POWER MAC G4 FIASCO APPLE'S GIGA FLIP-FLOP MORE NEWS INSIDE...

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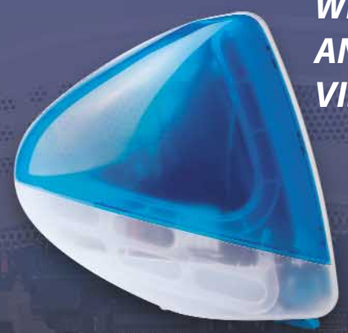

78 FIRST THERE WAS THE iMAC, NOW THERE'S THE iMAC DV – FASTER, REFINED AND READY FOR THE DIGITAL-VIDEO REVOLUTION. WE TEST THE iMAC DV, AND REVIEW APPLE'S iMOVIE VIDEO-EDITING SOFTWARE.

December 1999

read me first

Simon Jary, editor-in-chief

My name is Simon Jary, and I'm an Apple-holic. I know it's bad for me, my friends and my family. And it's bad for you, too, my readers. Sad to say, but this month Apple is nearly all bad news. Since I pleaded (*Macworld*, August 1999) with the Mac maker to get its planned Apple Expo 2000 absolutely right this time ("Apple simply cannot afford to let us down again" were my exact words) and after three years of failing to turn up despite promises, Apple has gone and done it again. Like a repeatedly battered spouse, we stand bloody and rather shocked that we didn't see it coming. How stupid we were to again believe Apple's word. Stupid, stupid, stupid.

Promises are promises. But then there are Apple promises. When Apple pulled out of Expo 98 (for the second time, mind), it had a point to prove – unfortunately at its customers' expense. When it cancelled Expo 99, it told us not to worry – next year's would be "bigger and better".

Now, we've been had again. Apple's done a runner. No show in 1998. Nowhere to be seen in 1999. Out of sight in 2000. And it looks like Apple will never open up to the British public ever again. Want to get to grips with the latest Apple kit? If you can't book a weekday appointment at an AppleCentre, you'd better book your Eurostar ticket and French lessons for Paris in September 2000. Or fly to San Francisco for Macworld Expo in January. Maybe you can wait till July – and fly to New York for the second US Macworld Expo of the year. For those prices, you could buy a nice desktop PC with printer and scanner, or a slimline Windows laptop.

All the third-party companies that booked for the show had been promised a major Apple presence. Even CEO showman Steve Jobs would appear. The Adobes, Macromedias, Epsons and Quarks had staked large parts of their marketing budgets on the event. If they have to change their minds, who'll end up paying for the let-down? You will, through higher UK prices.

Instead of honouring its promises, Apple tells us that it's spending its money on a series of TV ads – that's its new way of "communicating with its customers". Even Peter Mandleson would blanch at that one. It's not cheek, it's crap. And Apple is about as full of it right now, as it ever was under far-lesser men than Steve Jobs.

Since we broke the story of Apple's scandalous exit on Macworld Online, we have talked to nearly every pre-booked exhibitor. Unanimously, they are shocked and hurt by Apple's flippant flip-flop. There's more money to be made in the Windows market, and who will blame them for switching their Mac marketing budgets to safer fields?

We have also received hundreds of emails from *Macworld* readers. Every other email the word "disgusted". And the rest were really angry. Read them at www.macworld.co.uk/expoexit/.

Steve Jobs is busy elsewhere – at LA's Internet World a week later, and in Las Vegas for the National Association of Broadcasters days later. So what? Most of the potential customers that Apple wants to tempt with its iMacs and iBooks have never heard of Steve Jobs, and would rather watch a Tory party political broadcast than sit through an hour's tech pep.

Steve is right to talk at the other shows. That's where the media will be. That's how he'll spread Apple's message best. But it's no excuse for Apple UK to run away and hide behind his projector. We want to see, play with, and buy Apple's products – not stare at billionaires.

Apple likes to think it lives and dies on look-&-feel. Everything must be just so. Apple Expo had been promised a replica of Apple's stylish white stand from San Francisco. Trouble is, that three-dimensional glossy plastic brochure needs to be in LA and Las Vegas in April, and getting it over from London in a couple of days is too much even for Apple. So why can't Apple bend its corporate blueprint a little to allow everyone a sight of its goods? After all, any look is better than no look and no feel.

I don't enjoy writing negative comment about Apple. I usually leave that to the rest of the press. But, when it hit its pre-iMac hard times, Apple survived through one thing and one thing only – the loyalty of its customers. This time, with the outcry of readers and partners alike ringing in my email folder, I think Apple may have pushed many of those trusting souls too far. There's no way we'll believe it again. And, not coming from Apple, that's a real promise.

When Apple goofed over Power Mac G4 orders (see page 20), Steve Jobs stepped in, saying: "Good companies make mistakes. Great companies fix them". Thanks heavens, then, that Apple is still a very, very good company. MW

Macworld

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New User | New Group | Open | Duplicate | Delete

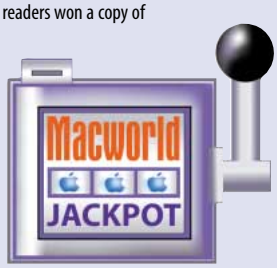
More winners, more great prizes

The winner of the **Polaroid SprintScan 4000** Scanner from the September's *Macworld* was Miss Clare Forbes, from Sutton,Surrey.

There were even more lucky winners from September *Macworld's* Jackpots. Five readers won a copy of **Age of Empires**. They were: Keith Hodges, Oxford; Matt Jemson, Hampshire; Trevor Simm, Tyne & Wear; Dominic King, Lanarkshire; and John Haskins, Northamptonshire.

The five copies of **Adobe Type Manager Deluxe 4.5** we were giving away went to: Robert McMinn, Nottingham; Mark Knowland, London; Edward Connolly, Belfast; Mark Holt, London; and Joseph Ortenzi, London.

Finally, we offered you the chance to win a copy of **4.5 Dimension 6.5**, and the winners were: Memasche Scharf, London; Athol Jamieson, Staffs; Adrian Furniss, Hampshire; Pat O'Halloran, North Yorkshire; and Ben Griffiths, Cambridge.



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We've got 30-day trials of FileMaker Pro 5, Norton Disk Doctor, Speed Disk & AntiVirus, plus top games, utilities and updaters making this month's CD a not-to-be-missed affair. Vic Lennard starts the ball rolling …

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:

■ QuickTime 3.0.2

Many of the demos need this installed. It gives you QuickTime 3.0.2 plus the MPEG, VR, Musical Instruments and PowerPlug add-ons.

■ Acrobat Reader+Search 4

Install this version to be able to read many of the on-screen manuals.

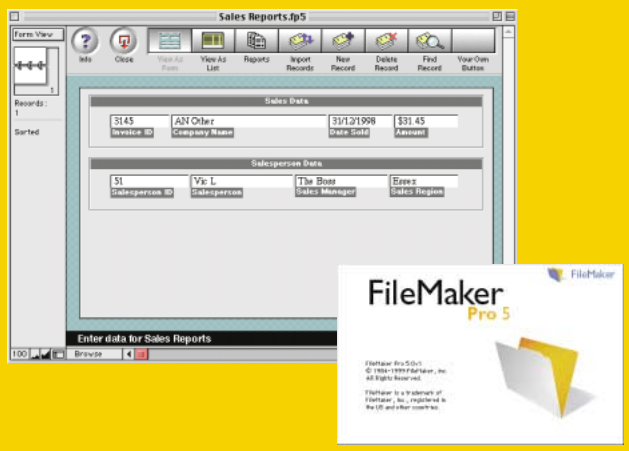
■ StuffIt Expander and DropStuff

Versions 4.5 & 5.1.2 are included.

■ Also included

A number of useful utilities such as Apple Game Sprockets 1.1.4, InternetConfig 2.0 and Apple Appearance plus essential items such as Apple Disk Copy and Drive Setup.

FileMaker Pro 5

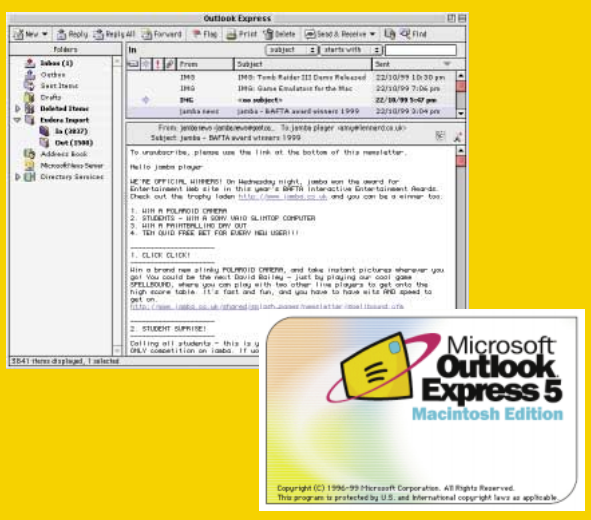


With FileMaker Pro 5 you can easily create, share and manage information and projects with colleagues over an intranet. With the Instant Web Publishing capabilities, render database layouts on your intranet with just one click. It's the ideal database to use with Microsoft Office.

FileMaker Pro 5 brings a wide range of new features and improvements to the application. Much attention has been paid to the ways that users interact with the software. Menus, dialogue boxes and tool bars have all received attention in an effort to make the experience of using FileMaker Pro more productive and enjoyable, while FileMaker Pro software's ODBC and Microsoft Office compatibility have also improved. Some of these changes will make the experience of using FileMaker Pro much easier for people that are new to the application, while others are certain to please long-time users and developers.

Take FileMaker Pro 5 for a 30-day test drive!

Microsoft Outlook Express 5 – full version free!



Outlook Express 5: an email application that offers a hassle-free operation that brings all your information together. This latest version has support for key Apple technologies such as Macintosh Drag-&-Drop, Mac OS 8 appearance and also full AppleScript support.

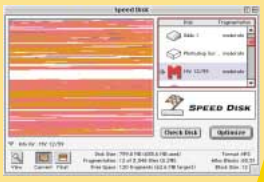
Time-saving features include the Account Setup Assistant and customizable Address Book, making it easier to set up email accounts, and send and manage email. The application now offers a quick and intuitive new way of addressing email using Address AutoComplete to send messages to contacts added to the Address Book. And sending and receiving file attachments has never been more seamless – Smart Attachments encodes for any computer.

Select the Test Drive option from the Outlook Express 5 Set-up Assistant window to import all your mail, contacts and Internet Connection settings into Outlook Express while saving pristine copies of all your mail and contacts in your other email program. Your mail is kept on your mail server, so it is visible in both places. You will lose no data whatsoever, still be able to use your other email program, and get to try all the new features instantly!

More CD contents on page 12

Serious Software

Norton trials

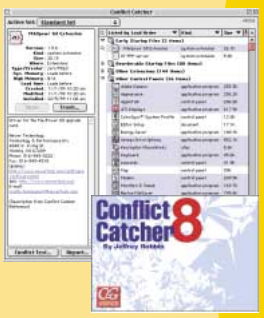


Disk Doctor and Speed Disk are part of Norton Utilities 5. Disk Doctor can now repair the boot volume or any volumes with open files on them (LiveRepair), has an undo facility, a redesigned user interface and a launcher for Norton AntiVirus 5 or 6 if installed. Speed Disk now optimizes directories so resulting in faster disk access.

Norton AntiVirus 6 can now repair boot blocks after damage from an AutoStart worm. Also included is a PDF copy of the Reference Guide for Norton AntiVirus for Macintosh.

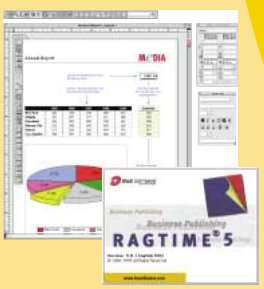
Disk Doctor and Speed Disk will expire 30 days or 47 launches after first use, or on December 15, 1999, whichever comes first. Norton AntiVirus will expire 30 days after installation or on December 15, 1999, whichever comes first.

Conflict Catcher 8.0.6



This latest version of Conflict Catcher has added a number of new features including Mac OS 9 All and Base sets, Clean-Install System Merge for Mac OS 9, and a new Reference Library with descriptions for over 4750 files (including descriptions for Sherlock Internet search sites). System Report now recognizes the G4 processor and the Velocity Engine, and SpeedTools and Control Strip groups have been added. The trial will work for 7 days, after which it will no longer function. If you are currently using Conflict Catcher 4, pay careful attention to the removal instructions in order to retain your existing Conflict Catcher 4 preferences.

RagTime 5.0.1

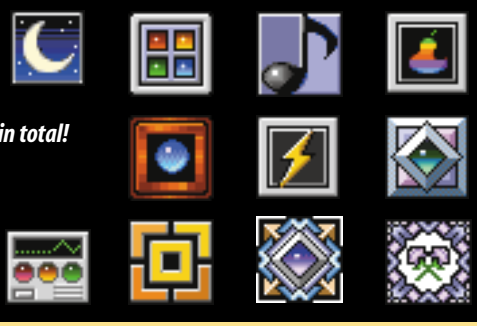


RagTime 5 creates all kinds of business documents and print-outs. Its tight integration of text processing, drawing and calculating tools makes RagTime a most versatile application for business publishing. Reports, price lists, catalogues and printed presentations are created easily and kept up to date by RagTime. Most available documents from standard office applications can be integrated easily in RagTime documents and 'hot links' between different elements of a document allow consistent changes of data at any time. The demo is fully functional but save disabled.

If the Studio Artist demo on last month's CD has expired, replace the application with the one in Serious Software on this month's CD.

Don't miss...

- **Cool Extras!** — **BlueSkyIcons** *Six sets of superb icons comprising almost 500 in total!*
- **Mac ISPs** — **Internet access offers from Abel Internet, AppleOnline & FreeUK.**



Also on the CD

APPLE *(in the System Utilities folder):*
AppleShare MMgr INIT 1.0
Network Asst 3.5.2
PB G3 DVD-ROM Updater 1.0

COMMS & INTERNET
15 applications including:
Download Deputy PPC 3.2
IE Admin Kit 4.5
Snak 3.0.2

FONTS
FontAgent 8.0.1
QuickFontLister 1.1

GRAPHICS
Five items including:
ImageViewer 5.11 PPC
TextureMagic 1.1.2

ICON UTILITIES
DropIcon 2.5.1
Icon Machine 2.0.1
IconMacher1.5.2

INFO
Four items including:
.Mac September 1999
About This Particular Mac 5.10
My Mac Magazine #54
plus four items for developers

MATHS & SCIENCE
Four utilities including:
Periodic Table 1.4
The Atomic Mac 3.5.1

NETWORK
Talk2Mac 2.0

SOUND & MUSIC
Eight applications including:
FretPet 2.1.2
OMS 2.3.8
Virtual Drummer 4.0.3

UTILITIES
Eleven categories comprising almost 40 useful tools for your Mac including:
ACTION Files 1.5
ACTION WYSIWYG 1.0.1
Ascii Converter 1.4.1
Create Adobe PDF
EpsonShare 1.3
MacArmyKnife 1.4
MultiTimer Pro
Play it Cool 3.32
Power Windows 2.0.6
SmoothType 2.1.1

UPDATERS
This month's dedicated updaters folder includes 90MB of patches to bring many popular applications bang up-to-date, including:
Adobe Premiere 5.1c
BorisFX 4.0.4
Bryce 4.0.1
Conflict Catcher 8.0.6
Extensis Portfolio 4.1
Kingston PCI Ethernet 3.2
MagicScan 4.3
Norton AntiVirus (10/99)
Retrospect 4.2
SoundJam MP 1.1.1
Spell Catcher 8.0.1
Toast DVD 3.7.1
Virex (10/99)

Other demos *include:*

Data Hammer 2.2.5
EIMS 2.2.2
Mailsmith 1.1.5
PhotoJazz 2.0
PitStop 4.03
ShowReal 1.0
Vicomsoft DHCP Server 6.5

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 up to 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.

More CD contents on page 14

Total Annihilation

When the Arm and the Core clash, an epic battle decides the fate of the galaxy! A real-time strategy game of epic proportions, Total Annihilation brings true 3D to the world of Macintosh strategy. Choose to battle as the Arm or the Core, building kBots, tanks, ships and aircraft to accomplish your goals.

With dozens of unique units for each side, challenging missions, and lightning-quick skirmishes, Total Annihilation will keep you addicted for days and days. Or, challenge your friends to blistering multi-player games via LAN or Internet. And when you've mastered Total Annihilation, you can move on to the two add-on packs included as a special bonus: Core Contingency and Battle Tactics. These add-ons ramp up TA with scores of new units, dozens of new maps and missions, and greater challenges than you've ever encountered before.

This demo features control of the Arm with a single-player, three-mission campaign.

Games World

Our hot new games folder boasts demos of Air Hockey (ace arcader) and Realmz 7.0.4 (superb role-playing game) plus the latest versions of Ambrosia Software's Cythera adventure game and Ares blast-'em-up.

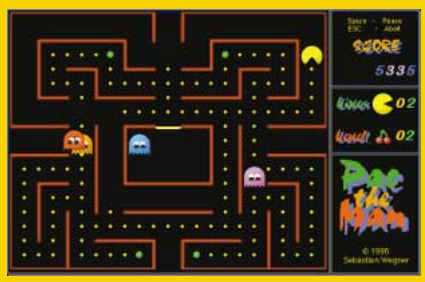
This month's Top 10 shareware games has some splendid arcade action – BrickBreak, Grand Teton Tetris, Sphaera, Ski3D, TRON-ish and Pac the Man will keep you going for ages. Then there's Extreme Prejudice, that Mac rarity of a platformer, and two-player fighting courtesy of Fight of the Sumo Hoppers. The more cerebral among you can enjoy MemoryPict (a modern-day version of the 'pairs' card game) and the latest incarnation of ChessWorks.

Air Hockey

Ares

Ski3D

Pac the Man



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 Woody Phillips at woody@macworld.co.uk

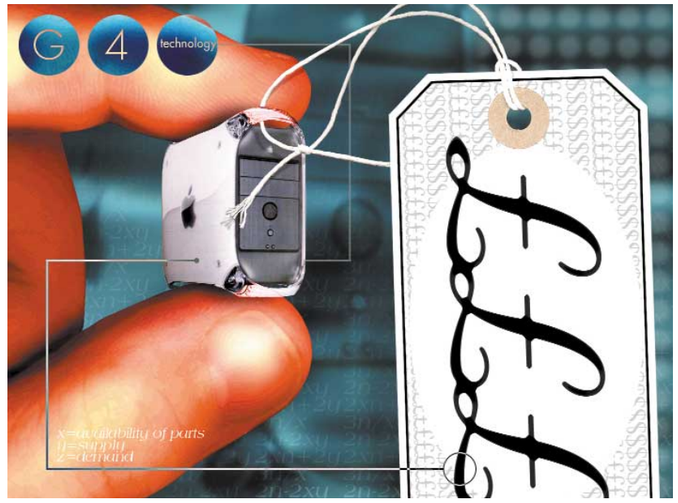
If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 0171 344 4375, or at kelly_crowley@macworld.co.uk

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 – over 132,000 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.

CD competition on page 16

Fiasco: Apple's G4 giga flip-flop



DAVID ANGEL

Flummoxed Apple 'downgrades' G4 Power Macs – blames quake, angers customers

The events of the past month have been embarrassing for Apple – many say inexcusable. Not only did Apple reverse its promise to make Apple Expo 2000 "bigger and better", but supply problems forced the company to downgrade the processor speeds of its much-hyped Power Mac G4 range. Matters were compounded by an extraordinary corporate communications muddle that put out a contrasting stance on the rejig each day for a whole week. Think Different, indeed.

While trumpeting a "better-than-expected" quarterly profit of $111m, Apple quietly added that it had to "reconfigure" its new G4 systems, putting the blame on a shortage of chips from Motorola. "Despite receiving orders for over 150,000 Power Mac G4 systems during the quarter, we were able to ship only 64,000 G4 units, which was far short of our plan," said Fred Anderson, Apple's chief financial officer.

To help address the problem, IBM will begin manufacturing the G4 processors in the first half of 2000, giving Apple two suppliers (see page 27).

500MHz speed limited

Motorola's Semiconductor Product Sector is working to resolve "errata" that affect its new G4 processor when run at speeds of 500MHz or higher. A fix isn't due until December.

Sources said that the problem – which arises only when the G4 is run at speeds of 500MHz or higher – can result in some corruption in the processor's data cache. Although the G4 processors in shipping Power Mac G4s contain the errata, their sub-500MHz speeds keep them from encountering the corruption problem.

Indeed, another source said, this issue might never show itself in Macs, since the OS doesn't manipulate data rapidly enough to cause the problem – the glitch would more likely effect extra-efficient embedded operating systems. Even if data corruption should occur, a source said, the result would be nothing more than a system freeze, easily fixed with a restart.

"That kind of errata isn't unusual for new ships from any manufacturer," said Keith Diefendorff, editor-in-chief of the *Microprocessor Report*. Motorola's warnings don't necessarily portend serious problems: "Motorola, as a company, is relatively conservative, and it likes to have everything perfect."

Bizarre reaction

While only the 500MHz version of the G4 processor was allegedly affected by the errata, Apple opted not to take the logical step of delaying delivery of its top-speed systems until the problem was addressed.

Instead, Apple chose to make a far more sweeping – and bizarre – move: Any customer in the market for a Power Mac G4 would now get a slower processor for the price Apple had promised a few weeks before. Moreover, those who had already placed advance orders received emails from Apple informing them that their orders had been cancelled outright. Those users' only option was to place another order at the higher price and wait longer for delivery.

A firestorm of criticism among users prompted the company to reverse that policy. The policy was then re-reversed and re-re-reversed.

After a day of public uproar, sales representatives at the online Apple Store began responding to outraged customers with a new party line: The company would go ahead and honour orders at the original prices. The Apple Store confirmed that decision with an odd little email message on Friday morning that read, in part: "After a good night's sleep and digesting emails from many upset customers, we have decided to reverse this decision."

One day later, resellers said they had received "official" emails from Apple stating that the company would honour only a limited number of pre-orders placed directly through the Apple Store, citing product shortages. Apple also told them that all pre-orders taken by third-party resellers would not be honoured.

As the day drew to a close, Apple's PR department was apparently in a tizzy. An Apple PR manager called *Macworld*'s US online sister publication, *MacWeek*, asking it to post what he said was corrected information to counter news reports – including some from other Apple spokespeople – that pre-orders were being honoured at the original prices. Despite reports to the contrary from the Associated Press and other news organizations, Apple said that no reversal in policy had occurred.

Throughout this confusion, Apple made no mention of the fate of customers who had placed advance orders with third-party retailers, saddling dealers with the unpleasant task of calling customers and apologising for Apple's goof up.

After a weekend of no one knowing the state of their Power Mac pre-orders, word came down from Apple CEO Steve Jobs himself that the company will honour its earlier agreements, and deliver G4 systems at the original price to customers who had placed orders through Apple and its dealers before the whole mess began.

"We aim to delight our customers, and we clearly dropped the ball in this instance. We apologize to our customers for upsetting and disappointing them," said Jobs. "Our actions will hopefully set things right. As the old business proverb says: Good companies make mistakes. Great companies fix them."

A spokesman for Apple UK confirmed that Apple will follow the US lead in honouring orders made in the UK for its 400- and 450-MHz models before October 13. Users who ordered a 500MHz machine can either re-order a 450MHz machine – at the same £2,399 price at which the 500MHz model was originally advertised – or wait until the first quarter of next year when Apple expects to be able to ship these machines.

Otherwise, the new pricing structure (see table below left) applies to all new customers. MW

Power Mac G4 speeds they are a'changin (but not prices)

	original entry-level	New entry-level	*original mid-range*	New mid-range	*original high-end*	New high-end
G4 processor	*400MHz*	350MHz	*450MHz*	400MHz	*500MHz*	450MHz G3
Memory	*64MB*	64MB	*128MB*	128MB	*256MB*	256MB
Max. RAM	*1GB*	1GB	*1.5GB*	1.5GB	*1.5GB*	1.5GB
Hard drive	*10GB*	10GB	20GB	20GB	27GB	27GB
CD/DVD drive	*CD-ROM*	CD-ROM	*DVD-ROM*	DVD-ROM	*DVD-RAM*	DVD-RAM
Zip drive	*No*	No	*Yes*	Yes	*Yes*	Yes
Backside cache	*1MB*	1MB	*1MB*	1MB	*1MB*	1MB
FireWire ports	*2*	2	*3 **	3 *	*3 **	3 *
Sawtooth logic board **	*No*	No	*Yes*	Yes	*Yes*	Yes
Price (ex. VAT)	*£1,099*	£1,099	*£1,699*	£1,699	*£2,399*	£2,399

* 2 external; 1 internal. ** Sawtooth logic board features: 133MHz 2x Advanced Graphics Port; 800Mbps memory bandwidth; and faster, independent USB ports.

