released a fake survey to bolster its federal antitrust case.

According to Shane Greenstein, professor at Northwestern's Kellogg Graduate School of Management: "The fake survey revelation is the defining moment for this trial. The company, and Bill Gates especially, will not live that story down for years. Even if they win this case, that story is going to haunt them for a long time. Nobody has reason to believe any piece of information coming out of that company ever again. More to the point, it undermines the credibility of everything they do in court. I really think it will be hard for them to recover."

Next, the antitrust trial itself is getting pretty nasty. For example, the US government's cross-examination of key Microsoft witness and MIT economist Richard Schmalensee was hard-hitting, to say the least. His assertion – that Microsoft is not a monopoly and has not harmed consumers – has been left in tatters.

If these two hits weren't bad enough, Microsoft also announced yet another slip in the shipment of their latest Windows 2000 beta (which is widely acknowledged as being critical to the company's future success), while another federal judge rapped the company for contract language that requires temporary workers to waive any awards from a pending lawsuit over the software giant's employment practices.

Too bad for the boys and girls in Redmond. But as I have often stated, "What goes around comes around, and Microsoft's time is coming."

And for those of the Apple persuasion, Microsoft's woes can lead directly to further Apple successes. One down, one up

The reason is simple: no matter how much we might like to believe that Apple is Microsoft's partner (what with the stock deal, licensing deals, Office 98 and Internet Explorer 4.5), Apple is Microsoft's natural competitor. Apple makes the only serious desktop OS to compete with Windows. (I know, I know, Linux is going to rule the world someday. I recall hearing that same crap about every other open-source version of Unix since BSD 2.X in the 1970's.) Apple is the



## Fake survey and doubting public haunt Microsoft

only computer hardware manufacturer who can leverage its hardware without kissing Bill Gates' butt. And Apple is the only computer company with a CEO (interim though he may be) who can stand toe-to-toe with Gates in the imagination of the people. (Sorry, Scott and Larry, but it's true.)

Which makes now – right now – the time for Apple to make some more noise about its present and its future. With the announcement of the new blue G3s; updated and multicolored iMacs; and the expected announcements of G4-based machines, plus the consumer portable later this year, Apple has the goods to grab the limelight.

But it needs once again to pump up the competitive volume in marketing. Rather than just push the new G3s as Wintel beaters, push them as Windows beaters. Make fun of Windows and how much of a pain it can be for both newbies and oldbies. Expose Windows 98 and NT for the kludges that they are. Kick some ass, Apple. The iron is hot: over the next few months, Microsoft will spend a lot of time, money and effort winning both the trial and the court of public opinion. But as things stand, it is likely to lose on both counts. This presents Apple with a golden opportunity to fight back against the Windows hegemony in a way not possible just six months ago.

Just as Microsoft will kiss you on the lips, then punch you in the mouth, Apple needs to learn to do both with its most important partner or competitor. Nothing less than the future of desktop computing lies in the balance.

— Don Crabb

MW



# Mac wild for 3D

**A**pple's decision to adopt the OpenGL 3D acceleration API was welcome news for the Mac 3D community. Experts said it signals progress for 3D on the Mac, from games to high-powered animation and CAD application development, but the future for Apple's own QuickDraw 3D remains uncertain.

At Macworld Expo in San Francisco, CEO Steve Jobs announced that Apple has licensed the OpenGL API (Application Program Interface) and software library from Silicon Graphics Inc (SGI) and that it plans to incorporate OpenGL in future releases of the Mac OS.

With OpenGL part of Mac OS, "We will be able to entice more [OpenGL-based] 3D applications to port to the Mac," said engineer John Stauffer.

Sources said Apple's QuickDraw 3D API has been in maintenance mode for more than a year, with only one engineer assigned to it. "The plan is to move QuickDraw 3D to be able to leverage OpenGL, both on Mac and PC," Stauffer said.

OpenGL, already a standard on Windows and Unix machines, was developed by SGI in 1992. It is a low-level graphics library for drawing objects to the screen, and it can be implemented in hardware or software. Similar to the RAVE (Rendering Acceleration Virtual Engine) portion of QuickDraw 3D, OpenGL does not offer high-level features. According to Shawn Hopwood, senior manager for graphics APIs at SGI, QuickDraw 3D offers lighting and scene management capabilities and user interface components while OpenGL handles only point, line and triangle primitives.

Hopwood, formerly of Apple's QuickDraw 3D team, said OpenGL and QuickDraw 3D could be complementary because they reside at different

## Apple finally commits to industry-wide Silicon Graphics OpenGL standard

levels in the processing architecture. Apple's plan provides developers with a common standard for cross-platform applications.

Duane McNamee is the product manager for Strata StudioPro, a 3D package that supports QuickDraw 3D and OpenGL. McNamee said Apple's move will let high-end OpenGL accelerator cards proliferate on the Mac. He said the lack of Mac cards has been giving Windows NT the advantage over the Mac as a 3D platform.

McNamee said he does not expect Apple to try to integrate OpenGL with QuickDraw 3D: "I can't think of a single thing that QuickDraw 3D does better than OpenGL. For everything we touch, OpenGL was a better choice."

Peter Glaskowsky, senior analyst at MicroDesign Resources, said that the next-generation Mac OS X, with its Unix underpinnings, will give the platform the impetus needed to persuade 3D developers to port their tools to the Mac, "with better performance on Mac than NT."

Meanwhile, SGI is working with Microsoft to develop an extensible 3D graphics architecture similar to QuickDraw 3D. Called Fahrenheit, it will use OpenGL and work with Windows and SGI machines when it ships later this year. Glaskowsky expects Apple to adopt Fahrenheit rather than attempt to compete with it.

— Rebecca Gulick



## Sound better Audio-enhancement technology destined for the Mac

**A**pple has licensed new audio-enhancement technologies from Spatializer Audio laboratories ([www.spatializer.com](http://www.spatializer.com)), planning to incorporate them into the Mac.

The technologies, namely 3D-Stereo, N-22, enCompass and Vi.B.E., will be integrated into systems later in the year.

3D-Stereo is a stereo-expansion technology that accepts stereo input and provides the customer with an enhanced sound field from only two speakers.

N-22 is Spatializer's flagship HRTF-based virtualization technology, providing realistic multi-channel surround sound playback from just two conventional speakers or headphones.

enCompass, an interactive positioning technology, localizes multiple-sound sources over wide three-dimensional spaces and enhances the experience for games and multimedia.

Vi.B.E. is a virtual enhancement technology, designed to improve the perception of low frequency audio from multimedia and consumer speakers. Apple is the first licensee of this technology, which was launched at the Consumer Electronics Show in January. MW

# MindExpander gets stuffed

**A** contender has arrived to challenge Aladdin Systems' Stuffit, the Mac's de facto standard for compression.

MindVision Software, known for its Installer Vise software installation kit, announced at Macworld Expo in San Francisco that it will enter the compression market with its MindExpander utility. The tool will be compatible with Aladdin Systems' Stuffit 4.5, which is widely used by Web and graphics professionals to compress image files.

"Tools like MindExpander play to our strengths," said MindVision CEO Steve Kiene. "We are compression experts, and we know the file system inside and

out. With something as important as the compression standard on Macintosh, users deserve a choice."

According to the company, MindExpander will be able to decompress files created using Aladdin Systems' Stuffit 4.5 format, except those that are encrypted or segmented. MindVision's decompression utility will also handle all BinHex files; MacBinary I, II and III files; and most Zip files.

The company said the tool was designed to simplify the process of expanding files downloaded from the Internet and will expand files more quickly than Stuffit Expander does.



MindVision promoted itself at January's Macworld Expo in San Francisco with this iMac-like VW Beetle.



Why is Macworld best for news? There's a demo of MindExpander on this month's Macworld CD. That's why. MindVision, [www.mindvision.com](http://www.mindvision.com) MW

## Vendor shock as Apple re-certifies

**Company claims new moves will benefit all Mac buyers**

**T**here were some unhappy faces at Apple last month when the company announced its new plans for the UK reseller channel. Around 130 members of the company's indirect reseller channel gathered in the company's Stockley Park HQ were told that Apple is cancelling all previous contracts.

To cries of disbelief and anger from some corners, the dealers were told that indirect resellers would be re-certified based only on certain conditions:

- minimum quarterly sales targets – dealers must make £60,000 yearly and must buy at least £15,000 per quarter of pure Apple product;
- staff size – dealers must employ at least five people, two of which must have Gold Status in the Apple Learn & Earn programme, an Online training course;
- premises – dealers must have premises approved for demonstration of Apple product.

In answer to the uproar which greeted the announcement, Apple's channel program manager, Nigel Boatswain, claimed that the move was intended to improve the overall experience of the Apple buying public.

One small dealer, under threat from the new regulations and who asked not to be named, denounced the move. He claimed it would spell the end for many small retailers and even some larger mail-order dealers.

Another dealer told *Macworld* he had mixed feelings about the move: "It seems a bit short-sighted. The small dealers, especially the one-man bands are intensely loyal to Apple. They've supported Apple through the difficult times, and kept the Apple name high in public awareness. That has been beneficial to Apple and to us."

Apple's PR Manager David Millar, however, told *Macworld* that some resellers had misunderstood the terms of the new deal. "The new licensing



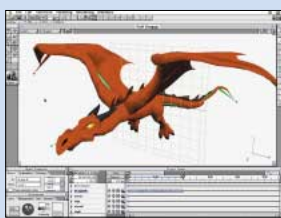
criteria are designed to ensure we are concentrating our resources on partners who are best placed to use the tools we offer," he said.

### Anti-deception measure

Another, more-established dealer present at the meeting was in full support of Apple's new policy, although he too wished to remain nameless.

"Apple is trying to ensure that an Apple dealer is just what the name implies, rather than a company that just sells the odd machine alongside PCs. I think Apple's worry is that some companies might use the Apple listing to gain custom, but then say to the customer: 'Here's a Mac, but you'd be better off buying a PC' and then they've lost a sale. If Apple wants the customer to have a good experience of buying its products, it has to ensure that resellers meet a certain standard. – **Michael Burns**

MW



### C-3D buys Strata

Strata, the 3D-graphics software developer, has been acquired by C-3D Digital, a maker of 3D technology for both broadcast and the Internet.

C-3D is a pioneer in the field of stereoscopic media for the Web and television.

The acquisition of Strata will provide additional revenue for the new C-3D digital television network – launched on January 1 as the first TV network to offer 3D programming.

Blaine Harris, C-3D Digital's founder and chairman, said: "We think the ability to sell technology and tools to the 3D content production market represents a great revenue opportunity, it's really like selling picks and shovels to 3D digital miners."

The takeover was announced at Macworld Expo in San Francisco.  
*Principal, 01756 704 040*

## Apple Expo 99 (with added Apple!)

**A**pple UK reportedly will return to Apple Expo this year after dramatically pulling out of the show last November over differences with exhibition-producer EMAP Trenton.

According to sources, Apple has struck a deal with its marketing partner CKS to take over production of the event. The new Apple Expo UK will be held in London in November, sources said. Apple Expo will reportedly remain at the Olympia conference hall, which has housed earlier installments of the show.

Apple abandoned last year's Expo – which ran November 25-28, 1999 – after EMAP announced plans to fold the Mac show into a cross-platform expo titled Total Design Technology (TDT). Emaph hit

on the idea of running both events concurrently in an effort to placate Apple, but Apple pulled out, citing a low quality of attendees as its reason (see News, November).

A TDT show was planned for November this year, but Emaph Trenton has announced that it has now been abandoned due to lack of exhibitor support.

Despite a positive visitor response to TDT, the future of the show was reported to be in jeopardy when redundancies were announced by the organizer in December last year.



MW



# Apple back at core

## Apple reasserts its presence in UK education market

**T**he UK market for educational information and communications technology (ICT) has been rocked by the news that Apple has taken full ownership of Xemplar, the joint venture between Apple and Acorn. Announced during the annual educational technology show, BETT, running at Olympia in London last month, the deal saw Apple pay £3million for Acorn's 50 per cent share of Xemplar.

Apple set up Xemplar in April 1996 with British manufacturer Acorn (the Acorn platform is based around the RISC OS, running on the StongARM RISC chip) as a specialist company dealing exclusively with technology solutions for primary and secondary education. It is currently the second top supplier of learning technology to UK schools. The giant Intel-based PC supplier, Research Machines (RM), holds the top spot.

Apple's current share of the total UK primary and secondary education market is around 10 per cent. Since its inception, Xemplar – whose revenue last year topped £30 million – has been Apple's sole representative in this market, but has been stymied by having to co-promote the Acorn brand.

But now that Apple has bought Acorn's share, it seems likely Xemplar will concentrate on pushing Macintosh products to schools.

The deal gives Apple increased presence and potential in the education sector, a prospect already strengthened by the introduction of the eMate and iMac. The arrival of new G3 desktop Macs and servers, as well as Mac OS 8.5 and the five-colour iMac range, will further cut into RM's domain. At the BETT show, crowds swarmed around the new Macs, attracted as much by their appearance as their power. But more significantly,

# of curriculum

the educational community gave Apple a vote of confidence – by awarding the iMac the prize for best equipment in the BETT '99 awards.

"The resurgence of the Mac in education owes a lot to the success of the eMate," said Alan Bennett, education marketing manager for Xemplar. "There just wasn't anything like the eMate in the market and it made a lot of educators familiar with Macintosh. Now when upgrading their machines they are more ready than before to trust a Mac."

He added: "Kids think the iMac is cool, so they are more interested in it from the start."

One Xemplar representative said that, when she was delivering an iMac to a school, the pupils took the iMac from her and, before she had unpacked her other supplies, had taken it out of its box, set it up and were accessing the Internet.

Apple is willing to continue to let Xemplar sell Macs to schools on its behalf. At present, the higher and further education sector is addressed by the normal Apple reseller channel, supported by the company's in-house education sales team.

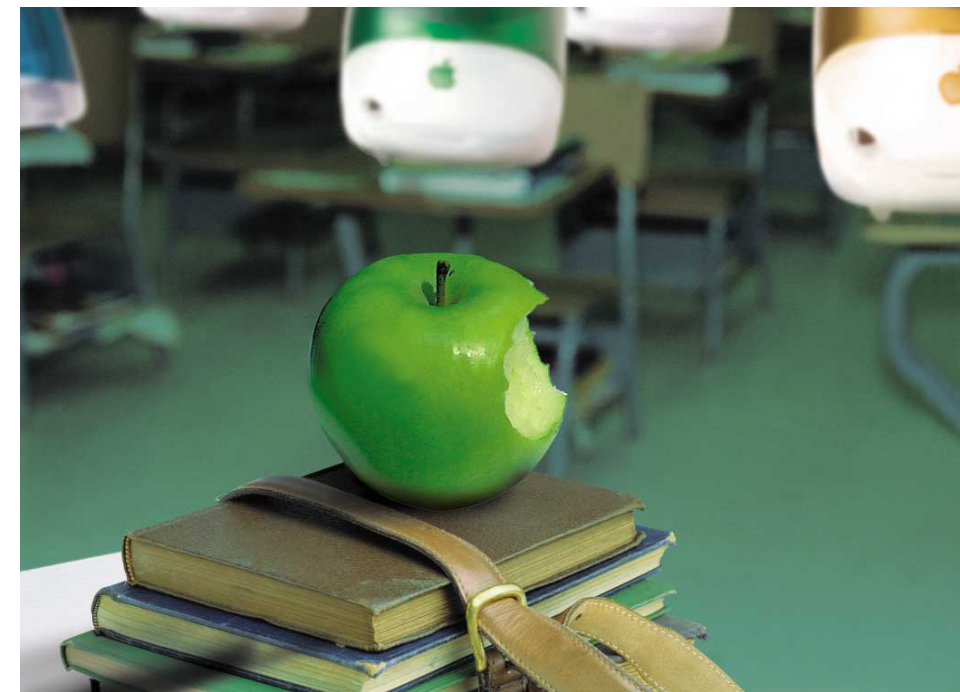
"Xemplar knows the primary and secondary education market more than Apple ever could," said Martin Capel-Smith, marketing manager for Apple UK. "More importantly, teachers and educators know and trust Xemplar."

A continuing quirk of the Xemplar deal is that the company is obliged to meet schools' demand for Windows machines if that is what they want. This means that, in many instances, an Apple company will be supplying Intel-based machines in place of its own Macs.

Brendan O'Sullivan, managing director of Xemplar, said: "First and foremost, we are an education company whose charter is to supply the specialized ICT needs of this sector."

However, judging by the opinions of third-party software developers at the show, Windows may no longer be such a sure bet in education. "People are fed up with Microsoft's dominance," said one. "People want an alternative to Bill Gates."

Many software vendors at BETT were offering new Mac versions of their products, while some who had never left the Mac platform were producing tri-format (Apple, Acorn and PC) titles.



One such developer is Sherston Software, one of the largest in the market, with 50 Mac titles on its books.

James Bayliss, marketing director for Sherston, sees a healthy future for Apple in education: "The ability and price point of the iMac has been welcomed by the Mac-based schools and local education authorities. It looks to have stopped any thoughts of a change to Windows."

Local government funding preferences of the last decade has meant Apple's presence in the education market is stronger in some areas of Britain than others.

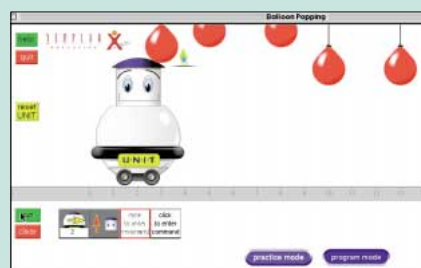
Macs, for example, are particularly dominant in Scottish schools. This trend looks set to continue: under a recent government ICT initiative, Edinburgh schools are to receive 2,000 Xemplar-supplied new Macs – with schools in Glasgow likely to follow suit. – **Michael Burns** MW

## Mac's BETT showing no tragedy

**T**he BETT show saw a wave of educational software, reflecting the resurgence of the Mac in the market.

Developer of collaborative intranet software, SoftArc (Principal, 01895 456 500) was showcasing an educational-flavoured edition of its FirstClass Intranet Server. FCIS Education Server ships for £375 and includes 10 Regular User licences, 2 Remote Sessions (to allow remote users to connect to the server), a customised interface for education, a set of specific forms and resources, and a guide to using FCIS for education purposes. An Introductory Server is available for £125, which includes a 5 Regular and a 2 Session licence. Embanet ([www.embanet.com](http://www.embanet.com)) was on the SoftArc stand demonstrating an online testing module for FCIS. The £635 application gives teachers the ability to run tests online without the need for programming, developed using a simple multiple choice-style generator. Tests can be graded automatically, with the results being sent to the teacher and/or student.

Xemplar launched its StarTower ([www.xemplar.co.uk](http://www.xemplar.co.uk)), an interactive application that runs in any browser. The author of StarTower, Mike Matson, who taught in primary schools for 14 years, said the project's dynamic nature is more akin to CD-ROM software than typical Web material. For example, users can control a robot to burst balloons or, to collect apples, children have to "program" the robot to complete the task successfully. Matson designed StarTower to



### Learning is fun

Xemplar's free StarTower application features a host of educational games and programs.

take advantage of the DHTML facilities in version 4.x of Netscape Navigator and Internet Explorer. Authoring components feature in many of the areas and material can be stored locally on machines without Internet access. Xemplar will develop the project – free to download – into educational activities.

Kudlian Soft (01296 842 544) had a demo running of DataSweet, a data-handling package consisting of a graph-drawing application and three card-file databases. Pictures can be loaded into each file, and descriptive text can be included alongside. Kudlian intends the £69 software to provide a natural progression for children developing data-handling skills. Multiple-licence packs are available with prices starting from £139 for six to ten machines.

Crocodile Clips had version 3.0 of its simulation software on show. Crocodile Clips

allows students to build virtual circuits to experiment with the effects and behaviour of electricity, mechanics and sound. Version 3.0 now has more physics experiments dealing with Ohm's Law, Newton's Laws, momentum, sound waves and Hooke's Law. Prices for the software are arranged in blocks of five: a professional licence for up to 5 users cost £175, an additional five-user block costs £75. (On *Macworld* cover CD this month)

Sherston Software (01666 843 200) has updated one of its old titles, Crystal Rain Forest 2000, and brought out a completely new title, Mission Control. The £60 Crystal Rain Forest 2000 is a multimedia adventure to help teach children maths and introduce them to Logo. Mission Control is a £45 package intended to familiarize children with control technology, encouraging them to operate virtual machines to complete tasks.

A product sure to shake up more than educational users is Version 4.0 of Textease Multimedia, a simple, yet feature-packed, desktop publishing package from Softease (01322 204 911). Including a free copy of HTML Reader/Writer to convert Textease documents into Web-ready HTML format. Version 4.0 costs £85. Users can add sound, animation and video to traditional layouts of text and pictures.

Due to ship in April, the product won a BETT '99 award in the software category. A demo version will be available on next month's *Macworld* cover CD. MW

## CalComp's credit stopped

**C**alComp, a leading manufacturer of graphics peripherals like the USB Creation Station graphics tablet (pictured right) is set to fold.

After being unable to extend its \$43 million credit limit from major shareholder Lockheed Martin, the company is planning a non-bankruptcy shutdown of its operations, something likely to take around six months. Although the company doesn't expect to obtain extra funding from other sources, Lockheed will provide funding to assist in the shutdown.

John Batterton, president and CEO, said: "The

arrangement with Lockheed Martin will make it possible for CalComp to sell or liquidate its assets in a manner that will take into account the best interests of our shareholders, creditors, employees, customers and suppliers."

The company expects to lay-off 450 employees by the end of this month, around 65 per cent of its North American workforce. Batterton said that the company's ability to pay its creditors depends returns from the sale of its assets.

**CalComp, 0118 932 0032**



## Macworld

BEST of SHOW

# Explorer discovers easier Mac Internet

## Microsoft releases version 4.5 of Web browser



Get Internet Explorer 4.5 Macintosh Edition and Outlook Express 4.5 on this month's cover-mounted CD-ROM.

**W**ith their recent Web browser releases, Netscape and Microsoft have striven to incorporate the latest whizzy Web technologies – such as Cascading Style Sheets and DHTML – sometimes at the expense of greater functionality. Sure, you can watch a GIF file dance across the screen, but what good is it if your browser crashes or slows to a crawl?

Microsoft has taken a different tack with Internet Explorer 4.5 Macintosh Edition, the latest version of its Mac Web browser. You won't find any earth-shattering new capabilities, but the upgrade adds some clever features designed to make Web surfing easier.

### Fewer keystrokes

One of Microsoft's design goals was to reduce the number of mouse-clicks and keystrokes needed to perform common tasks. Like previous versions, Internet Explorer 4.5 features a Search Pane that lets you keep search results separate from the main browser window. The upgrade adds a similar Page Holder feature that lets you temporarily store a page containing many links.

For example, a popular news site might include links to dozens of news stories on the Web. With Page Holder, you can store that page separately and then follow its links in the main window. You can then quickly return to the Page Holder without clicking repeatedly on the Back button.

Two new features make it easier to fill out online forms. Form AutoFill lets you store personal information in a preferences file. When you encounter a form on a Web site, you can click a toolbar button to fill in the fields automatically. Form AutoComplete automatically fills in a form entry after you've entered the first few letters.

Internet Explorer 4.5 also includes several



features to enhance printing from the Web.

A new Print Preview function, similar to the one in Microsoft Office, lets you view a page before printing. You can turn images, backgrounds, and headers and footers on or off, and you can crop pages that include wide tables. The browser can scale the output to fit the paper, and can also break a page around images and other objects rather than cutting them off.

Microsoft says it built the browser from the ground up to run on the Mac, and the program supports many Mac OS technologies.

For example, the browser recognizes ColorSync profiles embedded in downloaded images, ensuring more-accurate colour display. You can access the Sherlock search engine in Mac OS 8.5 directly from the Internet Explorer toolbar.

### A new Outlook

Along with Internet Explorer 4.5, Microsoft has released an upgrade of Outlook Express, its free email client. Outlook Express 4.5 now lets you preview email message headers before you download them. A new AutoText Clean Up feature lets you rewrap paragraphs, convert text to upper- or lower-case, and remove or straighten quotation marks.

Outlook Express 4.5 also provides more-extensive AppleScript support than do previous versions. All functions are scriptable, and you can organize scripts into hierarchical menus. You can also link scripts to the program's mail-filtering function.

Microsoft has also launched a Mac-specific Web site called MacTopia ([www.microsoft.com/mac/](http://www.microsoft.com/mac/)). In addition to information about Microsoft's Mac products, the Web site includes Mac-related news, software downloads, and a chat room.

– Stephen Beale

JOHN RITTER

## Smart seat: tomorrow's office furniture



**Y**ou've got a smart Macintosh, so why not use smart computer furniture? The £3,500 Aura system from Poetic Technologies ([www.poetictech.com](http://www.poetictech.com)) is a self-contained workstation with its own shelving, lighting, and air-circulation system. The unit features electronic controls for cushion firmness and other ergonomic choices. You can store your preferred chair, footrest, and keyboard drawer settings on a personal memory chip; simply plug it in and the Aura adjusts itself. The unit, scheduled to ship in the US this month, takes up 34 square feet of floor space – but will make you look like Gordon Burns off *The Krypton Factor*.



## form•Z is a model of 3D imagination

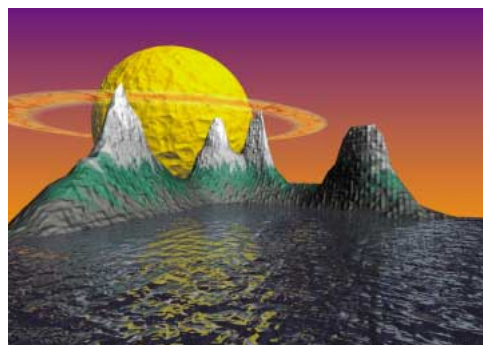
**A**uto•des•sys has released version 3 of form•Z, the solid- and surface-3D modeller. With form•Z, the user can design in 3D or 2D using numeric or graphic input. The many enhancements in the latest version of the £1,119 package include animation, objects with multiple parametric personalities and a fully-customizable interface.

Animations are produced with user-defined cameras, with previews can be shown directly in the modelling window. Animations are saved compressed or uncompressed, and can be replayed without loss of resolution.

Parametric primitives – such as block, cone, cylinder, sphere and torus – can now be generated directly in a few steps. Derivative objects – such as revolutions, helixes, screws, bolts and sweeps – have become parametric, which means they are stored within the parameters that generated them and later edited.

Two new tools, Edit Controls and Edit Surface, have been added for editing parametric objects, either through their controls or by manipulating their surfaces directly.

More types of spline curves are now available,



**Space sage**

form•Z can build startling 3D spacescapes.

including b-splines, quadratic and cubic Bézier, free-hand and sketch curves. The redesigned interface features a customizable tool bar, context-sensitive option palettes, and the ability to draw across windows, using different reference planes and views in each window.

Support for JPEG import and export has been added, as well as DEM import and SAT export.

**Gomark, 0171 731 7930**

## ASK makes Impression

**A**SK has launched a new LCD projector, the Impression A8. The £5,195 SVGA projector weighs 4.9kg, is 118mm high and boasts 1,200 ANSI Lumens. The A8's multimedia capabilities allows for connection to two Macs for presentations and also offers computer audio and two video/S-video sources.

The projector has a multilingual menu system, a 2,500 hour lamp and digital zoom for pinpointing detail in the projected image. It also offers a reduced-operating noise level of 38db.



Its features can be controlled via an integrated keyboard or from the ASK BatMouse II remote

control. The A8 comes with a range of optional accessories, including a multimedia upgrade kit, ceiling-mount kit, and 20m of wired remote-control cable.

**Acco, 0800 252 359**

### Particle Storm plugs-in

Dynamic Realities has released Particle Storm 2, a new version of the particle-animation plug-ins for LightWave 3D. The £350 software gives each particle its own individual attraction or repulsion force field, allowing for better control of ooze and water effects. New effects in Particle Storm 2 include hair, string, streamers, fireworks, and waterfalls. It also includes OpenGL real-time preview and a facility for assembling objects out of particles and sticky particles for the creation of spray-paint effects and viscous effects. Upgrades from Particle Storm Lite are available for £275.