Apple exits UK expo… again

Fury at fourth show rejection since 1997

Apple is pulling out of the only Macintosh trade show in the UK, leaving exhibitors to wonder whether to proceed with plans for Apple Expo 2000, scheduled for next spring in London.

Macworld Online broke the news on October 28, before the show organizers had alerted other exhibitors. Although Apple puts its decision down to a "refinement" of its global marketing strategy, reports from Apple US suggest that CEO Steve Jobs has gone cool on the UK show.

Apple's change of plans leaves Apple Expo 2000 without its principal sponsor and attraction, and exhibitor reaction has been swift and furious.

"It's a fiasco," said Epson PR manager Mary McNulty. "How dare Apple treat its customers and partners like this. The Mac community is abandoned again."

It was only July when Apple cancelled the 1999 expo in favour of the "bigger and better" Expo 2000 (see August 1999). Apple was also a no-show in 1998, after a ding-dong with the show organizer (see November 1998).

Apple UK PR manager David Millar told *Macworld* that its decision is a "further refinement" of its "global strategy." September's Paris-based Apple Expo will now be Apple's only European event.

"Exhibitions are only one part of the marketing mix," Millar said. Apple junked the UK show, he said, to "maximize our global impact".

"We are going to NAB [the National Association of Broadcasters show] and Internet World with a vengeance," he said. NAB takes place in Las Vegas April 8-13, following the April 3-7 Internet World show in Los Angeles. London's Apple Expo 2000 runs March 31-April 1.

Millar said Apple has doubled its marketing budget in the UK over the past year, but is spending most of it on a series of TV ads promoting iMacs and the iBook. This is now Apple's main method for "strengthening communications with our customers", Millar said.

UK customers haven't seen Apple at a Mac show since November 1997, and the future of Apple Expo 2000 is now in the hands of show organizer CKS and those exhibitors that have already booked stands, including Adobe, Epson, Heidelberg, Macromedia, Microsoft, and Quark.

LONDON PHOTO COURTESY OF PHOTODISC (WWW.PHOTODISC.COM/UK)

Ricky Liversidge, Adobe's UK marketing director, said: "It's deeply disappointing, and an absolute shame that the community has not got an opportunity to get together, and feed back to manufacturers."

Fiona Coughlan, MD of Macromedia UK, demanded answers: "Why is it Apple's strategy not to do shows in one of their leading countries?"

To read further exhibitor reaction and the furious comments of Macworld Online readers, go to **www.macworld.co.uk/expoexit/**.

– Simon Jary MW

Pismo PowerBook slimmer, quieter

Revamped laptop line could debut at 500MHz

In keeping with the reconfiguration of its entire product line, Apple is set to relaunch its PowerBook professional laptop. According to sources, the overhaul – code-named *Pismo* – will be unveiled at January's Macworld Expo in San Francisco.

Based on Apple's new cost-cutting and technology-improving Single Common Unified Architecture, Pismo is expected to follow previous Apple PowerBooks as the most powerful laptop in the world.

Apple insiders say display size should remain the same at 14.1 inches, but that additional graphics power will come from the inclusion of ATI's Rage 128 chip. Such acceleration is becoming de rigeur for Apple's range.

Pismo will retain the G3 processor, as opposed to the G4 chips currently running Apple's Power Macs. According to sources, Apple is running 400MHz, 450MHz and 500MHz prototypes at present. G4 PowerBook are not expected for some time, following Apple's recent supply problems with PowerPC manufacturer Motorola (see page 20). However, IBM's return to the G4 fold (see page 24) could mean G4 PowerBooks sooner rather than later next year. System bus speed is likely to jump from 66MHz to 100MHz.

All units should come with 64MB of RAM, and feature hard drives starting at at least 6GB – as currently available in the 333MHz PowerBook G3.

Pismo will feature an easily accessible AirPort Card slot under its keyboard, as in the consumer-oriented iBook portable computer. AirPort antennae will be built-in beside the PowerBook's active-matrix screen. One or two FireWire ports will probably replace the PowerBook's HDI-45 SCSI connector. USB remains as Apple's primary peripheral-connection standard.

Uncorroborated rumours suggest the new Pismo PowerBooks will, like the new iMacs, be fanless. If so, the new machine will be lighter and more slimline than even the current model. Battery life could be stretched up to 8-10 hours per charge – certainly at least to the six hours Apple claims for its iBook.

What the new PowerBook will look like is really anybody's guess. We are likely to see some iBook touches in the pro portable – no case-latch, pulsing sleep-light, and a metallic trackpad. Graphite casing is also a contender for inclusion. Macworld Expo runs from January 4-8, 2000. MW

– Jonathan Evans

Oz cops pick Mac

Apple technology has helped Australia's Queensland Police Service make AUD$30 million in cost-efficiency savings.

Queensland Police adopted the platform as the mainstay of its IT systems: it has 6,000 Apple Macs spread throughout 400 offices.

"These results show cost-effective implementation and management of the service's computer network, which spans the State and has links to other police jurisdictions," said Queensland Police spokesman Brian Swift.

He added: "Computers have become an important resource in our communications system, and an integral part of our fight against crime."

The news follows last month's revelation that the US military had switched to the Apple platform.

– JE

Teachers' pet is QT

Apple director of QuickTime product marketing Frank Casanova played teacher to the education professionals attending October's Educause '99 event with a pitch for the power of QuickTime, QT Streaming and QuickTime TV.

Touting the software's features, Casanova said QuickTime is the only format that captures, edits, composes, delivers, plays back and archives content for media. He added that within four months, documents will be signed that confirm QuickTime's file format as the MPEG-4 standard by the International Organization for Standardization.

Server power

Apple, which uses Akamai Technologies as its network provider for QuickTime and QTV, invested $12.5 million in the company, which integrates QuickTime servers into its network. Apple and Akamai's engineers upgraded Akamai's global content delivery service to support Internet streaming using Apple's QuickTime Streaming Server software. Akamai will increase its servers from 1,350 to 3,000 within a year.

Casanova said, "Akamai's servers talk to each other; if one goes down, it gets purged and the other servers pick up the load, with tons of redundancy"

Apple also used the show to promote its new iMacs and iBooks to teachers.

Discussing Apple's virtual-reality software, Casanova said, "You will see more development with QuickTime VR in the next year." QuickTime VR lets users navigate 3D virtual worlds via a mouse, keyboard or other input device and change an image displayed by the QuickTime VR movie controller. **– Wendy Mattson** MW

FireWire rival heats up link war

USB 2.0 target speed ramped to 480Mbps

JAMES WALKER

The gap in the speed race between next-generation connectivity standards FireWire and USB appears to be closing after an announcement that the target speed for USB 2.0 has been increased to 480Mbps – an improvement on the original target of 240Mbps, and a dramatic leap from the mere 12Mbps possible with the current version, USB 1.1.

At the USB 2.0 Developers Conference in October, the USB 2.0 Promoter Group also released a draft specification allowing developers to begin work on USB 2.0-compliant peripherals, and predicted that USB 2.0 products would be available during the second half of 2000.

The announcement has caused some industry watchers to believe that USB 2.0 is being touted as a competing technology to FireWire (IEEE 1394) – the high-speed (400Mbps) I/O connectivity technology developed by Apple.

Upping the anti

According to the USB 2.0 Promoter Group – consisting of Intel, Compaq, Hewlett-Packard, Microsoft, NEC, Lucent and Philips – USB 2.0 will be backwards compatible with the current USB 1.1, using the same cables and connections. But the higher bandwidth will open the doors to peripherals such as higher resolution video-conferencing cameras, next-generation scanners and printers, fast storage units and faster broadband Internet connections.

This, according to the USB 2.0 Promoter Group, will make USB 2.0 "the preferred connection for most PC peripherals", consigning FireWire to the niche market of audio/visual consumer electronic devices, such as digital camcorders, VCRs and digital TVs.

The final specification of USB 2.0 is scheduled for release in the first quarter of 2000. However, while the Promoters Group anticipates products and systems to be on the shelves in late 2000, some of its developers believe otherwise. Hervé Petit, of peripheral manufacturer La Cie, for example, said: "USB 2.0 peripherals will be available in 2001".

The chairman of the FireWire Trade Association, James Snider, was also sceptical: "Improvements to a specification that needs them are certainly welcomed," he said, "but a draft specification represents only the first step. It takes up to two years from initial silicon to complete hardware debug. Then, it takes another 10 to 12 months, at the minimum, for software development and debug. With the original USB specification, this process required four years. I cannot imagine that ramping from 12Mbps to 120Mbps is going to happen any sooner. Faster speeds will take even longer."

Snider also talked about plans for 1394b – the next revision of FireWire. While the USB 2.0 Developers Conference was in full swing in California, the 1394b working group met in France and sent the new FireWire standard to ballot. Snider predicted that 800Mbps FireWire silicon would enter production early in 2000.

"1998 was the year when we saw significant numbers on 1394 camcorders," he said, "1999 was the year for PCs, and 2000 will be the big year for 1394-enabled peripherals. 1394 hits critical mass in the PC and peripheral industry two years before USB 2.0 is ready for prime time." **– Louise Banbury** MW

■ *Read our lab tests on FireWire drives, from page 86.*

USB big time

PC-giant Xircom has acquired Entrega Technologies. Xircom is widely known in the PC world for its mobile-access solutions. The move marks a major leap for Xircom from the PC to a USB environment – potentially offering many more products for the Mac in coming months.

"Combining the established consumer presence of Entrega's products with Xircom's access-oriented PortStation line enables us to address customer needs across the entire USB-port expansion market," said Dirk Gates chairman, president and CEO of Xircom.

The decision to buy was influenced by research projecting that all of the notebook and PC shipments in 2001 will be USB-compatible. Dataquest estimates a potential installed USB user-base of 500 million USB equipped PCs by that year. By purchasing Entrega, Xircom gains a leadership position in the USB hub market, which is forecast to become a multi-billion pound market by 2002.

With a 45 per cent market-share, Xircom is the world leader in the 100Mbps Fast Ethernet PC-card market.

Entrega's products (seven-port hubs shown above) will eventually be marketed as Xircom PortGear products. These will continue to be aimed at both the PC and Mac platforms. The concept is that the Xircom (Entegra) PortGear range will complement Xircom's PortStation family of products. PortStation is a modular connectivity solution for the PC with a sleek design and snap-together construction.

Benny Van Calster, European marketing director of Xircom, is keen to take Xircom's expertise in PC connectivity and apply it to the Macintosh platform.

He said: "New technological solutions from the Xircom/Entrega takeover should reach production in January, and hit the streets in February/March."

Entrega's £51 USB-to-SCSI converter allows Mac or PC users to connect SCSI-based peripherals to USB-based computers. The device can handle up to seven SCSI peripherals through a single USB port. MW

Big Blue rides to Apple's G4 rescue

Supply doubles for high-end quake-hit Power Mac chips

PowerPC partner IBM has rekindled its relationship with Motorola, and will begin manufacturing G4 processors with the Motorola-developed Velocity Engine for Apple by mid-2000. The announcement follows Apple's recent admission of a delay in production of Motorola's G4 PowerPC processors (see page 20).

The move closes the year-long row between the two PowerPC chip makers over the design of the G4, and increases the supply of G4 chips for Apple's top-of-the-line desktop models.

Prior to the agreement, Apple had announced no plans to equip its Power Mac G4 line with processors from IBM.

Velocity up to speed

The most heavily marketed feature of the G4 processor – as it ships in the Power Mac G4 line – is its AltiVec technology, called Velocity Engine by Apple. It is a vector-processing unit connected to the core CPU via a 128-bit, high-speed bus.

When the G4 processor was announced, IBM said it would not build G4 chips with AltiVec, but would, instead, concentrate on pushing its own version to higher processor speeds.

"IBM never actually manufactured a G4 chip," said Phillip Bergman, a spokesman for IBM Microelectronics, the semiconductor division of IBM. Bergman said that the company's recent efforts were concentrated on the "BookE" joint project (with Motorola) for embedded processors and on the company's Power4 chip for servers.

Like Motorola, IBM is a major supplier of PowerPC chips for use in embedded systems. It also manufactures its own line of PowerPC-based servers.

Under terms of the recent agreement, IBM will begin building G4 chips for Apple. These processors will include the AltiVec technology, thanks to a licensing agreement with Motorola.

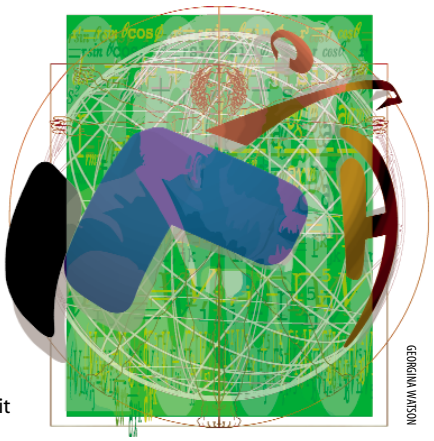
Bergman was unable to comment on the nature and timing of the agreement between IBM and Motorola. Neither would he be drawn on whether IBM will produce 500MHz versions of the processor, following the technical difficulties experienced by Motorola in its bid to build the half-gigahertz processors.

Bergman did confirm that IBM is expecting to ship G4s to Apple "within the first half of 2000", but declined to offer a specific date.

Motorola spokesman Will Swearingen said: "IBM's licensing of Motorola's G4 processor for sale to Apple in the first half of next year is a further endorsement of Apple's long-term strategic direction as a company."

One industry source, when asked about the sudden IBM-Motorola announcement, said he wasn't surprised by the timing. "It was definitely hastened by the issues at hand" involving Apple, he said. **– Daniel Drew Turner** MW

Macromedia puffs up e-commerce with Project Whirlwind



GEORGINA WATSON

Macromedia – developer of Flash, Shockwave and Director – has rejigged its eBusiness infrastructure in a bid to offer an integrated Internet solution for content-creation, analysis and management of corporate Internet, intranet and extranet sites. The company has merged with a major industry player, and will soon blow hot with Project Whirlwind.

According to the company, the new infrastructure allows enterprises to collaborate more efficiently with regard to mission-critical Web sites. Crucially, strategic Internet services company, iXL, has pledged to support the new infrastructure. Another string to Macromedia's bow comes with its merger with Andromedia, a leading provider of eMarketing software solutions for e-commerce. Further, Macromedia has announced partnerships with leading delivery and solutions providers, BroadVision and USWeb/CKS.

The eBusiness mission enables management of Web-site production through four phases: creation, management, personalization and analysis. This means e-commerce site providers can determine more accurately the returns they are making on their investments.

Next year will see the release of Macromedia's Project Whirlwind suite, designed to be a complete site-production platform. Users will be able to submit content, collaborate with other users across the company, and control the delivery of information. Project Whirlwind has an open architecture, so will work with existing infrastructures and be able to handle dynamic content.

The simultaneous spin-off of Shockwave.com, an online consumer entertainment portal, further focuses Macromedia's interest in e-commerce. Shockwave.com has registered almost three million users and is the third largest animation site – and fourth largest game site – on the Web. MW

‘Smart’ new iMacs cheer Mac gamers

Apple’s new iMacs seem to have answered many of the complaints and concerns of Macintosh gamers, with their new, dramatically improved groovy graphics, super sound and power-user performance. But how do these new systems really rank among the technical elite? Peter Cohen **of MacGaming.com spoke to a variety of Mac game-developers to get their impressions of the new systems.**

Brian Greenstone, of Pangea Software was most impressed by the new iMac’s improved video graphics: “Apple has finally released a consumer machine that consumers can play games on. The new iMac is fast and the price is right. For games, the biggest core-improvement to the new iMac is the inclusion of ATI’s Rage 128 chipset.

“Although Rage 128 has been criticised by some gamers and developers for being under-powered, its widespread popularity as reseller equipment on both PCs and Macs does make it an easy target for game developers, especially those involved in cross-platform development. RAGE 128 is an excellent addition to the hardware, and everything else about it kicks ass, too”

Mark Adams of Westlake Interactive agrees with Greenstone: “The biggest improvement in the new iMacs is the Rage 128 which, even with 8MB, will run very fast,” he told us.

“A big improvement is the new iMac’s 64MB of RAM. We were having a lot of problems getting games to work in 32MB of RAM,” said Graphic Simulation’s Jeff Morgan.

He added: “Having 64MB of RAM pre-installed cuts down problems with virtual memory.”

Pangea’s Greenstone agrees: “The main thing for me is the 64MB of RAM. Getting our games to work in 32MB of RAM meant a reduction in quality.”

Westlake’s Adams also chimes in on the RAM issue: “The RAM was always something that we complained about, and we’re happy to see Apple do something about it.”

Apple’s decision to roll out an iMac model for under £800 seems to have some resonance, too.

Ambrosia Software founder Andrew Welch, said: “The best part of the announcement is that you can get a new iMac for under £800. It’s great to get DVD and all that stuff, but it’s really good to see Apple go for the low-end market.”

He added: “Apple has been very smart. It has developed strong branding for the iMac and, now it has captured the mind-share, the low-price of the new iMac can help it build market share.”

The new iMac has even won a convert in the game-development community.

“I’ve got a PC at home,” says Graphic Simulation’s Morgan. “For what it’s worth, I’ll be replacing that PC with a new iMac. It looks like an outstanding games machine.”

Westlake’s Adams sums it up by saying: “When you take the improvements together, the new iMacs add up to great machines.” MW

Mac Rage

Quake (see page 74 for review of Quake II) has been one of the Mac’s most popular games to date. id Software’s John Carmack thinks the new iMac is “a solid, well balanced machine that will play a great game of Quake 3 Arena.” But did Steve Jobs hold a HyperBlaster to his head?

iMac ROM – just say ‘No!’

Recent postings on Apple’s Tech Info Library (TIL) warn owners of late-model iMacs to steer clear of iMac Update 1.0, a ROM upgrade recommended for the older versions of the consumer desktop system running Mac OS 8.1. The update can cause a startup failure when installed on 333MHz systems as well as the latest “slot-loading” iMacs. Even vintage iMacs that have been upgraded to Mac OS 8.5 or later should avoid iMac Update 1.0, another TIL note states.

Apple says that the Update – which Apple released in September 1998 – “was created to improve performance in iMacs with 233MHz and 266MHz processors,” effectively “downgrades” the Mac OS ROM file in newer systems. Doing so can prevent the iMac from starting up correctly – or at all.

If the iMac Update 1.0 is mistakenly applied, Apple recommends starting up the computer from the Software Install CD that shipped with the computer, dragging the Mac OS ROM file from the CD to the computer’s System Folder and rebooting.

Despite Apple’s concerns about possible problems from installing the old software on newer systems, apparently few iMac users have tried this at home. Apple tech-support staff said the company has received no reports of this problem.
– Daniel Drew Turner MW

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Adobe has new tools InProduction

Adobe is reportedly preparing to shore up the output side of its professional publishing equation with a forthcoming Macintosh-based package, aimed at troubleshooting Portable Document Format (PDF) workflows.

Sources said Adobe offered select visitors to October's Graph Expo 99 in Chicago a sneak peek at **InProduction**, a preflighting tool that was developed under the code-name *Springtide* and is apparently scheduled to make its debut in time for February's Seybold Seminars in Boston.

InDesign's pre-press pal

Sources said the print-production application is designed to complement Adobe's InDesign page-layout tool, by expanding on InDesign's preflighting capabilities. InProduction will handle a variety of heavy-duty pre-press tasks: conversion of improper files, such as transforming images in RGB, or other colour spaces, into CMYK; embedding fonts and flagging corrupted typefaces; and creating separations either on the fly or in conjunction with in-RIP tools.

InProduction will also allow users to save their files as Acrobat PDF documents.

"Adobe is basically preparing a whole suite of PDF workflow tools," one source said. "They're answering the complaint that Adobe doesn't take PDF seriously enough to provide industrial-strength pre-press tools."

Sources said those tools will include InCopy, Adobe's recently announced copy-fitting package (see below); InProduction; and *Stilton*, the code-name for a yet-to-be-announced client-server, workflow-management system that uses a Web interface.

"From a strategic point of view, they now have the input methods via InDesign, Photoshop and Illustrator," a source said. "Now they're attacking both the workflow component via Stilton and proper PDF support for pre-press through Springtide."

While Adobe declined to comment on InProduction, the company has announced **InCopy 1.0**, an editorial workflow tool designed to work with InDesign and slated to ship next spring. The tool lets users track changes to files, collaborate with designers and fit copy, among other tasks.

While InCopy is based on InDesign and uses the same core technology, the workflow tool is aimed specifically at the editorial staff of magazines, newspapers and other publishing environments. InCopy works either with InDesign or separately as a word processor, but the company is "not positioning the software as a word-processing program," according to product manager Roberto Loria.

InCopy lets layout professionals, as well as

editors and writers, see text changes and different versions of files. Writers can select either a layout view to display text exactly as it will appear in a print publication, or a galley view to display editorial changes and notes with the editor's name attached. Editors can also track changes that affect locations of paragraphs, as well as hyphenation and justification modification.

InCopy will let users access text previews, perform line counts and add editorial notes. Users will be able to specify kerning options and character styles, as well as keyboard shortcuts for common editing and formatting tasks. MW

– Matthew Rothenberg & Wendy Mattson

Apple to sell Macs 'direct only'

Apple is preparing to bring all of its sales in-house through its existing direct sales operation, the Apple Store, and the establishment of its own chain of High Street stores, if a handful of "knowledgeable" sources are to be believed.

And this time, they should be believed. When even conservative old IBM decides to stop selling its consumer-oriented Aptiva line through traditional resale channels and push them instead through a Web site of its own, you know the big guns are not only seriously considering direct-only sales models, they're actually beginning to implement them.

Apple, of course, has been selling direct for some time, but it appears that the Mac maker is ready to move on to the next level. Sources suggest that it plans first to serve all of its education customers solely through the Apple Store, and then to bring all its other customers over too.

Some resellers may be allowed to continue to offer Apple kit – they will be "carefully integrated into our plans", one highly placed Apple source is claimed to have said – so we're not talking a truly direct-*only* approach here, but it's clear that many Apple dealers are for the chop. Apple has already had a shake-out of its reseller channel this year, but this kind of move would be *much* more far-reaching.

Now, while there is as yet no other evidence to confirm any of this, it does appear to tie in broadly with the direction Apple has been moving in under CEO Steve Jobs. His priority has long been not only to drive down costs, but to push up Apple's margins. And the launch of the Apple Store has helped here by cutting out some of the middlemen. Such is the momentum behind online sales in general, and IT online sales in particular, that the Apple Store's sales will continue to grow, almost exclusively at the cost of traditional resellers – and that's even if Apple *doesn't* modify its strategy in any way.

That it will increase its focus on the direct channel is clear from Apple's ongoing 'maximize revenue at all costs' strategy. Large-scale production outsourcing cut costs, and cutting out resellers increases Apple's margins. Moves like the decision to make it difficult for users to upgrade CPUs – so users are instead forced to buy new computers – suggest that Apple is so bottom-line driven now it's willing to sacrifice its reseller channel.

Of course, now that computers are commodity items, many resellers can add so little value to a sale – and with fewer of them, price competition isn't what it was – that Apple's plan is likely to offend few buyers. However, it does leave those customers seeking solutions rather than commodity boxes – first-time buyers, and users requiring maintenance and repair services – out in the cold.

Again, most of these customers can actually be handled through an expanded online store, as Dell has shown. For the rest, we also have Apple's long-rumoured plans for a retail presence á la PC vendor Gateway. When your kit is sold on the basis of looks as much as performance, you need a better way of showing them off than a series of newspaper ads for your online sales service.

And – bingo! – this neatly allows Apple to retain many of its better-located resellers by opening up AppleCentres (or whatever they end up being called) to franchise deals. True, Apple starts losing money to the middlemen, but with fewer such operations that's less of an issue, and Apple could take full whack on its own products, leaving franchisees to make ends meet on consultancy and third-party product sales – which also leaves some room for a diminished but viable mail order channel. Apple can also ensure that all such stores look and feel the same – we all know how keen Apple is on a consistent look-&-feel – and provide the same customer experience.

One template for this is Apple UK's revitalized AppleCentre programme, the idea being to give Apple a better High Street presence. In some instances the scheme has worked – the site on London's New Oxford Street, for instance – in others it's been less successful. That said, it's worked rather better than Apple's half-arsed AppleShop plan. Cooked up in the early 1990s, it had the same concept but attracted just a single reseller.

The real parallel, though, is perhaps Gap. The similarity between Apple and Gap goes deeper than simply having each others' CEO on their respective boards (see News, November 1999). Gap, like Apple, is fundamentally an image company, selling a look-&-feel more than a product that goes beyond simple branding – stressing the company's difference from other clothing retailers. Having its own stores to sell its own products comes into the deal too.

Meanwhile, Gap is ruthless in keeping its cost of sale right down. Not so long ago, the *Independent on Sunday* revealed Gap's use of sweatshop third-world labour. That's not to say all of its clothing is produced in such conditions, or that it does so knowingly, but it illustrates its broader desire to cut the cost of production right down.

Ruthlessly cutting costs; promoting design; stressing look-&-feel; thinking different – sound familiar? All Apple needs to do to make the parallel complete is develop its own High Street presence – which is exactly what its emerging sales strategy appears to call for.

If Apple gains that kind of exposure to the buying public, the company could well return to its glory days. And for all the resellers let go in the process – well, just think of all those peripherals and software packages that all those new users are going to want to buy. MW

– Tony Smith is managing editor of The Register (**www.theregister.co.uk**)

Tony Smith asks whether Steve Jobs is 'thinking different' on Mac-system sales strategies.

Sun demands Microsoft Java injunction

Sun Microsystems and Microsoft have returned to court, where Sun is urging the reinstatement of an injunction requiring Microsoft to use a version of Java that passes Sun's compatibility tests in Microsoft's products. The appeals court had questioned the finding that Microsoft infringed on Sun's Java copyright.

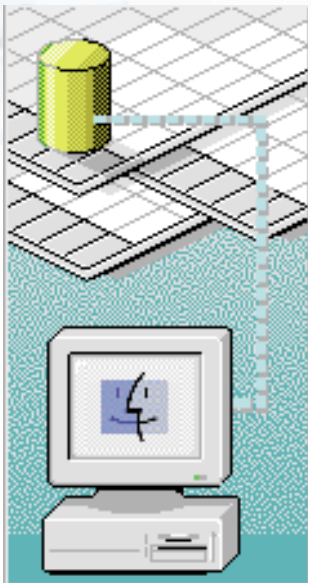
Sun's lawyers told the court that Microsoft would continue to behave anti-competitively if the injunction were not reinstated. They cited recent examples of Microsoft's alleged false advertising, and its failure to update prior Java products to keep them in line with Sun's Java compatibility test suites. Meanwhile, Microsoft alleged that Sun is trying to prevent other companies from making Java products that compete with its own.

Sun and Microsoft have been at war since November 1997, when Sun charged Microsoft with breach of contract, copyright infringement and anti-competitive behaviour for allegedly using an "impure" version of Sun's Java programming language in some of its software products.

Java can be used to write applications that run on any OS. Sun has argued that Microsoft saw that cross-platform capability as a threat to Windows. Sun claims Microsoft countered the threat by illegally promoting a version of Java that is tied to Windows features.

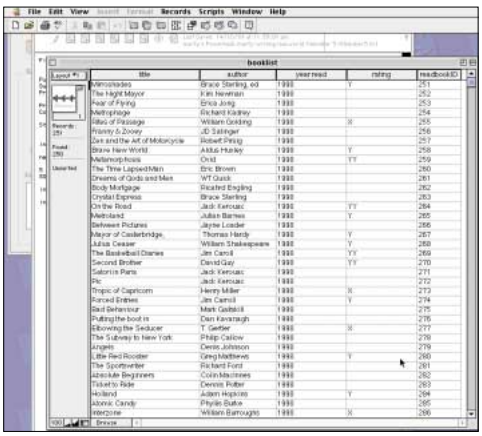
A November 1998 injunction required Microsoft to bring its Java-using software products into line with Sun's version. Affected products included Windows 98, Internet Explorer and a handful of development tools. MW

– James Niccolai



‘Limited’ FileMaker under data attack

Database developers bemoan licence’s third-party barrier



As FileMaker gears up the campaign to promote FileMaker Pro 5.0, developers are divided about the recently released software’s pricing and feature-set.

The basic package has begun to ship (see page 61). FileMaker Pro 5.0 Unlimited should ship later this year, adding Web-deployment capabilities to the database application, as well as FileMaker Server 5.0, which can host workgroup databases for up to 250 users. FileMaker Developer 5.0 – aimed at application development with support for XML Java Database Connectivity (JDBC) and other standards – will include FileMaker (FM) Pro 5.0 when they ship next year.

Developers, though, are bemoaning the fact that the licensing terms for FM Pro 5.0 prohibit use of third-party software – such as Lasso – and the use of AppleScript-based CGI scripts.

Such restrictions don’t apply to the Unlimited version of FM Pro, which may be used with other software or technology to host an FM Pro database. Another issue for developers with legacy applications is that FM Pro 5.0’s file format differs from – and is incompatible with – that of version 4.1’s. Complaints from developers also cropped up on online discussion forums, Blue World Communications’s Bill Doerrfeld said his company “neither endorses or stands against FileMaker’s current direction”.

Doerrfeld’s company sells the Web-data engine, Lasso 3.5, for building and deploying database-driven Web sites. “We are waiting to hear from FileMaker about what we can offer small workgroup customers who indicated they want to use Lasso with Filemaker Pro 5.0, so they are not left in a position where they don’t have connectivity,” Doerrfeld said.

No middle ground

“It’s almost like there’s a missing product between the low and high ends of the line,” said Shawn Hogan, president of Digital Point Solutions.

Hogan added that his company is examining alternatives to FileMaker – such as ACI’s Fourth Dimension and software from Omnis.

Digital Point has said it will also develop new versions of its products if it doesn’t get results from FileMaker soon: “We could redevelop all our products, which would cost us between $250,000 and $500,000 in development time – but would cost FileMaker even more,” he said.

FileMaker spokesman Kevin Mallon said: “We think FileMaker Pro 5 has a lot of value for the price. While price changes can be upsetting, we think it’s still incredible value.”

Other developers criticised the feature range in FM Pro 5.0. David Heady of Heady Solutions, a Mac consulting company, said: “FileMaker Pro 5.0 has fewer features than I’d have wanted. FileMaker recoded FileMaker 4.1 into version 5.0 with C++; added 20 per cent of the features people asked for, such as multi-threading, and slapped a £799 price tag [Unlimited version] on it.”

FileMaker’s Mallon claimed there are plenty of new features in FM Pro, and that, in general, developers are pleased with them: “The list of new features is five pages long; Office integration is the most important feature,” Mallon said.

“In August, the 1,500 developers at the conference were jumping up and down about the features in FileMaker Pro 5.0”

Heady continued: “Developers are treated as a revenue stream and aren’t offered explanations about FileMaker’s products and strategies. I’m not angry, but I’m concerned about the company.”

By contrast, Joel Bowers, a FileMaker Solutions Alliance member, said he is “very enthusiastic” about FM Pro 5.0.

Bowers, who began using version 5 with a beta version in late August, said: “FileMaker Pro 5.0 is rock-solid, and the features are wonderful additions. People are upset about the limit of ten users in a twelve hour period” in FileMaker Pro 5.0, Bowers said: “The controversy is big because the price is big – but that’s because the company has realized the product’s worth.”

“Try to do an Oracle database for the Web – it will cost a minimum of £30,000 and probably over £60,000 when you’re done,” one developer said: “My clients are Web-based, so we have no choice but to wait for the Unlimited version. Right now, there is no real advantage to upgrade.” **– Wendy Mattson** MW

Free! Britannia waives the rules

After 231 years successful years as the oldest printed English language reference work, Encyclopaedia Britannica has found itself blinded by the bright lights of the information age. Britannica has been forced to drop the £3 joining charge for its Web site, which was launched in 1995.

All 70,000 of its articles are now free. Britannica will run news and magazine feeds linked to its reference articles, offering free email and links to related Web sites.

The company hopes to make its money through advertising, sponsorships with newspapers and magazines, and by selling books and products related to the customer’s search.

Encyclopaedia Britannica’s online presence is that of the ultimate information portal.

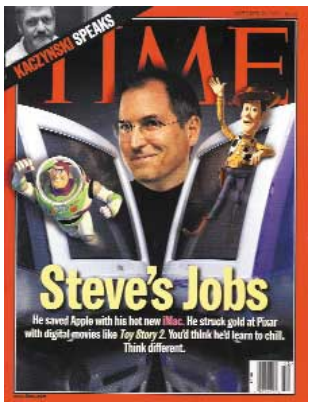
Immediately, the site enjoyed a vast number of hits – so many that the fledgling portal’s servers could not handle the strain, and the site had to shut down.

The company is now setting up an international network of servers to meet demand.

www.Britannica.com

Jobs: 'his DNA is in Apple'

Time magazine honours Steve, with frank and optimistic interview



With a doubled market share and over a year's profits in the bank, Apple is back – leading the way with innovative technologies and computers that outperform and out-class the mainstream opposition. And Steve Jobs is back on the cover of *Time* magazine.

A recent issue of *Time* (US edition) eulogized the 44-year-old Apple interim CEO over 11 pages, also focusing on his role as chairman of Pixar Animation Studios. In it, journalist Michael Krantz suggests that Jobs "embodies the personal-computer revolution, perhaps even more fully than Microsoft's Bill Gates".

The article claims that Jobs still has "anger-management issues": "Anyone who has worked with Steve during his second tour at Apple will tell you that he's as driven, tense and temperamental as he has ever been," adds author Alan Deutschman, who is writing an unauthorized Jobs biography that hits the shelves next year.

"Steve might be capable of reducing someone to tears," John Patrick Crecine (a long-standing pal of Jobs) tells Krantz, "but it's not because he's mean-spirited; it's because he's absolutely single minded, almost manic, in his pursuit of quality and excellence."

"His DNA was built into this company," adds Heidi Roizen, a former Apple exec who has known Jobs since the beginning. "And when he came back, everything fell into place – a return to excellence in design, to listening to the consumer, to developing cool products."

The *Time* article follows Jobs on a typical day at the office – whether that's his home, Apple, or Pixar: "There's not a day that goes by that I don't do stuff for Pixar," Jobs says, "even if I'm not physically there. There's not a day that I'm at Pixar that I don't do stuff for Apple."

It tells how he won't let his kids watch TV, "lest it stifle their creativity", and how, time and time again, his wife Laurene makes him shave off his "salt-and-pepper beard".

Steve speaks

In a frank interview that stretches from the Apple canteen ("When we got here this was dog food… it was just s**t") to broadband communications, Jobs spells out his renewed vision of Apple and its customers.

"Funny enough, 20 years after we started Apple, there was nobody building computers for people again. They were trying to sell consumers last year's corporate computers. The roots of Apple were to build computers for people, not for corporations," says Jobs. "The world doesn't need another Dell or Compaq."

His work with Apple's head of design, Brit Jonathan Ive, is at the forefront of Jobs' vision for Mac products. "We work together as designers

work together," Ive tells Krantz. "The last few weeks we've been working on this new product we're going to have a year from now. Just working out the concept for how it's gonna be – how we're going to engineer it, present it, what it's going to look like."

"Our design group is light-years ahead of its peers." adds Jobs.

"We want to choose wisely the standards we're going to ride," says Jobs, "the directions we're going to go, so that each project builds upon the last one and we can invest our engineering efforts into new things, rather than redoing things we just did a year or two ago. You have to invest in thinking through the architecture of things."

What, apart from the $400 million purchase of NeXT, tempted Jobs back to Apple?

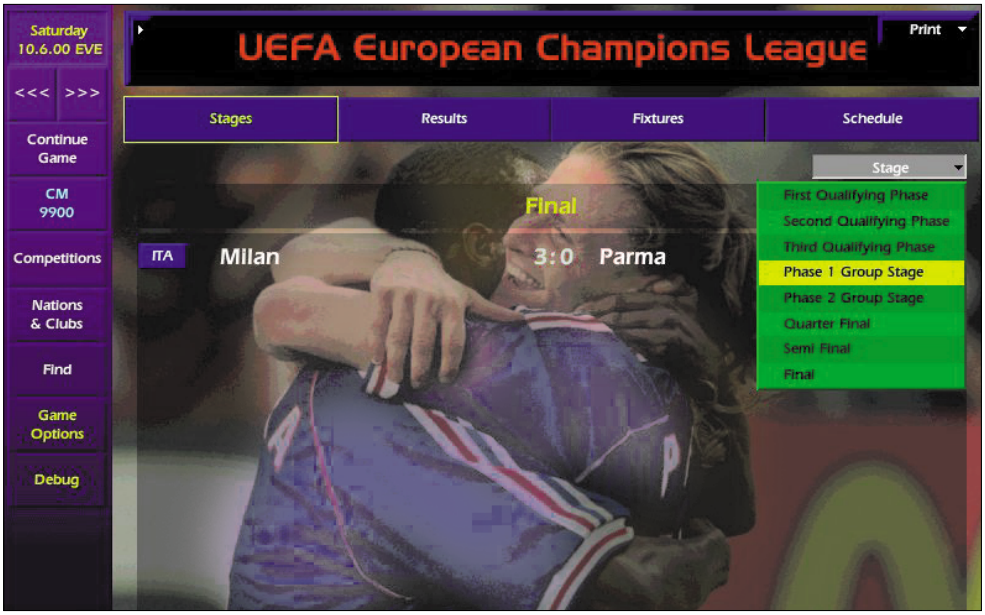
Jobs saw the return as "a wonderful, wonderful opportunity". He laughs at the speed at which Apple has transformed itself around since his return: "In 148 days, we've completely changed every product. We've been working too hard".

During the interview, Jobs takes time to explain what makes Apple so special:

"Apple's the only company left in this industry that designs the whole widget. Hardware, software, developer relations, marketing. We didn't have a plan, so it … was a tremendous deficit. But with a plan, it's Apple's core strategic advantage, if you believe that there's still room for innovation in this industry, which I do, because Apple can innovate faster than anyone else."

"Technology has exploded. It's getting more complicated by the day. And there are very few ways for us mere mortals to approach all this technology. People don't have a week to research things and figure out how they work. Apple has always been, and I hope it will always be, one of the premiere bridges between mere mortals and this very difficult technology." MW

Article on and interview with Steve Jobs, from *Time* (**www.time.com**) October 18, 1999; volume 154, number 16.



Le garcon did good

Mac gamers will soon be able to enjoy Championship manager 3 – complete with its up-to-date Champions League format.

It's coming home

The best-selling computer game, Championship Manager 3, is coming to the Mac platform, Feral Interactive has confirmed. The title sold more than 50,000 copies in its first week when released as a PC title by Sports Interactive. Feral's Mac version is set for release in late November.

The Mac version will be released simultaneously with the Windows updated version, and will be functionally identical.

Version 3 will contain all the latest data for the 1999/2000 season.

The new version includes accurate profiles and histories for 40,000 players, managers and coaches worldwide. It also includes a transfer system, with all the intricacies of modern-day negotiations and realistic disciplinary player procedures. The new European Champions League and World Club Cup structures are also included. There are even settings to reflect the foibles of referees of different nationalities.

And, when things turn sour for your team, you will run the gauntlet of player-revolt, media rumour, and predatory agents.

"Championship Manager is the most requested PC game by Mac gamers by miles," said Feral managing director David Stephen.

Available in several European languages the £34.99 game contains extensive data for 16 leagues worldwide, and all of the major European leagues.

Gauntlet Distribution, 01908 575 600

Olympus SLR ups digital camera ante

Olympus has released the £1,021 C-2500L – a 2.5-megapixel, single-lens-reflex (SLR) digital camera with a 3x optical zoom.

The camera is the first to support CompactFlash and SmartMedia cards for image storage. They can be used in tandem to increase total capacity. The camera also has manual focus, exposure, and white-balance options; an autofocus illuminator for low-light situations; and a 43mm threaded-lens barrel that accepts standard accessory lenses. A hot shoe lets you connect external flashes, including the company's new FL-40, which was designed for use with digital cameras. The camera features a ⅔-inch CCD; most other two-megapixel cameras use ½-inch CCDs.

Maximum image resolution is 1,712-x-1,386 pixels. In burst mode, the camera can capture and store five full-resolution images in three seconds.

The C-2500L is not USB-friendly, but Olympus says it will offer a USB card reader as an option.

Olympus, 0800 072 0070

Apple's ROM bug-fix

Apple has released ROM Update 1.8.1, to deal with data-corruption problems that have occurred on the PCI-based Power Mac G4 machines under Mac OS 8.6. The problem comes with the use of Virtual Memory, with reports of data corruption and system crashes. The fix is not required under Mac OS 9. It can be downloaded from **www.asu.info.apple.com/swupdates.nsf /artnum/n11533**

Yamaha reads right

Yamaha has announced the SCSI CRW-8424, an 8x recorder. The CRW-8424 can write to CDR media at 8x, re-write to CD-RW media at 4x and reads any CD media at 24x. Capable of recording a 74-minute audio CD in nine minutes, the 24-speed reader transfers data at 3,600 Kilobytes per second. It costs £249.

Yamaha, 01908 366700

Chase Swift off the mark

Chase has released USB Mac versions of its Swift Cardport range. The Swift Cardports for Smart Media and Swift for CompactFlash cards allow users to access digital images immediately, rather than waiting for serial downloading. Both versions are £50.

Chase, 01274 225 000

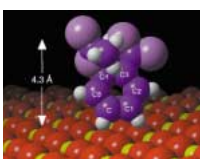
Web-editing duo boxed

Macromedia has announced Dreamweaver/Fireworks Studio – a £299 upgrade-bundle consisting of its Web-page design title, Dreamweaver 3, and Fireworks 3, its Web-graphics creation tool. For a review of both titles, see pages 52 and 53.

Computers Unlimited, 020 8358 5857

Boffins title up and atom

CrystalMaker 4.0 is a Mac program for building, visualizing and manipulating crystal and molecular structures in photo-realistic colour. It is designed for scientists and engineers. It costs £299, but is £199 for schools and colleges.



CrystalMaker, 01869 369 393

All prices exclude VAT

CDs and books

Pearson gets flash

Peachpit, a division of Pearson Education, has published *Flash 4 for Macintosh and Windows*. The £18.99 book features expert tutorials and a step-by-step guide to creating Web animation using Flash 4.

Pearson Education, 01279 623 623

Cantol hits high notes

The new Cantol Opera collection features a complete interactive encyclopaedia of the world's greatest composers, their lives and their music. The CD also acts as a complete home-recording system, allowing you to record yourself as you sing along with classic Opera arias. Cantol Opera Collection requires a PowerPC and costs £25.50.

Cantol, 0181 970 1909

Europress back to roots

All future titles from Europress – Britain's top educational software company – will be Mac-compatible. Europress launched the UK's first Mac-related CD, *Windfall*, in the early 1980s, and has decided to return to the format. Its catalogue already includes 24 Mac titles, – but in future, all titles will be Mac-friendly, starting with its new A-level range. Above is a screenshot from Titantic, an Adventure out of Time.

Europress, 01625 855 000

Twist to the tales

Semerc has released Twisted Tales, a set of five illustrated CD-ROMs for use by literacy Stage One and Two pupils. It consists of five 20-minute stories from around the world. Each CD costs £20.

Semerc, 0161 827 2927

Apple sharpens Final Cut

Image maker
Final Cut Pro 1.2 takes advantage of Apple's G4 Velocity Engine to enhance existing video-editing capabilities.

Apple has announced Final Cut Pro 1.2 – its enhanced video-editing, effects and compositing software – at the International Broadcasting Conference in Amsterdam. Available worldwide from November, the upgrade will, for the first time, support seven languages – including international English – and include support for PAL, the European video and broadcast standard.

Final Cut Pro 1.2 takes advantage of Apple's G4 Velocity Engine, greatly accelerating the compression, and decompression of images.

Other enhancements include the ability to import Macromedia Flash-formatted files; faster digital-video encoding and decoding; and improved batch-capture. The latter can capture multiple clips and sequences at once, and provides extra support for third-party Adobe After Effects plug-ins.

Phil Schiller, Apple's vice president of worldwide product marketing, said: "Final Cut Pro gives artists, teachers and digital-media professionals worldwide extraordinary new tools for creating broadcast-quality video for about one tenth of the cost of competing systems."

Final Cut Pro 1.2 will be available as a free download to current customers. To others, the price is $999 in the US, with international pricing due to be set at shipping time.

Apple, 0990 127753

Sanyo snaps to it on budget camera

Sanyo's new, budget-priced digital camera – the VPC-Z380 – is now available. The megapixel VPC-Z380 can store up to 60 high-quality pictures on its 4MB SmartMedia card.

It also boasts three resolution modes and comes with Sanyo's software package, which includes Agfa's PhotoGenie image-manipulation tool. Other features are a 1.8-inch Colour TFT LCD screen, a sequential-shot function, and a macro facility of 20-80 cm. Also featured is a three-mode built-in flash, an electronic shutter and an auto and manual white-balancing function. The camera costs £299.

Sanyo, 01923 246 363

Revo finds mobile home

Psion has unveiled the pocket-sized Revo, a powerful personal organizer that can be used with a compatible mobile phone, The £255 Psion Revo can access email and browse the Web (via planet.psion.com). Its large selection of office facilities include, among others, word processing, spreadsheets, database, world times and dialling codes, and a calculator.

Organizing functions include Day in View, Agenda, and a contacts manager, with a jotter for quick notes. A number of functions require peripherals. One, MacConnect, lets you use your Mac in conjunction with the Psion to manage files and to backup and restore all files and data.

Revo has built-in support for text- and graphics-printing to most printers, either output via infra-red or to any printer connected to a PC using PsiWin 2.3 (or Mac Connectivity software).

Psion offers an optional infra-red parallel-printer pod, which plugs into the parallel port of most standard printers.

Revo's rechargeable batteries last around a week. It runs at 36MHz and has 8MB of RAM.

Psion, 0990 143 050

All prices exclude VAT

Virtual PC 3.0 fillip for Mac 'virgins'

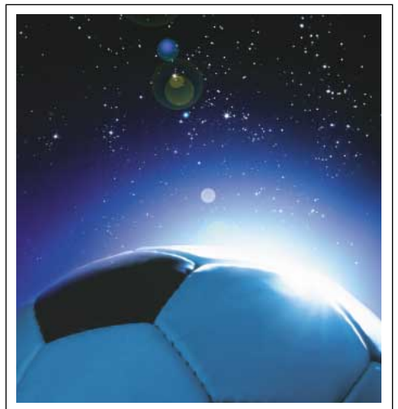
Connectix is shipping Virtual PC 3.0, the new version of its popular PC emulation solution for the Mac. Featuring an enhanced set-up assistant and faster performance, it is simple to use, offering first-time Macintosh users access to PC files.

It includes USB-device support, allowing Mac USB devices to talk to Windows apps, although this feature works only with Mac OS 9. Virtual PC 3.0 offers fast PC disk-performance and better network access, as well as a single Internet connection between Mac and Windows environments.

Other features include the ability to drag-&-drop files between formats, ethernet support, serial device support and bi-directional copy-&-paste. Virtual PC 3.0 is available in Windows 98 and 95 packs, as well as a PC DOS version, to meet differing price and performance needs. Virtual PC 3.0 also lets users install other PC operating systems, including IBM OS/2, Linux and all flavours of Windows.

Virtual PC 3.0 is £110. Virtual PC 2.0 owners in Europe can upgrade to v.3.0 for a nominal fee if the purchase is made before December 31.