**Par Services, 0171 437 2670**

### USB floppy drive ships

TEAC is shipping a USB floppy disk drive for the iMac. The £89 drive comes in translucent blue and is

designed to connect directly

to the iMac's USB port.

It is compatible with industry-standard disk capacities of 88K and 1.4MB.

Measuring 104-x-160-x-21mm, the portable drive draws its power from the standard USB connector, so no external or auxiliary power supply is needed.

**TEAC, 01923 225 235**

### Casio ships Mac cameras

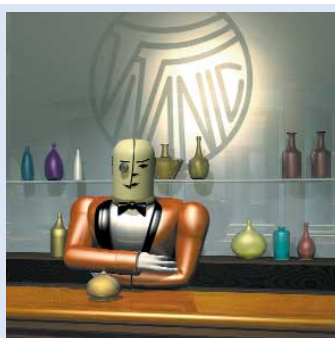
Casio digital cameras are now Mac-compatible, following the company's shipping of Mac software for downloading images. The software is available as a separate stock item, for £50 and can be used for basic adjustment of brightness and colour. The package also contains Spin Panorama and Spin PhotoObject software, as well as a user's guide and manual and a data-transfer cable.

**Casio, 0181 452 7253**

### Top-end scanners duo

Howtek has unveiled two high-end scanners, the HiResolve 8000 and the HiDemand 400. The £17,995 HiResolve desktop drum scanner has an optical resolution of 8,000dpi, a top scanning area of 292-x-305mm and a bit-depth of 16. Also costing £17,995, the HiDemand CCD scanner has optical resolution of up to 4,000dpi with an optical density of 4.0D.

**Techex, 01628 777 800**



**No ice, thanks**  
The 'bar' aboard the Mac version of Douglas Adams' *Starship Titanic*.

## Mac crash course

**T**he long-awaited Mac version of Douglas Adams' *Starship Titanic* is now shipping. The £35 adventure game is set on a starship built by a distant, advanced civilization, serving as the ultimate in intergalactic luxury transport.

Like its historic namesake, the *Titanic's* maiden voyage ends in disaster, with the starship crashing into the player's home world. The adventure begins as the player tries to solve bizarre puzzles, correct the ship's navigation system and return it safely to Earth.

Photo-realistic graphics and interiors add to the *Starship Titanic* experience.

**Softline, 0181 401 1234**

## CDs and books

### Snap-happy guide

*Digital Photography for Dummies*, by Julie Adair King, priced £24, is aimed at anyone filmless newbies. It covers everything from buying the digital camera that's right for you, through to tricks and online resources.

**IDG Books, 0181 231 6732**

### Watch this space

Two-Can's latest title, *Interface Reference Space*, could boost British space efforts by encouraging children to learn about the stars.

The £17 interactive CD and book is aimed at 7-12 year-olds and

contains seven multimedia learning adventures, including a comprehensive astronaut training package.

**Two-Can Publishing, 0171 684 4000**

### It's all me, me, me

All About Me is a £20 CD aimed at five to eight year-olds. Children can enter facts about themselves and their family and friends, answer questions, design pictures, write stories, record all their wishes for the future or create a fantasy pet.

**Dorling Kindersley, 0171 836 5411**

### Jazz Jack Rabbit's due

Jazz Jack Rabbit II, from LogicWare, is a £34 platform game, aimed at children and adults. Players must destroy marauding blocks – but each kind can only be destroyed with a particular type of weapon.

**Softline, 0181 401 1234**

### Blinding science

Dorling Kindersley's new CD, *My First Amazing Science Explorer*, is full of games and activities designed to give five-to-nine year-olds a head start in science. It is priced at £40, and contains 180 narrated pop-ups.

**Dorling Kindersley, 0171 836 5411**

# Epson in blitz on spring market

Epson has launched a spring offensive, with a host of new graphics hardware. Leading the way is the company's first large-format printer, the Stylus Pro 9000. Intended for corporate and professional graphics users, the 1,440-dpi printer incorporates Epson's proprietary six-colour ink and Micropiezo printhead system, known as PhotoReproduction Quality.

Priced at £6,995, the Stylus Pro 9000 is able to print on to cut-sheet paper from A3 and also roll paper up to a maximum width of 44 inches (BO+). It features a straight-paper path that can accept coated art-board up to 1.5mm thick. A £9,995 version of the Pro 9000 will ship in April and will include a PostScript 3 hardware RIP.

The Stylus Photo 1200 is the latest in Epson's line of photo-quality printers. At £387, the 1200 is an A3+, 1,440dpi model that features Epson's

Ultra Micro Dot and Variable Sized Droplet ink technology.

### Print devil

Epson's Stylus Photo 750 (pictured right, centre) is an improved version of the

Stylus Photo 700, giving faster

print speeds, six-colour output and improved Ultra Micro Dot, for £232. It has USB and Mac serial as standard.

Printer speed is 6ppm mono or 5.5ppm colour and resolution is 1,440dpi. Bundled software includes Adobe PhotoDeluxe 2.0 and PictureWorks Spin Panorama.

The Stylus Colour 900 is a USB-capable colour printer shipping for £342. With a print resolution of 1,440dpi, it features Improved Ultra Micro Dot technology which delivers an output volume of three picolitres. It also ships with a Mac serial port and features print speeds of 12ppm in mono and 11.5ppm in colour.



The latest Epson digital camera, the PhotoPC750z, (pictured left, bottom) features a 3x optical zoom lens and an additional 2x zoom for close-up shots. Priced at £619, the camera also features 4MB of internal memory, with a flashcard slot for expansion.

Shooting modes include panoramic, macro, continuous shot and mono. The camera features an optical viewfinder as well as a 2-inch TFT screen, which can be backlit with natural light through a slot at the top of the screen.

In the projector market, Epson has launched the EMP-7500, a £5,995 XGA projector (pictured left) offering 800 ANSI lumens with the smallest LCD on the market. Also launched is the EMP-7200, also at £5,995.

A replacement for the EMP-7100, the EMP-7200 offers 1,000 ANSI lumens. Epson has also replaced the GT-9500 scanner with a 36-bit model that the company claims is 1.3-times faster. The GT-9600 A4 flatbed scanner (pictured top) offers 800-x-3,200 dpi scanning resolution and improved colour and greyscale reproduction.

The scanner incorporates Epson's Advanced Scanning Technology such as On-Demand Pixel Optimizer, for high-speed, low-resolution scans.

It ships in two configurations: the £516 base-model and the GTX-9600, which includes Adobe Photoshop 5.0 LE, Xerox TextBridge, Adobe PageMill 2.0 and Presto! PageManager. It costs £570.

**Epson, 0800 220 546**



# Crescendo G3 card move on old Macs

Sonnet Technologies has announced a line of Crescendo G3 upgrade cards for a wide range of PCI Power Macs and Performas. Often referred to as "upgrade-challenged", these models were not built with a processor slot and upgradable daughter card. Instead, they were built with the CPU soldered directly onto the motherboard.

Like other cards of this type, the Sonnet range occupies the L2 cache slot. The company claims that the cards deliver a 575 per cent performance increase.

Available in three speeds, the Crescendo G3 L2/PCI has been designed to be compatible with the Power Mac 5400, 5500, 6400, 6500; the Performa 5400 and 6400; the 20th Anniversary Macintosh and Power Computing PowerBase models. The 225-240MHz version, with 512K cache, costs £299, the 300MHz card with 512K cache is priced at £429, and the 300MHz with



### On the cards

*The Crescendo G3 L2 PCI solves old Macs' upgrade problems.*

1MB cache is £479. Cards are backed by a three-year warranty and include free technical support.

The company says all cards are built to run within engineering design specifications for speed, temperature and power consumption and are also easy to install

**Computers Unlimited, 0181 358 5857**

## Photo Soap in picture with update

Kai's Photo Soap, the innovative photo-editing software from MetaCreations has been updated to version 2.

Priced at £40, Photo Soap 2 provides improved tools for cropping, retouching, and for colour-correcting photos.

Under-exposed photos can be brightened, cracked and yellowed heirloom photos restored, and red-eye removed.

Soap 2 will now automatically convert images into HTML, so that they can be saved directly onto a Web site.

An integrated MetaStream format creates 3D picture "cubes" for the Web. Pictures can be emailed as a slide show, using the PhotoMailer feature. Free Internet access software is included in the package.

New output options include the ability to customize shape, size, colour and format for all manner of stationery.

**Computers Unlimited, 0181 358 5857**



**Picture perfect**  
An image before the Soap treatment (top) and after it (bottom).

## Surf Express is just swell

A new version of Surf Express from Connectix is now shipping. The £22 Web-browser accelerator has faster page-loading, more control over storing and updating pages, and support for America Online 3.0.

While most Web accelerators rely on pre-fetching, Surf Express 1.5 uses a combination of advanced caching and network-proxy technologies for faster loading of pages. Connectix claims that the improved FASTore cache engine means pages can be loaded up to 36 per cent faster than with the browser alone.

A new Cache Control tab gives more control over how Web pages are stored and updated. Also new in 1.5 is the News tab, for accessing the latest information on registration, updates and product announcements relating to Surf Express.

The new SmartFetch technology delivers up-to-date versions of users' most frequently visited pages, and the FindCache feature quickly locates pages using key words or phrases contained in recently viewed Web pages.

A 30-day trial version can be downloaded from the Connectix Web site.

Computers Unlimited 0181 358 5857

## pricing update

### Umax Astra 1220

Umax has reduced the price of the Astra 1220 – its entry-level flatbed scanner. The 600-x-1,200 dpi model will replace the Astra 610, which will be phased out. Two versions are available: a £109 USB model – a reduction of £40 – and a SCSI model, which at £129 is £100 cheaper. The single-pass 1220 uses 36-bit technology and its resolution can be enhanced by interpolation to 9,600-x-9,600dpi.

**IMC, 01344 871 329**

### Tally T8104 printer

Tally's colour laser printer, the T8104, has been reduced by £1,000. The network ready printer is now £1,795 for the standard model, and £2,295 for the plus version. The standard configuration features 24MB of RAM, 600-x-600 dpi resolution, and a



133MHz 65-bit NEC VR4300 RISC processor. The Plus version has

a resolution of 2,400-x-600 dpi and 80MB of RAM.

**Tally, 0118 978 8711**

### MotoDV video-capture

MotoDV, the digital video-capture package from Digital Origin, is now shipping for £299, a reduction of £100. The package consists of a PCI FireWire card, still and motion DV capture software and ships with Adobe Premier LE, the entry-level DV-editing software. MotoDV transfers DV clips at 3.6MBps onto the hard drive and stores the footage as QuickTime 3.0 movie files.

**Digital Origin, 01277 201 729**

### MX-700 digital camera

Fujifilm's MX-700 digital camera is now £412, a reduction of £89. The pocket-sized MX-700 boasts an image resolution of 1,280-x-1024, a 2-inch TFT LCD and easy-to-use menu.

**Fujifilm, 0171 568 900**





### Dye-sub gets graphic

Mitsubishi has announced the CP2000DE A4 Dye-Sublimation colour printer for high-end graphics applications. The £3,570 CP2000DE prints at a resolution of 325dpi. Printing capabilities include transparencies and A4 monochrome and it also prints directly from a digital camera via the SCSI 2 interface. It



can print RGB video output of resolutions up to 2,560-x-3,200 pixels, with a frame-capture speed of 15KHz to 85KHz.

**Mitsubishi, 01707 276 100**

### No more hard graphs

SPSS has announced version 4.5 of Deltagraph, an all-purpose charting application. Deltagraph, costing £199, creates customized charts, using features like the Chart Advisor, which determines which kind of chart is best for given data, and a Visual Library of custom-chart templates.

**SPSS 01483 719 200**

### Aladdin's USB dongle

Aladdin Knowledge Systems is shipping the MacHasp, a network-based USB dongle. The £22 dongle, or hardware key, prevents software duplication by assigning a unique identifying character to a program. Developers can use the MacHasp to release time-limited, modular and demo versions of their software and to control licensed copies.

**Aladdin 01753 622 266**

### Scan Speed film star

Minolta has announced the Dimage Scan Speed, an addition to its film scanner line-up. The £851 Scan Speed scans 35mm and Advanced Photo System film at a maximum input-resolution of 2,820 dpi. The average scan-time is 30 seconds for full-resolution, full-frame 35mm colour positives. The



Dimage Scan Speed offers 12-Bit AD-Conversion and 3.6 dynamic range, leading to fine tonal-gradation of up to 4,096 shades.

**Minolta, 01908 200 400**

# Agfa digicam duo to debut in March

Two digital cameras are set to make an appearance in March – Agfa's USB megapixel ePhoto CL-30 and Fujifilm's MX-600 Zoom.

Priced at £299, the Agfa ePhoto CL-30 is the first camera in the ePhoto range to use CompactFlash memory cards instead of SmartMedia. It ships with a 4MB card.

The top resolution is 1,152-x-864 pixels. Features include video output for PAL, the ability to view, save and delete images, and to record text images. As well as autoflash, the camera supports an external flash. It has a standard tripod mount and ships with both USB and serial connections.

The £453 Fujifilm MX-600 has a 3x zoom lens with Funjinon optics, and, as a special launch offer, ships with 12MB of SmartMedia storage.

The MX-600 delivers a 1,280-x-1,024 image



**Plenty in store**

The Fujifilm MX-600 Zoom ships with 12MB of SmartMedia storage.

from a 1.5 million-pixel CCD, and features Fujifilm's primary-colour RGB filters for enhanced colour reproduction. It also has two high-speed RISC processors with on-board DRAM to accelerate processing and storage of images.

With the on-screen menu, users can adjust the built-in flash and set the resolution.

**Agfa, 0181 231 4154**

**Fujifilm, 0171 586 5900**

## LCD rookies screen test

Mitsubishi has announced the LCD 80 18-inch monitor. The £1,895 screen is aimed at first-time LCD users, and comes with a simple one-step set-up system.



This provides automatic picture and greyscale set-up, and automatic smoothing whenever the screen resolution is adjusted.

The Auto Scaling feature enlarges the screen image to eliminate the borders that tend to appear

when resolutions are changed, and Auto Adjustment prevents images losing their sharpness as a result of clock phase "drift".

Users can also make adjustments manually with the front-panel buttons.

The LCD 80 uses a wide-view optical compensation film on each side of the LCD panel to reduce angle distortion and allow a wider viewing angle. There is a Text or Graphic Select feature, which enhances and sharpens text or gives greater colour fidelity to graphic images.

Measuring 8.6 inches deep, the LCD 80 offers a contrast ratio of 230:1, a brightness rating of 180 cd/m2, and a resolution of 1,280-x-1,024.

**Mitsubishi, 0800 731 1222**

## Griffin's Power Mac link-up solution

Griffin Technology is offering a solution for connecting serial devices to the new translucent G3 Power Macs.

The gPort, a £59 universal serial adaptor, will smooth the transition period for G3 owners, now that the new systems only support FireWire and USB I/O devices.

The adaptor provides a standard serial connection for all Apple and third-party serial devices such as printers, modems, MIDI devices,

lab equipment, digital cameras and input tablets.

The gPort supports LocalTalk for printing to LaserWriters and other LocalTalk printers, as well as file sharing on LocalTalk networks. It is also Geoport compatible.

**Alta Technology, 0171 622 6606**





Apple's FireWire will make nerds of us all

# FireWire starter

**T**he days of the nerd must be over by now. I remember about five years ago being at a party where it was known that I was connected to the Internet. People were queuing up to in turn to laugh at me. Nowadays, a TV commercial or billboard that includes a Web address doesn't even raise an eyebrow. I even saw some Internet-based graffiti recently. (It was scrawled on a toilet wall in San Francisco, so I didn't follow it up.)

Today, it's hard to be a nerd, especially when Joe Public is rapidly gaining on your technical knowledge. You know about USB, the replacement for keyboard and mouse connection ports. USB-compatible scanners, digital cameras, and hard drives are appearing. When the iMac introduced the new standard to the world last year, hardly anything used it. Now almost everything comes in a USB flavour.

It may be a little late to be throwing USB into conversation and expecting bewildered looks. FireWire, on the other hand, is more cutting edge – even though it's been around for years. Until now FireWire has been strictly for Digital Video uses. However, with the inclusion of FireWire and the omission of SCSI in the new Power Mac G3 series, things are about to change.

At Macworld Expo, Steve Jobs demonstrated an external FireWire hard drive. It had no power supply and only a thin FireWire cable to connect it. The high bandwidth and hot swappable properties were demonstrated by playing a QuickTime movie from the drive. The crowd gasped as he yanked the wire out of the drive. The movie simply paused in mid flow. He plugged it in again. The movie gamely carried on where it had left off.

That was enough to tell me that the SCSI interface's days are numbered. No more ID numbers to conflict, no more termination to drive you crazy. No more pretend 'Plug & Play'.

You can expect a short lag before the rest of the peripheral makers really get behind this idea. La Cie, for example, has made some great USB products; but is still a few months away from a FireWire range. It looks like one of the first companies to switch to FireWire is co-developer Sony. The current digital camera from Sony uses that blast from the past, the floppy disk, to hold its images. Rumour has it that the next generation of digital cameras from Sony

will, like digital camcorders, skip the USB option and go straight to FireWire (or iLink as Sony dubs it).

Other FireWire virgin territory includes scanners, desktop video cameras and even networking. Did you know that you could network the new Power Mac G3s using just FireWire. Simply connect the wires directly from machine to machine or via a FireWire hub. Presto you have 400Mbps networking without even buying a network card.

It looks like all future Macs will include FireWire as standard, including the portables: the new G3 PowerBook, expected soon; and the elusive, consumer P1 portable. This expands the possibilities of FireWire peripherals, to include all kinds of portable devices. The 6GB FireWire drive Steve Jobs was demonstrating was about half an inch thick, and small enough to fit in your top pocket. Two years ago Sony demonstrated a video camera that used FireWire, ideal for on-the-road video conferencing.

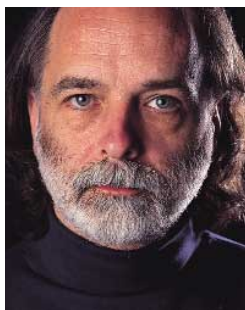
All these advantages are not yet certain because we must wait for manufacturers to fully endorse the standard. Some people are a little pessimistic of the chances of all manufacturers jumping on FireWire's flaming bandwagon. There are certain economies of scale that are hindered by the lack of support from the Wintel platform. Intel is not very enthusiastic about including FireWire connectivity, as it would mean actually having to pay Apple royalties to use their technology. But, in the absence of any competing products, what's the future in ignoring movers like Sony.

The royalties issue is another thing causing consternation with developers. Apple is going to charge all new FireWire developers a dollar per port on all the products they make. It may seem a small amount, but it has been significant enough for developers to try to design a FireWire port that doesn't use Apple technology. This may take as much as two years, so it seems a little petty. If any developers are going to go ahead with development, then I'm sure others will follow swiftly.

So by next Christmas it's safe to assume that Johnny will want a USB joystick for his iMac, and Granny will want a FireWire camera to videoconference with the grandkids in Australia. Nerdyness is spreading quickly. In a few years time, a nerd will be somebody who still insists on buying a newspaper instead of getting their news from the Web like everybody else.

mw





## Michael Prochak

Apple's Xemplar deal may brighten  
the outlook for tech-starved UK schools.

# Apple for teachers

I think it was the Jesuits that said something like if you gave them a child until the age of seven, it would be theirs for life. OK, maybe I've got the quote wrong. But the sentiment of the message, particularly when it comes to education, is pretty similar. What we give our children and expose them to from an early age does indeed influence who and what they become and invariably shapes their attitudes and reactions to a myriad of experiences in later life.

In the early days of Apple, education was recognised as a key market for winning the hearts and minds of the next generation of computer users. The two Steves worked hard to insure that the Apple II became the standard computer for education in the US. The move to early Macs, although not as well facilitated by Apple as previous initiatives, also began to prove the Jesuit adage in that as kids finished school and went on to university or the workplace, they demanded Macs instead of the boring DOS-base IBM compatibles that were beginning to dominate the market in the mid to late 80s. In theory, Apple should have had a user-base for life. In practice, we all know the history and with 20-20 hindsight, can comfortably point out all the times Apple got it desperately wrong. But while the Apple II was a bloody good education machine for its time, the Mac was even better. And for many years, and as many parts of the world, Apple definitely had the education advantage before the world succumbed to the dark madness of Wintel.

In the UK, however, we were never quite that lucky. Somewhere along the way, in that horrible weirdness we fondly refer to as the Reagan-Thatcher era, a whole generation of kids was subjected to the over-priced, under-powered, non-standard, real-world-challenged BBC micro.

Since we're talking hindsight here, I would imagine that the buffoons at Acorn couldn't believe their luck back in the 80s. Thanks to a clever con that got the BBC logo attached to their second-rate machines and a restrictive directive from the department of education, schools all over England and Wales were coerced into buying huge numbers of these turkeys. They simply didn't have any choice.

Local education boards were told that the BBC micro was 'the' computer for schools and generally, schools simply weren't allowed to buy anything else... even if it was better, more powerful and cheaper. For those of you who don't remember the old days so well, this was around the time

when even the Commodore 64 was faster, more powerful and cheaper than the BBC micro and probably had more applications relevant to real-world computing as well.

Apple did eventually get a token foothold, particularly in Scotland and Ireland. But for many years, it took a daring head to ignore the edicts from on high and to buy Macs instead of Acorn or Nimbus machines for their school.

Maybe that's why for the past few years, Apple seemed to have given up on the education market in Europe. There wasn't a lot anyone could do about the Acorn-damaged kids who came out of schools with no useful working knowledge of real-world computing and as mentioned earlier, Apple had enough problems on its plate. However, with the recent news that Apple has taken full ownership of Xemplar (see News, pages 28-29), perhaps all that is about to change.

As it happens, Xemplar has managed to become the second top supplier of learning technology to UK schools, although in real terms, Apple itself only has around 10 per cent of that market. Wintel boxes, particularly those produced by Research Machines (RM), are still flavour of the month in schools that remain overly paranoid about backing the wrong horse... again.

But now that Apple has bought out Acorn's interest, and the world of the BBC micro and Archimedes is well and truly dead, maybe Xemplar will have a bit more success in getting Mac products accepted into UK schools.

They say that giant oaks grow from little acorns. Unfortunately, the only thing Acorn managed to grow in the UK school system was a petrified forest where no one could see the wood simply because there were never any real trees. Acorn's passing will not be missed and, for a whole generation of digitally-deprived school kids, it's a shame it didn't happen a lot sooner.

Apple's got the technology and the momentum at the moment to make a real impact in education on a global scale. And while I'm not a big fan of the Jesuits, Apple should heed their message. If Apple could provide every child with a Mac before the age of seven, who knows – perhaps they'd have them for life as well.

As Dryden said:

*"By education most have been misled;  
So they believe, because they so were bred.  
The priest continues what the nurse began,  
And thus the child imposes on the man."*

MW

As iMacs sell in UK high-street stores again, *Macworld* looks at how things are working out in US shops. And it's not good news.

## Desktop critic

**DAVID POGUE** is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and *The Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies*, fifth edition, newly updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microcloth Joke Book* (Berkeley, 1997).

# Not-so-super stores

I'm here to buy my very first computer," I tell the young guy in the red CompUSA shirt. "Something really easy to use, for the Internet and word processing." Without a word and without ever making eye contact, Mr. \$6-an-hour turns. He strides right past six iMacs in the Apple "store within a store" and stops beside a boring Wintel box.

"Here you go," he says, "\$899. Monitor's extra."

I play even dumber.

"Is this one of those, um, iMac thingies?"

He scoffs. "Oh, you don't want one of those. You can't put floppy disks in 'em. Besides, there's no software for Macs. This shelf right here – that's all we got for Macs. The 30 shelves over there are all for Windows."

So I pluck a package from a Windows-software shelf.

"What about this?"

I point to a bright yellow sticker on the box that says: "For Mac OS and Windows 95."

My guy grabs the box and puts it back on the shelf.

"No, that's for Windows."

Pathetic, yes; unusual, no. For two months, I've been dropping in on CompUSA stores in five US states, posing as a computer dummy to see how Apple's hand-picked national retailer represents our favourite computer. On Long Island, New York, the salesman answered my question about the iMac by saying, "I don't know anything about 'em – nobody here does." In Connecticut, I was told emphatically that there's no way to run Windows programs on the Mac. And in Philadelphia, one sales kid claimed that the iMac doesn't have "a level cache" (!).

Unfortunately, the problem of uninformed, Mac-bashing CompUSA staff is a nationwide phenomenon. Visit the CompUSA Watch Web page ([www.macsonly.com/acu.html](http://www.macsonly.com/acu.html)), for example. The depressing table there indicates just how lousy the Mac-oriented staff, set-up, hardware, and software offerings are at each of the 225 CompUSA stores.

So who cares? After all, there are 3,500 other places to buy Macs: independent Mac dealers, savvy smaller chains such as Fry's and MicroCenter, and mail-order joints.

But CompUSA, then the only US national authorized computer chain, is by far the most visible Mac retailer. Before Apple cut other chains out of the action, what most Americans saw of Macs was sad indeed: disconnected, crashed, and mouseless Macs on dusty shelves. In exchange for exclusivity, CompUSA promised to give Apple a decent

presentation.

Apple has certainly done its part to take advantage of the arrangement. An eye-catching self-running demo plays on the screens of most display Macs. In many stores, Apple reps hang out to answer questions on weekends. During the holidays, Apple cut a \$30 cheque to each clerk for each iMac sold. And for big store events, such as the rollout of the iMac or Mac OS 8.5, Apple has harnessed the enthusiasm of local user-group members – a grass-roots, win-win marketing masterstroke.

So why are the young clerks at CompUSA so comically – make that tragically – ill-informed? CompUSA says that it's simply impossible to hire enough knowledgeable staff, especially Mac people. "Getting staff is a problem across the board," says Suzanne Shelton, the company's PR director. "We need specialized talent; finding it can be a challenge."

OK, so pay more, or solicit help from user groups, or hold training seminars; whatever the excuse, CompUSA simply isn't holding up its end of the sweet Apple deal. In steering potential buyers away from Macs, store clerks make a mockery of CompUSA president Jim Halpin's 1997 promise to make his stores "the Apple headquarters for America."

In light of all this, it's doubly amazing that CompUSA's Mac sales are screaming. Maybe that's because the Apple display areas are attractive and the Macs irresistible, even when they're unmanned. Or maybe it's the local Mac fans who sneak in to "volunteer," spending each Saturday answering questions, moving Mac/Windows software boxes into the Mac area, fixing icons that customers have renamed "ZVSFZZZZ," and so on. And here and there, in the occasional CompUSA outlet, there's even a Mac-savvy worker. (Exactly one CompUSA guy – in Beachwood, Ohio – won my little game of Help the Dummy. He immediately led me to an iMac and then made it speak, run Windows programs in Virtual PC, and play a movie. I almost bought one despite myself.)

Perhaps in frustration over the CompUSA situation, Apple recently authorized a second chain to sell iMacs: Best Buy. Well, that'll certainly help. Now we're counting on those young, underpaid, poorly trained employees to know Macs and Windows – and VCRs, cameras, and toaster ovens. **MW**





# Macworld reviews

MACWORLD RATING	★★★★/9.0-10.0 = EXCELLENT	★★★/7.0-8.9 = VERY GOOD	★★/5.0-6.9 = GOOD
	★★/3.0-4.9 = AVERAGE	★/0-2.9 = POOR	
MACWORLD POLICY	At Macworld, we don't think our readers should have to worry about whether ratings are based on a real product or a prototype. Therefore, we simply don't rate products unless they are real, shipping versions – the products we rate and review are the same products you end up buying.		

New release rockets towards the Web



## Director 7

**Publisher:** Macromedia  
[www.macromedia.com](http://www.macromedia.com)

**Distributor:** Computers Unlimited (0181 358 5857)

**Pros:** Faster, smaller playback engine; great vector graphics and text support; new Internet features.

**Cons:** Expensive upgrade path; no vector-based text; Photocaster only LE.

**Price:** Director 7 Shockwave Internet Studio, £1,110; upgrade from Director 6.5, £299. Users of versions up to 6.x can upgrade to Director 7 for £299, and to the full Studio bundle for £329. All prices ex VAT.

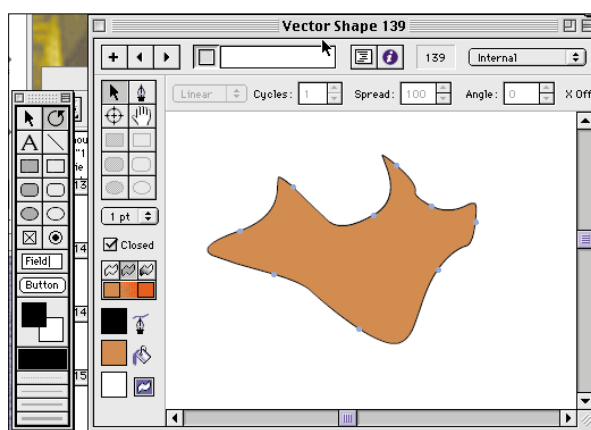
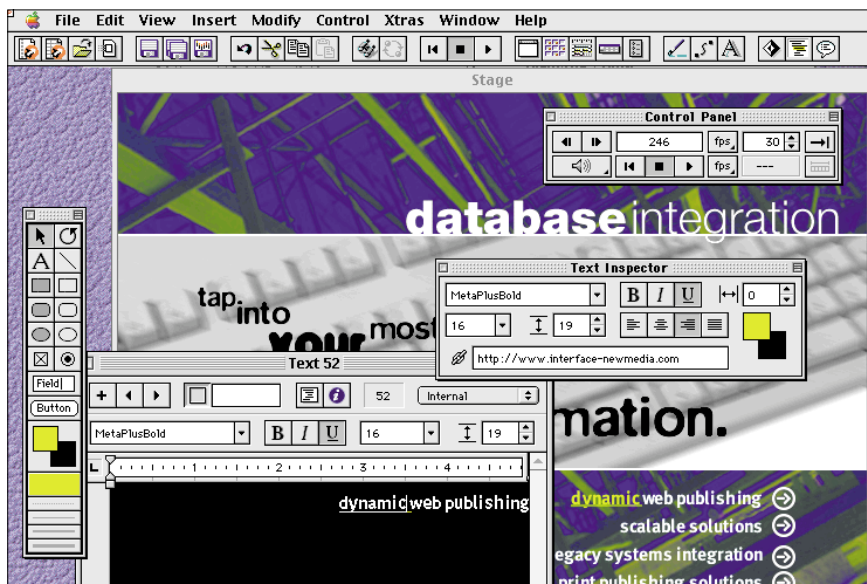
**Star Rating:** ★★★★★/9.2

It's been five long years since Macromind metamorphosed into Macromedia and launched Director 4 upon an unsuspecting public. While previously a popular animation tool for the Mac, version 4 was a breakthrough product thanks to its cross-platform authoring and delivery capability, and the advanced interactivity that Lingo offers. Bearing in mind that in 1994 the Internet was still mainly the province of Unix beardies in academic research establishments, Director 4 was firmly slanted for CD-ROM and multimedia presentations.

Of course, we all know what has happened to the Internet since then, and Macromedia has been one of the smartest companies to strap itself to the Internet rocket, most notably by releasing Shockwave as a way of distributing Director movies online. Macromedia has confirmed this trend with the release of Director 7 – the most Internet-centric release of Director yet.

While Director's suitability for CD-ROM based applications or multimedia presentations remains undiminished, (and there are a number of significant enhancements in these areas) it is for developers wishing to create multimedia content online that Director 7 really takes off. It's no surprise that the bundled box is called the Director Shockwave Internet Studio, featuring Fireworks for Web graphics and Peak LE with Streaming Audio Xtra for Internet ready sound. However, I would have liked to have seen Flash included as well.

There are so many new Web-oriented



**Above: HTML integration**  
Adding hypertext links to text in Director 7 is now easy, and you can even import HTML.

**Left: Get in shape**  
The new Vector Shape tool is great for simple vector objects, but more complex forms still call for Flash.

features that it's hard to cover them in depth in the space permitted, so I'll run through the highlights. First of all, you can integrate HTML content into a Director movie, and a range of Web protocols are now supported, not only HTTP but also HTTPS, CGI and XML. This means that whether you're creating a Shockwave movie to play online within a browser, or an application that will run on a desktop, you'll have a greater level of Internet communication than ever before. You can build an Internet chat engine in Director, or an online store, utilizing multimedia content far beyond the confines of HTML forms. A multi-user server also makes dynamic multiple user environments – such as online games, collaborative working and chat forums – a possibility.

Web-friendly media such as QuickTime 3

and Flash are now further integrated into Director, as are animated GIFs. Java export has also been updated and refined. This just leaves the completely new Shockwave 7 – the all-singing, all-dancing play back engine for the Internet. Movies are now automatically streaming, and can start playing almost instantly. Shockwave 7 can be installed to be auto-updating, so that any upgrade will be automatically installed on users' Macs, and Xtras can be downloaded as required into an Xtras folder – thus helping to reduce file size.

Display text is something that has troubled Web designers for years – the current situation is still one of an extremely limited number of fonts for use as body text, and thus the use of bitmaps such as GIFs for titles and headers. Director 7

features a comprehensive number of ways of handling fonts, but perhaps the most significant of these is the ability to duplicate or create a subset of a font and embed it as a cast member into a movie – ensuring that it will be available to any text cast members using that font. I was sceptical of the new text features in Director 7, but they work well. You can even select portions of text and make them clickable hyperlinks, further entwining Web and Shockwave content.

### Productivity enhancements

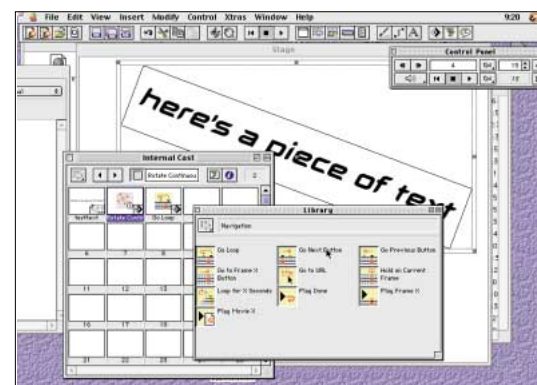
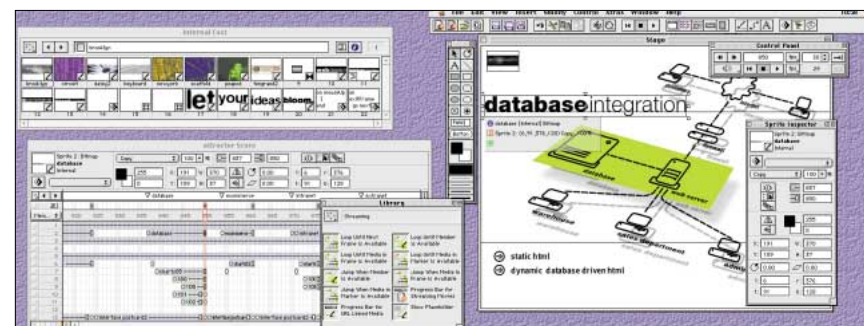
But it's not just the Web side of things that has seen improvements. A number of general enhancements, some long overdue, make Director 7 not only a more productive and expressive working environment, but make it easier for beginners to learn. The most significant of these is the improved interface for behaviours.

Behaviours are fully editable and can be shared across projects via the new Library Palette. Now offering drag-&-drop interactivity, they allow users to create advanced navigation and interface controls without having to know any Lingo. Experienced Lingo users, however, will be pleased with the new Lingo commands – most of them for Internet control – including colour coding, hardcore JavaScript-style dot syntax and unlimited script length.

Now that anti-aliased text is here with the superb embedded font feature, Macromedia has finally done the same with graphics. Now you can import graphics that have alpha channels, such as native Photoshop files, and preserve their transparency – which essentially means perfectly anti-aliased graphics, whatever the background. This has been achieved by incorporating the Photocaster Xtra into Director. Experienced developers will be familiar with this Xtra but it's a shame that it is the LE version – which only lets you import one layer properly.

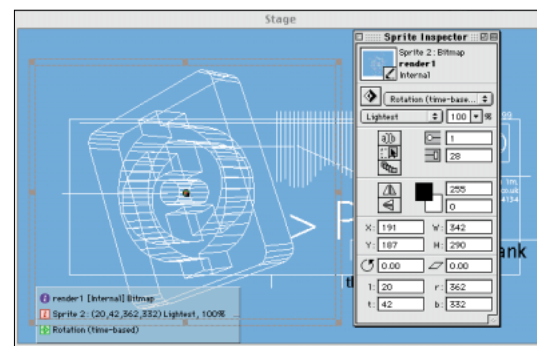
### Taking shape

One of the biggest new feature in Director 7 is a new media type called a vector shape. This is created in a window similar to the Paint window, but with drawing tools more akin to an Illustration program such as FreeHand or Illustrator. These let you create simple shapes, which are vector-based. The advantage of these shapes is that they're small in file size, and can be scaled and rotated on the stage with perfect quality. Sprite rotation and skewing can



**Above: A tad cluttered**  
If there was ever a program that needed a dual-monitor system, Director is it. Version 7 adds a new Library palette and the Vector shape cast window.

**Playing with text**  
Rotating bitmaps get a bad case of the jaggies, but it's great for vector shapes and Flash assets. Here, I've dragged a behaviour onto a Flash sprite to make it spin.



**Sprite Inspector**  
The revised Sprite Inspector window lets you see and control more properties of a sprite, including behaviours, colour, rotation and skew.

now be applied to elements on stage, but when applied to bitmaps or text the results look jagged. I would like to see the ability to enter text as a vector shape. Otherwise, if you want to be able to scale, rotate and skew text that looks good, you have to resort to creating text in Flash and importing into Director.

Version 7's playback engine has been seriously improved. This is shown by the number of sprites available on the stage at any one time – 1,000 compared with Director 6.5's measly 500. Also as playback can be set as high as 999 frames, Shockwave movies play faster. Stand-alone projectors made for multimedia and CD are

also leaner, with a much lower minimum size – great for making little applets for distribution via email or floppy.

### Macworld's buying advice

With this release Macromedia has hit the ball right out of the park. Any nagging doubts I had using previous versions have been resolved with this release. While £299 is a lot to pay after shelling out for Director 6.5 six months ago, who ever said progress was going to be cheap? Macromedia has not only grabbed the Internet rocket, it appears to be steering the damn thing.

**Martin Gittins**

Reviews continues page 48



Unique transparency function sets it apart



# Canvas 6

**Publisher:** Deneba Software

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

**Distributor:** Principal (01756 704 444)

**Pros:** Strong transparency features; good combination of vector- and bitmap-editing tools; multiple document-type interfaces make for good integration.

**Cons:** Palette-heavy interface; no document-wide image adjustments; Colada Web features a bit buggy.

**Price:** £399 ex VAT; upgrade £149 ex VAT.

**Star Rating:** ★★★★★/8.4

Every graphics power user knows that it takes many tools to get the job done: an illustration program for line drawings; an image editor for painterly, touch-up effects; and a page-layout or HTML-authoring package to tie it all together. Deneba Software takes a different approach and offers Canvas as an argument for a single program to serve all the needs of corporate graphics users.

Deneba Canvas 6, the software's first major upgrade in three years, adds many features that will appeal to art and design pros, including powerful transparency functions and improved drafting tools. However, the program is still best suited for intermediate users seeking an all-in-one graphics package.

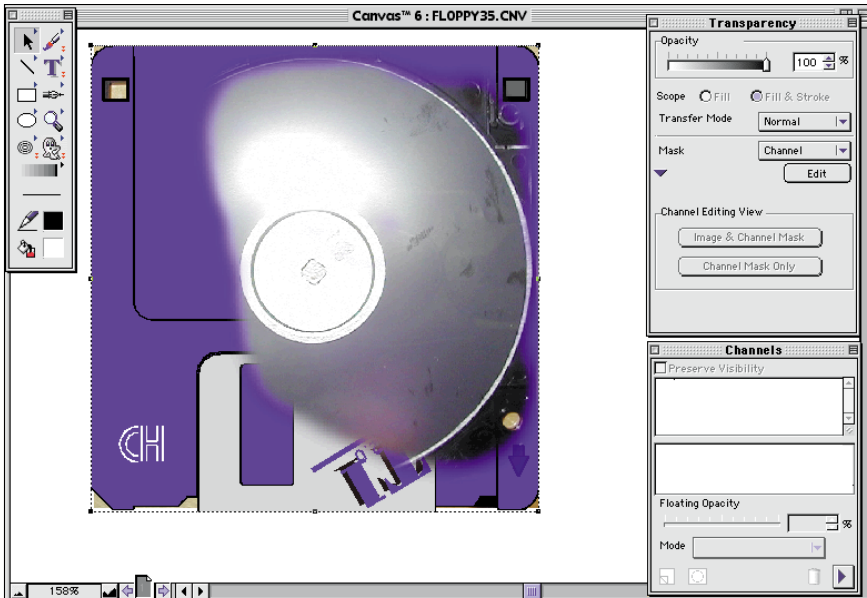
## Transparent objects

Adobe Illustrator can import raster images, and Adobe Photoshop can treat bitmapped layers as objects, but no program comes close to Canvas's ability to combine vector and bitmapped graphics. In Canvas, a bitmapped image is simply another object, alongside text or vector shapes. If you import a layered Photoshop file, each layer comes into Canvas as a separate paint object.

This object-oriented approach provides the framework for the most exciting new feature in Canvas 6, SpriteLayers. This technology lets you layer vector, bitmapped, and text objects with full control over transparency, masking, and transfer modes. No other program provides this level of transparency control.

Canvas provides several different ways to apply transparency. The simplest is to select an object and adjust its opacity using a slider. If you're working with a vector object, you can change the fill opacity while preserving the stroke.

You can also apply directional, radial, rectangular, or elliptical transparency fades to any object. You can define objects as vector masks and attach them to other objects, with the masking object's colour values determining the level of transparency in the underlying object. Build a gradient or



### Cutaway view

Canvas 6's Channel Mask feature lets you create sophisticated transparency effects.

paint object with varying degrees of grey, then attach it to another object, and you've got a complicated transparency map that doesn't need extra channels or clipping paths.

The program's most impressive transparency feature is the Channel Mask, which lets you apply opacity variations using any of the program's brushes. You simply paint the areas you want to make transparent. What's most amazing is that the feature works with bitmapped and vector objects. For example, you can place a photo of a house over a vector drawing of the interior, and then paint transparency onto the photo layer to create a combination photo and illustration cutaway.

Because transparency is implemented as a mask on top of an object, you can edit objects without affecting their masks. You can also apply transparency to groups of objects. However, if you want to edit the individual objects, you must ungroup them, which causes Canvas to remove the transparency channel for that group.

## Barfly

Canvas 6 sports some interface improvements, although new users should still expect a bit of a learning curve.

You can now customize the program's tool bar, adding buttons or keyboard shortcuts for any feature. The program lacks scripting facilities, but the customization in version 6 helps streamline repetitive tasks.

Beneath the tool bar is a new Docking Bar that provides one-click access to any of the program's numerous palettes. Drag a palette to the Docking Bar, and its name appears there as a simple tab. This great feature compensates for the program's palette glut. However, rather than listing its palettes in a single menu, Canvas spreads them throughout the menu system, making them difficult to find.

Canvas 6 also offers context-sensitive menus – accessible by control-clicking on an

item – and a cool new ink-extraction feature: drag any object to the Ink palette, and the program automatically adds its stroke and fill colours to the swatch.

Like its predecessor, the upgrade employs a different interface depending on what type of document – page layout, illustration, or presentation – you want to produce. For example, if you create a page layout, you get an interface that provides columns, multiple pages, and master pages; opening a new presentation document brings up a slide-making interface. However, all of these interfaces use the same basic tool set.

Unfortunately, some interface troubles remain from the previous version. For example, to modify a vector shape, you must double-click on it to invoke the vector-editing mode, which can only display a wireframe of the object.

Canvas 6's object-oriented approach also makes it difficult to perform document-wide adjustments. For example, you can't modify shadow, highlight, or midtone levels on an entire document – or even simultaneously on multiple bitmapped objects. If you need to lighten or saturate an entire image, you have to do it one object at a time. We'd like to see something akin to Photoshop's Adjustment Layers, which make it easy to experiment with different document-wide Levels and Curves adjustments.

Canvas 6 implements a new virtual-memory scheme that greatly improves painting performance. Brushes and other painting tools are much peppier and smoother than in previous versions. In version 5, editing a large bitmapped image was unreasonably slow, but the upgrade is adept at handling even large, high-resolution CMYK images.

Version 6 also adds new tools for creating three-point ellipses and arcs, along with a Knife tool for slicing objects. Several new features will appeal to technical illustrators: the CAD-like Fillet and Trim commands for making corners; the ability to enter mathe-

matical equations in measurement fields; and a Transform palette that lets you scale, rotate, or skew an object using numeric values.

Like its competitors, Canvas 6 provides a full set of layer controls, including a new Guides layer for creating snap-to guides in front of or behind other layers. However, the layer implementation could use some work. To move an object between layers, you must use a Send To Layers menu command. We'd prefer a control in the Layers palette.

Deneba has spruced up other Canvas components as well. The Page Layout facility now supports multiple master pages and less flashy options such as Auto Correct spelling

checks. However, despite the program's impressive layout features, most publishing pros will want to stick with a dedicated program, such as QuarkXPress, to ensure support from local service bureaus.

Canvas 6 also features a built-in version of Colada, Deneba's Web publishing facility. Through Colada, you can easily create Java-based rollover buttons and animations. However, we found the resulting HTML somewhat flaky, with buttons occasionally appearing in the wrong places. Most Web designers are better off sticking with a dedicated HTML authoring package.

We found other minor instabilities, including the Brush palette's tendency

to show up empty and occasional incompatibilities with certain PostScript Type 1 fonts. However, we experienced no crashes, and Canvas 6's performance improvements impressed us.

## Macworld's buying advice

If you're a current Canvas user, you should buy this upgrade. The new transparency features and bitmap performance improvements alone are worth the price. Illustrator, Photoshop, and Macromedia FreeHand still serve high-end graphics pros better, but Canvas 6's strong integration of text, painting, and drawing tools makes it a good one-stop graphics application. **Ben Long**

Upgrade adds much-needed improvements



# Freeway 2.0

**Publisher:** SoftPress

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

**Distributor:** MacWarehouse (0800 181 332)

**Pros:** Easy to learn; familiar work environment; ability to edit and overlay text onto graphics.

**Cons:** Treatment of text/images could lead to overloaded pages.

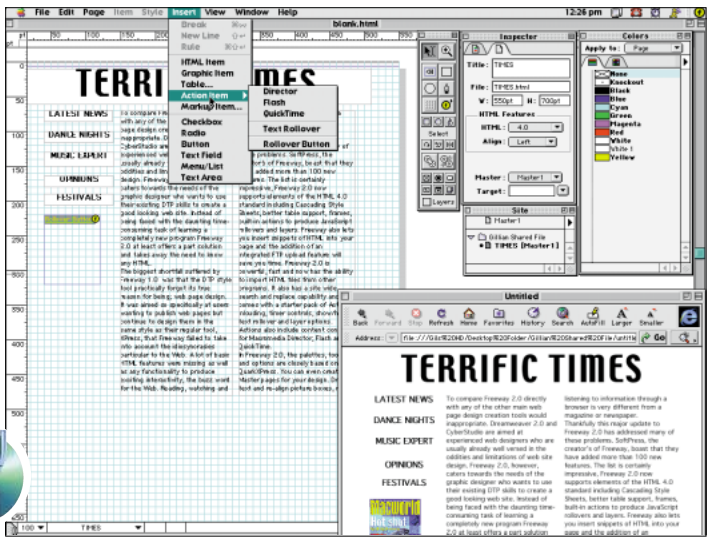
**Price:** £119.95 ex VAT; free upgrade to registered users via Web. A 30-day trial version with tutorial is available on this month's cover CD.

**Star Rating:** ★★★★★/6.0

Although Freeway swells the ranks of Web-page creation tools any comparison with its fellow contenders is inappropriate. Leaders of the pack, Macromedia Dreamweaver 2.0 and Adobe's CyberStudio, are aimed at experienced Web designers who are usually already well versed in the oddities and limitations of Web-site design. Freeway, on the other hand, caters for graphic designers who wants to use their existing QuarkXPress skills to create a good looking Web site. Instead of being faced with the daunting, time-consuming task of learning a new program, Freeway with its DTP-style interface offers an easy solution without the need to master HTML.

The biggest shortfall suffered by Freeway 1.0 was that its DTP-style tools made it forget its true reason for being: Web-page design. So specific was its aim to shield users from the intricacies of raw code that it failed to take into account the idiosyncrasies particular to the Web. A lot of basic HTML features were missing as was any functionality to produce exciting interactivity – the buzz word for the Web. Accessing information through a browser is very different from a print publication.

Thankfully, this major update has addressed many of these problems. SoftPress boasts that it has added more



### Action items

Freeway 2.0 lets you add text and graphic rollovers and multimedia with Flash, Director and QuickTime actions.

than 100 new features. The list is certainly impressive. Freeway 2.0 now supports elements of the HTML 4.0 standard including Cascading Style Sheets, improved table support, frames, built-in actions to produce JavaScript rollovers and layers. Freeway also lets you insert snippets of HTML into your page and the addition of an integrated FTP upload feature should save you time.

Version 2.0 is powerful, fast and now has the ability to import HTML files from other programs. It also has a site-wide search-&-replace capability and comes with a starter pack of Actions including timer controls, show/hide, text rollover and layer options. Actions also include content control for Macromedia Director, Flash and QuickTime.

In Freeway 2.0 palettes, tools and options are still closely based on QuarkXPress. You can even create Master pages for your design. You can drag text, re-align picture boxes, resize boxes by dragging edges, lock items to grid and manipulate text freely.

You'll be able to create amazing designs with Freeway 2.0. And not just as static pages. You can add interactivity to your pages, video and audio clips, and incorporate framed pages. Freeway 2.0 also comes with a library of customizable Actions. You can choose objects and scripts to incorporate

database applications and dynamic HTML behaviours.

The way Freeway deals with images is commendable. You can select an image preview in the page while Freeway automatically compresses and converts to GIF or JPEG format. Generally when using images for text rather than typing directly in HTML causes file size and, therefore, download time, to increase dramatically. But Freeway's final export size, even with a lot of the text converted into graphic files, was within a reasonable download time. You can even overlay text onto your image within Freeway. It is automatically merged with the image when published.

But does it work in practice? The crunch comes when you take the plunge and convert your page to HTML format or apply some actions such as JavaScript rollover buttons.

## Macworld's buying advice

Freeway has a unique approach to Web-page design and will appeal to DTP designers who want to publish on the Web, but don't want to master a completely new set of skills. In reality, however, users need some knowledge of HTML and the basic rules of Web-page design to fully benefit from Freeway 2.0's new features.

**Gillian Robertson**

Reviews continues page 50



QuickTime 3 authoring tool



## Electrifier Pro

**Publisher:** Electrifier Inc (001 919 968 0701)

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

**Pros:** Simple drag-&-drop approach; makes full use of QuickTime 3; approaches Director-level results with little of the complexity.

**Cons:** Few direct drawing tools; poor timeline feed-back; animation settings must be entered numerically; can't view Layout and Structure concurrently.

**Price:** \$595 available via Web site (UK distribution is currently under negotiation). A 30-day trial version is available on this month's cover CD.

**Star Rating:** ★★★★★/8.6

QuickTime has for years been taken for granted by Macintosh users.

Regarded as no more than “the gizmo that plays movie files”, many are now surprised when they learn how extensively QuickTime 3 can be used as a one-stop shop for authoring and playing sound, movies, bitmap and vector images, animation, synthesized music, panoramic scenes and 3D objects, as well as for building interfaces that gather together all of these file-types into an interactive multimedia presentation.

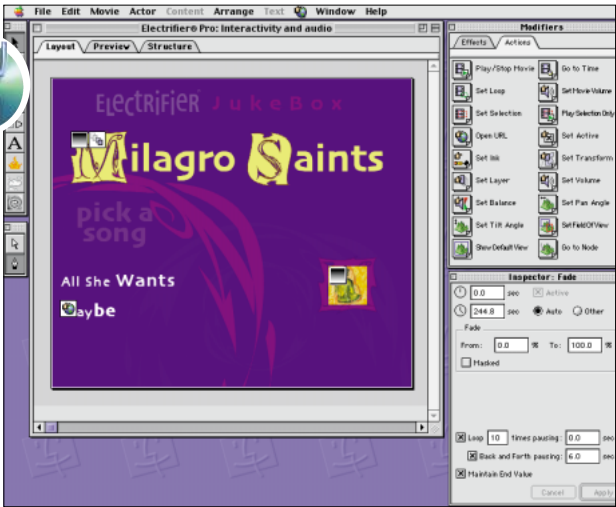
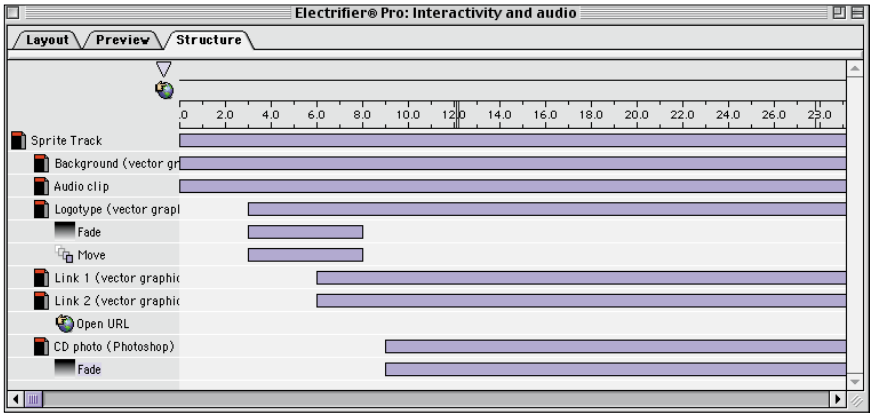
Although Apple made a great job of QuickTime 3, it's made no real effort to build any authoring tools for it. The result is that the amazing abilities with QuickTime 3 go largely unnoticed. You need Electrifier Pro to unlock them.

Electrifier works along the lines of Macromedia Flash. It has a timeline, multiple layers onto which you place media, and commands that you attach to any object so that it can respond to mouse-clicks. It diverges from the Flash model in three important ways: its timeline and command flexibility are much less detailed than in Flash, so you can't build such complex presentations; it caters for many more media types than Flash, and so Electrifier can arguably build richer presentations; and Electrifier has no drawing tools of its own, so it's a pure layout-and-assembly engine rather than a design tool.

### Easing into Electrifier

A key feature of the program is its ease of use: you simply drag items (referred to as Actors) straight from your desktop into Electrifier's Layout window, and then use the Structure window to set the in- and out-points on the timeline for each Actor.

To add a little movement to the presentation, you can attach any number of Effects to an Actor by just dragging the appropriate Effects icon onto the Actor in either the Layout or Structure windows. With this approach, you can do things like move an Actor around the screen (either straight or along a bézier path), change the



#### Above: Timed switch

*Electrifier Pro's Structure window makes it clear where all of the Actors in a presentation are at any time, and also which Effects and Actions are assigned to each Actor.*

#### Left: Drag to direct

*All Actors are dragged into the Layout view, where Actions and Effects can be dragged onto any Actor. Fine-tuning is done within the Inspector palette, but it's not possible to view the Layout and Structure windows at the same time. This precludes any system of picking a point in the timeline and then arranging any Actor's position and modifications at that point.*

### Macworld's buying advice

Electrifier Pro's main competitor is Macromedia Flash, and Flash is the better product if you're serious about low-bandwidth Web-based presentations – if for no other reason than the Flash plug-in is only around 100K, whereas the full QuickTime 3 download is about 6MB. There's also the question of the size of the presentation file itself. Both Flash and Electrifier specializes in making these very small, but it's more tempting to use full-motion video and photos in Electrifier, resulting in fairly large files.