Computers Unlimited, 0208 358 5857



Ingram Publishing has released Photoscene, a royalty-free CD consisting of 60 background images. The imaginative, drum-scanned, CMYK backgrounds provide backdrops against which other pictures can be placed. Aimed at graphic designers and pro-publishers, the £99 package comes with a browser and tutorial.

Ingram Publishing, 01270 528 696

In focus
The low-end Kensington VideoCAM CIF.

VideoCAM range

Kensington has launched its VideoCAM series of cameras for Macs and PCs. With a resolution of 800-x-600 pixels, the digital cameras offer three sensor resolutions – CIF, VGA and Super VGA. Each camera in the range can be used as a digital camera, a camcorder and for video conferencing.

The VideoCAM Super VGA comes with a telephoto and wide-angle lens. The CIF and VGA models come with VideoCAM Works, which lets the user choose which function they require from within the application. To run the cameras, you need Mac OS 8.5, 32MB of RAM and a USB port. The VideoCAM CIF is £42.50, the VideoCAM VGA is £69 and the VideoCAM SGVA is £111.

Acco UK, 01296 397 444

Canon sees light

Canon's new range of Liquid Crystal Display (LCD) projectors – aimed at the professional and business markets – is designed for use in bright daylight.

The LV-7500, LV-5500 and LV-5300 also work on a simple plug-&-play connection, and have in-built dual-technology that triples luminosity, Canon claims.

The models are daylight-friendly, thanks to a micro-lens that concentrates lightwaves in a single direction. This enables projections to be well-defined, even in bright light.

Each of the projectors feature digital zoom and have auto-imaging functions that adjust tracking, image positioning and brightness.

The top-of-the-range 1,400-lumens 7500 costs £6,975; the 1,250-lumens 5500 is £5,222; and the 600-lumens 5300 is £4,175.

Canon, 01737 220 000

pricing update

MAXpowr G3 upgrades

Newer Technology has cut the price across its MAXpowr G3 upgrade-card range: the PDS 6100 240-266MHz drops £43 to £236; the 300/1MB/200 is down by £73 to £356; the 300/200 is £319, down by £30; the 400/200 is down by £65 to £432; the L2 300/512/200 is £274, down from £310; and the L2 300/1MB/200 is down from £335 to £312. Newer has also released the £735 500MHz G3 processor, which replaces the 466MHz model. Newer's G4 upgrade is not yet available in the UK.

AM Micro, 01392 426 473
IMC, 0870 840 2121

CatBase database title

CatBase Software has dramatically reduced the price of its database-publishing program, CatBase, from £695 to £295. CatBase is a database publishing application that simplifies the publishing of databases – either in print or electronically – as text files, HTML files or on the Internet. Users of the discontinued Limited Edition (LE) version qualify for a free upgrade to the full program. Miaow!

CatBase, 01920 871866

Palm Computing range

3Com has reduced the prices of its Palm Computing organizer products across the line. The street price of the Palm V is now down to £299 from its original £349. The Palm IIIx drops to £229, from £249.

3Com, 0118 927 8200

4th Dimension

ACI, the publisher of 4th Dimension (4D), the database development tool, is making a special offer pitched at users of Filemaker Pro. For a limited time, 4D Standard Edition 6.5 is available for £99 to registered FileMaker Pro users. The software normally costs £195. 4D combines a programing language, a graphical interface-design tool, a Web server and a relational database-engine into a cross-platform solution for creating any database application.

ACI, 01625 536 178

All prices exclude VAT

MouseRugs laid out

Pleased by the success of its previous collection, Fuseon Graphics has released two new MouseRug collections. The new series are the Pendleton and the Licensed Museum collections. Pendleton MouseRugs are based on North American art. The Licensed Museum set is based on oriental rugs reproduced from museum collections. The mouse rugs cost £12 each.

Fuseon Graphics, 01376 500 566

A wrist development

Interex Europe has announced the launch of its ergonomically designed USB keyboard. The £35 keyboard features wrist support and is available in Mac or PC versions. The ice-coloured Macintosh version features two extra USB ports, a 105-key standard-Mac layout, and is iMac-compatible.

Interex Europe, 01923 263 108

Pro scanner unveiled

Heidelberg's new £4,995 Linoscan F2400 XL A3 desktop scanner is pitched at the professional user. It comes with a built-in transparency unit and new Autofocus and DoubleLens optical system, ensuring that scanning results are razor-sharp and accurate. The scanner can handle reflective and transparency scanning, with a 10,500-pixel charge-coupled device array. It offers optical resolutions up to 2,400-x-2,400 dpi.

Heidelberg, 01242 285100

Counting on iMalc

Eyecatcher Productions has announced iMalc, a £10 scientific calculator for the Mac. Replacing the Apple calculator, it's customizable to match an iMac, or Power Macs' appearance. It has 18 maths functions, including base 10, logarithms, sines, cosines and square roots. Versions are available for PowerPC and 68x0. It also supports drag-&-drop and copy pasting to/from the display window.

Eyecatcher, www.tspencer.dircon.co.uk/eyecatcher/iMalc.html

Video conversion in frame for iMacs

Focus Enhancements has released iTView-DV, a video-converter designed to support simultaneous mirroring of Apple's new DV series of iMacs. It's an external video-scan converter that mirrors what's on the iMac's screen to a TV or monitor. It comes with a software interface that allows support for automatic device-configuration.

As well as being designed for viewing DVD movies, it can also be used for video presentations on an iMac. With this device, a television can become a large-screen computer display with a resolution of up to 1,024-x-768 pixels. Additionally, a movie generated on the iMac can then be archived to video-tape and be viewed on a television.

Available in late October, the device will be marketed by Apple via the Apple Store (**www.apple.com/uk**) and through resellers.

Users can control all image-enhancement – and panning and zooming – from the desktop. It features RCA video output and SCART/S-Video output. To use it on a TV receiver, however, you need an RF modulator, which isn't included (£25; Maplins, 0181 555 6254). The iTView gold pack comes with peripherals to enhance your iMac.

Screen star

The iTView-DV can turn a TV into a 1,024-x-768 pixel-display.

Ingram Micro, 01908 260 422

Wraps are off La Cie USB CD-RW

La Cie has launched the USB CD-RW-428. The drive operates at 4x2x8x and can write a 650MB CD in less than 20 minutes. Capable of recording both audio and data discs on CD-R discs, the machine can also write and rewrite data on CD-RW discs. As a disc reader, the 428 can cope with all major formats, including CD-ROM. Audio CDs and CD-I.

The cross-platform machine ships with software for both Mac OS and Windows 98. It requires a USB port, meaning the drive is hot-pluggable, obviating the need to shut down the computer to plug or unplug it.

Device-recognition is immediate, and configuration is automatic. No ID or terminator is necessary.

Shipping now, the USB CD-RW-428 drive is £230. The drive comes with the La Cie Recording Utilities kit, including Toast 3.8 for Macintosh, EZ-CD creator and Direct CD for Windows 98.

La Cie, 0171 872 8000

Gravis grasps the joystick basics

Gravis has unleashed a £59.99 joystick designed for the multi-tasking Macintosh games player. The Gravis Xterminator Dual Control is a USB joystick and game-pad combination, offering all-in-one utility. The ergonomically designed dual-control allows players to perform two moves simultaneously, by using the D-pad as a second joystick.

Both joystick and pad offer 360-degree motion, and this is augmented by an eight-way point-of-view switch that enables rapid view and weapons changes at speed. You can programme the controller with up to 49 functions and cheat codes with Gravis Xperience software.

Acco Europe, 01296 397 444

All prices exclude VAT

History maker

Students, researchers and amateur historians are the targets for The Learning Company's latest release – Centuries of Europe: A Chronology of our Times. The £25.50 CD contains information from 732AD to the present day. Based on the work of influential French art historian, Pascal Bonafaux, it contains 1,500 biographies, maps, and historical information.
The Learning Company,
01664 481 563

Kodak in high-end scanners release

Kodak has released a trio of scanners for the business and publishing markets – the Digital Science 1500 and 2500, and the Colour 3590C.

The £6,600 DS 1500 (below) features rotary transport and flatbed surface, combining the advantages of both a rotary and a flatbed scanner. An entry-level machine, it is capable of duplex scanning of up to 52 pages per minute (ppm) and up to 4,400 documents a day. An automatic sheet feeder can handle up to 200 sheets. The 1500 includes TWAIN and ISIS drivers, and Kodak's range of capture software.

The 2500, meanwhile, is a duplex rotary scanner and was unveiled at CeBIT '99 earlier this year. It features rotary transport, allowing scanning rates of 62ppm. It has a simple operator interface and can hold up to 300 sheets of paper. The machine also carries Kodak's advanced software bundle, is capable of dealing with 4,400 documents per day, and costs £8,050.

The top-of-the-range Colour 3590C scans at 85ppm. Aimed at the high-end production scanning market, its features include continuous document feeding, one-button operation, and a simple interface.

The £29,500 3590C can produce "bi-chromodal" images – colour on the front, bi-tonal on the back. Capable of capturing full 24-bit colour, the scanner's accuracy eliminates the need for contrast and threshold settings when scanning all but the most demanding documents.
Kodak, 0800 281 487

Notable input ...

ViewSonic has introduced the 15-inch and 18-inch VP151 and VP181 ViewPanel monitors. They are the first monitors to feature digital, analogue and video inputs in a single display. The VP181 supports a native resolution of 1,600-x-1,200 pixels, while the VP151 delivers 1,280-x-1,024 pixels. ViewMatch colour control is also offered.

Five input ports are featured on both displays, including two digital, two analogue and one video input (for VCRs, cameras and DVD players). The flat panels support PAL and NTSC, as well as Secam. The VP151 is £1,149; the VP181 is £2,599.
ViewSonic, 0800 833 648

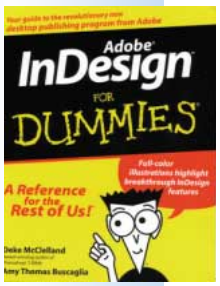
CDs and books

IDG Books worldwide has released the following titles – all of which are available at significant reductions from Reader Offers on page 137.

■ Joseph Lowery's *Fireworks 2 Bible* is an essential guide to creating dynamic Web graphics with Fireworks 2. Costing £36.99, it includes trial versions of Fireworks 2, Dreamweaver 2, and Flash 4. Fireworks 2 features state-of-the-art vector drawing-tools and pixel-based image-editing. It also includes a Web-export engine, which outputs in Java or HTML script.

■ Written by Clay Andres, *Great Web Architecture* has a companion Web site that includes artwork and sample pages from the book, plus updates and sample code. A collection of interviews with top Web architects gives the reader professional hints and tips. It is illustrated with images of top sites and costs £42.99.

■ *InDesign for Dummies* is a £18.99 step-by-step guide on how to use Adobe's feature-packed DTP package. By *Macworld*'s Deke McClelland and Amy Thomas Buscaglia, it will help you master layout, text and graphics tools, use multiple masters, export to PDF and share documents between Mac and Windows.



■ *Creating Web Pages with HTML Simplified* is now in its second edition. This £23.99 publication is aimed at the beginner and explains how to use and create HTML. The content is modular, to simplify the learning process.

All prices exclude VAT

Hansol's high-res bid

Hansol Europe has launched its latest monitor, the 710A 17-inch high-resolution display. This new monitor requires a £15.99 Mac adaptor. The 710A screen can reach resolutions of 1,280-x-1,024 pixels at 60Hz and features a dot-pitch of 0.28mm. The screen functions are controlled from an on-screen menu, from which you can make changes in any one of five languages. The screen also features anti-reflection and anti-static properties, as well as a proprietary shadow-mask, to enhance brightness and contrast. The monitor cost £140.

Hansol, 01252 360 400

Tint File is colour boon

Tint File – a CMYK colour-matching reference book – has been released. It contains more than 20,000 colours and features percentage combinations of CMYK that range from five per cent, to solid colour. Tint File means desired colours can be viewed in print, rather than on-screen. The book costs £75.

Tintmaster Publications, 01446 730 630.

Conflict Catcher update

Casady & Greene's Conflict Catcher has been updated to version 8.0.6. This release brings Mac OS 9 compatibility and the usual minor bug fixes. It is available as a free download for registered users of version 8.x. Conflict Catcher retails at £81. Among the changes in the update is a revised reference library, with 4,750 file descriptions – including descriptions of files specific to OS 9. This version also includes sets and links for OS 9.

Casady & Greene, 01372 726 333

HexWare Hex

In last month's *Macworld* we published an incorrect telephone number for Pantone, manufacturer of the £229 Hexachrome colour-management toolkit. The correct number is 01303 269 666. We apologize for any inconvenience that this may have caused.

SMC's Connect double

SMC Networks has announced the launch of the EZ Connect USB Hub and the EZ Connect USB/ethernet converter.

The EZ Hub is for USB-ready users, while the converter is aimed at users requiring a converter to handle legacy equipment.

The Hub offers one upstream port for connection to the host system, and four downstream ports for connection to individual computer peripherals or hubs.

Up to 127 devices can be connected with one USB connection, which is made at a speed of 12Mbps.

The converter allows USB-equipped computers to connect to ethernet networks. It is designed for easy connectivity and is capable of transmitting at up to 12Mbps.

The device also features automatic device-recognition, can suspend and resume operation, and can wake-up remotely for connected devices. The hub costs £44, and the converter is £39.

SMC, 01344 418 816

Image Source has launched an online royalty-free stock photography service Web site. The site – www.imagesource.com – **offers high-quality, contemporary images.**

Optra lasers are unveiled

Lexmark has released a new series of Optra T monochrome laser printers – as well as a low-end Optra M model. The Optra T range has multiple-connectivity options, including USB. MarkVision – Lexmark's print-management software – is also supported. With both 5K and 10K toner-cartridges and flash-upgradable memory, the machines offer versatile solutions to printing challenges.

The machines are modular, so a number of new features can be added – from sheet-feeders to various output trays.

The Optra T series' top output is 1,200dpi. It comes with 4MB of RAM as standard and a maximum on-board RAM of 132MB.

The £559 Optra M410 offers a 17-second wait for first-page printing – falling to 10 seconds with the higher-spec models. The Optra T610 is £839, the T612 is £989; the T614 costs £1,579; and the T616 is £1,949.

Lexmark, 01268 481 500

G200 Multiscan a Sony 17" first

Sony's new 17-inch monitor, the Multiscan G200, is the first of the new FD Trinitron series. The new G-series is aimed at general and "power" office users.

Retailing at £299, the G200 combines a 0.24mm aperture-grille pitch, with Sony's Multi-Astigmatism Lens System (MALS) to give sharper images and optimum colour fidelity. Greyscale reproduction, contrast and colour saturation have been improved by the addition of a new black layer.

The monitor delivers a horizontal scan-range of 96KHz and a maximum refresh-rate of 91KHz at a resolution of 1,280-x-1,024 pixels. A user-friendly setting device, called Display Mouse Control, operates the nine-language On-Screen Display, and a help menu guides users on parameter settings.

Sony, 0990 111 999

All prices exclude VAT

David Fanning

Home Macs out-perform the pro Macs of old – but when is enough enough?

Power points

Macs are getting ever faster – because that's what we want. Some things never change. This month marks something of a milestone in personal computing: the birth of desktop video-editing for the masses. It's the latest in a series of firsts, all made possible by Apple. The first milestone was the Mac itself. Before, Mac people could only dream of having a computer that they could have at home – it would have set you back around £3,000, although the original Mac 512 could be used by just about anybody with a little patience.

Not long after the first Mac, came the first laser printer, and the desktop publishing revolution was started. Buying this tackle wasn't a cheap option, but it was a fraction of the cost of traditional methods of publishing. Over the next couple of years, many people who could afford a Mac and a laser printer made their fortune at the cutting-edge of publishing and design.

It wasn't until 1990 – when the Mac Classic was introduced – that computing began catering for home users. For around £1,000 you could buy a Mac every bit as powerful as the ones previously being used for publishing. This lead to a proliferation of personalized Christmas cards and family newsletters, as the public developed a taste for professional-quality printing. 1990 saw professional publishing taking place at home, and, later that year, the Mac LC and the IIsi brought colour computing home for the first time. It was around then that people began to think that technology was fast enough for their needs. They had colour computing, professional typesetting – what else could could they need?

Speed increases, for starters. Being able to do things wasn't enough. Everything needed to be faster – and Apple obliged with ever-faster machines – and ever-increasing prices. The IIfx broke all speed and price records, tipping the scales at £6,000 for a stonking 40MHz. These prices did nothing for the home enthusiast, though. But patience meant that a year or two's wait generally brought professional capability within the reach of Joe Public.

The Performa range from Apple included models that were, for the first time, able to handle image editing without choking on the heavy processing requirements. The Performa models also introduced PowerPC processors that made short work of hefty Photoshop files and filters. Another milestone in computing – image editing for the public, with Kai's Power Goo – launched another craze: home-made Christmas cards.

Professional models steamed ahead, getting ever faster – but then came that strange period of Mac history: the Cloning Years. Companies like Umax, Power Computing and Motorola launched a speed and price offensive. Apple no longer provided the fastest Macs in town. Even more significantly, neither did it provide the cheapest. For just £1,500, you could get a Umax machine with built-in CDR and super-quick processor speeds. This was the first consumer model to allow professional multimedia-mastering for such a low price.

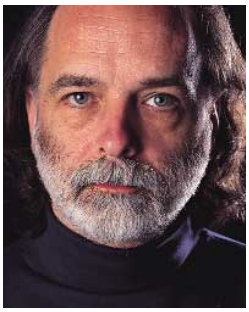
The gap between pro and consumer Macs was never as large after the clone wars. Now, an iMac offers almost the same speed as the lower-speed pro models. The latest DV iMac range runs at the same speed as the two-month-old G3 that I use for work. I'm not bitter – but surely the consumer models are now as fast as they need to be.

After years of promising desktop video, Apple now offers this function in the iMac. More amazingly, it actually works. So what will be the next milestone for home computing?

To answer this, you can usually look at what the pro users – with the latest machines – are doing with their Macs. Amazingly, they appear to be relatively happy with the speed thing. Of course, everyone would love a faster machin. It's all very well having a G4 super computer, but, unless you're going to do something new and interesting with it, what's the point?

The next use for home computers will be closer integration with appliances such as the TV. Steve Jobs is not a big fan of this kind of convergence. He holds that "you turn your brain on to use a computer, but you turn it off to watch TV".

However, third-party vendors don't share his lack of enthusiasm. It would take relatively few tweaks to the current iMac to give it control over TV and audio in the home. I'm not talking about watching TV on your Mac: that's possible, but not new. I'm talking about using your Mac as a control centre for recording TV programmes, listening to music (MP3), playing DVD-video out to your TV – and even controlling your lighting and heating. MW



Michael Prochak

If Bill Gates could influence events with the power of thought, where would that leave us?

The Gates of hell?

There are times when even being right feels wrong. As the Y2K clock ticks ever louder, all bets on ensuing chaos are off – particularly now that there's documented scientific evidence that shows it's possible to influence random events beyond what could be expected by chance – by the power of intentions, desires and emotions. Let's just think about that for a minute.

Better still, let's think different. This is scientific validation of a centuries-old hermetic belief that "magick" is simply the art of causing change to occur in conformity with will. Or, as Zen enthusiasts would say: "With our thoughts, we create the world."

This means that anyone applying his or her true will has the inertia of the entire universe to assist them, and can effectively control, or influence, every aspect of their life. So, by simply focusing our will, we could, in theory say, eradicate war, poverty, illness, hunger, greed, and never have to worry about the Y2K bug.

We could, with the right vision and intent, create an enlightened Utopia and push human evolution on to the next plane. The possibilities are limitless. So, what are the geeks at some Windows-based start-up company in Minnesota doing with this near-mystical revelation? Trying to figure out how to apply this power to controlling a PC and eliminate the need to use a mouse, that's what.

As a matter of fact, their ultimate goal is to create a new kind of computer chip that is "sensitive to intentions". Now that's what I call visionary. But visions and revelations can also have a dark side. When the digital scum rises, even intellectual rottweilers like Jeremy Paxman, whom I used to admire, go belly-up in the increasingly Darth Vader-like presence of Bill Gates.

As a matter of fact, some fear that Uncle Bill's influence on non-local quantum fields is beginning to reach Biblical proportions. I recently received an email from a friend who lives in the American deep south, and it imparted the following tale.

As we all know, Bill Gates' real name is William Henry Gates III. Nowadays, he is known as Bill Gates (III). So what's so eerie about his name? Well, if you take the letters in Bill Gates III, and convert it into ASCII code and then add up the numbers, you get 666... the mark of the Beast of Revelations.

A coincidence? Maybe not, because if you take Windows 95 and subject it to the same procedure... you get 666 again. Even MS-DOS 6.31 adds up to 666. It gets better.

For those of you who still have an old copy of Excel 95, try this out: Open a new file and scroll down to row 95. Then click on the row 95 button to highlight the entire row. Press tab to move to the second column. Now, move your mouse and click on help at the top. Then click on About Microsoft Excel. If you now Press ctrl-alt-shift and click on the tech support button at the same time, a window will appear with the title: The Hall of Tortured Souls. What you encounter is a Doom-style format, in which you can explore, using the arrow keys.

On the sides of the walls are the names of the tortured souls. When you walk up and down the stairs and face a blank wall, a secret passage is revealed if you type in "EXCELKFA". When you get to the end of the passage you're supposed to see something very eerie. I haven't actually tried this, but if anyone has an old copy of Excel and can get this far, do let me know what you find.

Sure, the Internet is full of this sort of paranoid evil-Bill stuff, and whatever is there, could all just be a joke by Microsoft programmers. After all, they are funny guys. Then again, even the wildest mythology usually has an element of truth.

Nearly 90 per cent of computers run on Windows and DOS, including those at the Pentagon. What if all of his products have an embedded tortured souls-style program that can allow Uncle Bill to set-off nuclear arsenals, or create havoc in security systems and financial systems worldwide? Perhaps Internet Explorer may just allow him to map out what you have on your computer, bit by bit each time you log on. Then again, perhaps he's just trying to make the world a better place.

OK, I can understand how the concept of a non-local field created by intentions which alters information states and effects physical reality could disturb our current take on science and religion.

And whether or not you actually believe Revelations, is not really the question here. As we eat our Christmas turkey and wait for the Y2K bug to kick in, maybe what we should all be asking ourselves is, if Uncle Bill really could get the hang of this influencing-random-events lark, what do we think he'd use it for? MW

Computer jargon is an exercise in futility.

Desktop critic

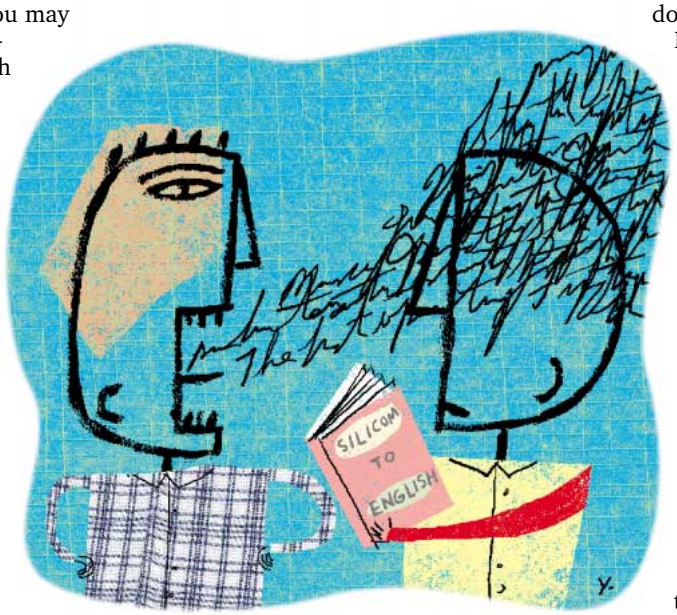
DAVID POGUE is the author of *iMac for Dummies* (IDG Books Worldwide, 1998) and the *Great Macintosh Easter Egg Hunt* (Berkely Books 1998). He also wrote *Macs for Dummies,* fifth edition, updated for Mac OS 8, *The Weird Wide Web* (IDG Books Worldwide, 1997) and *The Microsloth Joke Book* (Berkeley,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

Tower of babble

Ever been to a computer trade show, such as Comdex, Seybold, or Macworld Expo? It's like visiting another world, travelling into a thrilling whirlwind of excitement, celebrity, and new technology. But as I eavesdropped on lunch-table conversations at the last Expo, I realized that these shows are like a different world in another way, too: the computer-industry people who attend them don't speak English.