However, QuickTime is widely installed on most Macs and many PCs, and so there is an audience that's already geared up to viewing QuickTime presentations. Given the trend towards better bandwidth provision, file sizes will become less relevant in the future, and so Electrifier is well-placed as an easy-to-use tool for creating densely textured interactive experiences.

There's potential for Electrifier to become an even closer competitor for Flash, with Apple's plan to incorporate the Flash player into QuickTime in a future release. Given an appropriate upgrade, this would make Electrifier a very powerful authoring tool. In the meantime, Electrifier is already excellent. If you're a multimedia author, then it's probably an essential buy; and if you'd like to dabble in multimedia but can't stomach the complexity and price of Director, or the limited media types of Flash, then Electrifier Pro is the best route to follow.

**Ian Winter**

Windows 98 emulators still sluggish



## SoftWindows 98 5.0.4

**Publisher:** Insignia Solutions (01494 459 426)

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

**Pros:** Uses Mac TCP/IP networking; marginally faster than Virtual PC.

**Cons:** Rough interface; comparatively slow quick-start feature; unsuitable for many games.

**Price:** £129 ex VAT

**Star Rating:** ★★★/6.9

## Virtual PC 2.1.1

**Publisher:** Connectix

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

**Distributor:** Computers Unlimited (0181 358 5858)

**Pros:** Useful I/O indicators; clean interface; better compatibility with Windows applications; fast quick-start feature.

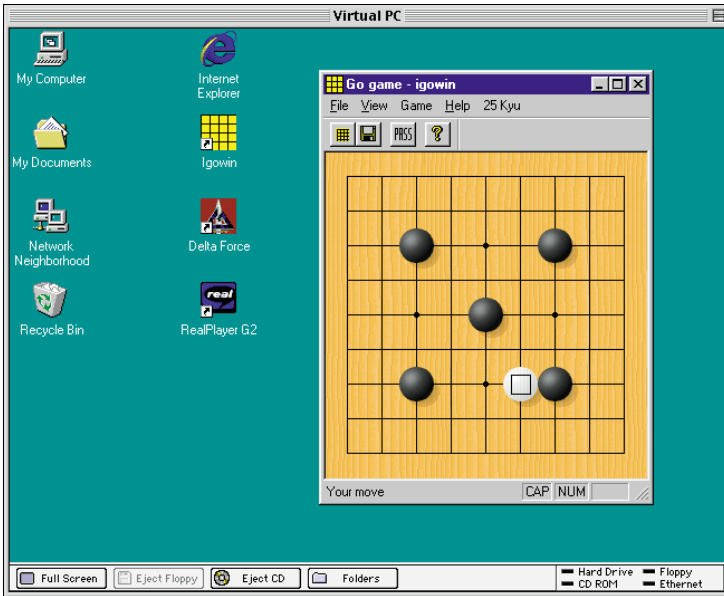
**Cons:** Needs its own IP address; marginally slower than SoftWindows 98.

**Price:** £119 ex VAT

**Star Rating:** ★★★/6.9

Like it or not, because much of the software that's available for the PC lacks a Macintosh counterpart, you occasionally need to turn to Windows applications to get your work done. But depending on the application, you may be able to use a software emulator running on your Mac rather than having to use an actual PC.

Unfortunately, our lab testing made one thing abundantly clear: if you need to run resource-intensive Windows software, emulators aren't for you (see ‘Emulation in the slow lane’). On a Power Macintosh G3/300, Connectix's Virtual PC 2.1.1 and Insignia Solutions' SoftWindows 98 5.0.4 delivered less than one-fifth the performance of our baseline system, a 300MHz Intel Celeron-based PC. That said, both emulators are fast enough and compatible



#### Windows in a window

*Virtual PC's window border contains useful LED-like activity indicators as well as buttons for accessing often-used features.*

enough for quick forays into the Windows world.

### Alike, yet different

Virtual PC and SoftWindows 98 are philosophically identical: they re-create a PC – including its CPU (an MMX-equipped Pentium) – in software and then run Windows and Windows software in this simulated environment. And their performance is remarkably similar: our overall benchmark scores show a difference of just five per cent between the two.

But running the emulators with applications that make heavier use of networks shows some compatibility differences. For example, SoftWindows 98 takes advantage of the Mac's built-in TCP/IP networking, so you don't need to configure a separate IP address for Windows. More important, if your Mac is already connected to the Internet via PPP, SoftWindows 98 uses that connection instead of requiring you to create one from within Windows – a feature you'll appreciate when you're on the road.

The downside is that SoftWindows 98 is incompatible with some networking

software. Virtual PC had no compatibility problems with the networking software we tested, although it requires a second IP address in addition to the one already assigned to the Mac and can't use an extant Mac PPP connection.

Both emulators use large Mac files as their virtual hard disks; both also have a quick-launch feature that lets you put the Windows environment to sleep and reawaken it without having to go through the full boot process, though Virtual PC's implementation of this feature is more than twice as fast as SoftWindows 98's. And although neither emulator has any problem running a variety of basic Windows software, contemporary games really want to run on actual PC hardware.

Despite their similarities, the two emulators differ in some significant ways. Virtual PC has a much more polished user interface, handy LED-style indicators that show whether hard disk or network activity is going on, and many smaller usability details (see ‘Windows in a window’). In contrast, SoftWindows 98's interface offers so many configuration options as to be daunting for the novice, and its answer to the right mouse button-pressing the equal sign (=) key or –R – is a poor solution.

### Macworld's buying advice

Windows 98 emulation is still a sluggish proposition, but it's fast enough for less performance-critical applications. While the emulators we tested perform similarly and have remarkably comparable features, SoftWindows 98 5.0.4's ability to use the Mac's PPP connection is particularly compelling for mobile users. Virtual PC 2.1.1 is more compatible overall, has a cleaner user interface, and offers a faster quick-start mode. If you decide to use an emulator, your decision will come down to which is more important to you: Virtual PC's compatibility or SoftWindows 98's convenience.

**Stephan Somogyi**

Reviews continues page 52

High-quality scans from cheap USB scanner



## Astra 1220U

**Manufacturer:** Umax Technologies

www.umax.com

**Distributor:** IMC (01344 871 329)

**Pros:** Good image quality.

**Cons:** Not a true 36-bit scanner; overkill for iMacs.

**Price:** £99 ex VAT

**Star Rating:** ★★★★★8.4

With its conventional flatbed design and opaque beige exterior, the Umax Astra 1220U might look out of place next to a Bondi-blue iMac. But the colours that really matter are the ones that show up after you've captured an image, and here the USB scanner does a good job especially considering the £99 price tag.

The Astra 1220U – also available in a SCSI version (1220S) for £129 ex VAT – isn't the cheapest scanner on the market. But with 600-dpi optical resolution and 30-bit colour depth, it delivers better image quality than do its bargain-basement rivals,



which typically offer 24-bit, 300-dpi image capture. (Umax advertises the 1220U as a 36-bit device, but it actually captures 30 bits and then uses hardware tricks to boost the colour depth.)

We used the Astra 1220U to scan a standard test image at 300 dpi, then printed the image with no modification on an ink-jet and dye-sublimation proofer. The scanner did an excellent job of capturing fine detail, and except for slightly saturated reds, colours matched up well with the original. Line art scanned at 600dpi also reproduced well.

Umax's VistaScan software, included as both a stand-alone application and an Adobe Photoshop plug-in, puts an easy-to-use interface on the essential image-capture features. The program's Beginner mode comes close to offering a one-button scan operation: you just pick a destination (such

as an image file or a text file for OCR), perform a preview scan, and let VistaScan do the rest. You can also send output directly to a printer.

VistaScan's Advanced mode offers full control over resolution, scaling, bit depth, and other scanning parameters. You can apply transfer curves to compensate for colour shifts or use a descreening function to remove moiré patterns from halftones. The only complaint we have is that the software makes it a little tricky to save images under user-supplied file names.

The scanner is bundled with Adobe PhotoDeluxe 1.0 for image-editing, Caere's OmniPage LE for text recognition, and Umax's own Presto Page Manager for launching scanning applications.

### Macworld's buying advice

This is a lot of scanner for the money – and therein lies the rub for many iMac owners. With its high resolution and extra bit depth, the Astra 1220U produces hefty files on a Mac that sports just 32MB of RAM in its base model; you may find yourself running out of memory as you play with those great-looking images you've captured. But if you're willing to limit yourself to small images – or boost your RAM – you'll find this a great scanner for the price. **Stephen Beale**

Impressive, feature-rich MIDI/audio sequencer



## Metro 4.0.1

**Publisher:** Cakewalk

www.cakewalk.com

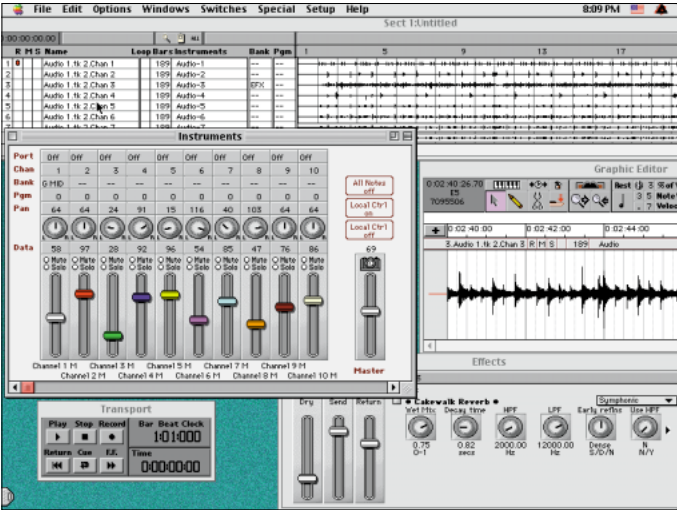
**Distributor:** Etcetera (01706 228 039)

**Pros:** Value for money, full-featured package; ability to handle variable sample rate audio files makes it perfect for multimedia sound authoring.

**Cons:** With no moving timeline in the main window it's difficult to see where you are at a glance.

**Price:** £189 inc VAT

**Star Rating:** ★★★★★8.8



#### Track editing

Metro 4's new audio features include the Graphic Editor for audio tracks and the new Cakewalk Effects Editor.

Metro is a name that may be familiar to Macintosh users. It was originally a MIDI-only sequencer published by OSC, designers of what became the Korg 1212I/O Digital Audio Card and whose main software was a multi-track digital audio editor called Deck II (recently acquired by BIAS, the company behind Peak). When OSC was bought by Macromedia, the 1212I/O design went to Korg and it looked like Metro might have been consigned to the wastebasket of history. However, Twelve Tone, better know for its Windows audio software, is now publishing a greatly expanded version of the program under the name Cakewalk Metro.

Metro 4 now boasts 64 stereo audio tracks of its own (dependant on CPU power).

Rather uniquely, it's actually able to simultaneously play back files recorded at different sample rates. In Cubase VST or Logic, you have to pick a single sample playback rate (usually 44.1 or 48K) and if any of the files you want to use differ from this then they have to be sample-rate converted offline (a time-consuming process, to say the least) before they can be used.

This makes Metro perfect for multimedia projects where you might be using sound effects samples and sound bites recorded at lower sample rates than the musical components. Combined with the ability to synchronize to video in a QuickTime window within the program, makes Metro 4 a very powerful multimedia post-production tool.

I found it very simple to import the

audio component of a QuickTime movie taken from a DV camera, add my own MIDI/audio tracks, some third-party sound effects and atmospheres, then mix it all together and export the result back onto the QuickTime footage. This is thanks to a single item in the synchronization menu, QuickTime Sync, something I have been looking for in vain in VST and Logic for sometime now. This alone earns Metro 4 a regular place in my production set-up.

The Cakewalk, Arboretum and SFX Lite effects supplied as standard are a good starting point for those without access to other plug-ins, but the real bonus with Metro 4 is the ability to use all VST and Adobe Premiere compatible plug-ins.

Third-party VST plug-ins are now beginning

to rival TDM in range and quality as a professional resource and without the expense of additional hardware.

On installation, Metro 4 looks to see if OMS is on your Mac and automatically configures to that if present. The only downside of this is that it doesn't seem to be possible to switch between OMS and standard Serial Port configuration. Whatever gets installed, you're stuck with. Digital audio PCI card support is expanding; Audiomedia III and Korg 1212I/O have been usable for some time, but the latest addition is the Sonorus StudI/O card (see *Macworld*, October 1998). I even managed to get a 1212I/O and a StudI/O being accessed simultaneously for a short

Intranet server keeps getting better



## AppleShare IP 6.1

**Publisher:** Apple Computer (0800 738 4846)  
www.apple.com/uk

**Pros:** SMB, IMAP, and W\*API support; TCP/IP printing, faster than Windows NT Server 4.0.

**Cons:** No native Windows printing; disjointed administrative tools; no bundled Web-server plug-ins.

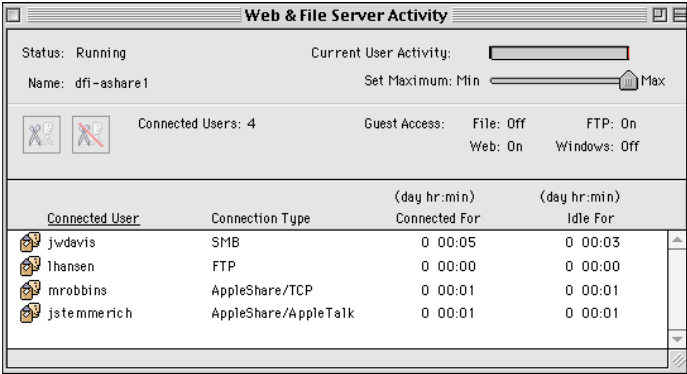
**Price:** 50 users, £799 ex VAT; pricing for 10 client and unlimited client versions can be obtained from Apple by calling 0870 241 0212.

**Star Rating:** ★★★★★7.7

Administrators who liked AppleShare IP 5 are going to love AppleShare IP 6.1. The new version sports major improvements such as Windows support, TCP/IP printing, a revamped mail server, and a host of smaller but welcome refinements. While AppleShare IP still lacks some advanced features found in specialized Internet/intranet server products, it proves a well-balanced and useful suite – and a good value to boot.

while using direct switching in the Instruments Window, but this proved to be unstable (admittedly this wasn't suggested as a possibility anywhere in Metro's manual).

My only real reservation about Metro 4 is the continued lack of a realtime timeline moving in the main Tracks window (although it does happen in all the edit windows). Instead you get a little dot jumping from the centre of each bar to the next on the currently selected track. This really lets the program down as from a distance it is very difficult to see, especially if your screen is set to a very high resolution. I suppose you open one or more Graphic Editor windows for a visible cue for events.



**All aboard**  
AppleShare IP 6 makes it easy to share files via AppleTalk, TCP/IP, FTP and even SMB.

### Extended service

AppleShare IP 6.1 runs on PowerPC Macs equipped with 48MB of RAM and Mac OS 8.1 or later. Like version 5, it lets Mac clients access files over either AppleTalk or TCP/IP – a decided advantage over Windows NT Server 4.0, which offers only AppleTalk access for Mac clients. Even better, TCP/IP significantly boosts performance: testing revealed that AppleShare IP 6.1 over TCP/IP is more than twice as fast as Windows NT Server 4.0 over AppleTalk (see 'AppleShare laps NT').

To fit more seamlessly into mixed networks, AppleShare IP 6.1 also offers Server Message Block (SMB) file sharing. Windows clients can access the server

natively over TCP/IP, eliminating the need for special AppleTalk software, and AppleShare IP servers appear in the Network Neighbourhood alongside their Windows NT counterparts. Although this feature isn't perfect – file names are limited to 31 characters, for example – it's still reliable, easy to use, and extremely useful.

AppleShare IP 6.1 continues to support FTP access to files, using the same security permissions as the standard file server. Other file-sharing improvements include account lockouts due to failed log-in attempts, fixed-term accounts, and the ability to resolve aliases via FTP.

AppleShare IP's Web services are fast; simple; and, with the addition of third-party plug-ins, extensible – perfect for typical Intranet sites. Version 6.1 expands Web capabilities by adding support for W\*API plug-ins, keep-alive connections, and custom error pages. The Web engine also shares the file server's permissions, simplifying basic Web security.

### But wait, there's more

In addition to expanding AppleShare IP's file and Web services, Apple has overhauled the mail-server engine. The mail database stores messages only once, even those with multiple recipients, resulting in improved performance and reduced storage requirements. And the server's new Internet Message Access Protocol (IMAP) capabilities are impressive: users with an IMAP client such as Microsoft's Outlook Express can

continues page 54



keep their mail on the server; organize it into folders; and even perform fast, full-text searches that use Apple's V-Twin search technology.

The standard POP and SMTP mail services now include simple anti-spam tools, multiple domains, and scheduled dial-up Internet connections.

AppleShare IP's traditionally weak print services have also been improved: version 6.1 supports both TCP/IP-based printers and printing clients. Administrators can restrict queue access to individual users, but access is granted based on the owner name

of the machine you print from. The print server also allows basic manipulation of the print queue, printer pooling, and support for up to 30 printers.

AppleShare IP 6.1 still has plenty of room for improvement. It lacks advanced file-sharing features, such as a centralized accounts database, log-on scripts, and multiple default FTP directories. Webmasters will miss Secure Sockets Layer support, virtual hosts, and an integrated search engine. And the print server's inability to support native Windows printing and more-advanced print-queue management

is disappointing. Even the installation and administration tools could use work; more-comprehensive setup wizards and a more consolidated administrative console would be welcome.

#### Macworld's buying advice

AppleShare IP 6.1 is a good product made better; its support for SMB, IMAP, and W\*API makes it much more versatile and well suited to cross-platform networks. It falls short of perfection, but AppleShare IP is nonetheless an excellent intranet solution for Mac-oriented environments. **JW Davis**

#### A mixed bag for content creators



## QuarkImmedia 1.5

**Publisher:** Quark (01483 445 566)  
[www.quark.com](http://www.quark.com)

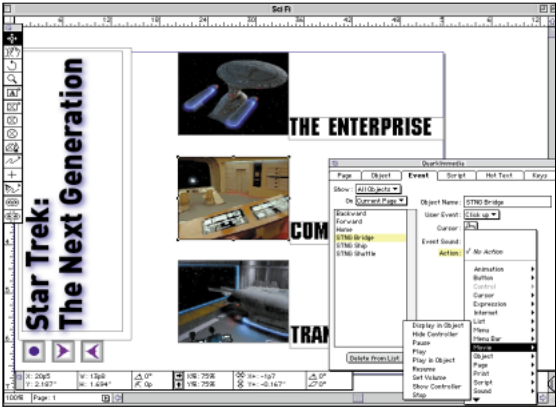
**Pros:** Rich set of functions adds interactivity to electronic documents created in QuarkXPress.

**Cons:** Extremely complex set of tools; unintuitive interface; some output glitches.

**Price:** £329 ex VAT; upgrade £129 ex VAT (requires QuarkXPress 4.02 or later).

*Save-disabled demo available on this month's cover CD.*

**Star Rating:** ★★ ★/6.6



#### Advanced technology

*QuarkImmedia 1.5 boasts many tools for adding dynamic content to your documents. But these tools may be a bit too advanced, given their extreme complexity.*

something as complicated as Myst, you can get close. The program lacks timeline-based video-editing controls, but provides any other tool a multimedia producer would need.

#### Lots of action

Quark has blessed Immedia with many types of actions – from downloading Web files to selecting and copying text for online surveys – that you can control through a scripting language that works for both Mac and Windows. You can use AppleScripts in two ways: automating production work within Immedia or executing multimedia actions for Mac-based recipients. The package also includes a variety of neat sound, video, and transition clips to help you embellish your files.

To view Immedia presentations, your recipients need a copy of the Immedia player (available on this month's cover CD). The package includes Mac and Windows versions of the viewer that you can distribute or embed in the file (for example, for CD distribution). When exporting files for use on the Internet, Immedia can automatically create a link that lets users download the player from Quark's Web site.

As a plug-in to QuarkXPress 4.02 or later, Immedia adopts the familiar QuarkXPress palettes and menus. However, an interface designed for print publishing doesn't necessarily work as well for producing interactive media. Some aspects of the Immedia interface are downright awkward.

One example: to add an object to the Immedia palette, you select the item and then enter a name for it. There's no Add button or equivalent as you would expect,

although there's a Remove From List button that deletes the object from the palette. You could spend a lot of time trying to figure out how to add objects and never stumble across this nonexistent button.

Immedia's use of multistate pop-up lists, rather than multiple check boxes, can be confusing at first. However, it's apparent that Quark chose this course to keep the dialogue box at a manageable size.

Given this lack of intuitive controls, few people will figure out how to use Immedia based on their experience with QuarkXPress or other programs (such as video editors, HTML editors, and presentation software). You will need to use the manual, which unfortunately doesn't offer much explanation beyond reciting program features. However, the interactive primer on the CD does a solid job of describing the basic tools, plus it's a great example of what Immedia can do. But you should still plan to spend considerable time figuring out how to use Immedia's many features.

We also found some strange behaviour, such as movies disappearing when there was more than one on a page, even though they were not set to be hidden. Cropped movies often obscured text that overlapped the cropped portion.

#### Macworld's buying advice

If you're the rare QuarkXPress user who really needs to transform print documents into interactive electronic versions, QuarkImmedia is worth a look – but be prepared to spend a lot of time learning how to use this package.

**Galen Gruman**

#### Fast, flexible image-compression plug-in



## Genuine Fractals Print Pro

**Publisher:** Altamira Group  
[www.altamira-group.com](http://www.altamira-group.com)

**Distributor:** Digital Toolbox (0181 961 6622)

**Pros:** Fast; lossless and lossy image compression; CMYK support.

**Cons:** RAM-hungry.

**Price:** £249 ex VAT

**Star Rating:** ★★ ★★/8.8

JPEG image compression is fast and efficient, but print-media pros avoid the format because of its tendency to add artifacts to images. So how do you squeeze that eye-popping nature scene down to a manageable size without losing the rich colours and crisp detail? The best solution is Altamira Group's Genuine Fractals Print Pro, an Adobe Photoshop plug-in that uses fractal geometry to compress images with little or no apparent loss of quality. Better yet, it lets you decompress images well past their original dimensions without compromising quality.

An upgrade to Genuine Fractals 1.0, Print Pro adds a lossless-compression option

#### Powerful vintage synthesis program



## Retro AS-1

**Publisher:** Bitheadz  
[www.bitheadz](http://www.bitheadz)

**Distributor:** Turnkey (0171 419 9999)

**Pros:** Very powerful Mac synthesis software in terms of features, polyphony and sound quality.

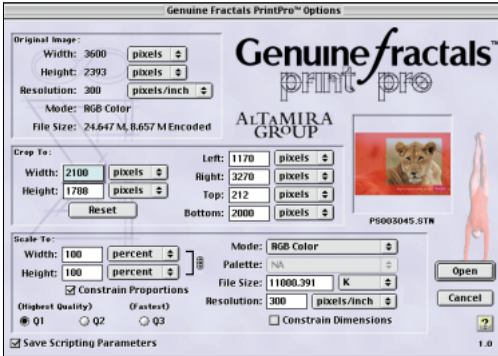
**Cons:** Really needs a high-spec G3, especially if you plan to run it alongside your sequencer.

**Price:** £129.99 inc VAT

**Star Rating:** ★★ ★★/8.7

Twenty years ago, polyphonic analogue synthesizers came in heavy wooden cases, cost around £3,000 and played five notes at a time. Two years ago, manufacturers like Korg, Yamaha, Roland and Nord used proprietary DSP chips to create keyboards which 'modelled' this retro sound and typically these increased the polyphony to ten notes for £1,000-£1,500.

Today's Macs have become so powerful that DSP software synths can deliver the same modelled vintage synthesis with no additional hardware. The appropriately-named Retro AS-1 is one such program and



#### Room to grow

*Genuine Fractals Print Pro lets you crop and scale an image as you decompress it.*

to version 1.0's "near-lossless" technology. Print Pro also addresses Genuine Fractals' major weaknesses with faster performance, better memory management, and support for CMYK and Lab images. (Altamira has also released Genuine Fractals 2.0, a £129 version that offers all the features of Print Pro except CMYK and Lab support.)

Genuine Fractals Print Pro works best with high-quality digital images captured at 15MB to 25MB. Instead of using version 1.0's painfully slow export module to compress a file, you use Photoshop's Save As command and select Genuine Fractals' STN compression format from the standard pop-up list. Not only is this more transparent

than in the previous version but it's also much faster.

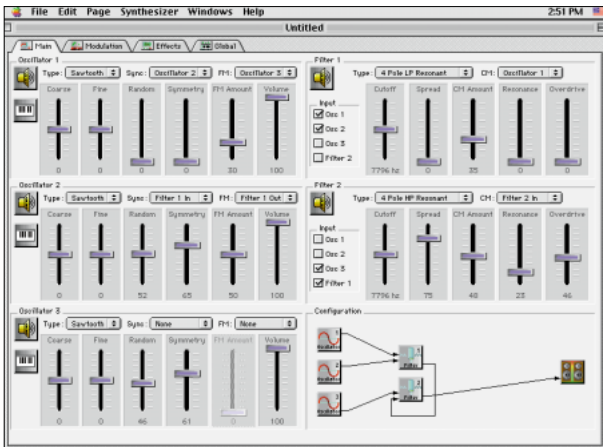
The program's lossless encoding retains all image data while offering a compression ratio of slightly better than 2:1. Near-lossless encoding offers a higher ratio of about 5:1 but sacrifices a small, generally imperceptible amount of image data. To decompress an STN file (or an FIF file from version 1.0), you select it using Photoshop's File Open command. The plug-in then displays a dialogue box with an image preview. You can crop or scale the image or choose from three options for balancing decompression speed with image quality.

If you scale the image to its original size, decompression is reasonably fast. If you enlarge the image, however, prepare to wait – and don't forget to stock up on RAM. The new version improves on its predecessor by using virtual memory and disk caching, but you'll still need lots of RAM if you want to convert a 20MB photo into a 100MB poster.

#### Macworld's buying advice

Genuine Fractals Print Pro delivers the same image-compression and -enlargement capabilities as its predecessor in a faster, more flexible package. It's ideal for any print-media professional who frequently transmits high-resolution images.

**Stephen Beale**



#### Vintage vibes

*Retro's powerful synthesis parameters are complemented by an architecture that can be as complex as you want.*

while by no means the cheapest at £129, is one of the best sounding fully-featured ones. Dependant on CPU power, it can generate up to 32 different notes at once using different timbres for each of 16 MIDI Channels and two insert and two master effects (a bonus original analogue synths never offered).

On a 266MHz G3 Mac, it continuously produced in excess of 20 voices when run alone and more than ten when triggered via OMS from Cubase or Logic sequencers run on the same Mac. Such is the warmth and 'phatness' of its sounds that this never seemed insufficient, but as clock speeds

increase, the full polyphony should become available even when used simultaneously with a triggering sequencer.

In the meantime, an indispensable power usage parameter in the AS-1 Control Panel lets you limit the percentage of CPU power it can take (to prevent your MIDI sequencer from being starved of power), while a separate AS-1 Status app lets you monitor polyphony and CPU usage in realtime. MIDI Drivers are provided for direct Serial port control or for OMS or FreeMIDI, so configuring it with an onboard

continues page 57

sequencer or external MIDI set-up is a breeze.

Performance is controlled via the AS-1 Keyboard app (which lets you play from an on-screen keyboard via the mouse if you don't have a MIDI keyboard or interface to hand), while the AS-1 Mixer app lets you set different sounds, volumes, pans and effect amounts for all sixteen MIDI channels (ideal for using Retro with a sequencer).

For those familiar with analogue synth terminology, it offers three oscillators, two multi-pole filters (with numerous different configurations), three envelopes and dozens of LFOs per voice, but if all that's Greek to you, don't worry, it comes with over a 1,000 pre-programmed sounds that auto-install from the CD. These are categorized into

handy banks of 128 patches, so whether you're looking for that screaming acid lead/bass or a Moog/Sequential/Oberheim timbre that Mssrs Wakeman, Emerson or Banks might have used 20 years ago, you'll find it quickly.

All edits in the authentic slider/switch programming windows can be heard in realtime and if the mouse is not your idea of performance control, Retro responds to Continuous Controllers from a MIDI keyboard so you can control your filter cut-off, resonance or any other parameter from your keyboard playing.

Sound quality is good even from the Mac's mini-jack, but routing the Sound Manager output through a PCI sound card (we tried

the Korg 1212I/O and Digital Media's DIGI 32/8) really brings out the excellent frequency response and the powerful bottom end (those with Digidesign hardware can achieve this through their Direct IO protocol).

### Macworld's buying advice

Retro AS-1 wouldn't be out of place in the most professional production set-up, which is why vintage synth aficionados like Howard Jones and Depeche Mode producer Daniel Miller have found their way to it. But to get the most out of the program in terms of polyphony and multi-timbrality, treat this program as the excuse you've been looking for to trade up to a powerful G3.

**Paul Whiffen**

### Stereo software sampler



## Unity DS-1

**Publisher:** Bitheadz

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

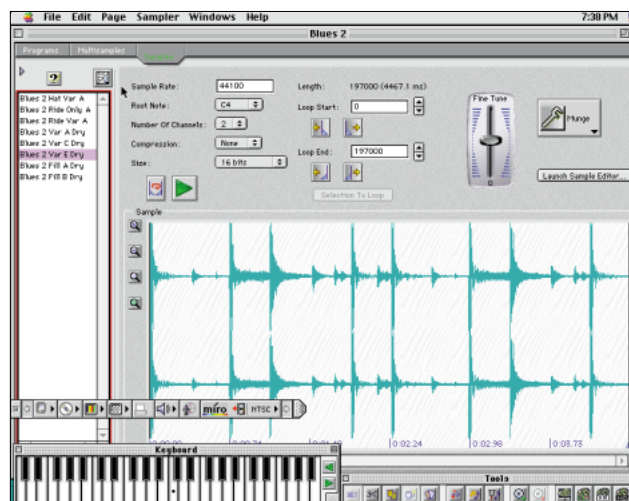
**Distributor:** Turnkey (0171 419 9999)

**Pros:** Turns your Mac into a professional sampler without the expense of dedicated hardware; has biggest industry-standard sound library.

**Cons:** Needs a powerful G3, as well as lots of hard disk space and RAM, especially when editing sounds.

**Price:** £249.99 inc VAT

**Star Rating:** ★★★★★/8.9



### Keep things in sync

*Unity DS-1 can sample, edit and play back in phase-locked stereo.*

The increased power of today's CPUs have brought down the cost of many audio sampling applications. For six months now, Mac-owning musicians have watched enviously as the £600 Gigasampler program offered this to PC users (a rash few even bought a Pentium II just to be able to use this program). By using the hard drives as the online storage space and just loading the first few samples into RAM, it's able to keep thousands of sampled sounds available for access from a MIDI keyboard or sampler. But no longer will any Mac-loving musician be forced to contemplate the unthinkable; indeed, Bitheadz's Unity DS-1 may well cause defection in the other direction offering significantly more features than Gigasampler at half the price.

The latest release from Bitheadz offers the same instant access to huge banks of sampled sounds. Clearly it's doing the same kind of trick with hard-drive storage and memory buffers, as 8MB sound banks taking over a minute to load into a conventional sampler are ready to play a couple of seconds after selection. This makes Unity a lot more usable in a live scenario than traditional samplers which (even with a hard drive) could lead to embarrassing gaps between songs. Only when you want to edit a multi-sample do you have to wait the longer time for the entire thing to load into RAM.

If the huge quantity of samples included on the CD isn't enough for you (including banks from benchmark libraries like E-mu), and you haven't time to make your own, then Unity's ability to import programs from Akai CD will be crucial (it even imports the keyboard mapping). For those whose Mac-based sampling has previously been via Digidesign's SampleCell, Unity can also read this data format directly. Other direct import sources include AIFX, SDI & SDII, CD-Audio and WAV files.

Those who have the courage to make their own samples will find a phase-locked stereo record facility (vital to make sure that left and right channels stay in sync) complete with DSP functions like Normalise, Fade, Reverse and Crossfade Loop (ideal for economizing on memory). Once multisamples have been assigned across the keyboard, then you can apply all the Retro-style synthesis parameters.

But comparison with Bitheadz's other program does not end here. Like Retro, it has two insert and two master effects and can be used multitimbrally on 16 MIDI channels via the DS-1 Mixer. Unity also comes with direct Serial drivers as well as those for OMS and FreeMIDI, making its use with sequencers a breeze.

The best thing we found was that it could be used side by side with Retro with

Sound Manager handling the output of both programs perfectly. This highlighted Unity's only downside, its heavy CPU usage (especially to achieve the theoretical 64-voice maximum polyphony). Fortunately, Unity's Control Panel lets you limit polyphony and CPU usage to avoid encroaching on other programs (particularly important when running sequencer, Retro and Unity all together).

Outputting at higher quality than the Mac's mini-jacks is not restricted to Sound Manager-compatible PCI cards. Individual outputs are available via Digidesign Direct IO, but Version 1.03 (recently posted on the Bitheadz Web site), adds Steinberg ASIO driver support, also allowing multi-channel input/output. A brief test with the Korg 1212I/O showed the first eight MIDI channels assigned to separate outputs.

### Macworld's buying advice

The only comparison available, Gigasampler, runs on the PC, is twice the price and doesn't offer all the synthesis capabilities of Unity. But the best reason to get Unity is its advantage over hardware samplers – virtually instantaneous loading and full integration with Mac sequencers and audio cards.

**Paul Whiffen**

Reviews continues page 59





## Renaissance EQ 2.5

**Publisher:** Waves

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

**Distributor:** SCV (0171 923 1892)

**Pros:** Can adjust several parameters at once; technical innovations in the filter designs.

**Cons:** Interface takes some getting used to.

**Price:** £239 inc VAT

**Star Rating:** ★★★★★/8.4

## Q-Metric EQ 1.01

**Publisher:** Steinberg

[www.steinberg.de](http://www.steinberg.de)

**Distributor:** Arbiter (0181 970 1909)

**Pros:** Has all the parameters you'd expect to find on a high-end hardware device; user-friendly interface.

**Cons:** None.

**Price:** £199 inc VAT

**Star Rating:** ★★★★★/9.0

## Waves DeEsser 2.5

**Publisher:** Waves

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

**Distributor:** SCV (0171 923 1892)

**Pros:** Lots of detailed control available.

**Cons:** Demands more technical knowledge than the SPL De-Esser making it less suitable for novice users.

**Price:** £169 inc VAT

**Star Rating:** ★★★★★/8.4

## SPL De-Esser 1.01

**Publisher:** Steinberg

[www.steinberg.de](http://www.steinberg.de)

**Distributor:** Arbiter (0181 970 1909)

**Pros:** One of the simplest plug-ins to use.

**Cons:** Lacks sophisticated controls of Waves DeEsser.

**Price:** £99 inc VAT

**Star Rating:** ★★★★★/7.5

## Renaissance Compressor 2.5

**Publisher:** Waves

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

**Distributor:** SCV (0171 923 1892)

**Pros:** Very easy to use.

**Cons:** Lacks some of the more sophisticated control; no expansion or gating.

**Price:** £239 inc VAT

**Star Rating:** ★★★★★/8.7

## Drawmer Dynamics 1.0

**Publisher:** Drawmer

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

**Distributor:** Digidesign (01753 655 999)

**Pros:** Provides first-rate limiting, compression, expansion and gating for Pro Tools TDM systems.

**Cons:** Can be a bit fiddly to set up.

**Price:** £399 ex VAT

**Star Rating:** ★★★★★/8.4



### Compression controls

Drawmer Dynamics window showing the Gate/Compressor/Limiter module with its wide range of controls.

### Below left: Everything to hand

The Q-Metric editing window shows the parameter controls neatly arranged and with clear, intuitive legends – with the EQ response curve displayed below.

This month's cover CD has online demos of all three Waves plug-ins.



This roundup presents an overview of six new audio plug-ins for the Mac, with comparisons drawn between similar pairs. Waves offer three new items to compare with similar offerings from Steinberg and Drawmer. As far as compatibility is concerned, Waves version 2.5 plug-ins are now supported by Mark of the Unicorn's Digital Performer 2.3 or higher, as well as Premiere, VST and Pro Tools TDM. Drawmer Dynamics is TDM-only, while the Steinberg plug-ins are VST format only.

### All things being equal

Waves Renaissance EQ features a unique user interface. The top half of the window contains the frequency response graph with the filter centre frequencies visible as coloured dots so you can see exactly what you're doing. Three rows of buttons let you set each filter's gain, frequency and 'Q' or bandwidth. At the bottom of the screen, a row of buttons lets you switch filters on or off and select the filter type for each band.

The Renaissance EQ has three modules for 6, 4, or 2-band operation and, uniquely, features simultaneous multi-parameter control. Simply use the selection rectangle or shift-click to select a group of controls, then drag on any of the selected controls to change them all together. You can, of course, still alter parameters one at a time.

Renaissance EQ comes with loads of useful presets, based on the three filter types available, including cut, resonant shelf and bell types. You can alter the 'Q' values on all these filters and the parametric bell filters are designed to have similar characteristics to the classic 'Pultec' analogue designs.

If you're looking for a serious equalizer tool to 'sweeten' your recordings, then

Steinberg's Q-Metric parametric equalizer deserves your full attention. Unlike many VST plug-ins that have simplified feature sets, Q-Metric includes everything needed to 'zoom in' on frequencies of interest and adjust the response accordingly.

The seven filter sections include Low Cut and Shelf, three mid-frequency filters, and High Shelf and Cut. These are arranged in vertical columns with an on/off switch at the top of each section and three switches below to let you process left, right or both channels of the stereo input.

Each filter has a frequency control that you can use to set centre, cut off or stop frequency. Mid-frequency filters allow full control of their parameters – here you set the centre frequency for the range of frequencies over which the filter acts. 'Q' controls let you set the bandwidth, which these filters control. Finally, all filters have gain controls to let you set the amount of filtering – apart from the Cut filters, which have a fixed amount.

### Less interference

If you ever wondered how to get rid of excessive sibilance in recordings of speech or singing, then wonder no more. You need a de-esser to tame the louder 'esses'. Waves DeEsser is a professional tool with a simple, yet powerful interface.

The interface has four main buttons. The top one lets you switch the Audio path from Split to Wideband. Split affects only high frequencies for more accurate de-essing while Wideband suits gentler de-essing. The second button lets you set the sidechain filter Frequency to match that of the 'esses' you want to fix while the third button lets you choose the Side Chain filter type. DeEsser normally works in HighPass mode, but the BandPass filter can be used to isolate just one type of 'ess' – as it 'looks' at just a narrow range of frequencies. Finally, the Monitor button lets you choose whether to 'listen' to the full output or just the sidechain.

A Threshold slider lets you set the level above which attenuation of the 'esses' takes place – just slide this down till the 'esses' sound natural while keeping an eye on the meters to make sure the levels are OK.

Steinberg SPL De-Esser version 1.01 comes in Steinberg's VST format, so it can be used with Cubase VST or other

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sequencers such as Studio Vision and Logic Audio. The user-interface could hardly be simpler. You get an on/off switch for the Auto Threshold function, a pair of selector switches to select male or female voice types, an 'S'-reduction knob to control the amount of de-essing, and a simulated LED display to indicate the level by which the sibilant frequencies are being reduced.

Choosing Male or Female adjusts the sibilant frequency settings and recognition parameters to the characteristic frequency ranges of the male or female voice. The Auto Threshold feature is ideal when recording less-experienced singers who often move around inadvertently in front of the microphone causing the output level to vary. With Auto Threshold on, Threshold and Ratio settings are automatically and constantly adjusted to cope with changing input levels.

### Compression

The Renaissance Compressor has an appealingly-simple user interface with sliding buttons for controlling Attack and Release, Threshold, Ratio and output makeup Gain, along with three selector buttons for Arc/Manual, Opto/Electro and Warm/Smooth.

The input and output signal meters let you see at a glance where to set your threshold and makeup gain, while a large bar meter in the centre shows the signal attenuation. In Manual mode you enter the release time using the Release control while ARC mode varies the release time automatically depending on the input signal. ARC mode is similar to responsive vintage compressors and works very well on individual tracks. Electro-type compression generates very fast release times for transient sounds

like kick-drums, while Opto-mode behaves like classic opto-coupled designs – perfect for entire mixes or tracks.

Character can be set to either Smooth or Warm. In Warm mode, low frequency harmonics added to the signal while approaching deeper compression produce a warm and rich sound. Smooth mode prevents the addition of harmonics – keeping the sound as close as possible to the original.

The Renaissance Compressor also includes a limiter set so users can't reach clipping through the compressor no matter how much gain is added. Plenty of presets are provided for mastering, decompression, vintage emulation and so on. For example, 'Mastering Opto' is a Classic mastering setup which allows transients to pass, gently compressing only the average level. 'Drums', on the other hand, is good for submix grouping of kick/snare and can also work well for full kit compression.

Drawmer Dynamics emulates the controls on Drawmer's hardware units. Three modules are provided: DrawmerECL – Expander/Compressor/Limiter, DrawmerGCL – Gate/Compressor/Limiter, and the DrawmerKey for use with the Gate module.

The DrawmerKey lets you designate any track as an external trigger source for the Gate module. A key is typically used with a gate to achieve tighter synchronization between two parts played 'live'. The gate opens to let you hear the audio only when audio is playing on the key track. So, if the bass drum is played very accurately, but the bass guitar less so, you can gate the bass guitar track and key it using the bass drum track so you hear bass guitar notes play only while the bass drum plays – not start-

ing just a little before or ending just a little after as you would if the bass player was playing slightly off-time.

The Expander module allows a wide range of adjustment and will automatically vary ratio and release times depending on the dynamics of the input signal – making it easier to avoid cutting off quiet word-endings, for example. The Gate also has impressive features, including Key Listen so you can hear the effect of the Key Filter, while the Compressor sections combine both traditional compressor styles with a 'soft-knee' approach to allow full creative control. Finally, a Peak Limiter catches any peaks a slow Compressor Attack might miss – particularly useful for digital recording.

### Macworld's buying advice

It was a tough choice between the Waves Renaissance and the Steinberg Q-Metric equalizers. Although the Renaissance is slightly more sophisticated and may interest professional sound engineers, I preferred the Q-Metric because of its user interface.

Of the two de-essers, the Steinberg performs adequately on straightforward male and female vocals and is a good buy for beginners. But my choice would be the Waves De-Esser as it gives just the right amount of technical control from a beautifully-designed user interface.

Finally, I would use the Renaissance Compressor for straightforward compression needs as it delivers excellent results with a minimum of fuss, while Drawmer Dynamics is a tool for the professional audio engineer, as it emulates the well-known hardware versions extremely well.

**Mike Collins**

### Long-running adventure game goes 3D



## Lode Runner 2

**Publisher:** MacSoft

**Distributor:** Softline (0181 401 1234)

**Pros:** Sumptuous graphics; great stereo sound FX; good selection of puzzles; highly addictive.

**Cons:** Tough gameplay – possibly too tough.

**Price:** £39.95 inc VAT. Demo available on this month's cover CD.

**Star Rating:** ★★★★★/8.2



### Nearly there

*Only four pieces of gold to go – but the Blue Monk will make life tough in this level from Jungle World.*

character, Jake Peril, moves north-east, north-west, south-east and south-west on the compass rather than left, right, forward and back, an idea that works well. Additionally, Jake can now 'scale' – move hand-over-hand along ropes.

Play starts at the Jump Station from where you select one of the game's five worlds. On completion of a level by solving the puzzles and collecting all the gold, the exit portal becomes active and transports you to the next level. Ultimately, on completion of all levels within a world, you find yourself back at the Jump Station ready for

the next world. Each world has its own look – even the portals and gold have a different appearance.

All versions of Lode Runner have the bomb element but LR2 has 3D versions – six in all. These vary from simple x, y or z-axis straight-line blowouts through to the sphere, a deadly 27-square doozy. Leave Jake in the line of fire and he perishes in the same way as any bricks. LR2 also sports ten different power-ups, each of which provide Jake with a unique ability for a short period of time, and three kinds of triggers that alter aspects of the current level. With three different kinds of monks on the prowl (and instant death on contact), the old grey matter is in permanent use.

### Macworld's buying advice

With a number of new features including multiplayer mode (either co-operative or deathmatch), a comprehensive set of tutorials and a level editor, LR2 will addict puzzle freaks instantly. However, it may leave the rest of us a little cold through its sheer difficulty at times. It's a bit like chess – easy to get the hang of the moves but tough to do well. Check out the demo and decide for yourself. **Vic Lennard**



# Speed

The new G3s do not place style

# freak

above substance. **By Allyson Bates**

WHILE APPLE HAS BEEN basking in kudos by waging war on the boring beige-box consumer blues with its iMac, professional users have been staring at their plain Power Mac G3 boxes and wondering when they'll be able to use a computer that doesn't just Think Different, but looks it.

Their wait is over. Decked out in blue and white plastic, Apple's new Power Mac G3 series promises to add some colour to the lives of professional Macintosh users, by combining iMac style and affordability with impressive power and leading-edge connections.

These new Power Mac G3s may be minitowers with external monitors, but they're still undeniably related to the iMac.

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They may use the same polycarbonate plastic that makes up the iMac's shell – albeit in a darker shade of blue. And their daring curves, translucent surfaces, and two-tone colour scheme are definitely derived from the iMac school of design classics.

But the story of these new Power Macs G3s is most certainly not a case of style over substance. For, beneath the striking, eye-pleasing design, lurks an impressive update to the Mac's hardware architecture. The very least it promises is that the way you use your Mac in the next millennium will be deeply affected – in a good way, of course.

Goodbye, beige box

Once you get past the striking blue and white plastics, the most noticeable feature of the new chassis is the addition of four curved handles on the corners, which make this Mac less unwieldy when you need to move it. Its ribbed white sides sport a blue Apple logo with a bold G3 silk-screened onto the metal case, just visible behind it.

Unfortunately, some of Apple's more questionable iMac design elements are also a part of its big brother. While the new Power Mac G3 does not come with a floppy drive (no surprise there), what most configurations are really missing is an Iomega Zip drive, currently

available in only one of Apple's standard configurations. And then there's the compact iMac keyboard and ergonomically dubious round iMac mouse, both of which come standard with these models.

**Promising connections** Aside from the flashy colours and a few curved corners, the biggest change on the new Power Mac series is the way you hook-up peripherals. Some foreign ports have taken the place of the historic and quickly-becoming-archaic Mac serial (printer and modem) ports: USB and the much-anticipated FireWire.

The new Power Mac G3 offers two USB ports on a single bus, for peripherals such as keyboards and digital cameras. This replacement

replace – and are much faster than – the SCSI port on the back of your current Mac (see the sidebar, "So long, SCSI? FireWire arrives").

The arrival of FireWire spells the end for built-in SCSI on the Mac. If you want to use SCSI hard-drives with these new Power Macs, you'll need to buy a PCI SCSI card. (The top-of-the-line Power Mac G3 model comes standard with both a 9GB Ultra II SCSI hard drive and a PCI SCSI card.) For users of SCSI devices who need lots of PCI slots, that's bad news – SCSI off the motherboard means you'll need to fill a slot if you want to keep using your SCSI devices.

There's still one ADB port on the back of the new Power Mac G3, meaning you can squeeze a little extra life out of older input devices. So if you hate the new, round mouse, you can keep your old one.

**Open sesame** In addition to the colourful exterior, the new Power Mac G3 design offers some impressive high-end features. These new G3's are by far the most easily accessed (and upgraded) Macs we've ever seen. Just pull on the small round handle on the side of the tower, and the entire side of the computer opens up. The Mac's motherboard is mounted on that surface, giving you easy access for upgrading RAM or installing PCI cards. And unlike Macs of the past, the new G3's don't have to be turned off before you can open the door and show off what's inside.

Inner beauty

**Mighty megahertz** Of course, the heart of these new G3's is a G3 processor. Apple offers three different processor speeds in these new models: 300MHz, 350MHz, and a new speed record for Apple, 400MHz. These new Macs also offer a 100MHz system bus instead of the 66MHz bus of previous G3 desktop models. According to exclusive tests run by *Macworld*, the new Power Mac G3/400 offers 30 per cent faster CPU performance, 47 per cent faster disk speed, and a whopping 115 per cent faster graphics speed than the old top-of-the-line Power Mac G3/300.

**More memory** When it comes to RAM expansion, these Macs excel. If you feel the need to max-out your RAM, you can: each slot can handle DIMMs up to 256MB, meaning the upper limit for RAM is an astonishing 1GB. Hard-core Adobe Photoshop users, take note.

However, these new RAM slots do make one compromise: compatibility with earlier Macs. The new Power Mac G3's use the same PC100 RAM that the iMac uses. PC100 RAM is usually cheaper, since it's also used on Wintel-based PCs – but it's incompatible with previous Mac RAM types.

**3D power** At one time, a fast graphics accelerator was considered an expensive add-on, but an ATI Rage 128 graphics card comes standard on all new G3s. The Rage 128 supports resolutions up to 1,900-x-1,200 pixels and up to 24-bit colour. Because the card uses SDRAM, a different type of video RAM than SGRAM – which was found on previous models – these cards are less expensive. The card's Rage 128 chip gives these new systems 3D power for graphics-intensive games and other 3D applications. The card fits into a high-speed PCI slot – it runs at 66MHz, as opposed to the traditional 33MHz bus speed of the Power Mac G3's three other PCI slots.

**The three-slot shuffle** Not counting the 66MHz PCI slot, which houses the graphics card, these new G3 Macs offer three general-

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Inside the new G3

**A** PCI Slots (shown with two cards installed): All three slots are free, except in the 400MHz configuration, which includes a pre-installed SCSI card.

**B** PCI 66MHz Slot: This slot is used by the built-in ATI Rage 128 graphics card.

**C** Easy access: The motherboard is mounted on the side door, which swings open for quick installation of RAM, PCI cards, and the like.

**D** DIMM slots: Four readily-accessible RAM slots make it easy to ramp up your memory to 1GB. The switch to PC-standard RAM will make memory upgrades less expensive and more available.

**E** G3 processor: The PowerPC chip, running at speeds of 300MHz, 350MHz, or 400MHz, is housed in a ZIF (Zero Insertion Force) socket.

**F** Expansion bays: There is room for three internally-accessible devices (including a built-in hard drive) and two externally-accessible devices (including a CD drive, a DVD player, or an Iomega Zip drive).

for both Mac serial and ADB (Apple Desktop Bus) ports is faster and much more flexible than those old technologies.

But unlike the iMac, which doesn't offer any high-speed means of connecting external devices, these new Macs also include two FireWire ports. FireWire is an impressive new connection technology that makes its debut on these new G3 Macs and will probably appear on all future Power Macs as well. These two new FireWire ports

Macworld Exclusive: All the new G3 speeds

Best results in test. Longer bars and higher scores are better.

Old G3 and new G3 together...

	Processor Mix	Disk Mix	Graphics Mix
New G3/400 Power Macintosh	1,310	1,408	3,019
New G3/350 Power Macintosh (DVD)	1,143	1,337	2,869
New G3/350 Power Macintosh	1,145	1,362	2,882
New G3/300 Power Macintosh	926	1,272	2,604
Old G3/300 Power Macintosh	1,002	956	1,404

Behind our tests

MacBench 5.0 uses special test programs tuned to measure and isolate the performance of the processor, disk, and graphics subsystems. Test platforms had a minimum of 64MB of RAM, a 2,048K disk cache, and Mac OS 8.5.1. All displays were set to a 1,024-x-768-pixel resolution at 24-bit colour. – Macworld Lab testing supervised by Gil Loyola



# SCSI wire fired

The iMac introduced Macintosh users to USB, a simple and powerful way to connect peripherals to your Mac. But USB is only half the story: it's faster than the old Mac serial and ADB ports, but isn't a suitable replacement for the SCSI port that's been standard on the back of every Mac up till now. Enter FireWire, the new connection technology that makes its debut on the Power Mac G3s and combines USB's simplicity with blazing-fast speed.

USB is great for connecting keyboards, mice, and joysticks (and perhaps even slow disk-drives or printers) to your Mac, but when it comes to sheer speed, USB is no replacement for SCSI. When you need to move lots of data in a hurry – for example, if you want a really fast hard drive – FireWire is the answer. Boasting a combination of speed, ease of use, and configuration flexibility, FireWire is destined to become the high-performance standard for connecting computers, digital camcorders, digital VCRs, DVD-ROM drives, high-speed hard drives, printers, and even high-definition TV sets.

### From Apple with love

FireWire was invented at Apple, and approved as an industry standard in 1995. Most companies that produce FireWire-compliant devices don't need a licence from Apple, but no one can use the Apple-trademarked FireWire name without paying a licensing fee to Apple. That's why just about everybody but Apple calls FireWire "1394," the name it was given by the IEEE, an international standards body.

As we went to press, sources claimed that Apple is going to charge new FireWire licensees \$1 per port for the ability to put FireWire capability into their systems and peripherals.

So if Apple came up with the idea (and has the market cornered on the cool moniker), how come PC vendors such as Compaq managed to get FireWire into their PCs before Apple got it into the Mac? Good question.

Actually, Apple got support for FireWire

into the Mac OS before Microsoft got it into Windows, and has offered a FireWire PCI card since April 1998. FireWire just hasn't become standard on new Macs until now.

### So long, SCSI

FireWire shares many of USB's best features, meaning it'll be a big improvement over SCSI in terms of ease of use. FireWire devices are hot-pluggable, so you can connect and disconnect them even when your Mac is running; there's no need to turn everything off just to add or remove a device, as you must with SCSI.

FireWire's connectors are simple to use: they don't have the clips or thumbscrews typical of SCSI connectors (see the illustration "Make the connection"). To add a FireWire device, you just plug in the connector; to remove it, you squeeze the connector slightly and pull it out.

FireWire also doesn't force you to worry about sticking terminators on the end of a chain or setting device IDs. If you've spent much time working with SCSI drives, scanners, and the like, you know what a pain it can be to flip switches, push little tabs, or rotate thumbwheels to ensure that no two devices have the same ID.

FireWire devices have unique device IDs, too, but FireWire automates much of the hassle: when you plug in a new device, a FireWire bus reconfigures itself, assigning new IDs as necessary.

**Device-a-palooza** You can connect up to 63 devices to a FireWire bus, a big improvement over SCSI, which is limited to seven devices. While that 63-device limit might seem like an embarrassment of riches to most people, it's not even the upper limit. If you add a bridge to a FireWire bus, it divides the bus into multiple segments, each of which can support 63 devices. FireWire is also more flexible when it comes to how you connect

your devices. SCSI requires that you string all the devices together in a chain. With FireWire, you can connect up to 16 devices in a chain – but you don't have to link all your devices in one continuous chain. That's because, unlike SCSI, FireWire allows branching. For example, imagine a FireWire external hard drive with three ports. You use one port to connect the drive to the chain leading back to your Mac, and another to connect more devices down the chain. But you can also connect additional devices to the third port, creating a second branch if you want to spread out your peripherals in several directions simultaneously.

**Out on a limb** Not only can a FireWire chain branch out in different directions, but it can also go for long distances. The SCSI on the back of your Mac can barely take you to six metres, whereas a FireWire segment can be as much as 72 metres long (if you're using an Ultra-2 SCSI PCI card, this can be extended to 12 metres). But FireWire provides a way out here, too. By adding a repeater, which cleans up and amplifies the signals travelling on the wires, you can extend FireWire's reach even further without having to worry about degradation.