Instead, after logging hundreds of hours of booth duty and attending dozens of meaningless meetings, all the while saying the same things over and over again, computer-industry salespeople, executives, and PR staffers have developed a strange, inflated form of bombast I call Silicom. If you work in a corporation, you may already be familiar with its sub-dialects: Buzzword Meta-English and Dilbertese.

You can think of Silicom as a sort of reverse shorthand: it requires more words to express a thought than English, thereby making the speaker feel as though each utterance has more import. In Silicom, you don't check the price; you check the "price point". A computer isn't fast; it has "enhanced performance". A laptop isn't small; it has a "compact-form factor".



JAMES YANG

Jargon madness

Of course, every profession has its jargon, but Silicom is sillier than most. Whereas doctors, musicians, and mechanics invent terms for concepts unique to their professions, computer-industry nerds merely substitute words for which perfectly good English equivalents already exist.

I can't help wondering if these people speak that way all the time. When the trade show ends, do they lapse back into plain English? Probably, otherwise their families would have them committed. But what if two of these people married? Now there's a thought – can you imagine what their everyday conversation would sound like? What would it be like at a backyard cookout thrown by a hardware engineer and a PR exec?

She: Hurry up with those burgers, honey. You're making their form-factors way too big.

He: What's the rush? The form-factor isn't mission-critical.

She: Yes it is! New consumers are arriving onsite. They're going to grow the party.

He: Well, at this price-point, what do they expect? They can chat with the installed base until the product ships.

She: How many units have you shipped so far?

He: Feels like 2K.

She: Well, we've got a bottleneck. We need a better enterprisewide solution. The end-users look like thin clients.

He: Look, honey, I'm cooking them with as much performance as I can. If I downsize the patties any more, they'll be sub-optimal.

She: I'm sorry, honey. I just want enough product to ensure a positive user-experience.

He: Well, you're not going to incentivize me by standing here. Be proactive. Go consult the documentation for this grill. Maybe there's a methodology for upsizing the heat.

She: All right. In the meantime, the users can utilize the ketchup and pickles for more compelling content.

He: Oh, right – interactivity! I'd almost forgotten. That's the beauty of component-based food solutions.

She: Look, we can't wait 24/7. Why don't you ship this batch now? You know, a just-in-time delivery system.

He: They're still a little undercooked.

She: That's OK. We'll tell the consumers that, going forward, we're shifting to a new paradigm: beta burgers.

He: That's a real value proposition, sweetie. I'd put that implementation on the shortlist of your best ideas.

She: Just trying to improve the ROI on our R&D. And at the end of the day, if nobody eats the product, I can repurpose it for tomorrow night's meatloaf.

He: Now we're on the same page. Honey, you've positively impacted my day.

She: Food-service solutions has always been one of my best vertical markets.

He: I feel empowered to kiss you.

She: Oh, darling . . . Let's leave the consumer space. Are you up to a little functionality?

He: Yeah, baby. I'm feeling a powerful new media. Let's go upstairs and make a start-up.

She: Will you go cross-platform?

He: You know me, darling. I've got flexible standards. MW

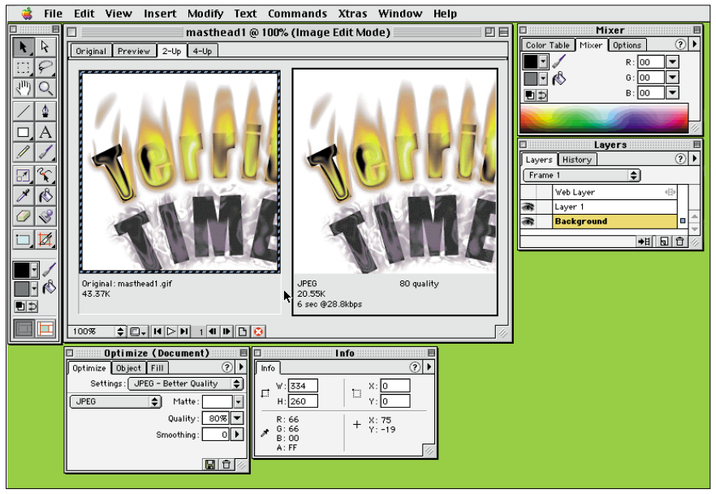
reviews

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. All prices exclude VAT, unless stated.
MACWORLD JACKPOT	The Macworld Jackpot gives you the opportunity to win some of the products we review. Simply dial the number indicated on participating reviews. Calls cost 60 pence per minute. Winners are selected by computer the day after the closing date.

Superb-graphics bundle

Dreamweaver/ Fireworks Studio 3

Publisher: Macromedia
www.macromedia.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Customizable; cross-platform reliability; Dreamweaver support for third-party server products; excellent integration; Fireworks gamma preview feature; fast and powerful.
Cons: Knowledge of JavaScript needed to make use of the extensible features.
Price: Studio bundle, £299; Fireworks 3 £139; Dreamweaver 3, £229. Individual upgrades, £99; upgrade from either to Studio, £179; upgrade from previous Studio, £149.
Star Rating (Studio 3) **:** ★★★★★/9.4
Star Rating (Dreamweaver 3) **:** ★★★★★/9.1
Star Rating (Fireworks 3) **:** ★★★★★/9.1



What a display
Optimization within Fireworks' Image Edit mode allows you to check file size, and decrease download times.

As *Macworld's* online editor, I'm always awaiting the next new bit of software that will ease the strain of administering *Macworld*'s Web pages. Trying to keep up with strict deadlines, without screwing-up propriety tags, database front-ends, or the scripts needed to run *Macworld's* adverts, can be a task.

I've had great fun for the last three years, trying out and testing every so-called WYSIWYG Web-page editor available. But, from GoLive to Freeway, I have usually been disappointed. The annoying quirks, messed-up HTML, and strange disappearance of the tags I've carefully written by hand, is frustrating rather than straightforward. When fired up with optimism that the software will make life easier for me, finding out that the reality is a little more long-winded than the PR, is always depressing.

Imagine that

Macromedia is certainly making the best progress in sparking the imagination of Web designers. It's actively encouraging them to push their creativity to the furthest limits possible by consistently providing easier-to-use, more reliable, and more production-friendly tools. These tools are built around suggestions from its customers, and then improved upon even further.

Announced on November 8, the latest upgrade to Macromedia's HTML and Web graphics tools, Dreamweaver 3 and Fireworks 3, are again pushing up the standards in Web-development software. Loads of new features have been added to both products. This upgrade focuses on customization, and streamlined production flow of Web pages for collaborating designers.

A dream to use

Dreamweaver and Fireworks have always complimented one another, but this is the first time they have been sold as a complete solution. They are intertwined as never before, and now their interaction has become almost seamless.

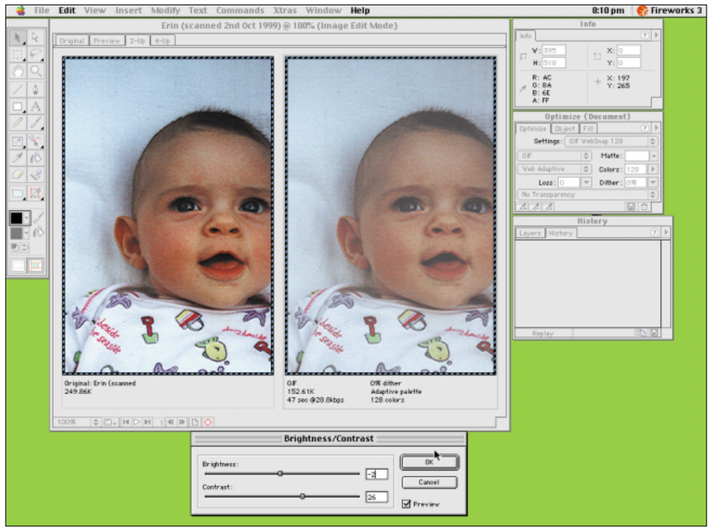
One of the major new changes is the use of DOM (document object model), that allows flexibility in creating customized versions of Dreamweaver, and, therefore excellent control over your working environment. This extensibility will be a great asset for Web design teams – enabling the editing of drop-down menus and commands in multiple copies of Dreamweaver. Also, using JavaScript in the menus.xml file – within the configuration folder – to do this means the changes work across platforms. The production flow can be designed around the level of skill of an individual, and the necessary limits required for a Web team's project. You can make your copy of Dreamweaver as intuitive as you want.

A new History palette allows steps to be recorded and saved as commands, automating repetitive tasks across designers and platforms – but, source-code editing is not supported by this feature. Being able to track down an error made somewhere along the production line, through the historical data, will inevitably speed up the de-bugging process. However, once you quit the application your history is lost – but, the saved commands are still there.

The Macintosh version of Dreamweaver makes use of the latest Mac OS system features, such as spring-loaded folders, and improved navigation. The HTML window in Dreamweaver now supports line numbers, find-&-replace, drag-&-drop, and cut-&-paste.

New and improved

When mobile phones become a more common form of Internet access, you'll be able to design pages for them with ease. Web TV is also difficult to design, because of the limited screen space of 640-x-480 pixels. Any help in these areas will be appreciated more when it becomes a common requirement. Other new Dreamweaver features include: the introduction of a QuickTag Editor – allowing access to the HTML tags in layout format – pre-loaded framesets, support for CSV, CFM and PHP, and better integration with Microsoft Word. Also, support for WebTV and WML/WAP for mobile phones, table sorting, and embedding of Excel content, are now included.



Come correct
The Modify menu has been re-organized, so altering colour, image size, and canvas size is easier.

No comments

HTML styles are fully customizable, as the mark-up code is stored as XML in the libraries – for designers who prefer to use those, rather than CSS (cascading style sheets). Special characters, such as @ and ©, can be quickly added to content from the corresponding object palette. These are also customizable – you simply add the HTML code and icon into the specified folder, within the configuration folder. Design notes can now be stored as XML, separate from the page itself, getting rid of the need for comments.

Fireworks 3 has greater integration with third-party applications, such as Photoshop, and the same customization features as Dreamweaver. You can 'slave' Fireworks to Dreamweaver, allowing swift changes to images – without even launching the Fireworks application. Designer's favourite third-party plug-ins and filters, such as Alien Skin's Eye Candy, can also be used with Fireworks – though why would you want to, when Fireworks itself has so many in-built effects?

Size dosen't matter

Some of the smallest features in Fireworks, are the most fun and most useful to apply, such as being able to turn H1 headers into Gifs with just a couple of clicks. Slicing is easier and more accessible. There's a new Optimize option – allowing you to preview your JavaScript rollover effects within the work window, and also to add these scripts to the Symbol library to use again and again.

The history palette introduced to Dreamweaver 3 is also applied in Fireworks 3. There is even a new Work Space command, that will snap your palettes back to tidy positions on screen, so you no longer get muddled-up in palette-hell. You can turn your animations into Flash movies instantly, or add sound and render your images as QuickTime files. You can quickly jump between viewing hot spots and slices, with the added palette options in v.3.

Also, you can instantly preview your work by clicking the related tab, rather than plodding through the Export Wizard to get an idea of what your creation will eventually look like.

One of the main advantages of using Fireworks, rather than any other Web graphics editor, is the always-editable format used to create the files. PNG format is fully-editable, even after importing into Dreamweaver. Designers who would rather create their initial designs in Illustrator, or Photoshop, will be glad of the extra support for paths and vectors in Fireworks 3. There is also added flexibility for designs created in Fireworks, when exporting from Fireworks into FreeHand, Illustrator, or even CorelDraw. Any text imported from Photoshop is still editable, as are any Photoshop effects layers.

Macromedia has maintained the focus on the creation of cross-platform Web elements in Fireworks 3, by adding the ability to check the gamma variations, across Windows and Macintosh platforms, within the applications.

Options to correct the look of your digital-camera-produced images have been improved. You no longer have to alter the hue, saturation, levels, or brightness and contrast of your pictures in Photoshop, before importing into Fireworks. You can do it as you work, and, because they remain seamlessly editable as Live Effects, you can change them at any time.

Macworld's buying advice

The advantages of using both Dreamweaver and Fireworks as an all-in-one solution for Web design are numerous. The integration between the two applications can only serve to speed up the production, and maintenance of Web sites. Make life easier on yourself, and invest in this Studio set. It's not a lot to pay for the sheer wealth of features, and superb integration, that will allow you to produce a good-looking, professional site.

Gillian Robertson

Win
... One of three copies of Dreamweaver/ Fireworks Studio 3 with Macworld Jackpot. Go to www.macworld.co.uk/ jackpot before December 30.

Daring design for consumer-Mac laptop

iBook

Manufacturer: Apple Computer (0800 783 4846)
Pros: Wow-factor design; rugged exterior; powerful; optional AirPort wireless technology; battery life.
Cons: Not the lightest portable out there; you'll need to buy more RAM.
Price: £1,249 inc VAT.
Star Rating: ★★★★/8.4

It looks like no other portable computer. It's colourful. It's powerful. And, finally, it's here. Will Apple's iBook electrify the laptop world as much as its see-through older brother, the iMac, did for the world of dreary desktop PCs? It's often forgotten that Apple started the whole laptop explosion – sometimes literally – with its innovative PowerBook back in 1991; I'll ignore 1989's monstrous Mac Portable. Since the successful launch of the PowerBook, Apple let its market-share lead slide to the point where IBM cleaned up (with its ThinkPad), and Sony became the true innovator (with its Vaio). However cool the new slim PowerBook G3 is, it's the iBook that marks Apple's true portable return.

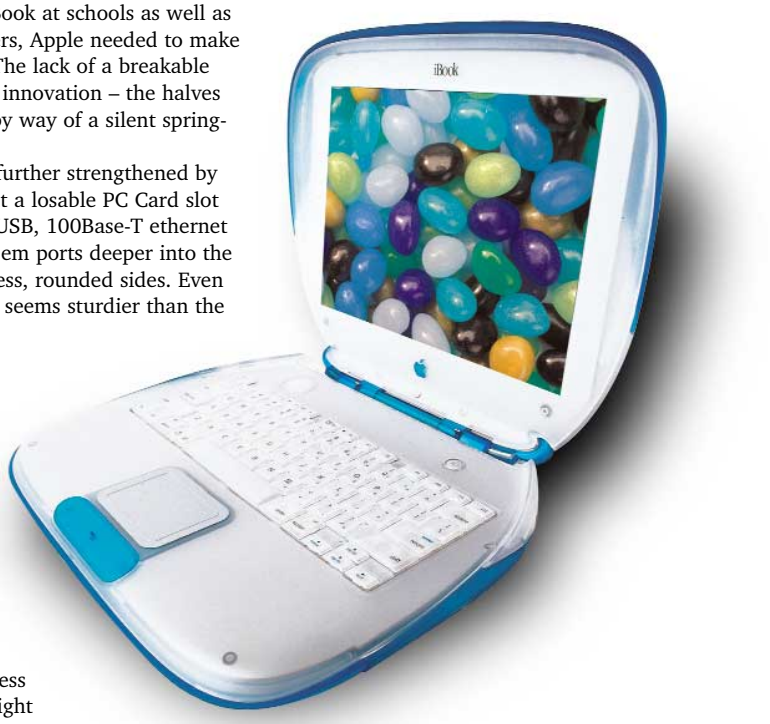
Hello boys...er, girls

First impressions count, and the iBook's a traffic-stopper. Its translucent Blueberry and Tangerine rubber and plastics make the iBook look like no other laptop. Its gently rounded clamshell shape – accentuated by the sweeping rubber curve – is also quite different to the notebook norm.

Softer, yes – but it's also tougher than most fiddly laptops. Apple has broken the mould with a design that has an unbreakable mould. Its rugged, impact-resistant exterior is strengthened by colour-co-ordinated co-moulded rubber edges, which protect the iBook from bumps and knocks – and add a sexy smoothness.

Aiming the iBook at schools as well as general consumers, Apple needed to make it kid-iot proof. The lack of a breakable latch is a superb innovation – the halves are kept closed by way of a silent spring-loaded hinge.

The iBook is further strengthened by Apple leaving out a losable PC Card slot and sinking the USB, 100Base-T ethernet and 56Kbps modem ports deeper into the machine's ridgeless, rounded sides. Even the 24-x CD tray seems sturdier than the average.



I said I'd ignore the Mac Portable, but the iBook does share one public perception with Apple's old leviathan: a weight problem. OK, the iBook's less than half the weight of the 'luggable', but 3kg is still a bit hefty when carried about in a case. Thank heavens, then, for the transparent carrying handle, which automatically snaps back when not in use. It makes picking up the iBook very easy indeed. As with other aspects of the design, if you think it looks like a handbag – and that bothers you – go for the more macho PowerBook. It's not my job here to tell you what to like, but it is the reviewer's prerogative to urge you to go take a look at the iBook.

One reason that the iBook's no slimline Sony Vaio is the super-sharp 12.1-inch active-matrix display, capable of displaying millions-of-colours at 800-x-600-pixel resolution – putting the Vaio to some screen shame. A lighter Mac laptop would be ace, but we'd have to trade down our screen-size expectations, as well as any number of other full-size features that the iBook has aplenty.

The translucent white keyboard, for instance, is comfortable and neat – slightly perkier than the PowerBook G3's keyboard. The F1 through F6 keys control screen brightness, volume, sound muting, and Num Lock functions; press F7 through F12, and a dialogue box offers to launch your favourite program, document, or networked disk on subsequent presses of that key.

The iBook has a lithium-ion battery life that makes it outlast most other portables. Six hours, claims Apple, "depending on configuration and usage". In our tests, we couldn't match that bonzer battery boast. We came close to five hours, which is still highly impressive. And you'll get more life out of your battery if you add more memory, rather than relying on virtual memory.

Where's all that extra juice coming from? Apple has added a raft of new power-management features, including rewritten

continues page 56

Under the iBook cover

Although slightly faster than the 333MHz PowerBook G3 – due to the machine's sluggish graphics – the iBook doesn't break any speed records. However, its extra battery life is probably more than enough for most of us not to care.

Best results in test. Shorter bars and shorter times are better.

Mac performance compared:	Processor	Disk	Graphics	Overall Score
400MHz iMac DV	1,214	1,470	2,928	1,779
PowerBook G3/400	1,003	972	2,863	1,705
iBook	833	882	1,845	1,187
PowerBook G3/333	914	755	1,415	1,028

Behind our tests See page 140 for more details on our testing methods.

Power Manager software, and an Energy Control module that also reduces startup time. The sleep function is dreamy – the iBook automatically wakes when its lid is opened. The sleep indicator pulses rather than flashes on and off – a feature that has been carried on to the new iMacs. The power-plug light glows orange when the battery is charging, and green when it is fully powered.

For more details on this and the other iBook features, read 'Me, myself and iBook', Macworld, September 1999 – also online at **www.macworld.co.uk/sep99/features/ibook.html**.

The iBook lacks a video-out capability, leaving those who need one to AverMedia's USB-to-VGA USBPresenter. So if the 12.1-inch screen seems cramped, it's going to be a struggle to connect an external monitor, or multimedia projector. And there's no microphone – again, look out for a future USB solution. By leaving out some rarely-used regulars, Apple has kept the iBook's price down to £1,249 – a pretty good deal for an active-matrix 300MHz G3 laptop. Memory, however, is a lacklustre 32MB – you'll need to add at least another 32MB of RAM (about £50). Don't even think about scrounging for virtual memory – portables' hard disks are liable to drop off to sleep just when you need that extra memory. Cue painful wait. As with any computer, adding extra memory will reduce the chances of the iBook crashing.

The 3.2GB hard disk seemed more than reasonable until Apple announced the new iMacs would boast storage from 6GB to a mighty 13GB. As there's no PC Card bays, your only options for extra storage are external USB drives.

As a consumer/educational computer, the iBook comes with the same bundle as the iMac – minus the new iMovie, as there's no FireWire connection.

Apple couldn't provide us with a working version of its AirPort wireless technology – together, the AirPort Card and Base Station cost an extra £318 (inc. VAT) – so we couldn't test this great advance in mobile computing. But, if it lives up to Apple's claims – up to ten users linked at 11Mbs up to 150ft away from modem or ethernet connection – then it makes the iBook the hottest portable ever. Some claim. Some machine.

Macworld's buying advice

I'll leave the aesthetic decisions to you, but most of Apple's design innovations are a welcome change to the old ways of making portable computers. Demanding Mac pros will prefer the 400MHz G3 PowerBook, but the iBook is powerful enough for most of us. Students, in particular, are going to fall for the iBook in a big way.

Other options you should consider are the new iMacs – see our feature from page 78. If that iBook isn't really going to leave your house or office that often, the more powerful consumer desktop Mac might be a better bet. The new iMacs also have a larger screen, more memory, and finer audio capabilities. And, like the iBook, they can join Apple's wireless revolution.

Together, the AirPort option and longer battery life offer tantalizing wireless opportunities for portable users. Order your online groceries from the end of your garden. Easily equip a classroom with iBooks, iMacs and a few Base Stations. This iBook puts Apple back in the driving seat of innovative mobile computing. It deserves to be a best-seller. Just add more RAM.

Simon Jary

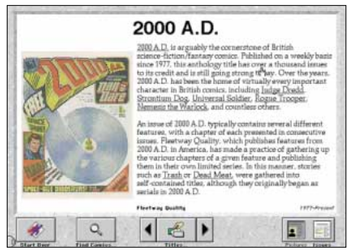
Database for comics fans

ComicBase 4

Publisher: Human Computing
www.human-computing.com
Distributor: GOSH Comics (0171 636 1011)
Pros: Customizable; searchable; loads of graphcis.
Cons: Some of the more underground stuff isn't covered.
Price: $129 form Human Computing's Web site.
Star Rating: ★★★★/8.1

I have to admit, I expected to hate this. However, this database of comics – all published since 1933 – is a valuable addition to a computer-using, comic-collector's world. I wouldn't hesitate to recommend it to individual collectors and small-time dealers – even the larger dealers may find this useful. The great strength of this package is that it is customizable. A user can input fresh titles, pictures, values, and even QuickTime movies.

The database of publishers includes the likes of Vertigo – and even stretches to British makes, such as Tundra. Easy to install, this software does have a US bias; but then, so does the world of comics. You can also link to individual publishers' Web sites at the touch of a button – which is handy. I tested individual titles against my small – but classy – collection, and found *Lobo* and *2000 AD* – but failed to find such classics as *White Trash*, or *Skin*. The obvious titles – such as *Batman*, *Superman*, and *Swamp Thing* – are all there, as are *Dr. Strange*, et al. In other words, the database is thorough, and contains plenty of information about most popular titles – and some of the obscure ones.



I am the law
With a wealth of data, ComicBase has got it covered.

Oh, so pretty

The database is good to look at. Cover pages of comics are included, as are a mumber of film clips. The films are mainly trailers, so of questionable value, but it's a nice touch. The real strength of the machine is its Search Engine. This enables a user to search by title, publisher, year, character, artist, writer, value, and more.

Other features include a value checker – input your collection and it will total the value of it, and calculate the average value of your comics. It will also print out price labels straight from the software, and follow related links: ComicBase draws links between artists, characters, publishers and titles.

Also, the database lets you import and exchange data with other software, as well as making notes. You can even print lists of your missing titles to grasp in your sweaty palm, and take down to your local dealer. There is a value checker, that shows graph representations of the price of titles for the last four years.

However, there is a United States bias to the pricing, so serious collectors might find themselves inputting UK values – a major task when re-inputting the values of over 100,000 comics. Comic values – albeit in dollars – are fairly accurate, as ComicBase supports the industry-standard Comics Buyers Guide (CBG). Regular updates are promised, so hopefully, missing titles will be included soon.

Macworld's buying advice

Overall, ComicBase is an excellent product for comic fans. Oh, and before someone yells loudly that comic fans are just another breed of nerd, comic fans I have known include Jonathan Ross, Lenny Henry, and even occasional appearances by Malcolm McClaren. So you may be right.

Jonny Evans

CD storage/ back-up

NetBox

Manufacturer: La Cie (0171 872 8000)
Pros: Cheap and relatively hassle free CD sharing; no more lost CDs.
Cons: Not always as simple as it sounds.
Price: £1,395
Star Rating: ★★★★/8.3

Traditionally, CD jukeboxes have been high-price products, out of the range of smaller offices and studios. La Cie has come up with a novel approach that is both cheaper, and more compact, than other methods of CD-sharing.

It has achieved this with the NetBox, a hard-drive and CD combo that includes a whole box of networking tricks. The box plugs into your network using ethernet, and quite separate from any other machine. Inside the box, lurks a hard disk, a fast CD-ROM, and a tiny computer running Linux. Before you head for the hills to hide from Linux gobbledygook, don't panic, – it is well hidden from the users. All the computer does is take care of networking, and controls the CD-ROM.

The box takes the place of multiple CD-ROMs, by copying, to the hard disk, any CD you put in it. It then becomes available for sharing on the network, and you can remove the CD. Even the most basic NetBox model offers a capacity of 18GB, which is a minimum of 27 full CD-ROMs. In reality, many CDs will contain less than 650MBs: if there was just 200MBs on each disk, you could have 90 CDs loaded at once. If you were using a carousel for this task, you would be limited by the number of CDs – rather than the size of the files. This makes NetBox much more efficient, and cheaper, than other jukebox options.

If you run out of space, you can add up to five drives to the NetBox. There are also versions with larger 36GB disks, as well as a DVD-ROM option.

It isn't as easy to use as La Cie claims – it's not quite as simple as just plugging it in. However, it took only five minutes, with the manual, to get it up and running. Once you've got it going, you will rarely need to go back to it: it's operated remotely, there is only a power switch and an eject button on the box itself. You log-in via a Web browser, and change settings from there. You use the browser to manage the space, deleting old CDs and setting sharing preferences.

Macworld's buying advice

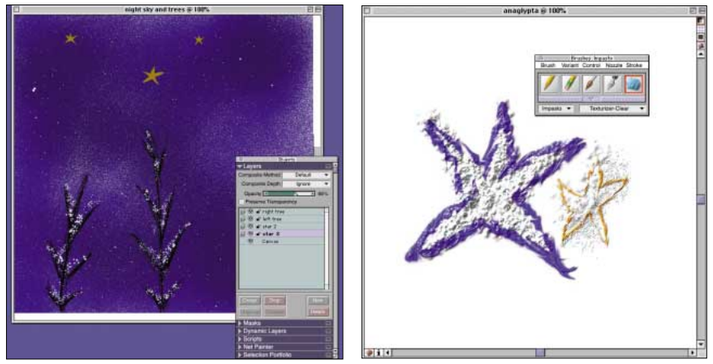
The NetBox brings high-end archive-storage into a new price bracket. Just £1,395 gets you up-and-running with a minimum 27-disk capacity – that's a fraction of the price of a CD jukebox. It is a tidy way to keep track of your CD archives, plus you will have no more trouble with lost CDs. I'm sure the NetBox will reach a whole new archiving audience.

David Fanning

Natural brush strokes, digital-editing

Painter 6.0

Publisher: MetaCreations
www.metacreations.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Full-blown layers capability; dynamic text; new brush engine; Impasto brush; mouse can be used to mimic a stylus; vastly improved interface.
Cons: Some interface improvements are difficult to use.
Price: Full package £299; upgrades from 4.0 and later, £149; upgrades from previous versions and Painter Classic, £199.
Star Rating: ★★★★/8.9



Effective layers
Painter 6.0 now has full-blown layers (left), rather than the limited 'floaters' of previous versions. And, you can now build-up layered textural-effects, using the new Impasto brush (right).

Natural-media simulation programs can fail on two counts: interface and results. Firstly, the interface. The difference in feel between a palette knife loaded with paint, and a stylus poised on a drawing tablet, is enough to discourage many would-be digital artists. And this is without grappling with dialogue boxes that contain a bewildering display of characteristics, such as jitter, resaturation, flow, and angle.

Secondly, results. However closely natural-media programs try to reproduce the characteristics of natural media, the effects are often patchy and unconvincing. But, with Painter 6.0, MetaCreations has brought back two of the original Fractal Design developers to consider the very fundamentals of Painterness – and it shows. The team has obviously aimed to bridge the "reality gap" between digital paint and real-life paint – and, also, between digital painting and real-life painting. This is far and away the best Painter upgrade yet.

The main improvements in the pen-to-paper (stylus-to-screen) interface, centre on a "next-generation brush engine". Previous versions of Painter laid down colour on the canvas using a series of dots – according to user-defined parameters of size, spacing and distribution. The end result could tie slower processors in knots, resulting in slow rendering that was anything but intuitive. In Painter 6.0, the brush engine renders the laid-down colour as continuous one-pixel lines – representing the individual brush hairs – that are easier for slower processors to handle, and makes the brush speed faster than in version 5.0.

On top of this, the new multi-stroke spooling feature also helps compensate for slower processors – it might take a while for the stroke to catch up with you, but you won't lose any stroke information. Or so the theory goes. I found, often, this didn't work, especially when using the Impasto brushes. The new brush-engine also allows each bristle of the brush to pick up a different colour. And there's a new, adjustable Damping feature that creates smoother, less-twitchy looking lines.

Users of Wacom's next-generation Intuos drawing tablet will find Painter 6.0's new Airbrushes respond to Intuos' finger-wheel, which simulates a needle-control for adjusting ink-spray. It's now also possible to simulate a drawing tablet using a mouse: pressure, tilt, bearing, and wheel settings can be set via a Mouse section in the Brush Controls palette. Also new to Painter 6.0, is the ability to save and re-use recorded strokes, using the Use Stroke Data option in the Brush palette menu. You can use a drawing tablet to create the stroke, save it so you can find yourself giving the intended value to the wrong control.

Texture vultures will love the new Impasto technology in version 6.0. Impasto – a method of building up deposits of paint on a canvas to give textured, slightly-3D results – is controlled by two factors: the settings you apply to an Impasto brush, and the values you set in the Impasto Lighting controls. It yields a surprisingly convincing effect, especially when you build layer upon layer. But, much of the skill is in setting the Lighting controls, rather than in the painting itself. Artists who are more accustomed to real-life paint, than digital paint, may find the idea of having virtual control over their viewers' ambient light a touch bizarre.

Painter 6.0 also features a new Dynamic Text feature. This allows the sort of flexibility with text you normally get only in vector-based drawing programs – you can edit, rotate, stretch, tilt, and scale type on a curve, or a straight line.

While the "pen-to-paper" aspect of version 6.0's interface has been nudged towards a more life-like feel, paradoxically, the on-screen controls owe more to modern software design than any previous version of Painter. The now-dockable palettes have been restructured and rationalized, and the result borders on elegant – now there's an adjective I thought could never be used to describe Painter's interface

Behind a new master Brush Control palette, lurks every other individual-function palette. And, the version 6.0 interface has some time-saving power-user features. These include the ability to click directly on a value displayed in a palette, then edit it on the keyboard, and the Current Setting Shortcuts on section bars, that allow you to change key settings without opening the section. This last feature is a bit clumsy. For instance, the Brush Controls palette assumes you're adjusting the most frequently-used control – Painter has always been a source of frustration, on account of its limited layout-editing capabilities. It's not unknown for Painter-created objects to be exported from separate files, and then positioned on individual layers in Photoshop for easier editing. In version 6.0, MetaCreations has at last reworked the "floaters" metaphor of previous Painter versions into a full-blown layers feature similar to that in Adobe's Photoshop. You can make selections, apply a current selection to a different layer, and cut, copy and paste between layers. This is a major plus, and it's about time it was included. What's the point of simulating natural media digitally, if you don't take full advantage of editing capabilities?

Digital artists who have nursed grudges against Painter for its space-consuming, and over-complicated interface, will find much solace in version 6.0. The only complaint I can make, is that it still requires you to keep a screwdriver in your pen-tray to open the tin. But, in exchange for the improvements in this new version – well, I can cope with that.

Macworld's buying advice

The Painter 6.0 upgrade is fairly expensive – 50 per cent of the full package price – but the number, and quality, of improvements you get in version 6.0 represent outstanding value for money.
Karen Charlesworth

Industry-standard CD-burning software

Toast 4 Deluxe

Publisher: Adaptec
www.adaptec.com
Distributor: Ingram Micro (01908 260 422)
Pros: Full support for MP3 format; burns in the background; useful audio and multimedia utilities; absolute doddle to use.
Cons: None to mention.
Price: £42
Star Rating: ★★★★★/9.3

Adaptec's investment in Toast, the standard in CD-burning software, continues with its release of version 4. Given that its predecessor supported all CD standards, it was difficult to see how improvements could be made. What Adaptec has done, is to make Toast into a more comprehensive product – through the inclusion of two ancillary programs – and with its support for MP3.

In terms of looks, Adaptec has taken a leaf out of the various MP3 players, by adopting the use of 'skins', or 'look and feel' as it's referred to in Toast.

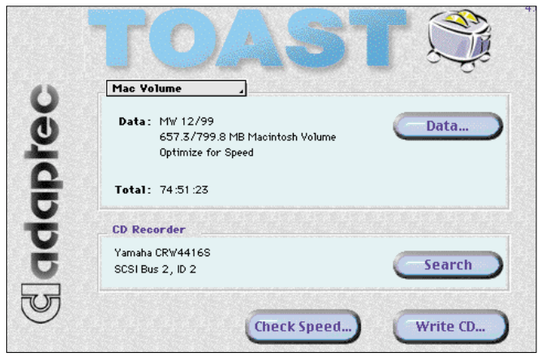
Little has changed with the user interface, though the format can now be selected from the main window, and CD names can be typed in without needing to double-click. However, the biggest change – and one that doesn't appear to be mentioned anywhere – is that Toast now functions in the background. Adaptec should shout this from the rooftops. This is a major selling point.

Select Audio CD for the format, and MP3 makes its appearance. Files can be drag-&-dropped, building up a CD's-worth of music, with Toast handling the file translation automatically. Adaptec makes noises about using only "authorized" MP3 files, but any MP3 will be accepted. Another new feature is Disc-at-Once recording – a complete audio CD can be burned in one pass, rather than as a succession of tracks. Also, Toast users have access to CDDB's disc-recognition service, to save typing in track titles.

Included in the package is Arboretum Systems' CDSpinDoctor, which uses Steinberg's VST plug-in technology to optimize old tapes and vinyl offerings. Noise and pops can be banished, and bass and top-end re-introduced.

Macworld's buying advice

Adaptec has not sat on its laurels. Toast 4 Deluxe is excellent. With around 500 CD-R and CD-RW writers supported, this is a must for anyone who burns CDs.
Vic Lennard



A little bit of Toast
With a new look, Toast is better than ever.

Super-model scanner, at a Divine price

CanoScan FB 636U

Manufacturer: Canon (0121 680 8062)
www.canon.co.uk
Pros: A Kate Moss of a scanner, with a Nora Batty price tag; no power cable required; nice image-editing software.
Cons: For the price, it's churlish to quibble.
Price: £99
Star Rating: ★★★★★/9.0

I keep an open mind about virtually nothing, so Canon's claims that its CanoScan FB 636U USB colour flatbed-scanner is "the world's smallest and most stylish" had me on the edge of my sleeping bag. More bouffant PR silliness, I decided – before even opening the box.

But, that's the beauty of being narrow-minded – surprises are always much bigger and much better.

Before USB, scanners were like glass-topped flagstones – yet here's one you can misplace under a sheet of A4. And – just like the PR says – the metallic-silver CanoScan FB 636U is as sleek as you like. Also, it runs off the 2.5W supplied via its USB cable, so requires no mains supply – making it a truly portable model. Less is definitely more.

Under the hood, the CanoScan shouldn't disappoint. It's pitched at SoHo users, and punches its weight comfortably at this level. It has an optical resolution of 600dpi – which is the number of Charge Couple Devices (CCD) per inch of scanning head. The scanner is automatically colour-calibrated and the results are pleasing – whether you are scanning at 72 dpi for Web-site use, or at 300 dpi, or over, for images that will be printed.

If your stills are sub-standard, CanoScan's ScanGear CS-U scanning software offers adjustment facilities for colour and contrast, and highlight and shadow. However, these are fairly basic and you're better off using the bundled software.

Low-end scanning used to involve little more than image-placement, but now, it's fun for all the family. This is down to modern image-editing software.

The CanoScan comes bundled with Adobe PhotoDeluxe 2.0 and CanoScan Toolbox CS. The latter is quite handy.

When you press the Start button at the front of the scanner, Toolbox CS displays a toolbar on your desktop. This allows you to scan an image without starting up another program, to send images to a printer, or to send them to your fax or email apps.

But it is Adobe PhotoDeluxe 2.0 that adds real value. The small brother of Adobe Photoshop, it offers Photoshop's core image-editing capabilities: you can delve as deep into image-manipulation as you'll probably ever need to.

But there's also plenty of fun to be had – from pasting pals' heads onto bogus bank notes, to creating greetings cards and calendars.

Macworld's buying advice

For the money, you can't go far wrong with the CanoScan FB 636U. It looks good, is utterly unobtrusive and – unless you have mid- to high-end scanning requirements – will perform well, whatever you demand of it. Being graphite, it will also complement the new Power Mac G4, and the iMac DV Special Edition.

Sean Ashcroft

Bargin-basement speakers

Labtec LCS – 2414

Manufacturer: Labtec
www.labtec.com
Pros: Bargain sounds.
Cons: Bottom end seems to lack warmth.
Price: £42.50
Star Rating: ★★★★/7.5

The built-in speakers on Macs are not the best quality, so if you want to listen to music – or play games – it's a good idea to get external speakers. This can be an expensive exercise, but Labtec has come out with some speakers that include a subwoofer for just £42.50.

World at war

While playing games, these speakers performed excellently – explosive sounds turned my front room into WW3 battle ground. The only drawback is that background hiss is amplified when playing badly recorded sounds. This hiss occurred when I tried recording my own voice onto the hard drive – a treble control, or graphic equalizer, would have done away with the problem, but this was sadly lacking. With audio CDs, the speakers performed well in the mid-range, creating good-quality, warm-sounding aural sensations. Extreme sounds were distorted – jungle, reggae, and industrial noise all suffered. Fine for Mariah Carey tunes, not so hot for drum-and-bass.

Don't believe the hype

Labtec's claim that these speakers will "become an industry classic" is something of an over-statement, especially when you can direct your computer's sounds through a second-hand amp, connected to a speaker set-up, with superior results. The beige colour is not inspiring. Offering the speakers in black could have enhanced aesthetic appeal. However, the subwoofer *is* enclosed in wood, for floor placement.

Set-up is easy too, with colour-coded connections. The satellite speakers are tiny, but offer a rich, large sound – in the mid-range at least. Frequency response is an adequate 40Hz-20KHz. Power output is 25W – the subwoofer rates 15W, and the satellites 10W between the two. Volume is controlled through one of the satellites, the on/off switch sits on the subwoofer, the unit needs a power supply. I would have preferred the volume control on the subwoofer, so I could have raised the speakers away from the computer. The cables are a little spaghetti-junction-like, making these a desktop solution.

Macworld's buying advice

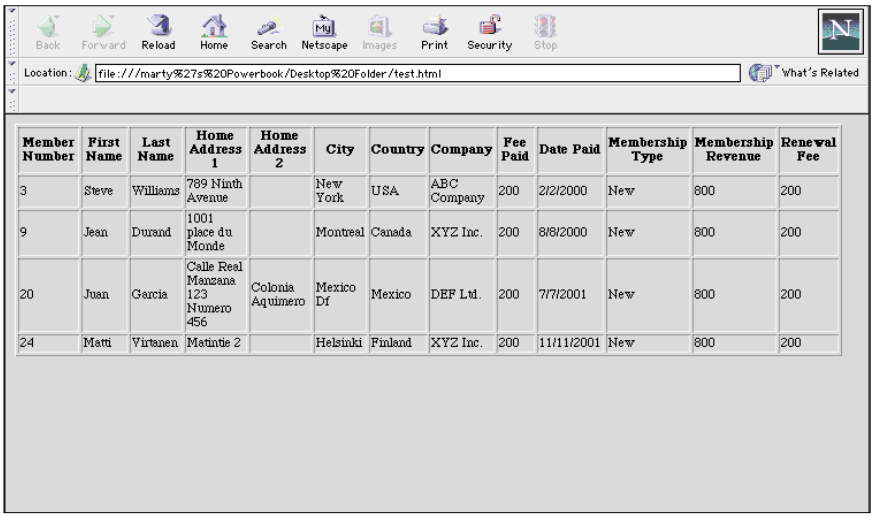
These speakers are OK, but for better results I would recommend buying higher up the Labtec range. The Labtec 2414 Audio f/x is good, but its higher-end products rock. These budget speakers simply perform.

Jonny Evans

Ever-green database software

FileMaker 5 Pro

Publisher: FileMaker (01628 534 100)
www.FileMaker.com
Pros: ODBC support; Microsoft office integration; Internet publishing.
Cons: The files are not backwards compatible.
Price: £199; upgrade from 4.x, £115; Unlimited, £799; Developer, £799; Server, £399.
Star Rating: ★★★★/8.6



Member Number	First Name	Last Name	Home Address 1	Home Address 2	City	Country	Company	Fee Paid	Date Paid	Membership Type	Membership Revenue	Renewal Fee
3	Steve	Williams	789 Ninth Avenue		New York	USA	ABC Company	200	2/2/2000	New	800	200
9	Jean	Durand	1001 place du Monde		Montreal	Canada	XYZ Inc.	200	8/8/2000	New	800	200
20	Juan	Garcia	Calle Real Manzana 123 Numero 456	Colonia Aquimero	Mexico Df	Mexico	DEF Ltd.	200	7/7/2001	New	800	200
24	Matti	Virtanen	Matintie 2		Helsinki	Finland	XYZ Inc.	200	11/11/2001	New	800	200

Online – fast
Exporting the results of a script as an HTML file, is a quick-and-easy way to achieve static Web publishing.

FileMaker has always been the database of choice for the Macintosh. That FileMaker has survived – and thrived on the Mac – as well as making inroads into the PC market, is a testament to its quality. Indeed, people who would probably run a mile if you mention the words "relational database" will happily input advanced queries, and produce complex reports in FileMaker.

Version 5 adds a number of features, the most obvious being a user-interface redesign – meant to bring the layout more in-line with the look-&-feel of the 800lb-gorilla of business applications, Microsoft Office. A new Table View makes it easier to see the content of your database, and edit it interactively – rather than shuffling through records. New Open Database Connectivity (ODBC) support provides easier ways of importing data into FileMaker, and sharing data.

The Web-publishing features have also been improved, including better layout definition and enhanced security. Code rewrites mean that version 5 is incompatible with previous versions. Files saved in 5 cannot be opened by 4 – although, when opening an existing database from version 1 upwards, it will automatically convert it and save a backup copy of the original. This also means that version 3 of the Server edition of FileMaker cannot open FileMaker Pro 5 files – you'll need FileMaker 5 Server too.

Using FileMaker Pro 5 is essentially the same as using the previous version – with the process of defining fields, and then entering records, pretty much the same. A table is a separate file, so that relationships between tables are essentially between files. I'm not sure if this helps performance, but at least it's simple to understand.

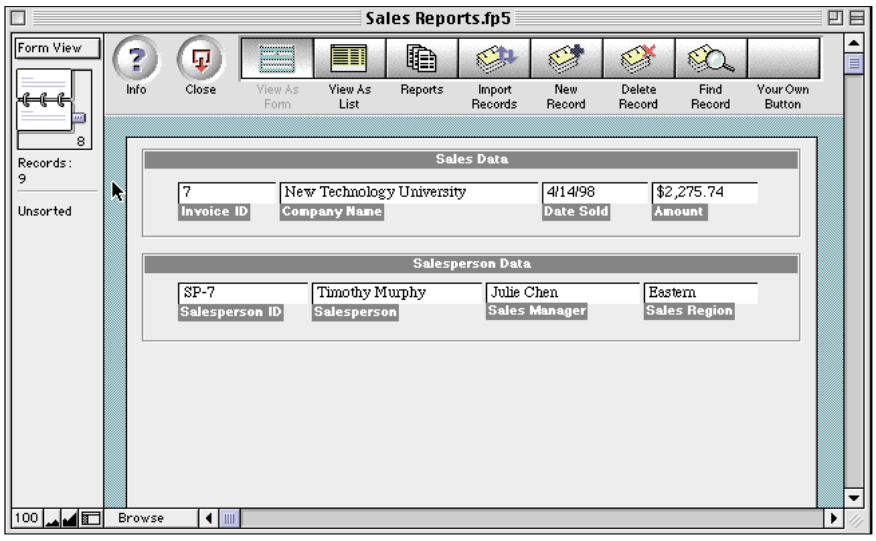
One impressive FileMaker feature is the way results are displayed. You can achieve this in a number of ways. For example, invoicing sales reports and stock control, can be presented in different ways.

The layout tools in FileMaker are unsurpassed by any other database I have seen, and go a long way to explaining the popularity of FileMaker on the Mac. While all databases have hurled themselves at the Web as the future of client interfaces, FileMaker hasn't forgotten the importance of well-presented printed information.

For cross-platform users, FileMaker remains just about the only option. FileMaker files are fully interchangeable between the Mac and the PC, which can be a godsend for small offices. Its Web-publishing tools allow FileMaker to export a database as a series of static HTML pages. You can assign a FileMaker database to an IP address – for remote access, multiple users, and to allow the database to be accessed via the Web. Version 5 adds greater security to online database publishing, including the ability to limit access to certain IP address ranges.

FileMaker allows you to construct structured query language (SQL) statements when importing data. Bizarrely however, it does not support SQL queries to actually search data. Instead, constructing queries can be a convoluted task, requiring you to create a number of sub-queries – that are executed sequentially – to return the desired information. This can get tricky, especially when the queries cross several files.

This convoluted way of constructing queries and building relationships doesn't bode well for FileMaker's performance, especially for multiple users – the Server edition is an essential for more than ten users. But, for most small-scale users, FileMaker Pro's ease of use, and superb presentation tools, will carry the day.



Good form
The ability to construct simple forms, with clear buttons, makes FileMaker great for creating databases.

Macworld's buying advice

FileMaker 5 isn't exactly a revelation for existing users, but does contain enough new features to see it into the next millennium. Serious developers should be aware of the need to have the compatible Server and Developers editions (see News, page 32). FileMaker Pro remains one of the best tools around for managing and presenting data from the desktop.

Martin Gittins

Computer-aided design software

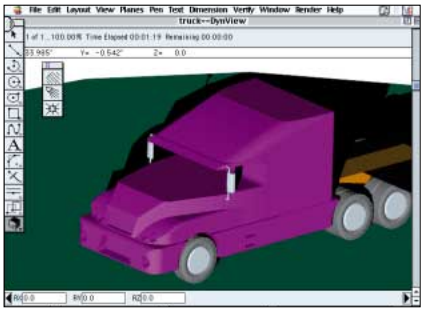
Vellum Solids '99

Publisher: Ashlar (01954 267 711)
Pros: Truly impressive feature set.
Cons: Bloated memory requirements; can't read AutoCAD 2000 files.
Price: £2,695; subscription, £595.
Star Rating: ★★★★/7.6

Arriving only a year after the original Vellum Solids (see Reviews, October 1998), Ashlar's Vellum Solids '99 is packed with new solids-modelling features – yet it's still relatively easy to use. Although the rapid-code upgrade shows evidence of a few growing pains, no other Mac CAD (Computer Aided Design) product can compete with Ashlar's implementation.

Ashlar, of course, is looking over its shoulder. Not at its Mac competition, but at the industry leader, Autodesk's AutoCAD – whose clunky-but-improving design-modelling capabilities this new version is intended to out-distance.

Vellum Solids '99's long list of new features will appeal most to industrial designers. While architectural CAD depends primarily on standardized components, CAD for industrial design needs fluid handling of curves, and curved surfaces. Think of the iMac or BMW Z3. Solids '99 lets you draw a curve, rotate it in space to generate a surface, and then "knit" this surface to another, with a few quick mouse operations.



Truckload of features
Here's an AutoCAD's file, translated into Vellum Solids '99 from .DXG.