### Blazing performance

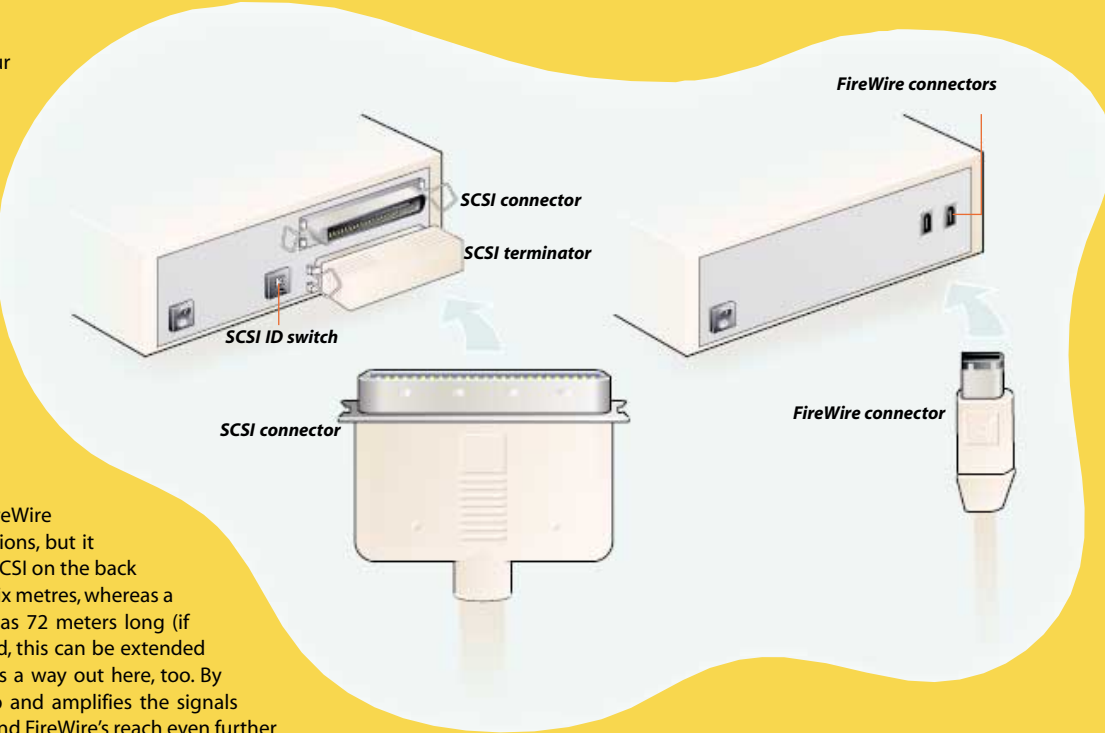
FireWire's ease-of-use makes connecting peripherals easier, but its greatest strength is its speed. To transfer uncompressed, full-frame full-speed video requires around 210Mbps. USB can't transfer more than 12Mbps, which isn't even in the ballpark. The SCSI port on the back of old Macs could manage 40Mbps at best.

The FireWire port built into the new Power Mac G3's, on the other hand, can transfer data at up to 400Mbps. (SCSI can reach faster speeds – up to 640Mbps – via a SCSI PCI card.)

FireWire even has room to grow. Soon there will be an upgraded version of FireWire hardware that will be able to handle up to 800Mbps, and future versions might support transfer rates that exceed 1.5Gbps. With bandwidth like that, a video-editing system could receive multiple live-video feeds simultaneously and never drop a frame.

**Guaranteed delivery** Not only is FireWire speedy, but it also has the ability to guarantee speed to applications that need it, something that SCSI can't do. When your Mac wants to read a file from a SCSI hard drive, for example, it has to compete with all the other data being exchanged on your SCSI chain. If several devices are all trying to transfer data

### Make the connection



simultaneously, the exchange between your Mac and the hard drive will slow down. That's not great for any task, such as handling digital video or burning CDs, that requires a guaranteed real-time data delivery rate.

But FireWire supports a system called isochronous transfer, which can provide that guarantee. In an isochronous transfer, two devices on a FireWire bus stake a claim to a guaranteed amount of bandwidth – and they get ownership of that bandwidth for the duration of the data transfer, regardless of what other devices may be using the bus.

So when you're capturing video, burning a CD or DVD disc, or performing other tasks that require a steady stream of data, you don't have to worry about other devices interrupting your data stream and causing dropped frames or failed disc burns.

**Versatile performer** One of FireWire's most interesting features is that it supports more than one computer on the same bus segment. Thus you could use it to let several computers share a peripheral device, such as a scanner or a printer.

You could even use it as an alternative to ethernet for file transfers between computers. (Apple, however, says it has no plans to provide software to enable either device sharing or Mac-to-Mac file transfers. For this to happen on the Mac, other companies will have to step into the breach and write that software themselves.)

The flexibility doesn't stop there. FireWire even supports device-to-device transfers that don't involve a computer at all. That makes it possible to copy digital-video data from a digital camcorder directly to a digital VCR, or directly to a hard drive, without the need for computer control. This is all assuming that vendors build such capability into their devices, of course.

### The wait begins

FireWire products are beginning to make their mark in the digital-video domain. FireWire-enabled digital-video camcorders are available from Sony, JVC, Panasonic, Canon, and Sharp; Sony, JVC, and Panasonic also offer FireWire-savvy digital VCRs. As the Mac community starts buying new Power Mac G3s, it's clear that the number of available FireWire products will continue to grow. At press time, however, all the companies we contacted were playing their cards close to their chests. Although many companies announced last summer that they'd be producing USB products for the iMac, those products are only slowly starting to arrive. FireWire-savvy MIDI devices, printers, CD changers and CD-R recorders, and hard drives are on the way, but just how quickly they'll begin to reach users' desktops is still anyone's guess.



SCSI v FireWire: any contest?		
	SCSI	FIREWIRE
Number of devices supported	7 (A)	63 (B)
Requires termination	yes	no
Hot-pluggable	no	yes
Sets device IDs automatically	no	yes
Allows branching connections	no	yes
Physical connector type	nasty	nice
Computer required for data transfer	yes	no
Standard transfer rate	40 Mbps (C)	400 Mbps
Maximum transfer rate	1.2 Gbps (D)	>1.5 Gbps D

(A) In addition to the computer. (B) Can be increased by using a bridge. (C) Standard Mac external SCSI. (D) Future implementation.

## Apple's base configurations at a glance

MODEL	PRICE	STAR RATING	CACHE	RAM	HARD DRIVE	CD/DVD DRIVE	ZIP DRIVE	CONTACT
<b>Power Mac G3/400MHz</b>	£2,029	★★★★/8.7	1MB	128MB	9GB Ultra II SCSI	24x CD-ROM	no *	0800 783 4846
<b>Power Mac G3/350MHz</b>	£1,699	★★★★/8.8	1MB	128MB	12GB Ultra ATA	24x CD-ROM	yes	
<b>Power Mac G3/350MHz</b>	£1,349	★★★★/8.9	1MB	64MB	6GB Ultra ATA	DVD (1.5x DVD; 32x CD)	no *	
<b>Power Mac G3/300MHz</b>	£1,069	★★★★/8.7	512K	64MB	6GB Ultra ATA	24x CD-ROM	no *	
* Optional								

purpose PCI slots. But several technologies commonly placed on PCI cards are now built-in or available as options that don't use up slots. For example, you won't need a Fast Ethernet card because the system comes with 10/100BaseT ethernet. MPEG-2 decoding – necessary if you want to watch DVD movies on your Mac – is available as an optional daughtercard that plugs into the system's video card, and therefore doesn't require an additional slot. And, of course, the graphics card itself goes into that special fourth slot.

**The bottom line** This arrangement of slots and built-in capabilities should satisfy all but the most demanding users – those looking to load up their Macs with multiple video and sound cards, for example. For those users, PCI expansion chassis remain the only option. Thankfully, when it comes to expansion, these systems are loaded. The new G3s offer three internal 3½-inch bays for installing additional drives and two more externally accessible 5¼-inch bays for storage devices such as a 24x CD drive, or the optional DVD-ROM and Zip drives. But keep in mind that since there's no built-in SCSI bus on these models, you'll need to add a PCI card if you want to add internal SCSI devices.

### A new view

No new Power Mac would be complete without a matching display, and Apple hasn't disappointed here. Apple's flat-panel display and new line of CRT monitors shine in the same translucent plastic as the new computers they've been matched with. Apple's new 17- and 21-inch Studio Display monitors stand on a sturdy tripod that doubles as a space to stow away the pint-size iMac keyboard when you're not using your computer.

The price of these new monitors is also appealing. The 17- and 21-inch monitors (the latter with ColorSync) cost £319 and £939, respectively. The 17-inch display promises up to 1,600-x-1,200 pixels, with a 60Hz refresh rate. The 21-inch display features a Sony Trinitron tube, internal calibration (phosphor-decay), a four-port USB hub, and a shortcut display module that launches all screen functions.

Apple's current flat-panel Apple Studio Display monitor has also received a minor makeover, picking up the style of the new G3's by adding a ribbed, white plastic casing. It's also more affordable: the new display costs £699, £120 less than the original Studio Display.

**Very VGA** These new monitors get their signals via the new VGA video connector on the back of the new Power Mac G3s. So, these desktop Macs can use PC monitors and video cables without needing a Mac-to-VGA adaptor. (If you want to use an old Mac monitor with these new models, you'll need a VGA-to-Mac adaptor instead.)

### The last word

The design of these new G3's is a variation on the iMac. Like the iMac, these new Macs are daring, eye-catching, and even a bit shocking. Their almost whimsical look is a far cry from what we've been conditioned to think of as a professional-looking machine.

Apple has taken the minitower, a utilitarian computer meant to be hidden under a desk, and dared its users to show theirs off. But aesthetics aside, the real news about the new Power Macintosh G3 series is what's inside that blue plastic case.

These Power Macs change the rules of Macintosh computing in subtle but significant ways. With improved internal architectures, fast processors, easily accessible interiors, and remarkable prices, the new Power Mac G3's are impressive products. They're much faster than what's currently on your desk and more affordable than you'd ever imagine. Don't let the flashy exterior fool you.

MW

## The G3's new ports

Two 400-Mbps FireWire ports

ADB port

10/100BaseT ethernet

Two USB ports

RJ-11 jack for optional 56K modem

VGA video out





# Get your

# backup!

Losing all your data needn't be a major trauma. **By Adam Engst**

**A**t one time or another just about every Macintosh user will say about data-loss disasters that "It'll never happen to me" – often right before some event causes irretrievable data loss. Maybe you'll accidentally delete a folder containing an important file, or perhaps your hard disk will bite the dust. Data can disappear in myriad ways: fire, earthquake, a broken water pipe in the apartment upstairs, or theft.

Rest assured, you will lose data at some time or other. A few months back, my wife and I returned from a weekend with friends to find a broken window and an empty spot where our PowerBook 5300 once sat. All the files on that PowerBook were suddenly and irretrievably gone. Or rather, they would have been but for the fact that we backed-up regularly. That backup saved hours of work on one document, along with records we keep for tax purposes that would have been impossible to re-create.

Consider me the voice in your head that tries to prevent you from doing stupid things, like attaching weather balloons to your deck chair to see if you can fly. Backups are important, and you will need them one day. If you don't believe me, ask a friend to take a copy of a random folder on your hard disk and then delete the original.

## Software saviours

Although it's possible to back-up individual files by copying them onto a disk by hand, I strongly encourage you to use a real backup program. Sure, you could use the Finder, file-synchronization utilities, or custom AppleScripts for backup. But these approaches require extra effort that's simply not worth it, given how easy it is to use automated backup software.

When you're choosing backup software, stick to commercial applications from reputable companies. You'll never want tech support more than when you drop your PowerBook down a staircase and you need to retrieve a vital piece of work. Shareware is great, but

you should entrust your backups only to a program from a company you can hold accountable.

**Retrospect rules** When it comes to Mac backup software, the leader these days is the Retrospect family, from Dantz Development ([www.dantz.com](http://www.dantz.com)). Although the lack of choice when it comes to Mac backup software is unfortunate, the good news is that Retrospect is both powerful and flexible. (See the table "Backup bonanza: five backup programs compared").

The £159 Retrospect 4.1 (Computers Unlimited, 0181 358 5857) does it all. It backs up to any storage device you can mount on your desktop, essentially all varieties of tape drives, CD-recordable (CD-R) drives, and even FTP servers on the Internet. You can select which files to backup; create sophisticated backup schedules; and back up files over networks, from traveling PowerBooks when they return to your network, from networked Windows PCs, and much more. Although Retrospect is easy to use, its power makes it ideal for use with multiple Macs (and PCs) on a network.

In contrast, the £39 Retrospect Express (Computers Unlimited) is meant for use on a single Mac. It lacks Retrospect's flexible file-selection and support for tape drives and network backup but makes up for it with a lower price and simplified interface. Home users with removable-cartridge drives will find Retrospect Express a perfect fit.

**The alternatives** The only alternative to Retrospect is CharisMac's \$130 Backup Mastery 1.05 ([www.charismac.com](http://www.charismac.com)), which can write to any storage device on your desktop, tape drives, and CD-R drives. It offers unattended backups and backup scripts but is unflexible when selecting files or scheduling backups.

There are two alternatives for those people for whom even Retrospect Express is overkill. Redux Software's \$40 Redux 2.6 ([www.reduxsw.com](http://www.reduxsw.com)), a long-awaited revival of a popular backup program of yesteryear, lets you back up in either Finder format or

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Redux's own format to any storage device on your desktop. You can save scripts in Redux and schedule them to run at repeating intervals.

Even simpler is ASD Software's \$49 Personal Backup 1.2.3 ([www.asdsoft.com](http://www.asdsoft.com)), a control panel that works with desktop storage devices. Personal Backup offers basic backup features along with timed backup, hot-key-initiated backup, and a user-specified number of backup copies. Personal Backup can also synchronize files between folders and record your keystrokes.

## What to back-up

No matter which program you choose, your next step is to choose exactly what files you want to back up. Will you back up all your files or just the important ones? What about your System Folder? Is it worth it to back up your applications?

**Saving it all** The simplest choice when backing up is to save everything. If you back up every file you've got, you won't need to spend much time configuring your backup software – just aim it at your hard drive and you're set. If you need to restore your entire hard disk, you can be up and running quickly since you won't have to piece together a new System Folder, reinstall all your software, and adjust all your preferences.

However, backing up every file you've got means you need a whole lot of backup storage space – a real pain if you're trying to back up 1GB or more of data to a collection of 100MB Iomega Zip disks. Even if you decide to back up everything, don't take everything too literally. There's no reason to waste space in your backup on a Web browser's cache files, invisible files, the contents of the Wastebasket or your deleted email.

In Retrospect, you can create a series of selectors, or rules, that can exclude these files. (Other programs are cruder when it comes to



## Hardware helpers

For the safest backups, consider buying a CD-R drive above (left) or a digital-audiotape drive (above right).

browser's cache folders.

**System Folder** Your System Folder is the result of hours of installation and configuration. Sure, you could do it again, but why bother? The folder might also be harbouring vital data you don't know about, like your Eudora mail folder.

## Backup strategies

No matter what you choose to back-up, you must come up with a strategy for performing regular backups. Think about creating multiple backup sets, scheduling automated backups, and verifying the integrity of your backups.

**Back-up your backup** Too many people simply copy their hard drives to an Iomega Jaz cartridge or burn it on a CD and assume its taken care of. It's better than nothing, but it still leaves you far too vulnerable. A thief could easily take the backup along with your Mac, or a fire could destroy both. Or you could be hammered by Murphy's Law and have the backup cartridge go bad just when you need it. Instead, create

multiple backup sets – collections of backup disks or tapes – and alternate among them. For instance, I have three Retrospect backup sets, which Retrospect calls StorageSets. Each set of digital audiotapes backs up for a week and then is replaced by the next set. Creating multiple separate backups provides three advantages.

You spread out the risk of having your backup fail when you need it (if one dies, the last backup on another is no more than a week old). Second, you can store one of the backups elsewhere to protect against theft and catastrophe (I change tapes every Monday morning, storing the one I've just removed off-site). Finally, you gain increased protection: what if you accidentally delete a file and then make a backup? At that point, you've destroyed your chance to retrieve that file – but not if it exists on an alternate backup.

**Timing your backups** Particularly when working with multiple backup sets, you shouldn't have to worry about keeping track of when to back up to each set. All the backup programs provide scheduling capabilities of some sort. Use them to create a regular backup schedule. For instance, I back up all my desktop Macs' hard disks every day starting at 1 am

**Test Your backups** Even worse than the sob stories from people who didn't back up are those from people who did but found that their backups were worthless after a crash. A false sense of security is more dangerous than having no backups at all.

Every so often, restore some files from each of your backup sets. Disks do go bad, and once they have, you shouldn't use them for anything important. Just throw out bad tapes – there's no safe way to reuse a suspect tape.

## The right hardware

Choosing the right backup software and learning how to use it effectively is no good if you haven't picked an appropriate storage

continues page 77

**Even worse than the sob stories from people who didn't back up are those from people who did, but found that their backups were worthless after a crash.**

specifying what files to back up.) The logic of Retrospect's selectors can be tricky, though. By default, Retrospect creates "OR" constructs; to create an "AND" construct between two criteria, you must drag one next to the other (see the screen shot "Pick and choose").

## Getting picky

Backing-up certain files is a great way to save space, but be careful – it's easy to miss vital files. For instance, you might not realize that by default, Qualcomm's Eudora stores all your mail in a folder hidden in the System Folder. If you use a macro program like WestCode Software's OneClick or Binary Software's KeyQuencer, your macros also live in the System Folder. If you do restrict your backup to specific files, here's the order in which you should protect them.

**Documents** Your documents may not seem important, but imagine how long it would take you to re-create them. Remember that email messages you've sent and received can be just as important as spreadsheets and databases.

**Preferences Folder** Backing up your preferences will free you from having to dig out all your software registration cards if you've got to reinstall an application. Be sure, however, to exclude your Web

## Which backup is right for you?

TYPE	SOFTWARE	HARDWARE
Home Mac, iMac	Retrospect Express	Zip drive or Internet backup service
Home-office Mac, multiple home Macs	Retrospect Express or Retrospect	Magneto-optical or CD-RW drive
Small office	Retrospect	QIC tape or DAT drive
Large office	Retrospect	DAT, 8mm tape, or DLT drive



device to house your backups. There are numerous choices when it comes to picking a backup device, ranging from the (almost) ubiquitous floppy-disk drive up to dedicated tape drives. You can even back-up to someone else's hard drive via the Internet (see the sidebar "Backup by modem"). Which is best for you depends on your specific situation. Remember that drive price is only part of the overall cost – also factor in media cost and convenience as well.

**Floppy disks** For most backup situations, 1.4MB floppy disks don't hold enough data, and they're not particularly reliable. Floppies are fine just for making yet another backup key files.

**Second hard drive** A second hard drive is the fastest backup device you'll find, which makes it good for frequent backups to protect against damage to your main hard disk. If you run RAID software, such as CharisMac's RAID 2.0, you can mirror your main hard disk to another constantly. If something bad happens to one drive, the other can be put to work almost immediately. However, additional hard disks won't save you if a burglar or disaster strikes, so it's best to stick with removable-media drives.

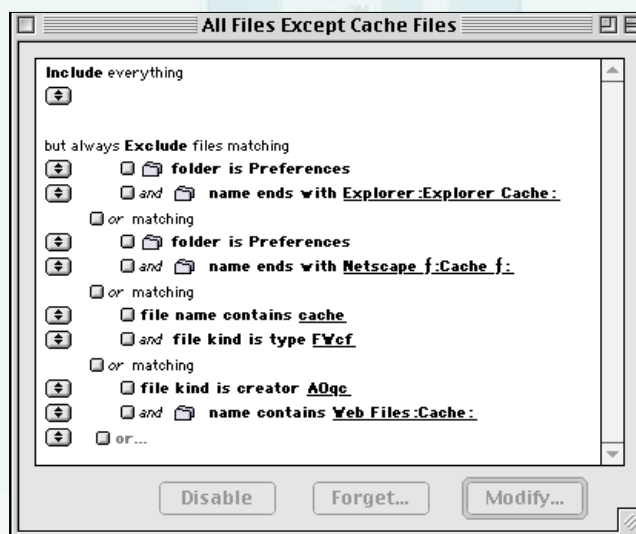
**Low-capacity removables** Iomega's ([www.iomega.com](http://www.iomega.com)) Zip drive (£79 (SCSI) or £99 (USB), Computer Warehouse, 0181 400 1298) is too low-capacity for complete backups of today's multi-gigabyte hard disks, but it works well for home users with relatively little important data to back up. Plus, Zip disks are inexpensive – around the £6 mark – so you can afford to make multiple backup sets – extra important because Zip disks aren't incredibly reliable. Another entry in this category is the 120MB SuperDisk, from Imation, although it's quite slow. Avoid the Zip or SuperDisk for serious backup situations.

**High-capacity removables** Iomega's Jaz 2GB drive (£399, Computer warehouse, 0181 400 1298) uses the same rigid disk media found in hard drives – encased in a removable cartridge. While the drive's price is reasonable, its cartridges are pricey, at around £160 for a three-pack. The downside to this drive is reliability. It will work fine for individual Macs with large hard drives, but it's too expensive and unreliable for serious, multiple-Mac backup situations.

**Magneto-optical drives** Modern magneto-optical (MO) drives hold either 640MB or 2.6GB, which puts them in competition with both low- and high-capacity removable drives. MO drives are incredibly reliable, and although they're more expensive than comparably sized Jaz drives, the media costs are lower. If you don't need to share disks with a service bureau, a large MO drive makes a good backup solution for one or two Macs.

**CD-R, CD-RW drives** Now that blank recordable CDs cost about £1 each for 650MB of storage, burning CDs for backup is a reasonable proposition. Unlike with the drives mentioned above (but as with tape drives), writing CD-recordable (CD-R) and CD-rewritable (CD-RW) discs requires special software, such as Retrospect or Retrospect Express. CD-R and CD-RW drives are great for users with only a few Macs. The capacity of a single disc isn't great, but the price per megabyte and overall reliability are good. And CD-R drives can also have other uses, like making audio CDs.

**QIC tape drives** Depending on the tape and drive, Quarter-



#### Pick and choose

To create a selector in Retrospect, choose an item from a pop-up menu on the left and then either leave the item where it was created, for an OR rule, or drag it elsewhere to create an AND rule.

Inch Cartridge (QIC) capacities range from 4GB up to 20GB. QIC tape drives cost less than comparable digital-audiotape (DAT) drives, generally, but cartridges are three to five times more expensive and the drives are also slower than DAT drives. QIC drives are ideal for networks of fewer than 20 Macs.

**DAT Drives** recently, DAT drives have become the standard for backup situations that require medium-to-large capacities, inexpensive media, and fast backup speed. DAT drives use Digital Data Standard (DDS) tapes with capacities from 2GB to 24GB and cost as little as £3 per tape. Small and medium-size businesses shouldn't settle for anything less than a DAT-based backup system.

**DLT drives and 8mm-tape** For the most part, if you need an 8mm tape or digital-linear-tape (DLT) drive, you already know it. DLT and 8mm-tape drives lead the field in capacity, speed, and price. Tapes can hold between 7GB and 80GB of data, speeds range up to 6MB per second, and prices hover between £2,000 and £6,000. Frankly, these drives are overkill for all but the most serious backup situations in large organizations.

#### Caveat emptor

Whatever your needs, be sure to buy commonly available devices from reputable manufacturers. If you buy a cheapo tape drive that uses a weird format, what do you do if your drive dies and the vendor has gone under? If you have serious backup needs, such as multiple Macs on a network or truly important business files, be sure

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## Backup bonanza: five backup programs compared

COMPANY	PRODUCT	RATING	PRICE	CD-R/CD-RW SUPPORT	TAPE SUPPORT	COMMENTS	CONTACT	PHONE
ASD Software	Personal Backup 1.2.3	★★★/6.2	\$49	No	No	Implemented as a control panel; includes synchronization and keystroke recording.	ASD	<a href="http://www.asdsoft.com">www.asdsoft.com</a>
CharisMac Engineering	Backup Mastery 1.05	★★/4.9	\$129.95	Yes	Yes	Weird interface, and has minimal file-selection flexibility.	Charismac	<a href="http://www.charismac.com">www.charismac.com</a>
Dantz Development	Retrospect 4.1	★★★★★/9.3	£159	Yes	Yes	Feature-laden and extremely flexible; is overkill for individual use.	Computers Unlimited	0181 358 5857
	Retrospect Express 4.1	★★★★★/9.5	£39	Yes	No	Stripped-down version of Retrospect easier to use but less flexible.	Computers Unlimited	0181 358 5857
Redux Software	Redux 2.6	n/a	\$40	No	No	An old favourite, but interface showing its age.	Redux	<a href="http://www.reduxsw.com">www.reduxsw.com</a>

## Backup by modem

**D**on't want to buy special backup hardware? There is another option: backing up over the Internet. Using the Internet for backup is great, because your backed-up data is physically separate from your Mac in the instance of theft or disaster.

But, given the slow throughput of the average modem-based Internet connection, Internet backup services are primarily useful for backing up a small set of important files, not your entire hard disk. The cost of phone calls must also be included in any calculations regarding the feasibility of Internet backup.

When you're evaluating any Internet backup service, make sure your files will be compressed and encrypted. Compression can reduce overall transmission time significantly.

Using encryption is the only way you can be sure that your data remains private as it travels across the Internet and is stored on remote servers. Finally, make sure that your Internet backup service also does backup – your backup strategy is only as good as theirs.

There is at present only one way of using the Internet for backup and once again it is Retrospect. In the future, a company called Synetics Business Systems may offer a solution called BlackJack in the UK. For the moment though the US law on encryption limits Synetics ability to export the product. At present, 128-bit encryption software is classified as munitions and is subject to restriction.

Anyway, it is generally considered to be overkill. Synetics is currently considering constructing a version of the software that uses the weaker 40-bit encryption that is found in International export versions of our Web browsers.

### Retrospect

Version 4.1 of Retrospect and Retrospect Express (which should be available by the time you read this) let you store your backed-up data on an Internet FTP server.

If you use Retrospect to back up a network of Macs, an Internet backup would be an excellent secondary, off-site backup of your most important files. If you have relatively few important files, you can rely entirely on Retrospect Express and Internet backups to avoid purchasing an expensive backup device.

Retrospect treats an Internet FTP server as another type of media, just like a disk or tape. You create a StorageSet in Retrospect or Retrospect Express; choose Internet for the storage type; and then enter your user ID, password, and FTP server. You can also enter a directory on the FTP server; if you don't know what to type, click on the Directories button.

Because other people may have access to your FTP backups, be sure to turn on Retrospect's encryption when you create Internet backup sets. Also, turn on Retrospect's software data compression in the Options tab when setting up a backup.

Most Internet accounts come with several megabytes of space on a remote FTP server (ask your service provider for details) and you may be able to purchase more space if you need it.

If you need to back-up more data than your ISP server is willing to accept, consider a service that offers FTP space specifically for backup. Dantz is certifying Internet backup services based on the companies' commitment to security, reliability, and customer service. Currently, there exist two of these services: first, there is Digital Forest's RecoverIt ([www.forest.net/backup/recover-it.html](http://www.forest.net/backup/recover-it.html)) and then there is also



### Backup to basics

The 4.1 version of Retrospect adds the ability to backup using an FTP server over the Internet.

Committed To Memory's MacBackup.com ([www.macbackup.com](http://www.macbackup.com)). Both companies charge based on the amount of data you store with them each month. It is worth remembering that it's better to backup to space provided by your own service provider as the connection will be faster. The backup services provided by the companies mentioned are based in the US. This is not a problem, because the Internet is a global entity. Connection speeds, however, may suffer noticeably because of the transatlantic link.

### The final word

Using the Internet for backup is a novel idea for most people, but it makes good sense. For most people, the actual amount of data that is considered irreplaceable is often just a Zip disk's worth, so it is practical, even when you factor in the cost of a phone call.

Service providers usually provide at least 5MB of Web space, and many offer as much as 25MB. You'd have to run an extremely large Web site to take real advantage of all 25MB – so why not use it as FTP backup?

to buy a dedicated device for backup, like a tape drive. Removable-cartridge drives that do double duty are acceptable only if regular backups of all your data are less important.

### Macworld's buying advice

When it comes to software, you won't go wrong with either Retrospect or Retrospect Express, from Dantz Development. Both are packed with features, and deciding between the two is easy.

If you need to back up to a tape drive, perform regular network backups, or back up a Windows machine as well as Macs, go for Retrospect. Otherwise, if you're primarily backing up a single Macintosh to a removable-cartridge drive, Retrospect Express has all the power you'll likely to need.

In terms of hardware, the choice depends on how many Macs you

plan to back up. Individual users with one or two Macs should go for a CD-RW or magneto-optical drive. If you already have a Jaz or Zip

drive for sharing files, it'll work for backups as well, but beware of media costs and unreliability. If you're backing up an entire network, stick with a DAT drive unless you need the high performance and capacity of an 8mm-tape or DLT drive. Also think about periodically archiving files to a CD-R.

However you choose to do it, be sure to back up. Take a moment to consider the relative importance of your files, and then use the advice in this article to craft your ideal backup strategy.

**Adam Engst backs-up religiously since a drunk-driver hit a power pole and caused a surge that toasted his 105MB hard drive.**

## Editors' Choice

### Workgroup backup

★★★★/9.3 **Retrospect 4.1** Combines ease of use for basic operations with a deep feature set that includes network backup (even for Windows 95, 98, and NT), Internet backup, support for a wide range of backup devices, flexible file-selection and scheduling, and numerous nice touches such as network clock synchronization. Company: Dantz Development ([www.dantz.com](http://www.dantz.com)). List price: £159; 10-client Retrospect Network Backup Kit, £319.

### Personal backup

★★★★/9.5 **Retrospect Express 4.0** Trades Retrospect's network backup features, tape-drive support, and flexible file selection for a low price and somewhat simplified interface. Company: Dantz Development ([www.dantz.com](http://www.dantz.com)). List price: £39.



# Space stations

21-inch monitors give you real room to manoeuvre. **By David Fanning**

If you're among those who become irritated when your document disappears under a platoon of control palettes and a company of control bars then it's time for a larger monitor. For those already owning mid-size monitors, but who still feel they have insufficient room for manoeuvre, don't panic. This month we look at the big boys – the 21-inchers.

Actually, a number of those tested go beyond the 21-inch mark, but the end-result is an image between 19-20 inches. There are many big monitors on the market, but we've concentrated on the models aimed at the graphics professional.

All the monitors tested are CRT-based (cathode ray tube), although LCD flat-panel displays are set to creep into the higher end of the display market over the next year. The past year has seen some impressive developments that have made the new CRT monitors better than ever. As ever, there's great pressure to keep prices at a minimum, so a monitor costing well under £1,000 today could easily have set you back £2,000 or even £3,000 three or four years ago.

Sony makes a 24-inch wide-screen monitor, which is also available from La Cie and Formac. We examined this monitor last year and found it to be of good quality (see *Macworld*, April 1988). The added width, though, just doesn't justify the extra cost, which is about £500. You would get more for your money by adding a second monitor for your tool palettes. This route is the best way to gain even more desktop acreage. If you acquire a new large-screen monitor, why not keep your old monitor too. It may require an additional monitor card, though smaller monitors may be able to use the internal video available on most Macs.

Monitors come in different sizes, and also are based on different technologies. The oldest – and most tried-and-tested technology – is shadow-masking. Shadow-masks have traditionally been characterized by lower-quality contrast but higher-accuracy colour. Traditions change, however, and the modern shadow-mask



## Editors' Choice

### La Cie electron 21/108

★★★★★/9.0

Colour-calibration tools and the reflection-shielding hood are boons for creative professionals. If you don't want to have your office redecorated by Apple, then the La Cie, available from £829, allows you to stand out from the crowd more quietly.

monitor can hold its own on contrast with other technologies. It's no longer true that an aperture-grille monitor will always have better contrast. That said, colour-matching technology has made aperture-grille monitors much better on colour performance.

The end-result of these advances is that most monitors we looked at performed very well in our qualitative tests – thereby making any choice a narrow one.

### Colour control

The one way that manufacturers can get ahead in the large-monitor market is to improve colour accuracy (or calibration).

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#### **Hue, what a scorcher**

The Hitachi CM811ET ships with Colorific, the simple-to-use DIY colour-calibration tool.



#### **Sonic boon**

The ViewSonic PT813 is less than £700 and there's little reason to pay more, unless you want something special.

Calibration is theoretically possible on any monitor; the controls are all there, but nobody has a good enough eye to calibrate without a little help.

Of all the monitors tested, only a handful have considered calibration requirements. To be a leader in the Mac monitor-market, manufacturers must do better in this area, or be satisfied lumped together with the generic 21-inch no-frills monitor makers. Calibration of even the most basic kind adds value and extends the working life of a monitor, so should be high on any buyer's wish list.

There are three methods used for calibration in the monitors we tested. The first and most basic method uses a software package called Colorific from Sonnetech. It does involve user-interaction, but nothing too complex – all you need to do is simply match shades of grey from a chart. The results are pretty good: it's comforting to know you're at least in the ballpark with your monitor settings.

The second method of calibration uses a hardware device to measure the output of your monitor. The information is then used to set up your monitor in the right way for the work you're doing. This requires little interaction, other than sticking the calibrator on the screen.

There's also one other method, which is found only in the Apple Studio Display. This is simplest of all: click open the control panel on the front. That activates the software. One more click means the software takes over. Using sensors inside the monitor, it measures and adjusts the image accordingly.

In the future, monitor manufacturers will need to supply some kind of mechanism to make image-quality consistent. Whether it's a high-end solution or just a rough-and-ready fix, calibration means that the monitor will be useful for longer. Old monitors end up on the scrapheap not because they fail to work, but because they get blurry, faded and dim.

Quality of image is paramount, along with the monitor's ability to maintain colour-correctness.



#### **View, what a scorcher**

Sony's CPD 520GST may be plain but it gives a good picture.

When we test any monitor it's impossible to comment on how its picture quality will measure up in one or two years' time. However, we can say that those with calibration features will always shape-up best. Controlling the functions of a monitor is something that you should need to do infrequently. It should, therefore, be a simple task, because if you adjust it only every six months you're likely to forget how it's done. Intuitive controls are the answer here.

The controls on most monitors are similar; the only difference being the means of accessing them. There are two schools on controls: the minimalists, who prefer few buttons, and the rationalists: who offer many buttons but few menu options. There is a lot to be said for a collection of well-labelled buttons. Menus are usually a good thing, but when complex can become confusing on-screen. A single button, while attractive, is not by definition simple.

Aesthetics are a less important factor, at least to professionals. Or so you would think. But actually looks are undeniably a factor – one has only to look at the Apple Studio Display to realize this.

There are other practicalities to consider, especially if space is a factor. None of us has endless desk space. In particularly tight corners a strong argument can be made for a flat-panel display.

You have to remember that any 21-inch monitor will eat up desk space, yet some are bigger than others. It's time to get your measuring tape out and see what you have the space for. Models such as the Samsung SyncMaster 1000 are over half a metre deep. It's a fine monitor, but what does it house to make it such a colossus?

The Apple Studio Display is also big – when viewed from behind it does a passable blue whale impression. But its innovative, albeit bandy, legs mean you still have access to the space under the monitor, which is ideal for stowing away your keyboard.

All of the monitors tested have high-quality screens, but most have standard features. There is not a bad one in the bunch. Though a number of them are less attractive – and therefore less appealing – than others.

So as not to antagonize the substance-over-style brigade, I should qualify this by saying the good-looking monitors also impressed with their technology.

The top performers were Apple, Hitachi, La Cie, Mitsubishi and Philips. The other monitors tested needed to be cheaper or boast some other compelling quality to make them stand out from the crowd.

Both the Hitachi and the Philips models ship with Colorific, the simple-to-use DIY calibration tool. This is ideal because any fool (including me) can use it. It doesn't let you set the environment to, say, a pre-press or CAD setting – it simply gets the monitor to within an acceptable margin of accuracy.

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Philips, which has a sleek one-button control – sleek for a 21-inch monitor, that is. The power button is on the top of the box, and the controls use a single button and a hidden wheel. This makes the face of the monitor look very clean, but mastering the controls does take a little time.

By way of contrast, the Hitachi case is pebble-dashed with buttons, which makes access to the functions easier but using them a little confusing. One thing that makes the Hitachi a more compelling purchase is its hardware-calibration tool. The ViewOpen calibration tool is available for the Hitachi monitor at £197.50.

Another monitor that has something extra to offer is the Mitsubishi Diamond Pro 2020U. This monitor lacks any calibration options, but the screen itself is outstanding. It uses the Naturally Flat CRT that is, as the name suggests, perfectly flat. Don't confuse this with the very flat aperture-grille CRTs that are vertically flat. The Diamond Pro is flat both vertically and horizontally. This means that reflections are kept to a minimum and there's no image distortion. It looks so good that you can almost forget its lack of calibration. If you don't care about calibration, this is the best of the rest.

That leaves two models to fight it out for the top recommendation – the La Cie and the Apple. Each boasts excellent calibration, (see feature on page 64) but with the new Power Mac G3s there are fresh compatibility issues. The La Cie monitor uses a hardware-calibration tool called Blue Eye. This requires both an ADB port to plug in the device and a serial port to control the monitor. The problem is that the new G3s don't have a serial port. This means that at present the electron 21/108 cannot use the Blue Eye with the new G3 series. La Cie says there will be an adaptor available soon that will allow you to use the Blue Eye with USB equipped Macs.

The new Apple Studio Display 21 uses a USB connection to control screen settings. Of course, this means anybody who doesn't have a new G3 series Power Mac won't be able to use this monitor. This may seriously limit the popularity of the Studio Display.

So, both the electron 21/108 and the Apple Studio Display share equal footing on calibration. Picture quality is also too close to call, so we can decide on a winner only by aesthetics. Because this is a judgement only you can make we placed them equal first. For what it's worth, I think the electron looks very businesslike in its dark-blue casing and reflection-shielding hood. The Apple is best described as striking, with its fun, rounded shape and bandy legs. I can understand why somebody buying a complete new system might want to get matching accessories, and the new G3 Power Mac and Studio Display are certainly a matching pair. If however you don't want to have your office redecorated by Apple, then the La Cie allows you to stand out from the crowd more quietly.

If you want to use your monitor for professional work, you should be calibrating

it to get the best out of it. If colour is not important then a monitor lacking calibration will be cheaper. The Maxdata and the ViewSonic models come in at less than £700, so there's little reason to pay more, unless you want something special like the Mitsubishi with its flat screen.

At the top-end, the Apple and La Cie monitors both do a great job. Even though the La Cie and Blue Eye bundle is more expensive than the Apple monitor it's worth remembering that you need only one Blue Eye calibrator, even if you have more than one electron monitor in your office.

If you can't afford a 21-inch monitor just yet, there are plenty of good quality 17-inch and 19-inch monitors around. You can find all you need to know about mid-size monitors in our January issue ("Pay and display", page 75). If you need the larger screen size there is one thing that divides them neatly. If there is calibration available you can consider it a professional monitor, no calibration and it may work fine but you'll never be sure.

If at all possible, you should always see the monitor working before you buy it. Unfortunately, there are precious few shops where this is possible. But if it is an option then you should use it. Uncalibrated monitors are all have a similar quality of picture, so you can make a judgement on price and aesthetics. Calibrated monitors will always be more useful to a graphics professional, so it is worth paying the extra.

These monitors can be deceptively large. If you have limited space, measure up and leave room for you keyboard. The hood on the La Cie monitor adds to its size, but is a great way to cut out glare. If you like the idea of the hood, simply use the box your monitor comes in to make your own.

Personal choice will always be the final decision maker, so trust your eyes when shopping.

MW



**Control freak**  
The MultiSync P1250+ boasts a good set of controls.



**Flat feat**  
The Mitsubishi Diamond Pro 2020U has an absolutely flat screen.

## Editors' Choice

### Apple Studio Display

★★★★★/9.0

The £939 Studio Display is striking, with its rounded shape and bandy legs. Those buying a new system might want to get matching accessories, and the new Power Mac G3 and Studio Display are certainly a matching pair. It has excellent calibration but it is aimed at owners of the newest Macs only.

I don't understand why this method of software calibration is not an industry standard. After all, it's not as if Colorific adds greatly to cost.

Though the specifications of both the Hitachi and the Philips displays are almost identical, the cases they use are quite different. Hitachi is one of the relatively few companies that actually manufactures CRTs, so it's a safe bet to say that the Philips uses a Hitachi tube. The Hitachi case is very square and plain when compared with the

## 21-inch monitors: the tube test

MAKER	PRODUCT	STAR RATING	PRICE (Excl VAT)	CRT TYPE	SCAN RATE (Hz)	DIMENSIONS (mm)	COMMENTS	DISTRIBUTOR	CONTACT
Apple	Studio Display	★★★★★/9.0	£939	Aperture-grille	85	566-x-511-x-550	Automatic calibration.	Apple	0870 600 6010
Hitachi	CM811ET	★★★★/8.6	£860	Shadow-mask	85	488-x-482-x-470	Includes Colorific calibration.	Hitachi	0181 849 2092
Iiyama	pro 502	★★★★/8.0	£699	Aperture-grille	100	493-x-490-x-490	Low flicker.	Iiyama	01438 745 482
La Cie	electron 21/108	★★★★★/9.0	£829-£1,290	Aperture-grille	75	500-x-490-x-488	Optional hardware calibration.	La Cie	0171 872 8000
Maxdata Belinea	10 80 15	★★★★/7.2	£639	Shadow-mask	75	505-x-487-x-508	Inexpensive and cheerful.	Maxdata	0118 936 2900
Mitsubishi	Diamond Pro 2020U	★★★★/8.5	£965	Aperture-grille NF	85	500-x-500-x-482	Absolutely flat screen.	Mitsubishi	0800 731 1222
NEC	MultiSync P1250+	★★★★/7.7	£849	Aperture-grille	85	509-x-519-x-525	Good controls.	CAE Office Systems	01923 210 923
Nokia	445Xpro	★★★★/7.9	£725	Shadow-mask	85	490-x-515-x-544	Cheap and good quality.	Nokia	01793 512 809
Samsung	SyncMaster 1000	★★★★/7.4	£815	Shadow-mask	85	508-x-550-x-505	Nice design, but bulky case.	Samsung	0181 391 0168
Sony	CPD 520GST	★★★★/7.2	£799	Aperture-grille	75	498-x-505-x-474	Plain, but good picture.	Sony	0990 111 999
ViewSonic	PT813	★★★★/7.4	£685	Aperture-grille	85	496-x-491-x-520	Bargain.	ViewSonic	0800 833 648
Philips	Brilliance 201P	★★★★/8.5	£999	Shadow-mask	85	490-x-529-x-551	Includes Colorific calibration.	Philips	01756 702 892
Taxan	Ergovision 2160	★★★★/7.5	£ 759	Aperture Grille	85	500-x-507-x-497	DiamondTron tube.	Taxan	01344 484 646
CornerStone	P1500	★★★★/7.5	£ 925	Shadow Mask	85	488.482-x-470	Pricy.	Cornerstone	0870 240 0232

\* At a resolution of 1,280-X-1,024 pixels (Higher scan-rate means less flicker).

## See also:

- Flat-panel displays, *Macworld*, October 1998.
- Mid-size monitors, *Macworld*, February 1999.

create motion

# Frame and fortune

How to tackle QuickTime Web movies. By Mike Wooldridge.

**T**here's a liberal sprinkling of QuickTime VR object movies throughout the Web, and you've probably seen your fair share of Web sites that let you

interactively rotate objects on screen. It's a neat effect the first few times you experience it, but after awhile you know what to expect – been there, spun that.

But some of the best QTVR object movies on the Web and CDs don't limit you to twirling objects in space – you can also open, close, dismantle, and peek inside objects. The trick to making such movies is integrating animation into them, as well as including changes in perspective. If you're trying, for example, to teach a potential customer about a company product, this added animation makes your object movie more informative – not only can people examine the packaging of a product but they can also open the product or watch it in action.

## Object-movie basics

A QTVR object movie, like a conventional movie, is a collection of image frames. By allowing users to flip through different perspectives of an object on screen, object movies give users the digital equivalent of examining the object in their hands. The simplest object movies comprise 360-degrees' worth of perspectives shot around the object's circumference. This type of object movie – sometimes called a single-row movie because of its linear arrangement – lets you spin the object back and forth on a single axis, like a globe.

More complex object-movies also include perspectives shot from above and below the object. These multirow movies give users a second axis to play with, letting them tilt the object as well as spin it sideways.

But an object movie doesn't have to be simply a collection of perspectives of a static object – it can also incorporate animation. An animated single-row object movie of a toaster, for instance, might eject the toast when you click and drag.

Adding animation to multi-row object movies is more complicated because of their two-dimensional nature. Dragging along one axis with the cursor causes the toaster to pop its toast. But what happens when you drag along the other? You have to consider not only what the object will do when manipulated in each direction but also how the two directions of movement



JENNIFER JESSE

will synchronize with one another.

Most animated two-dimensional movies limit the object animation to one axis, while letting you rotate the object along the other. In my example (see "Go beyond simple spinning objects"), clicking and dragging the cursor down (along the vertical axis) causes an ice-cream carton to tip over and spill its contents, while dragging left and right (along the horizontal axis) spins the carton in place.

## Juggling axes

Building an animated object movie is similar to doing claymation: you create the movie incrementally, shooting one step of the animation at a time. However, at any point during animation in a two-dimensional object movie, the user may start dragging along the other axis. Therefore, each step in the animation requires shooting not just a single frame but an entire row of frames to account for movement in the other direction.

By getting creative with the two dimensions available to you in object movies, you can transform QuickTime VR into a more fun and engaging experience for your audience. **MW**

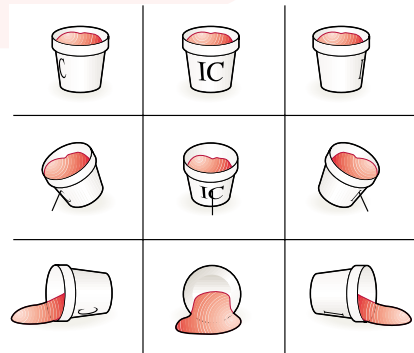
**Mike Wooldridge is a new-media designer whose "Refrigerator!" QTVR project won an award in Apple Computer's 1998 QuickTime VR contest.**

continues page 90



# Go beyond simple spinning objects

Elevate your QuickTime VR object movies to the next level by combining animation along with rotation. Whether you want potential customers to experience your company's product more thoroughly in a virtual environment or you're just trying to entertain, adding animation will lend depth, surprise, and humour to your object movies. Here's how to create one of these über object movies.



## 2 Plan the movie

We naturally think of movies as a linear sequence of frames viewed, in forward or reverse, along a single axis. But object movies can play along two axes. Think of the frames in an object movie as being arranged in a grid. Sketch out the grid beforehand to visualize both how to organize the overall project and how to shoot the individual frames. Here, a simple three-by-three grid shows the project's basic organization; animation happens on the vertical axis, and changes in perspective (rotation) occur on the horizontal axis. This grid is just a starting point – you'll decide later how many frames will actually make up the rows and columns of your movie.

## 2 Choose a capture device

Try to use a camcorder or digital camera when making object movies; it will be much easier to get good registration (or alignment) between frames and thus avoid jittery effects in the final product. If you shoot on film, the imprecision inherent in the digitizing process will prevent the scene in each picture from aligning perfectly and you'll have to realign the digitized frames during post-production. Camcorders and digital cameras have another edge over film cameras: they let you view your work immediately after shooting, so you can see if the lighting, alignment, and centering of the object are up to snuff. For this ice-cream project, I used an Epson PhotoPC 700 that was connected to my Power Computing PowerTower Pro 225. I could control the camera remotely; I never had to touch it and risk shifting the alignment between it and the object platform.

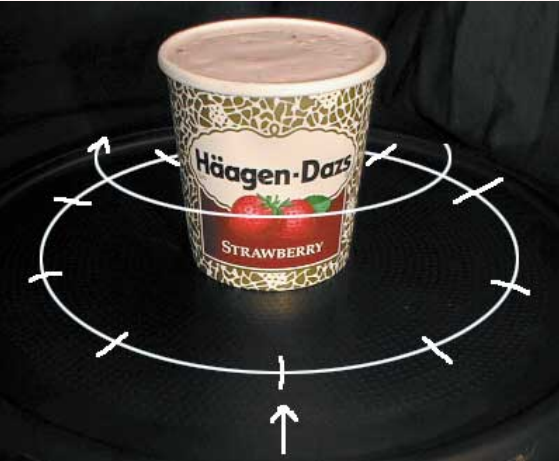
## 3 Set up the scene

Next, decide how to present your object to the camera. Several companies, such as Kaidan ([www.kaidan.com](http://www.kaidan.com)) and Peace River Studios ([www.peacriverstudios.com](http://www.peacriverstudios.com)), make high-end object rigs designed for QuickTime VR shoots. For budget-minded hobbyists who want to capture a single axis of rotation, a record turntable or lazy Susan (used here) does just fine. To make an object appear to be floating in space, use a uniformly coloured background that sets off the object: put light-coloured objects against a black background and vice versa. I put a coat of black spray paint on my lazy Susan and draped a black sheet behind to contrast with the light-coloured ice-cream carton.

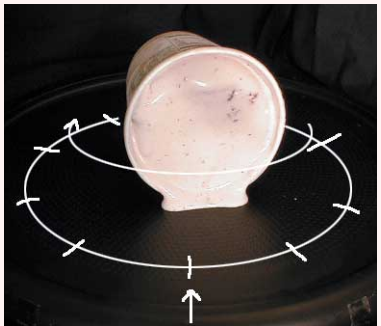


## 4 Start shooting frames

First, decide how many shots to take for each row and column in your grid. Consider the trade-off between motion smoothness and the file size of the final object movie. I sacrificed some smoothness for fewer frames, to keep the file size smaller and more manageable for the Web. For the horizontal axis (changes in perspective), I shot the frames in increments of 30 degrees, for a total of 12 frames per row. (If you're shooting a high-end object movie destined for CD, you might shoot a frame every 10 degrees.) For the vertical axis (animation), I used only three steps to go from the standing carton to



the carton on its side, and three more for the ice cream to melt out. The result is a relatively small QuickTime VR file (less than 400K). Shoot the frames one row of the grid at a time. I shot 360-degrees' worth of perspectives for each step of the animation. Twelve shots with the upright ice-cream carton turning make up the first row of frames.

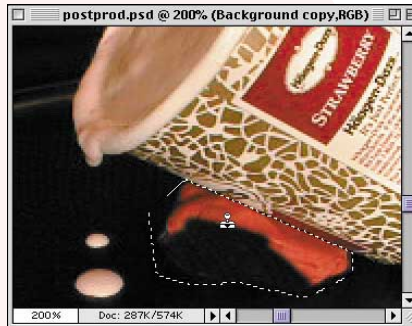


## 5 Shoot more frames

After you've shot one row of your object movie, move the object to the next step in the animation and shoot another 360 degrees' worth of frames. Repeat this process for each step of your animation. Here, I shot 12 frames for each of the six steps, for a total of 72 frames. To make sure the frames are synchronized in the final object movie, rotate the object in equal increments for each row and keep the object perfectly still as you rotate it. I marked off 30-degree segments around the edge of the lazy Susan to make sure the rotation increments were precise; to keep the ice-cream carton steady through the rotations, I anchored it to the lazy Susan with modelling clay.

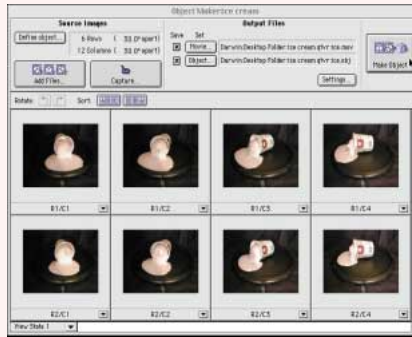
## 7 Build the movie

To create the final object movie, simply drag all the frames into an authoring environment such as Apple's QuickTime VR Authoring Studio (£279; [www.apple.com](http://www.apple.com)), shown here, or Roundabout Logic's Widgetizer (£99; [www.roundaboutlogic.com](http://www.roundaboutlogic.com), Full Moon, 01628 660 242) and set the playback parameters. One of the key settings defines whether the rows or columns wrap. In this project, the rows wrap (to let you spin the object repeatedly on the horizontal axis, like a globe) but the columns do not. The authoring applications also let you select from a variety of compression schemes to keep the final file size to a minimum. I used Sorenson Video



## 6 Clean up the frames

Most object movies require some post-production work in an image-editing application to clean up artifacts. In high-end work, where an object movie may contain several hundred frames, post-production can take more time than the actual shoot. For the ice-cream movie, I brought each frame into Adobe Photoshop, masked the carton, and used the Curves dialogue box to get rid of wrinkles in the backdrop cloth and reflections on the lazy Susan. I also erased the modelling clay I used to anchor the carton.

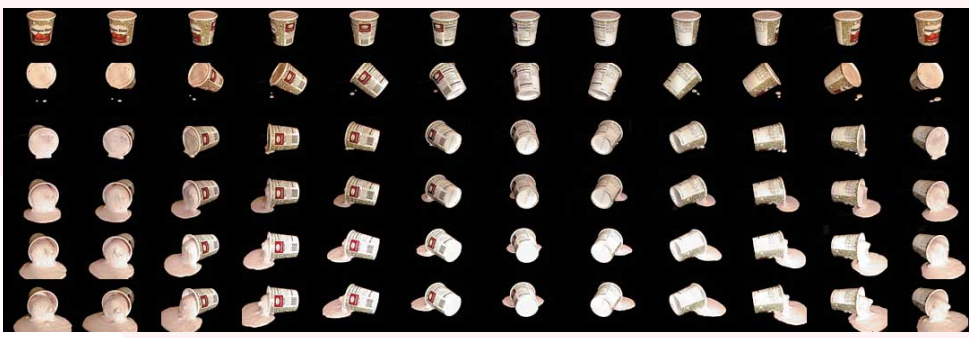


compression at its low setting and set the frames to 320 by 240 pixels; the final file size of the ice-cream project was 325K.

## 8 Take it for a spin

It's a wrap! The completed object movie is made up of 72 frames. Clicking and dragging down on the object causes the ice-cream carton to fall over and spill its contents;

clicking and dragging to the side spins the object in place. To test-drive the ice-cream object movie for yourself, go to [www.macworld.com/more/](http://www.macworld.com/more/) (you'll need QuickTime 3 to view it).



# Bookmarks

**Apple's QuickTime VR Site**  
The birthplace of QTVR – read up on background info, and get resources and links straight from the company that invented the technology.  
[www.apple.com/quicktime/qttvr/](http://www.apple.com/quicktime/qttvr/)

**"Refrigerator!"**  
Explore the contents of Mike Wooldridge's refrigerator via more than 20 QTVR panoramas and animated object movies.  
[www.mediacosm.com/refrigerator/](http://www.mediacosm.com/refrigerator/)

**Carol Rossi**  
Experience some amusing QTVR animations, including one of the site's creator.  
[www.sumthinsumthin.com](http://www.sumthinsumthin.com)

**John Greenleigh Studios**  
Take computers, roller skates, and a Volkswagen Beetle for a spin via QTVR object movies created by a design firm whose prominent clients include Apple.  
[www.greenleigh.com/qttvr.html](http://www.greenleigh.com/qttvr.html)

**eVox Productions**  
Play around with more cars via object movies created by a design firm with high-profile clients such as Toyota.  
[www.evovox.com](http://www.evovox.com)

**The Jason Project**  
Tour sunken ships and rain forests via this educational project that uses QuickTime VR, including animated object movies.  
[www.eds.com/community\\_affairs/jason/](http://www.eds.com/community_affairs/jason/)

create print

# Knockout lay-out

Tricks and shortcuts in QuarkXPress 4. By David Blatner

**T**he vast majority of desktop publishers simply don't have time to learn every nuance in a new piece of software. To get your work done on time, you probably just zero in on the major new features without stopping to pick up tricks and techniques. But all too often it's the non-intuitive, under-documented techniques that turn out to be most useful.

But if you use QuarkXPress 4, you're in luck – you're about to learn some techniques that will both speed up your work and make the program a little more enjoyable to use.