Even more impressive, the program remembers the association between your original curves and the surfaces, so you can modify the whole structure by moving a few points that defined the original curves. Solids '99 also does a competent job of translating files from other CAD systems, into drawings where free-form surface associations are recognized.

Solids '99 gives you access to all this power, using self-explanatory tools and palettes familiar to users of earlier Ashlar products. This is fortunate, because – while the product ships with complete documentation in a binder – it has none of the CD-based tutorials we've come to expect from CAD software. Solids '99 does a better job than the earlier version at approximating truly photo-realistic output, and experienced solids modellers shouldn't have much trouble poking their way through the new options. But, designers making the transition from strictly 2D work may need some guidance.

The program could also use some refinement in places. For example, although Ashlar claims Solids '99 runs on a 128MB system, memory allocations up to 256MB produce Finder error messages, and it feels sluggish compared with last year's model. In addition, Solids '99 can't read AutoCAD 2000 files – a glaring exception to Vellum's usually excellent import/export utilities.

Macworld's buying advice

Vellum Solids '99 is Ashlar's ambitious attempt to produce a dream product for industrial and mechanical design, although it's a little rough in spots from the furious pace of implementation. If you're an old Vellum pro, and don't need much hand-holding, Solids '99 can accelerate your creative impulses.

Charles Seiter

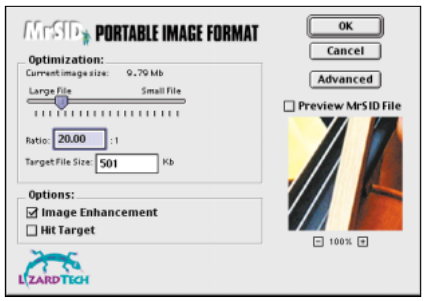
Amazing image compression

MrSID

Manufacturer: LizardTech
www.lizardtech.com
Distributor: Alta Technology (0171 622 6606)
Pros: Allows high levels of image compression, with minimal loss of quality.
Cons: Expensive; uses convoluted installation procedure.
Price: £299
Star Rating: ★★★★/8.1

They call it MrSID, but it's not a character from an old TV show; the name stands for Multi-resolution Seamless Image Database, an image-compression technology from LizardTech. The first Mac implementation is MrSID Publishing Edition, primarily for pre-press applications, which offers higher-quality image compression than the reigning JPEG standard.

MrSID uses wavelet scalar quantization compression, an improvement on JPEG's discrete cosine-transform technology. Both are lossy compression schemes – meaning that they sacrifice image data as the compression ratio increases. However, MrSID can compress pictures at higher ratios than JPEG, without adding the artefacts often found in highly compressed JPEG images.



Tell SID
At a 10:1-compression ratio, MrSID really hit the sweet-spot, exhibiting no discernible artefactsl. Even at 30:1, only minor artefacts appear.

At the program's core, is an Adobe Photoshop plug-in, accessed through Photoshop's Save As menu option. You choose a compression ratio by entering a number, moving a slider, or specifying a target file-size.

To see how MrSID compares with JPEG, we compressed a series of images, at various ratios, using both technologies. We also compressed the images using Altamira Group's Genuine Fractals Print Pro, which offers a compression ratio of about 5:1.

The differences between JPEG and MrSID are dramatic. At a 30:1 ratio – enough to squeeze a 12MB image down to 400K – the MrSID image displayed only minor artefacts. The smallest JPEG file – about 20:1 – showed extensive artefacts, even though it was larger than the MrSID image. At a 10:1-compression ratio – equivalent to JPEG's medium compression – MrSID really hit the sweet spot, exhibiting no discernible artefacts at all. Indeed, picture quality was comparable to that of the Genuine Fractals image, which was about twice as big. However, unlike Genuine Fractals, MrSID does not let you scale an image up beyond its original size.

The MrSID package includes a Photoshop plug-in for distribution to users who need to view your images, plus a browser plug-in for viewing images online. A Quark XTension lets you import MrSID images into QuarkXPress, where you can view and print them. All three modules are available as free downloads from the company's Web site.

Macworld's buying advice

At £299, MrSID is pricey. However, it offers much better image-quality and higher compression-ratios than JPEG. If you frequently transmit high-resolution images, and you don't want to compromise on quality, give this package a look.

Stephen Beale

Books on greed and madness

The plot to get Bill Gates

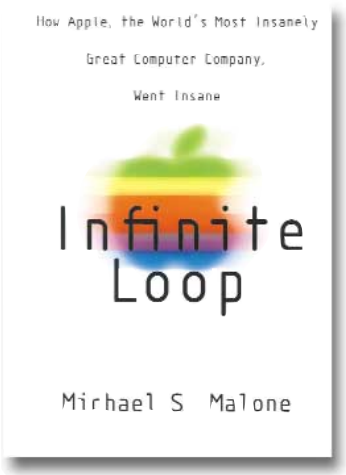
By Gary Rivlin
Publisher: Quartet Books
Pros: More colourful characters than Dickens
Cons: Not enough on Bill's battle with Apple.
Price: £12.50
Star Rating: ★★★★/8.0

Infinite Loop

By Michael S Malone
Publisher: Aurum Press
Pros: Lots of funny stories; gripping story line.
Cons: Some photos would have been helpful.
Price: £18.99
Star Rating: ★★★★/8.5

In order of literary interest, books about business and books about computers rank pretty low in most people's reading wish list. While I wouldn't want to pack a book about management or a volume on JavaScript in my holiday suitcase, Mac bookworms are advised to check out a couple of recent computer-business books.

Sure *The Plot to Get Bill Gates* is hardly *Fred West's House of Horrors*, but there is a belly full of bile and rancour in many of ghastly stories aplenty here. Author



Gary Rivlin calls this book "An irreverent investigation of the world's richest man… and the people who hate him". As such, it lists many Windows war crimes, while probing the motives of those who attack Microsoft's ruthless CEO.

Rivlin essentially follows industry analyst Esther Dyson's point that: "What people think of Bill tells you more about them than it does about him".

So alongside a (very) long list of Bill beastliness, we get fascinating insights into Oracle's colourful Larry Ellison ("a master of the ill-conceived remark" and "a really bright sociopath"), Sun's Scott McNealy (the "illiterate genius"; "a sports nut, a drinker, and a total ****-off"), and Novell's Ray Noorda, who crippled Novell in his anti-Gates crusade, and once said: "To have a heart-to-heart with Bill, you have to have two hearts". Ouch!

If you want more personal ammo on Gates, this is also the place to get it: Bill has got fat on a life's diet of cheeseburgers, has suffered from dandruff, and fidgets, twitches and "bounces like a teenager".

Our thirst for such juice stems from a global case of Bill-envy. And, who can blame us? According to Rivlin, if Microsoft stock continued its current rate of growth, Gates would own *everything* by the year 2020 – all the world's real estate, every share of stock, and the assets of every bank.

But we, as much as Larry and Scott, should remember Nietzsche's warning to "be careful who you choose as your enemy, because that's who you become most like".

Despite Microsoft's championing of the Mac in its early days, and excellent software ever since (except Word 6, of course), Gates gets it in the neck quite unfairly from most Mac fans. It's about time we gave up this Bill bashing – after all, it was he who advised Apple to license the Mac OS. It's not his fault that Apple was then run by a bunch of un-Bill-like bozos.

Even if Bill is "the company's mascot – a sort of high-tech Colonel Saunders", remember the legion of dead competitors: "Gates wasn't a visionary who saw the future so much as a gambler who bet on every horse entered in the race," writes Rivlin.

Bill vs Steve

"Every age gets the icon it deserves" states Rivlin of Gates. Imagine our age, then, if Steve Jobs was our icon? While Gates binges on burgers, Steve is a vegan. While Gates can't stop making billions, Steve earns just $1 a year as Apple boss and owns just one share – though, he gets 50 times that amount from his other company, Pixar.

It's certainly not the case that Steve was no match for Bill. In fact, the two are probably closer than either would like to admit. The parallels run deep. Bill's hissy fits at incompetent engineers easily match Steve's when it comes to bawling out employees – "motivation through fear-based bullying". It even seems likely that Bill dropped acid around the same time that Steve is alleged to have done so.

The reason our age's icon is Bill, and not Steve, has as much to do with Apple throwing away its advantage as with Microsoft's allegedly illegal business practices. There's been a spate of well-researched books on exactly how Apple lost the plot. And the latest, *Infinite Loop* by Michael S Malone, is a worthy addition to the canon.

Malone sets out to show: "How Apple, the world's most insanely great computer company, went insane". And while most of the madness happened after Steve was fired in 1985, the seeds were certainly sown in his first tempestuous tenure.

The central addition to our learning is Malone's debunking of the great Xerox PARC myth. Legend has it that Steve walked into Xerox's research centre, and – after seeing cool computing innovations, such as the mouse and windows-based graphical user interface – started Apple on the road to the Mac. Truth is, Malone argues, that it was Apple employee Jeff Raskin – author of a 1967 thesis on computer displays based on graphics rather than characters – who took the Lisa development team to PARC *before* Jobs' visit. Before seeing the light, Jobs even described Raskin's Mac project as "the dumbest idea" he'd ever heard of.

After Jobs, there's plenty for Malone to get his teeth into: the Newton, efforts to sell Apple to the highest bidder, PowerPC negotiations, OS flops, financial disasters, three more CEOs to get the boot… Did you know that Apple had the chance to buy Compaq for just $100 million in 1984? That Jobs and Wozniak invented the seminal computer game Breakout at Atari?

Unlike the earlier books, Malone manages to squeeze in the story's happy ending, with the successful launch of the iMac and first quarterly profit – making this book the definitive history of Apple to date (even if that date's October 1998).

Infinite Loop is highly entertaining reading. The titular Loop is Apple's Cupertino HQ's address, but it might just as well be Steve's corporate return to save his creation from a fairly certain death.

Despite all the dollars, and damnation, Bill and Steve are still affecting our lives – often to a greater extent than our elected politicians. Reading these two books gives us a far richer understanding of how we all got to where we are today – and that the ride to tomorrow will be paved with viciousness, victories, and victims.

Simon Jary

Win

One of four copies of each book with Macworld Jackpot. Ring 0900 1010 260 before December 30, 1999. Calls cost 60 pence per minute.

Vital Mac-fixer

Norton Utilities 5.0

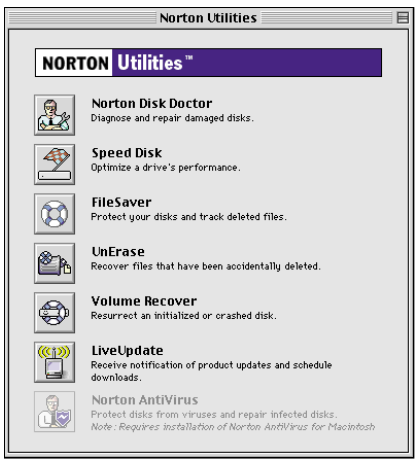
Publisher: Symantec
www.symantec.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Comprehensive suite of disk-repair and maintenance tools; Disk Doctor now handles boot partition; Speed Disk improved; CrashGuard no longer included.
Cons: Not many changes from version 4; Disk Doctor can fail where other utilities succeed.
Price: £99.99; upgrade, £47.50.
Star Rating: ★★★★/7.2

Irrespective of your Mac expertise, there are times when your problem-solving know-how just isn't enough. From the non-stop crashing syndrome, through to the dreaded: "Your hard disk is damaged: reformat?"-style message. So, a good commercial disk utility is a must. Until recently, Norton Utilities was the only choice, courtesy of its comprehensive suite of tools. But, Alsoft's Disk Warrior has certainly made inroads into Norton's domain. Symantec has continued beavering away in the background, resulting in version 5.0 of the evergreen product.

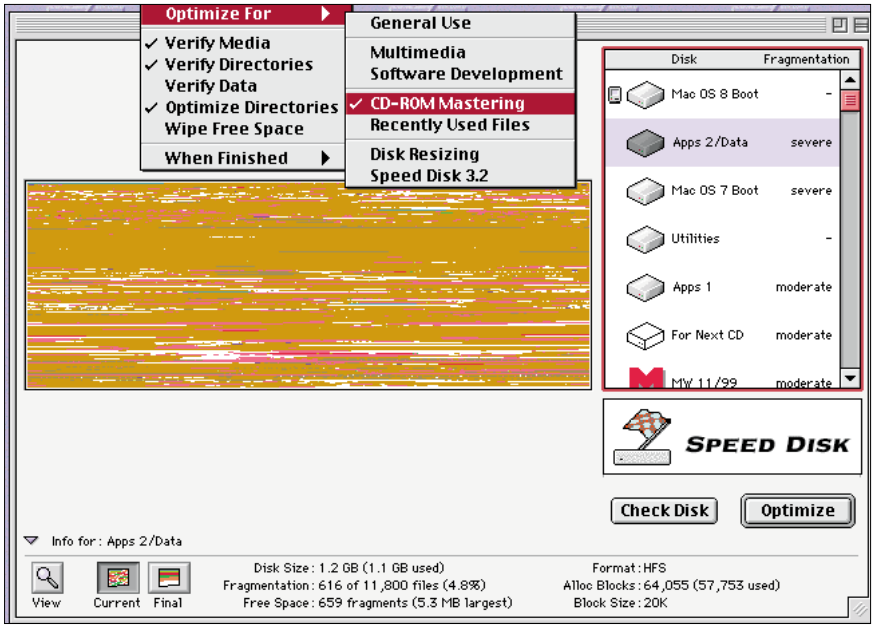
First off, LiveUpdate has been included. This is the same as the new feature in Norton AntiVirus (see page 70), where Symantec's site is checked for updates, either at the press of a button, or through a scheduling system. Though more useful for virus definitions than software updates, it's a nice addition.

The main Norton screen has been given a minor facelift, and now allows you to launch Norton AntiVirus. Aside from that, the look-&-feel are about the same. Similarly, some of the tools remain essentially unchanged.

One major change has been made to Disk Doctor – the most important part of Norton Utilities. With LiveRepair, you can now fix problems with your startup partition – even if Disk Doctor is running from there. Prior to this, the procedure was to boot from the Norton CD, run the program, select the partition, and repair. LiveRepair has the additional advantage of letting you run the latest version of Norton from hard disk, rather than an outdated one on the CD. A second addition is the "undo last fixes" facility. Oddly, the otherwise excellent manual doesn't appear to mention this at all – and it's difficult to think of a situation where such a feature would be useful. In tests, Disk Doctor handled most hard-disk problems thrown at it, but failed on two occasions where Disk Warrior succeeded.



A new look
Norton's launcher has a fresh interface.



New features
Speed Disk is virtually identical to its predecessor, but now includes a number of optimization options.

Speed Disk has also had a major improvement – it now optimizes the disk's directory structures (B-trees). This results in faster directory scanning and file access. Unfortunately, it still can't defragment the startup disk, but, retains the ability to optimize disks that have very little free space. Also, it now offers a number of optimization choices, including CD-ROM mastering and Multimedia. Also, speed of operation appears to be marginally faster.

System Info, Norton's testing program, puts your Mac's system and hard disk through their paces. It now has comparative statistics for all machines up to the Power Mac G3 450. However, it still fails to give real-world results due to the insistence of a 128K disk-cache – rather than the recommended 32K per 1MB of RAM – and a display running in 256 colours. Odd results can certainly arise with such settings.

Three of the tools are closely linked: FileSaver, Volume Recover and UnErase. FileSaver, keeps track of the files on each partition, scanning every so often – according to the time frequency set up in the control panel – and backing up each directory. This is essential for recovering a crashed disk with Volume Recover, or finding a deleted file – or folder full of files with UnErase. In testing, Volume Recover recreated a trashed partition perfectly. Again, though, no real changes here.

That leaves Fast Find, Disklight and Norton Disk Editor, all of which remain unchanged. But, Norton CrashGuard – probably responsible for more crashes than it prevented – has gone.

Norton Utilities is now sold as suitable only for Power Macs. Interestingly, only UnErase is PowerPC-specific, all other components being FAT applications. Similarly, only operating systems beyond Mac OS 8.0 are now supported – but not Mac OS 9.

Macworld's buying advice

Are there really sufficient improvements to warrant a jump from version 4 to 5? While realizing the commercial implications of doing this – more people will upgrade when a full numerical step has taken place than if, say, a half step – surely more should be expected than a bit of a facelift. Only a few new features worth mentioning?

Without a doubt, Norton Utilities is the most complete suite of disk-repair, and maintenance tools around. But unless you need any of the new features, I can't recommend upgrading.

Vic Lennard

Win

... One of five copies of Norton Utilities with Macworld Jackpot. Ring 0900 1010 261 before December 30. Calls cost 60 pence per minute.

Virus-protection tools

Virex 6.0

Publisher: Network Associates (01753 827 500)
www.nai.com
Pros: New electronic updating feature; redesigned scheduler; more modern-looking interface; invisible in use.
Cons: Slow first scans with some archives.
Price: £43
Star Rating: ★★★★/7.1

Norton AntiVirius 6.0

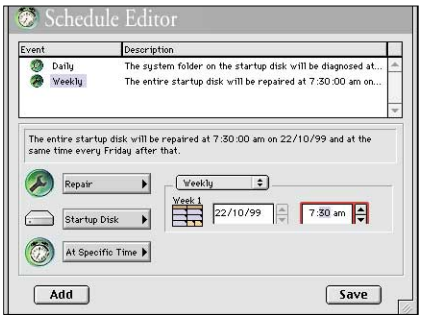
Publisher: Symantec
www.symantec.com
Distributor: Computers Unlimited (0208 358 5857)
Pros: Integration with Norton Utilities 5; LiveUpdate now works properly; fast scanning of all archives; can repair boot blocks after worm infection.
Cons: Invasive operation; now PowerPC only.
Price: £30.50
Star Rating: ★★★★/7.3

Without a doubt, a commercial antivirus program is second in importance only to a good disk maintenance and repair product. In fact, some would argue its the other way round. In this area, the Mac market comes down to two main protagonists: Virex and Norton AntiVirus (NAV). In the previous *Macworld* head-to-head, back in April, Norton just held the edge – but is this still true?

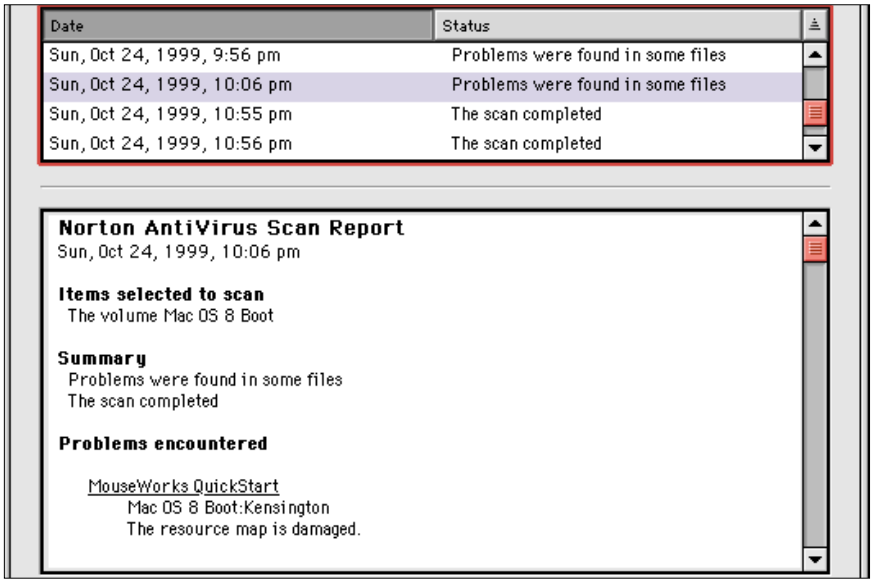
While Norton Utilities and NAV have almost always been offered as a bundle, as well as individually, the latter is now integrated into Utilities: if you own both of them, NAV can be launched from Utilities' main screen.

Intrusive

In terms of operation, NAV is rather invasive due to its Auto-Protect system extension. Working in the background, any virus-like activity throws up a dialogue warning of its action. While the trigger for this can be adjusted in the preferences,



Right on time
Virex's redesigned scheduler allows a series of events to be set up, including repairs and diagnostics.



You're history
NAV builds up an on-board library of scans, including a list of the problems found, and the remedial work carried out.

including the likes of 'modify startup documents', 'create/modify application' and 'format without dialogue' – it's essential to keep this turned on – the whole ethos of learning acceptable actions, and building up the Exceptions List, is intrusive.

Virex has an updated user interface – but it only looks nicer, rather than being more functional. It also has a different approach to scanning for viruses, working solely in the background, without any user intervention.

This latest version of NAV can repair boot-block damage, caused by AutoStart worms, and now keeps an on-board history file of previous scans.

While the previous incarnation sported LiveUpdate for the speedy downloading of virus definitions and software updates, quick it wasn't. Norton has put this right – logging on to the Web site and downloading the 827K file took just 100 seconds.

Same ol', same ol'

Virex has only two changes – but very important ones. eUpdate is comparable to Norton's LiveUpdate, and brings the latest virus-definitions file to your Mac posthaste. The 1,292K file downloaded in around 170 seconds, a similar speed to its competitor. Equally important is the redesigned scheduler, where you can choose to diagnose, or repair, specific partitions at start up, before shutdown, or at a chosen time or interval. It's certainly easier to work with, and more comprehensive than its predecessor – and pretty well on a par with NAV's equivalent.

The scan speed for virus checkers is important – especially the speed of rescan as this tends to be carried out on daily basis. Each writes a cache file of about the same size to a scanned partition for rescan purposes – Norton AntiVirus calls this 'QuickScan', Virex calls it 'SpeedScan'.

Using a 450MB Mac OS 8.1 boot disk, NAV cleared it in 535 seconds, while Virex took a woefully unimpressive 907 seconds. This is odd, as Virex certainly had the edge in speed previously – and rescans took 45 and 44 seconds respectively. The problem appears to be the speed of scanning of the 3,000-odd files in the MRJ Libraries' zip archives, in the Extensions folder. Carrying out a speed test on a 550MB partition, containing around 2,000 files, and StuffIt archives only, gave scan/rescan results of 47/8 seconds for Virex, and 81/7 seconds for NAV. Given the closeness in rescan times, there's little to choose here.

Macworld's buying advice

The similarity between Virex and NAV is uncanny. Each uses a trial-and-error approach to detecting new viruses. Both scan a variety of archives, and can check files downloaded from the Internet. They also have viable electronic updating systems and decent schedulers.

So, how do you choose between them? First off, if you're running a pre-PowerPC Mac, you don't have a choice – NAV is PowerPC-only. Second, if you already own one of them, there's no reason to change to the other. Pay the upgrade and be assured of future protection. If you're looking to buy new, and don't own any Norton products, go for the Utilities/NAV bundle – the integration is useful.

Ultimately, if you find the invasive nature of NAV to be unacceptable, plump for Virex.

Vic Lennard

Win

... One of five copies of Virex and Antivirus with Macworld Jackpot. Ring 0900 1010 262/263 respectivley before December 30. Calls cost 60 pence per minute.

Movie-effects software

RotoDV

Publisher: Digital Origin
www.digitalorigin.com
Pros: Speedy RAM previews.
Cons: Clumsy interface; frequent crashes; lacks third-party plug-in support.
Price: £399
Star Rating: ★★★★/8.4

Rotoscoping is the process of painting on the individual frames of a movie, to create special effects or animation. In the digital realm, you can rotoscope with programs such as Puffin Designs' Commotion, Strata's MediaPaint, or Digital Origin's new RotoDV.

But, although RotoDV provides a good set of tools for basic video editing – adding effects, creating stylized video, and removing unwanted elements – for professional-level work it can't compare with the high-end Commotion or MediaPaint.

You begin working in RotoDV by importing your source-video clips. Movies appear in the Timeline window as a Media Stack. As with the Layers palette in Adobe Photoshop, you arrange video clips in the Media Stack for simple compositing. RotoDV keeps the frames in RAM, for real-time playback – essential for determining if a painting effect has worked. This feature requires at least 128MB of RAM, and enough disk storage for the cache files.

Hard on the eyes
RotoDV's palette-heavy interface includes controls for customizing your brushes.