## Hands on the keyboard

Keyboard shortcuts aren't particularly sexy, but learning to keep your hands on the keyboard is one of the best things you can do to work faster in QuarkXPress (or any program). For instance:

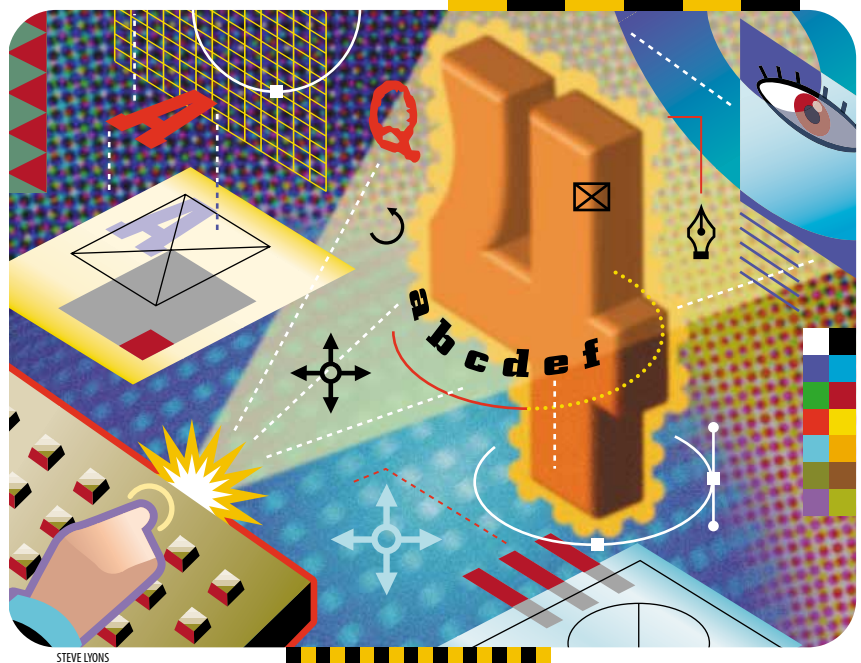
- Press **-F** for Find/Change palette; in version 4, **-option-F** closes it.
- Hit **-tab** and **-shift-tab** to select the next and previous tools, respectively, in the tool palette; in version 4, the same keystrokes also jump to the next or previous tab in a dialogue box.
- XPress has some screen-redraw problems, leaving pieces of objects on the screen after you've deleted or reshaped them. When you see such artifacts in version 4, you can force XPress to redraw the screen by pressing **-option-full-stop**.

Confusingly, while version 4 retains all of version 3's keyboard shortcuts, some of them now work slightly differently. For example, **-shift-backslash (\)** used to open the Font Size dialogue box. Now it opens the Character Attributes dialogue box and highlights the Size field, which can be a much slower process when you have more than 20 or 30 fonts loaded. A clunkier but faster option is to use **-option-shift-M** (to jump to the Font field of the Measurements palette), press **tab** (to switch to the Size field), type the size, and press enter.

And the infamous Martian still makes an appearance when you delete an object with **-option-shift-K**, but in version 4 the same key combination occasionally releases a guy from Neptune, too.

## Hidden features

XPress 4 keeps several of its most useful features hidden away. For example, the program now offers contentless boxes –



those containing neither pictures nor text – but hides the tools for creating them. The trick: **-click** on the Default Tool Palette button in the Tools tab of the Document Preferences dialogue box (**-Y**), and when you click on OK, contentless-box tools magically appear in your tool palette.

The new version contains other hidden gems to help you work faster. For example, you can now control-click on a tool in the palette to hide the tool inside a pop-out menu; holding down the control key and choosing a tool from a pop-out menu reverses the process, pulling the tool out of the menu and placing it in the palette proper.

One of the most popular features in QuarkXPress 4 is the ability to convert text into outlines. But if you hold down the option key when you select Text To Box, the outlined box actually replaces the original text and is automatically anchored in the text box.

The option key brings all kinds of other hidden features to the surface. For example, when you've got two style sheets (either paragraph or character) and want to know how they differ, you can have XPress 4 compare them for you. Select both styles in the Style Sheets dialogue box (**shift-F11**) by **-clicking** on each style. Then hold down

continues page 94



the option key while clicking on the Append button (which becomes Compare when you press the option key). The result: QuarkXPress displays the definition of each style sheet, setting the discrepant attributes in bold. This trick works in the Colors and H&Js dialogue boxes, too.

### Keep your eyes open

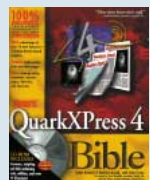
Sometimes we look at a dialogue box and don't even notice the new features staring back at us. For example, the ability to rotate a picture in a picture box is nothing new, but XPress 4 also lets you rotate text in a text box. Just press **⌘-M**, switch to the Text tab of the Modify dialogue box, and change the Text Angle setting.

Similarly, one of the coolest new features in the Find/Change palette is easy to overlook: if you turn on Ignore Attributes, you can search and replace style sheets.

That means, for example, that you can search for all the 11-point Helvetica text in your document and "replace" the attributes with a character-level style sheet. (This feature is a boon to anyone using run-in heads in their documents, because it's so much faster than applying the character styles manually.)

The best way to become really efficient in QuarkXPress 4 is to keep your eyes open and spend some time playing around with the program. But until you find the time to explore, these suggestions will help you speed up your production efforts – and maybe enjoy your work a little bit more. **MW David Blatner is the author of *The QuarkXPress 4 Book* (Peachpit Press, 1998), *Real World Photoshop 5* (Peachpit Press, 1999) and the video *QuarkXPress 4 Tips & Tricks* (Learnkey, 1998).**

This month, our special cover-mounted CD-ROM is from the *Macworld QuarkXPress 4 Bible* (IDG Books 1998), available from our Reader Offer section on pages 116-117.



## Ghosting images in text

Say you want to not only place text over a picture but also have the image show through the text. The new version of QuarkXPress still doesn't offer transparency, but that doesn't mean you can't fake it – and doing so is not as hard as it might seem.

**1** Select one line of text and choose Text To Box from the Style menu. (You can convert only one line of text at a time).



**2** Select the picture box behind the text, and use Step-&Repeat from the Item menu to duplicate the image once with horizontal and vertical offsets of 0. Modify the picture in this "clone" box (or import a new one). Here, I reimported the TIFF file while holding down the **⌘** key to convert the image to greyscale, and then picked a colour from the Style menu.



**3** Move the Bézier box that is shaped like the text outline into position, and then select it along with the duplicate picture below it. Choose Item: Merge: Intersection, and voilà! The altered picture shows through the text.

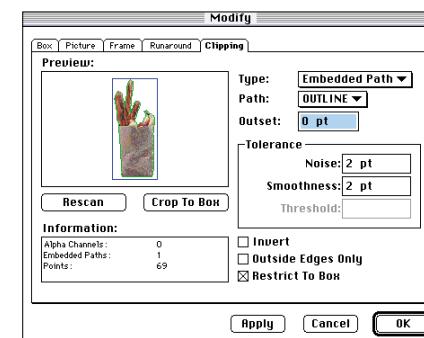


## Breaking the box

You can easily crop a picture by shrinking the picture box. And in QuarkXPress 4, you can clip a TIFF image by using the Clipping tab of the Modify dialogue box. But have you ever considered cropping one part of an image and clipping another? **NOTE:** The following technique requires you to build a path around the image in Adobe Photoshop before importing it into QuarkXPress.



**1** To experiment with the clip-and-crop technique, let's say that you want to crop the lower two-thirds of this grocery bag and clip the background out of the top of the image.

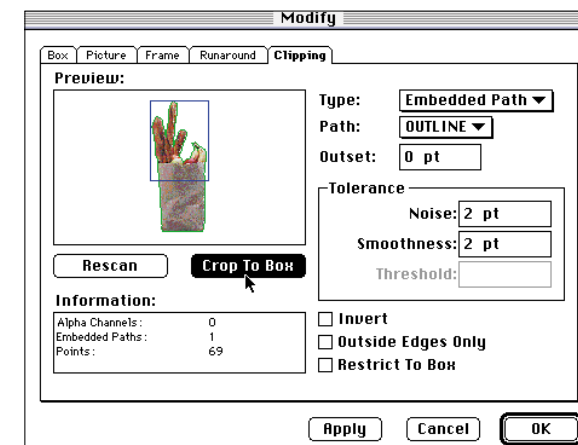


**3** Set the size of the picture box so that it crops out the parts of the image you want to remove but leaves the rest of the image visible.



**2** In the Clipping tab of the Modify dialogue box, choose Embedded Path from the Type pop-up menu. Then choose the path that includes all the parts of the image you want visible, even if it contains more of the foreground image than you need. Here, the clipping path includes the entire bread bag.

**4** In the Clipping tab of the Modify dialogue box, click Crop To Box and uncheck Restrict To Box. Click on OK.



**5** Finally, change the size of the picture box. (For some images, step 3 might require that you change the box to a Bézier box by choosing Item: Shape and then adding points. remember to remove the extra points.



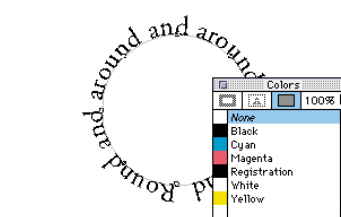
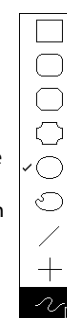
## Putting text on a circle

Trying to draw a perfect circle with QuarkXPress's Text Path Pen tools might give you a migraine. Instead, when you want to place text on a circle, follow these simple steps.

**1** Draw a circular text box (hold down the shift key while dragging with the Oval Text Box tool to constrain it to a circle), and type some text in it.



**2** While the text box is selected, choose the squiggly line from the Shape sub-menu (under the Item menu). This converts the box to a text path.



**3** Set the colour of the line to None (in the Colours palette or the Modify dialogue box) or the line will print along with the text.

# OS 8.5 – in depth

Get the most from the new Mac OS. By Joseph Schorr

**U**pgrading your system software to Mac OS 8.5 doesn't cost a lot – £60 – but it can be a big investment in terms of time and effort. If you've taken the plunge and upgraded, you want to get the most out of your investment – and that means retraining yourself to take advantage of the new tools, shortcuts, keystrokes, and menu commands that are suddenly at your beck and call.

Assuming that you've already mastered the basics of OS 8.5, such as tweaking its look and feel with the Appearance control panel, it's time to move on to some techniques and shortcuts that take you deep into the heart and soul of Mac OS 8.5.

**Playing favourites** The new Favourites command offers an easy way to access the files, folders, disks, and servers you use most – you can reach it from the Apple Menu or from a pop-up menu in the revised Open and Save dialogue boxes.

The Finder's File menu now sports an Add to Favourites command, but don't overlook the easiest way to turn any item into a favourite: just control-click on it to bring up a contextual pop-up menu that contains the same command. This trick also works if you control-click on the tiny folder and disk icons that now appear in the title bars of open windows.



GEORGINA WATSON

**Universal folder expanding** For years, Macintosh users have complained about the Open and Save dialogue boxes' shortage of navigation shortcuts. In OS 8.5, improved Open and Save dialogue boxes let

you view files in sortable lists containing nested folders, similar to standard Finder list views. (You'll find these revamped dialogue boxes only in programs that have

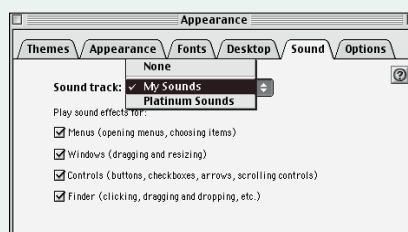
continues page 120

## The sound of menus

**A**pple has rolled dozens of subtle changes into the design of the new OS, but at least one new feature is anything but subtle: Mac OS 8.5 makes noise. Turn on the Platinum Sounds soundtrack in the Appearance control panel, and suddenly your Mac is snapping and ticking its way through every drag of an icon or selection of a menu command. The only disappointment is that you just get one set of sounds, but with a little help from ResEdit you can create a new soundtrack with your own custom sounds.

**1** Make a copy of the Platinum Sounds file (in the Sound Sets folder, inside the System Folder's Appearance folder), and open the copy with ResEdit.

**2** Open the Snd Resource icon to reveal the 67 sounds that make up the Platinum soundtrack. To hear a sound, select it and



choose Try Sound from the Snd menu.

**3** To replace one of these sounds with your own, first record your sound from any audio source, such as a CD, using the Record New Sound command in the Snd menu; it will appear as a new sound resource at the top of the Snd list.

**4** Suppose you want to use this sound to replace the one that plays when you're

dragging items across the desktop. Make a note of its ID number and name, then delete the old resource by selecting it and choosing Cut or Clear from the Edit menu.

**5** Select your new sound and press 1-I to see the Info window for the resource. Type in the ID number and the name of the resource you want to replace, then close the window. Save your changes in ResEdit, close the file, and install it in the Sound Sets folder. Now you'll be able to choose your edited sound set from the Sound Track pop-up menu in the Appearance control panel.

Replacing a whole sound set takes diligence – some of the sounds that accompany system actions are actually made up of several different sounds played in rapid succession – but with some effort you can give your Mac a voice that's uniquely its own.



been updated to support them).

Not surprisingly, many of the folder-manipulating tricks that work in Finder windows also work in these dialogue boxes. For example, you can select a folder in an Open dialogue box and press **→**right arrow to display the contents of the folder hierarchically within the dialogue box; pressing **←**left arrow collapses nested folders in the dialogue box. These shortcuts let you navigate to a deeply buried file without drilling down through layers of folders.

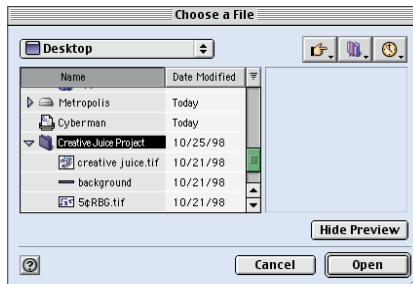
The same folder-expanding tricks work in the Network Browser, a new interface that provides easier access to file servers. From the Apple Menu, open the Network Browser to reveal a list of available AppleTalk zones, select a zone, and press **→**right arrow; the view expands to show all the servers in that zone. Press **←**left arrow to collapse the view.

**Drag-&-serve networking** The Network Browser is less hassle to use than the old Chooser, but network access is even easier if you take a shortcut: drag the icons of the servers you use most from the Network Browser window onto the desktop to create instant aliases. You can then log on to those servers by simply double-clicking on the icons; there's no need to open the Network Browser or the Chooser. The same trick works with the AppleTalk-zone icons that appear in the Network Browser window: drag a zone icon to the desktop and click on it to simultaneously open a Network Browser window and display the list of available file servers in the zone.

**Put Sherlock on a schedule** Easily one of the coolest features in Mac OS 8.5 is Sherlock. This slick, high-speed search engine sifts through your local files or the Internet, looking for information at lightning speed. Sherlock can even search the content of the files on your hard drive for a specific word or phrase. For this feature to work, Sherlock first has to index your hard drive – a process that can take hours. Apple suggests that you initially have the Find application index your drives when you're not using your computer.

But as Sherlock's index of your hard drive falls out of date, so do the results of your content searches; you have to index your hard drive regularly to keep Sherlock's internal database current. The good news is that you can schedule this to happen automatically. In the Find by Content window, click on the Index Volumes button, then click on the Schedule button and pick the days and times when you want Sherlock to rescan your disks. Back in the Index Volumes window, activate the check box next to each of the drives you want indexed. For example, you can schedule your Mac to turn itself on every day at 3am and have Sherlock index your drives at 3:05am.

When you get to work, your Mac will be completely up to date and ready to perform blisteringly fast content searches.



#### Expand it, collapse it

You can expand and collapse hierarchical folders in Mac OS 8.5's new Save and Open dialog boxes from the keyboard, just as you can with standard list views in the Finder.

**Find refined** Perhaps even more significant than the Find by Content feature is the fact that the new Find command lets you save the criteria of a particular search. You just press **⌘S** to save a search, or choose Save Search Criteria from the File menu after setting up your search criteria in the Find File window. This action saves the search criteria in a file that you can place anywhere on your hard drive; the next time you want to access the files that the search identified, just double-click on the saved-criteria file to launch the Find application, run the search, and display the results in the Items Found window.

You can also use this technique to rig up an efficient daily back-up system. Set up a search that looks for all the documents on your hard drive that were modified today, then save the search criteria.

At the end of each day, you can double-click on the search file to get a window displaying all the files on your Mac that need to be backed up. Drag them from the Items Found window to a backup disk, and you're done.

Actually, these tips just scratch the surface of what you can do with Sherlock.

See next month's column for a full-blown collection of Sherlock secrets.

**Joseph Schorr is the co-author of Macworld Mac Secrets, fifth edition (IDG Books Worldwide, 1998).**



Macworld's features editor David Fanning and contributing editor Lon Poole answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send mail electronically, marked Q&A in the subject line, to david\_fanning@macworld.co.uk or via fax to 0171 405 5308. We pay £25 for each tip published here.

We cannot make personal replies, so please do not include a stamped-addressed envelope.

## Q&A & Tips

### Fine-tuning Sherlock

**Tip** One of Mac OS 8.5's great new features is its multi-talented Sherlock searching program.

In addition to searching for files in the same way as Find File in previous Mac OS versions, Sherlock quickly searches the Internet by sending your queries to multiple Internet search sites and presenting their combined results, ranked by relevance, in a single Sherlock window. (Click any of the found items to see the corresponding page in your Web browser).

You can add to Sherlock's six standard Internet search sites (AltaVista, Apple Tech Info Library, Encyclopedia.com, Excite, InfoSeek, and Lycos) by dropping special plug-in software modules onto your Mac's System Folder icon; the Finder automatically routes them to the Internet Search Sites folder inside the System Folder. You'll find diverse search-site plug-ins from the growing collections at the Sherlock Plug-in Directory ([www.apple.com/sherlock/plugins.html](http://www.apple.com/sherlock/plugins.html)), Raul's Sherlock Plugs ([www.teamdraw.com/raul/stuff/stuff2.html](http://www.teamdraw.com/raul/stuff/stuff2.html)), and Sherlock Internet Search Archives ([www.apple-donuts.com](http://www.apple-donuts.com)).

But too many plug-ins make Sherlock cumbersome, observes Joshua Rafofsky. Collect a couple dozen search-site plug-ins, and you'll wish you could enlarge Sherlock's window to see more than six sites without scrolling. Until Apple amends this, you can easily modify Sherlock to make its main window resizable using Rafofsky's free utility Moriarty, available on his Web site at <http://members.aol.com/appleink98/moriarty.html>

The modified Sherlock doesn't have a visible size box in the lower right corner of its window, but you can change its size by dragging the window from that corner.

Even with a larger Sherlock window, the list of search sites becomes unwieldy when it grows to 50 or 100 – and Sherlock won't let you show or hide sites by group or category. Rafofsky suggests grouping these sites with Casady & Greene's venerable Conflict Catcher.

To set this up, open Conflict Catcher and choose Preferences from the Edit menu. Select the Folders icon in the scrolling list on the left side of the Preferences dialogue box, and click the Add button to display the Create Folders dialogue box. Here you set the Starting Folder option to the System Folder and enter sce – a standard suffix for Internet search-site file names – in the space provided for an abbreviation.

Then, still in the Create Folders dialogue box, click the Folder button. In the Open dialogue box that appears, select

## Sherlock • ClarisWorks • Windows

### Unearthing Application Switcher secrets

**Tip** Now that Mac OS 8.5's Application Switcher uses **⌘Tab**, this keyboard shortcut no longer can be used in QuarkXPress or FileMaker Pro. The following is a good way to change the Application Switcher's keyboard shortcuts.

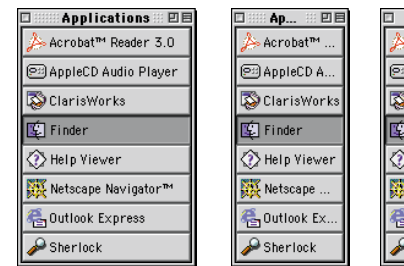
One way is to use the on-screen help that comes with Mac OS 8.5. First make sure the Finder is active, and then choose Mac OS Help from the File menu. On the left side of the Mac OS Help window, click Files And Programs. Then, on the right side of the window, click Switching Between Open Programs. Scroll down until you see the underlined text "Help me modify the keyboard shortcuts," and click this text. A series of dialogue boxes leads you through the process of modifying the Application Switcher's shortcut keys.

The Application Switcher has more advanced options, some of which you can control through AppleScript (see screenshots, right). For example, you can change the width of the Application Switcher window by dragging the right edge of any of its buttons. You can change the window orientation from vertical to horizontal by shift-option-clicking the zoom box, or change the icon size by

option-clicking the zoom box. Using AppleScript, you can hide the window's title bar and frame and list programs in the order in which you opened them instead of alphabetically. Mac OS 8.5 has three starter AppleScript scripts for changing the Application Switcher; run these by accessing Mac OS Help and clicking the underlined text at the end of the Switching Between Open Programs section of Files And Programs.

There are also many free utilities for changing Application Switcher options. Of the five I looked at, AppSwitcher Control gives you the best control of the Application Switcher's keyboard shortcuts, but it responds slowly to your clicking and doesn't let you set less common options such as confining the Application Switcher to one monitor. Prestissimo from PolyMorph Software Development gives you less choice of keyboard shortcuts, but it responds quickly and lets you set the less common Application Switcher options.

Other utilities are Dock Manager by Wade Cosgrove, SwitcherSetter by Chris Gervais, and Application Switcher Prefs from MaxConsulting.



#### The many faces of the Application Switcher

Change the appearance of Mac OS 8.5's Application Switcher by dragging the right edge of any button or by clicking, option-clicking, or shift-option-clicking its zoom box. For some of the effects shown here, you must use AppleScript or one of the utility programs mentioned below.

the Internet Search Sites folder. Now you can use Conflict Catcher to manage your Internet search sites just as it manages your extensions and control panels.

For each group of Internet search sites you want to establish, make a duplicate of your everyday set (probably named Standard Set) in Conflict Catcher. In each duplicate set, indicate which sites you want active and name the set appropriately (for example, Software Sites, or Business and Stock News).

If you turn on the Finder Menu option in the General section of Conflict Catcher's Preferences dialogue box, you can quickly switch among these sets by choosing from this menu. The change occurs the next time you run Sherlock – there's no need to restart your Mac.

#### Switching among Windows

**Q** How do I switch among open windows via the keyboard, as PC users do using Windows 95's Alt-Tab command?  
*Tom Adams*

**A** Upgrade to Mac OS 8.5, and tear off the Application menu (at the right end of the menu bar) to turn it into the Application Switcher window. To do this, click the Application menu icon, drag your cursor down the menu and past the bottom, and position the resulting window wherever

you like. Then you can press **1-tab** to switch to the next application, or press **1-shift-tab** to switch to the previous application.

If you don't want to upgrade to Mac OS 8.5, you can add similar keyboard shortcuts by installing Michael Kamprath's \$10 Program Switcher control panel, or one of several other similar utilities. You can set advanced options in Program Switcher to make program switching look and work very much as it does in Windows 95.

The Microsoft Office Manager control panel can also facilitate keyboard-based switching between programs, but has been known to cause problems. (For details, search for Microsoft Office Manager on Ted Landau's MacFixIt Web site at [www.macfixit.com/searchengine.shtml](http://www.macfixit.com/searchengine.shtml)). This control panel, installed automatically with Office 4.2.1, is not part of a standard Office 98 installation; you must drag the control panel from the Value Pack folder on the Office 98 CD to your System Folder.

#### Two-sided printing in ClarisWorks

**Tip** It's possible to print a multi-page ClarisWorks or AppleWorks 5 word processing document on both sides of the paper without using QuickDraw GX or a printing-utility program. First, open the document you want to print.

Choose Document from the Format

menu and turn on the Mirror Facing Pages option in the resulting dialogue box; this matches the inside and outside margins on facing pages.

I also like to select the Facing Pages Side-By-Side option in this dialogue box to display pages side by side on screen. This doesn't affect printing but makes it easy to distinguish the right (odd-numbered) pages, which print on the front of the paper, from the left (even-numbered) pages, which print on the back. Print the odd-numbered pages first by choosing Print from the File menu, selecting the Right Pages option, and clicking Print.

Then reverse the order of the printed pages, turning them over so that page one is on top and facedown, page three is facedown under page one, and so on.

Next, place the printed pages back into the printer facedown, observing the correct page orientation for your printer. If the last page of the document is odd numbered, don't put it back into the printer – there's nothing to print on its back.

Finally, print the even-numbered pages by choosing Print from the File menu, selecting the Left Pages option, and clicking Print.

*Bruce Farah*

Depending on how your printer feeds paper, you may not need to reverse the order of the odd-numbered pages before putting them back into the printer. – **LP**

## Peter Worlock



I've been moaning for years about  
Apple's strategy – but what do I know?

# Take a reign check

Compare and contrast, as they used to say in my GCSE exam papers: "Apple" Expo here in the UK, versus San Francisco's Macworld Expo. There is no comparison; the US show was everything we could have hoped for – new machines from Apple, plenty of new products elsewhere, number of exhibitors up, number of visitors up.

And with Apple's latest financial results – the company turned in a profit for the fifth successive quarter – the new year couldn't have got off to a better start.

For someone who has despaired of Apple's strategy for years (that's me, by the way) the 1999-model Apple is very impressive indeed. Most of the things I've been bitching about now seem to be right, not least the company's manufacturing system.

From the nightmare confusion of dozens of models in different cases, with different motherboards, the new range of desktop systems is beautifully simple: two product lines (iMac and desktop G3s), with easy-to-understand configurations – faster processors, extra RAM, your choice of hard disk. And in the case of the iMac, of course, your choice of colours. The new range can only simplify Apple's manufacturing, and help with demand-forecasting, one of the biggest contributors to the company's dire results of a few years ago.

There are still things to quibble about. Those iMac colours present Apple with a minor problem in manufacturing the correct numbers, and there are early reports that Apple will force dealers to take all the colours until Mac buyers demonstrate a clear preference.

And you have to sympathise with third-party peripheral makers – just as they're ramping up production of Bondi Blue drives and other devices, Apple drops the colour scheme and replaces it with even wilder choices. I'll bet the selection of colour-matched peripherals will be extremely limited this year.

Second, the cases on the new desktop systems! I never liked the iMac, and I like the desktop case even less. Other manufacturers targeting the creative computing markets have dabbled with design – Silicon Graphics' curvy blue systems, for example, and Intergraph's purple monsters – but none has been as radical as the new desktop Macs.

But, hey, why should Apple care what I think? All those years when I liked the look of Macintoshes, Apple was deep in the mire; as soon as they start making machines I hate, sales rocket, profits shoot up, and all the world loves a Mac once more.

I should offer my services to Apple as a market barometer. Apple designer: "Steve – Worlock loathes the new model." Jobs: "Terrific, let's ramp-up production."

The wider Mac-picture also looks good. With Apple shipping graphics accelerators with all new Macs, and its imminent adoption of the OpenGL graphics standard, the Mac is better placed to compete in all graphics, design and multimedia authoring markets.

The sudden explosion of games and entertainment titles is also good news in the consumer market. The dramatic announcement of Connectix' Sony PlayStation emulator is harder to judge. Although I told everyone I met last year that a PlayStation-on-a-PCI-board would be a killer product, I'm less convinced by a software emulator. There are the inevitable problems that emulation brings, and when you throw in the fact that a genuine PlayStation, with a free game or two, can be had for well under £100 it's hard to see why anyone would want to tie up their Mac that way.

My last quibble concerns Apple's surprising refusal to bow to demand for more slots in desktop machines. Video editors and others working at the high end simply can't live with three- and four-slot Macs, and will surely be disappointed by the new G3 systems (regardless of what they think of the colour). In fact, the new systems are a retrograde step, since it's likely that one or two of the available slots will be filled by things that used to be on the motherboard as standard – things like SCSI and serial adaptors.

But despite these few words of caution, everyone seems positively overjoyed by Apple's current situation – check out Macworld's extensive show coverage and read the glowing reports from reporters, show-goers, developers and others.

Personally, of course, I'm delighted, too. How kind of Apple to make it so easy to keep my New Year Resolution of sunny, upbeat reportage on this page.

But wait ... what's that on the horizon? Dark clouds, chill winds – we are definitely expecting rain next month. **MW**