The Media Stack can also contain any number of paint layers. This makes it easy to keep individual painting effects separate, and editable – and your rotoscoping won't affect the source video. However, you can rearrange layers only with the Move Forward, and Move Backward commands – dragging layers up, or down, in the palette would be a much better solution.

RotoDV includes the usual brush, airbrush, and pencil tools for painting. These are augmented by some natural-media tools, and simple effects-brushes for creating sparkles, fire, and more. You can use the tools to paint a frame at a time, or, you can use the program's Record function to paint across your movie as it plays.

But, RotoDV's best paint tool may be its Clone feature. You can clone from one part of a frame to another, from previous or later frames, and from one layer to another, making it simple to add elements from a stock footage clip.

Unfortunately, RotoDV's painting tools are hampered by a palette-heavy interface: it has four palettes – Brush, Brush Options, Dab, and Dab Options – just for the brush properties and performance. Neither can you dock and group tabbed palettes.

If you want composite layers using transfer modes, or alpha-channel information, you have to create a Blend Stack – a separate collection of layers that sits above the Media Stack in the Timeline window. You use the Blend Stack's controls to select layers – from the Media Stack – that will be blended, and the transfer modes that will be used. Unfortunately, the Blend Stack takes priority over the Media Stack in the final output; setting transfer-mode information for each layer in the Media Stack would be more intuitive.

Besides interface problems, RotoDV has stability troubles. Even with a set of basic extensions, the program frequently crashed when we imported footage, or, used the keying features. And, while it supports QuickTime effects, the program lacks support for third-party plug-ins.

Macworld's buying advice

RotoDV's best feature is its price. The program offers a reasonable amount of Rotoscoping, but with a clumsy interface. For serious rotoscoping work you'll still need a high-end package, such as Commotion. Although RotoDV's paint and effects tools aren't as flashy as those of Strata's MediaPaint, the program's field-rendering support and its affordable price make it a decent production tool.

Ben Long

GCSE-revision aid

Poetry for All

Publisher: Europress (0800 454 330)
www.europress.co.uk
Pros: Simple to use and understand; varied selection of verse.
Cons: More poems would be nice; no chronological information.
Price: £19.99 inc vat
Star Rating: ★★★/6.5

When *Macworld's* Reviews editor asked me to look at a poetry CD aimed at GCSE students, I wondered if he was dropping a hint about my writing. Yet, despite my scepticism, Poetry for All is actually quite good.

The title's somewhat dull, interface offers several options, including a how-to guide. However, the program is so easy to use, its instructions are unnecessary.

The hills are alive
Twee graphics aside, Poetry for All will be useful for GCSE students.

The program proper offers the choices Poetry in a Nutshell or The Character of Poetry. Both categories are simple, informative, and packed with hints about style – complete with spoken examples of poems to illustrate most points.

There were a few things that niggled, though. For starters, there are simply not enough poems – and some glaring omissions. There is, for example, no place for any verse by Keats or Shelley: the only romantic poet covered is Wordsworth. It does, though, have plenty of Shakespeare, which my teachers always insisted went down well with examiners. There are also some nice poems from writers such as Lewis Carroll and Robert Burns.

However, it makes no attempt to put the poems into any kind of historical, or cultural context – even the war poetry.

I took my GCSEs quite a few years ago, but I remember needing some awareness of the background of the poems, and poets.

Also, the interface, with its pictures of autumnal trees, could put the most hyperactive teenager to sleep.

Yet despite these flaws, Poetry for All is worth its £20 price tag.

Macworld's buying advice

If you, or your children, are gearing up for GCSEs, Poetry for All will be a useful addition to any revision program. Unlike other GCSE revision aids I've seen, this will be of no use to those studying A levels or higher. This is a shame, because it wouldn't take much tweaking to turn Poetry for All into a powerful research tool – even for undergraduates.

Woody 'Wordsworth' Phillips

Excellent flight-sim

Fly!

Publishers: Take 2 Interactive **www.take2games.com**
Gathering Developer **www.godgames.com**
Distributor: Softline (01372 726 333)
Pros: Impressive graphics; realistic maps and scenery; easy to get into; excellent 300-page manual.
Cons: Problems with Rage Pro chip-set; requires a G3, G4, or iMac with at least 400MB free disk space.
Price: £34
Star Rating: ★★★★/8.4

Up, up and away
Fly! boasts sumptuous graphics and the most accurate mapping ever seen on a Mac flight sim.The realism and options will keep you entertained for ages.

If you've been searching for a Mac flight sim, you've probably found just one – Microsoft's Flight Simulator. Until now, that is. Terminal Reality's Fly! has just landed on the shelves and appears to be the business. Perhaps not surprisingly, Terminal Reality's president, Mark Randel, was part of the team that designed and programmed Flight Simulator.

You get to choose from five aircraft – including the dual-propeller Piper Navajo and the plush Cessna Citation X jet. You can also visit five US cities – shown in ultra-high detail, courtesy of satellite data – including Los Angeles and New York.

The programmers have gone to extraordinary lengths to model the world with absolute accuracy – three CDs-worth to be precise. You could try to fly around the world, though you'd end up in the drink sooner or later, through lack of fuel – detail like this takes a serious amount of data.

The attention to detail doesn't end here. Inside each cockpit, you find every button, switch, lever and control from the real thing – and all are fully functional.
As the cursor moves over an item, a pop-up box tells you what it is. In a similar vein, the physics model used in flight is extremely realistic. Fortunately, beginners can limit the level of realism – for instance, deactivating Detect Collisions allows you to fly straight through buildings.

Learning to fly

Fly Now is a great starting point for novices – just select from the list of 24 scenarios and you're there, flying. A swift press of the C key brings up the external camera, from where you can watch the plane react to your joystick – or cursor keys, if you're a true masochist. Once comfortable in flight, you can move on to Flight Planner, where aircraft and weather settings can be significantly customized, and you literally 'plan' your journey from departure to arrival. Then there's the multi-player option, where you can cruise on a network, or over the Internet.

Macworld's buying advice

Fly! is a stunner graphically, though there is a problem with the Rage Pro chip-set that prevents the horizon fogging from showing correctly – a real shame, as this certainly spoils the effect. Terminal Reality is working on a fix for this, and is releasing a series of beta patches that also increase Fly!'s features. They are freely available from its Web site.

With add-on maps to follow – hopefully some of cities outside the US – Fly! could well end up being known as the ultimate flight sim.
Vic Lennard

First person blood-fest

Quake II

Publisher: id software
www.id-software.co.at
Distributor: Softline (01372 726 333)
Pros: Improved graphics; networkable fun.
Cons: Brainless; too similar to original.
Price: £34
Star Rating: ★★★★/7.3

Flamin' 'ell
Quake II is a bit of a disapointment – it just doesn't offer enough.

I must be getting old; killing things in a mindless blood-fest is getting a little boring. I enjoyed the original Quake and the other hack-and-slash games. However, Quake II just didn't inspire me to new levels of blood-lust. I have all the right gear to get the game running to optimum speed – a 400MHz Power Mac G3 with 256MB of RAM, together with an ATI graphics card. But, I didn't find it super-fast.

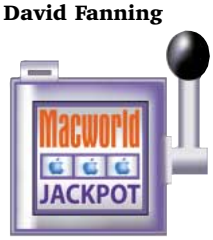
The graphics are smooth and fairly detailed, but not breathtaking. There are a few amusing new features – such as dead bodies attracting flies. Also, when you shoot somebody, you need to be careful, because sometimes they get a final shot off.
The accelerated graphics-card allows for better water effects, but little in the way of reflections or smoke-haze effects.

If you load the game onto your hard drive, you get some impressively animated cut-scenes, that go some way towards explaining the story. I may have missed some subtle nuances, but, the crux of it is that you land on an alien planet and kill anything that moves.

The network games are a hoot. There are hours of fun to be had nuking your neighbours and killing your friends.

Macworld's buying advice

Hard-core gamers will probably buy this, regardless of my opinion. However, more discerning gamers may want to wait for Unreal Tournament for a finer example of the genre. Quake II works as you would expect – but it it should offer more.
David Fanning



Win
... One of four copies of Quake II with Macworld Jackpot. Ring 0900 1010 264 before December 30. Calls cost 60 pence per minute.

DV times

Internet access and movie-making made easy with Apple's new family of iMacs. By Simon Jary

The day after we shipped the original iMac, we started working on this product". So spake Apple CEO Steve Jobs when he unveiled the latest generation of consumer desktops in October. "I'm in love with the new iMac – it's the finest product Apple has ever created," Jobs added. So, is the current crop of iMacs really the ultimate vision of Apple's personal computer for the rest of us? Or are they just faster, better-equipped iMacs?

An iMac is still an iMac

Whenever computer manufacturers update or cut the price of a current product, existing owners cry foul. Early iMac owners will be jealous of the new consumer crew, but must remember that their old machine will still do all the things that it promised to do when they bought it.

It was only last September (1998) that the first iMacs hit the UK. Then, the 233MHz G3 iMacs seemed perfect for Internet access, low-level office applications, and games. It still is. The 56Kbps modem hasn't changed in the new iMacs. What was ClarisWorks is now AppleWorks, but functionality remains the same. And the bundled games are pretty much the same. And, of course, the iMac still uses the Mac OS – by the time you read this, it should be running the very latest Mac OS 9 (see feature, page 99).

There's the same sharp built-in 15-inch shadow-mask CRT monitor. The keyboard and mouse are unchanged. You network in exactly the same way, with the iMac's built-in 10/100Base-T ethernet. And there's still two USB ports for adding input devices (keyboard, mouse) and other peripherals (printer, scanner, etc) – although the new iMacs use USB more effeciently, as I'll explain later.

So, what's new?

More oomph The new standard iMac is now a lot faster: with its 350MHz G3 processor, the new entry-level iMac beats the original by about 80 per cent but is just 8 per cent faster than the previous 333MHz models. The new advanced iMac DV and iMac DV SE (Special Edition) run even faster, at 400MHz. That's over twice as fast as the original iMac; 16 per cent faster than the old 333MHz models; and 12 per cent quicker than the new entry-level iMac.

That said, if you use your iMac mainly for Internet access and office apps (word processing, spreadsheets, etc), all that extra speed doesn't make much difference. A faster chip doesn't help you when the Internet drags – the modem's the bottleneck. And do you really think that a faster computer will make you type or write faster?

Less dosh Even if speed was the only difference – and it isn't by a long way – then the fact that the new standard model costs just £799 (inc. VAT) should be celebrated. Remember, the original iMac cost £999 a year ago.

Va-va Video

For £999 today, you can afford the iMac DV. This is where Apple really starts thinking different. The DV stands for Digital Video, which Apple expects to be "the next big thing". iMovie – based on the company's professional £699 Final Cut Pro video-editing tool, and originally developed by Macromedia – can transfer video in DV format from any digital camcorder to the iMac (and back) via newly installed FireWire ports. With iMovie, just about anyone can perform easy "drag-&-drop" editing to rearrange video clips; add special effects like cross-dissolves; add movie titles and rolling credits; and record voice-overs as soundtracks using CDs, AIFF and MP3 files.

"This is going to be very, very big." said Jobs. He may well be right, as digital camcorders are set to be this Christmas' hot home-tech sellers. The iMac DV, with free iMovie (see page 81), is the camcorder's perfect partner.

The key for DV is FireWire, and each iMac DV and DV SE has dual 400Mbps FireWire ports. Apple invented the high-speed connection standard several years ago, but it's only now coming to prominence. FireWire is now an industry standard, and is known by various names: IEEE 1394 is its official title; Sony calls it iLink. You connect your Sony camcorder's iLink cable to your iMac's FireWire port. For more on FireWire, see our feature on page 86.

iMac choices

As you see from our table 'iMac family facts', there's more choice today in buying an iMac than there was a year ago. People who aren't at all interested in the possibilities of making their own home movies or watching DVDs, and aren't that bothered about owning the ultimate speed machine, will fall in love with the bargain-priced entry-level iMac.

Those of us with aspirations above mere camera snaps and feel the need for DVD, will have to decide between the iMac DV and the iMac DV SE. For an extra £200, the SE offers double the pre-installed memory, a 13GB hard drive (3GB more than the DV, 7GB more than the entry-level), and an almost see-through Graphite-coloured shell.

The extra 64MB of RAM would normally cost you about £60. So that's £140 extra on your VISA bill for the added storage space and cool colour. 13GB is a lot of hard disk space, and DV eats gigabytes like rugby players drink beer. But the DV model's 10GB hard drive, however, is no Calista Flockhart.

Colour If I had to choose, I'd decide on colour issues: the DV iMacs come in all five 'fruit' colours (Blueberry, Tangerine, Lime, Strawberry, and Grape); the DV SE is available only in black (transparent grey Graphite, that is). Get colour-co-ordinating.

Yes, choosing an iMac can come down to colour – a notion that would have seemed ridiculous less than a year ago, when computers were available in beige or Bondi Blue only.

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PHOTOGRAPHY BY PETER HOWARD-SMITH

New DV iMacs

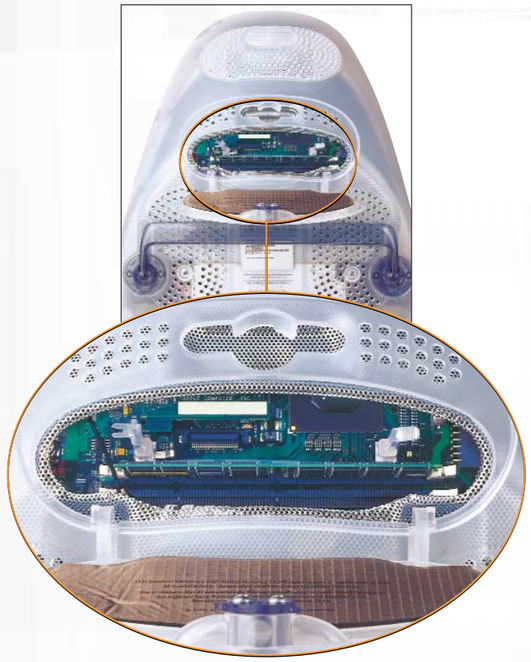
For consumer machines, the new iMac DV and DV SE are super-speedy – just 16 per cent less powerful than the Power Mac G3/450, Apple's most powerful system a mere month ago. Apple could not supply us with the 350MHz non-DV iMac to test; but BYTEMark tests rate the new entry-level iMac about 5 per cent faster than the previous 333MHz iMac, and 12 per cent slower than the 400MHz iMac DV/DV SE.

Best results in test. Shorter bars and shorter times are better.

Mac performance compared:	Processor	Disk	Graphics	Overall Score
Power Mac G3/450	1,466	1,340	3,588	2,131
iMac DV SE	1,003	1,470	2,863	1,779
iMac DV	1,003	1,454	2,863	1,773
iMac 333MHz	923	1,352	2,182	1,486
iBook	833	882	1,845	1,187
iMac 266MHz	801	1,356	1,436	1,198
iMac 233MHz	715	839	1,323	959

Macs in italics no longer available, listed here for comparison purposes.
The iMac DV and DV SE run 400MHz G3 processors; the iBook, a 300MHz G3.

Behind our tests See page 140 for more details on our testing methods.



Back door darling
The iMac used to be a bugger to expand. There's still no PCI slots or SCSI options, but adding memory is no longer a job for the professionals. This nifty new door – its button opened by any large coin – is discreetly placed underneath the iMac and makes installing memory DIMMs a cinch.

Refined design

Computer design is now a major player in the consumer market – although, whatever they tell you, Mac professionals will always go for performance over slick looks. And even the iMac, which started the whole movement, is evolving its shape and ease-of-use body features.

The new iMac has been "refined", to use Apple's terminology. It's an inch shorter than previously, giving you a little extra desk space – but don't expect to notice. It's also a wee bit rounder, most apparent in the front-mounted speakers. This slight makeover subtly changes the iMac's personality. Its face now looks rather morose – think *Hitchhiker's Guide*'s Marvin the Paranoid Android: "I'm just a robot and I know my place/A metal servant to the human race".

Big design difference #1: With the metal casing around the screen's cathode ray tube removed, the iMac's shell is virtually transparent. "It looks like a bubble," said Jobs.

Bubble or not, I'm not convinced on the new see-through case. The fruity colours are slightly milky in appearance, as opposed to the older iMacs' more opaque translucency. Again, it's really up to the individual – and, as the old style is now banished, it's either milky fruit or the tinted see-though Graphite of the SE. The entry-level iMac comes in Blueberry only.

Big design difference #2: Many iMac owners complained that adding extra memory was a real hassle. You had to virtually take the machine to pieces to add a RAM card – a simple enough procedure on any other Mac. Apple clearly didn't want people rummaging around inside its consumer desktop, with the end result that many iMac owners are still cramped by the feeble 32MB of RAM that came with the first iMacs. While that base RAM has now been upped to 64MB (128MB on the DV SE), new iMac owners can now add their own extra RAM with ease – thanks to a discreet door (above) on the iMac's bottom. No jokes, please.

AirPort This is also where you would add an AirPort Card (£79, including VAT) if you want to join Apple's wireless revolution. Yes, nearly all Macs can now enjoy 11Mbps wireless ethernet networking and Internet browsing without any wires tethering you to the phone line or hub. Up to ten iMacs (iBooks and high-end G4 Power Macs, too) can share a single AirPort Base Station (an extra £239) to connect to the Internet, and can be anywhere within 150 feet of the Base Station. Every connected user can visit different Web sites simultaneously, exchange files, or play the latest network games with

continues page 82

iMac family facts

	Previously	Standard	iMac DV	iMac DV SE
Processor	*333MHz G3*	350MHz G3	400MHz G3	400MHz G3
System bus	*66MHz*	100MHz	100MHz	100MHz
Memory	*32MB*	64MB	64MB	128MB
Hard drive	*6GB*	6GB	10GB	13GB
CD/DVD	*CD-ROM*	CD-ROM	DVD-ROM	DVD-ROM
Cache	*512K*	512K	512K	512K
Video ports	*No*	No	1 port	1 port
FireWire	*No*	No	2 Ports	2 Ports
Price (inc. VAT)	*£915*	£799	£999	£1,199
Colour	*Rainbow **	Blueberry	Rainbow **	Graphite
Star Rating		★★★★★/9.1	★★★★★/9.2	★★★★★/9.0

* Rainbow comprises Blueberry, Grape, Tangerine, Lime, and Strawberry.
** New see-through plastics.

Entry-level video editor is limited, but free!

iMovie

Publisher: Apple Computer
Pros: Simple enough for anyone to use; it's free to iMac DV buyers.
Cons: You may well hit the limits of its functionality the first time you use it.
Price: Free with iMac DV and DV SE.
Star Rating: ★★★★/7.4

Above: Even a dog can do it
Each clip you capture is put in the palette on the top right. Simply drag the icons down to the time-line at the bottom, and that's it. If you want to get more adventurous you can add some transitions from the pop-up palette (bottom right).

Apple has created a severely slimmed down version of Final Cut Pro for the DV iMacs, and called it iMovie. This entry-level video-editing application is almost childishly simple and makes movie-making something that even Prince Edward could do. Whether you are 9 or 99, iMovie is accessible to everyone. And that is what makes it so great. Its capabilities are very limited, but anybody can use it without resorting to a manual.

To use iMovie you must first start with some moving pictures – and this is the important part. You need to have a DV video camera – that is, a camera with a FireWire port. There are many around, but they do cost more that the average camera.

If the finished movie is intended to go on the Web or CD, then you need get only a basic DV video camera (prices start at around £700). If, however, you plan to run off multiple VHS or even DV copies, you will need to spend a little extra on the camera. The reason for this is down to those European bureaucrats: any video camera that can record from an external source – such as a TV tuner or computer – is subject to an additional 5 per cent tax. It is considered a video recorder, rather than a camera. This is ridiculous, yet the major camera manufacturers, at least initially, decided to sell cameras with DV-out but not DV-in. Their opinion was that people would not pay more for this feature, so they didn't offer it.

Out and proud

You can now buy DV cameras with the DV in and out, but they are still a little more expensive (prices start at £1,200). If you already have a camera with DV-out only, there are ways around this problem. The fact that the camera is digital means it can be reprogrammed – and you can turn on the DV-out option with some fiddling. There are companies that offer this service; around £50 seems to be the going rate. In theory, you can even change a PAL (UK standard) camera to record to NTSC (US standard) if you wanted to.

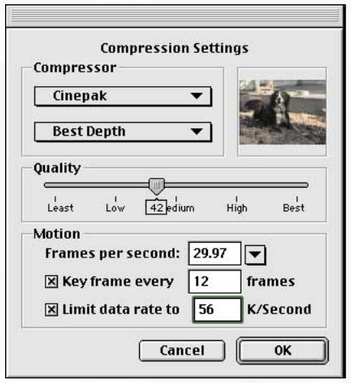
Assuming you have the correct camera, the rest is simple. First go and record some action: birthday party antics, grandpa pulling faces, friends pursued by a witch in your local forest… whatever. Then plug the camera in to the iMac using a FireWire cable (not supplied; £35 extra, if not with camera).

Start up iMovie. There are drivers for most popular cameras, so you can control the camera with your mouse. No need to choose the driver; if it is there it will just work. Fast forward your movie to the exciting bit, and set it to play. When the scene you want appears, hit the capture key. When it is over, hit the key again to stop it.

Do this for each scene of your masterpiece, and they will appear in iMovie as a palette of clips. Drag these clips to the time-line. If you don't want to add any effects or titling, you can play back the movie instantly. If you want to get fancy, there is a selection of transitions and wipes to go from scene to scene. There are enough options to be helpful, without encouraging an effects overload. Anybody who was paying attention during the desktop publishing revolution, will remember the overload of fonts and styles found on many home-grown publications. iMovie curtails such bad taste by offering only basic tools.

Adding titles is also simplicity itself. Choose a style, and type in what you want. You can scroll or zoom the titles, though I was disappointed to find that super *Crossroads*-style credits are beyond the capabilities of Apple's iMovie. It is equally simple to add sound effects and music to your movie.

Once your masterpiece is finished, you need to wait for the transitions to render. Then you are ready for output. The most complex part of the whole application is exporting the finished movie. There are some basic options – such as small for email, small for Web or CD-ROM, etc. There are also expert settings that utilize QuickTime options for compression, data rate and colour depth.



First compressions
Saving the movie is simple, but if you want to you can have complete control over every aspect of compression.

If you are lucky enough to have a DV camera with DV-in, you can simply output the raw DV signal to tape. This gives you a high-quality movie that can then be output from your camera to VHS, or any other video format.

Macworld's movie advice

iMovie offers a great but simple solution for video editing. It's a bit like SimpleText for movies. There is actually quite a lot of the functionality of iMovie in QuickTime 4 Pro – but it is not so obvious, or simple, to use. Ease of use is key to its appeal, but I expect it will spur users on to more ambitious projects – step up to iMovie's big brother Final Cut Pro (£699). But, for a free piece of iMac software, iMovie is unbeatable. Roll 'em.

David Fanning

each other – without getting tangled up in a snakepit of wires. With AirPort, you can put your new iMac wherever you want, a promise no other non-Mac PC can truly make. The future of the Internet has definitely arrived. For more details on AirPort, see *Macworld*, September 1999).

CD/DVD

Easier to applaud than the 'refined' case colours are the new CD/DVD drives – see photo, below. Is the DVD-ROM drive an improvement on the CD? Yes, the DVD-ROM drive is compatible with CDs, and it's more future-proof. More and more games will be coming out on DVD, which carries nearly seven times more data than a CD. And, via software, the DVD drive can play movies on your iMac. However, if watching movies is your aim, you're better off buying a £200 DVD player for your TV – bigger screen, remote control, comfier chairs.

Sound and silence

Apple's refinement means 'less' as well – less noise. The iMac was no foghorn, but, like most PCs, it did add to a room's ambient noise levels. Most of the racket comes from the computer's internal fan, which keeps all the PC's hot bits cool. Apple engineers have been clever enough to remove the need for a fan in all the new iMacs. As a result, the iMac is now the quietest computer on the block. The last Mac to have no fan was the original, back in 1984. The reason? It was so slow (its 68000 chip running at 8MHz!) that none of its bits got hot enough to warrant a fan.

"We've made the iMac beautiful to look at, and now we want to make them beautiful sounding," said Jobs when he launched the new range. He wasn't just referring to the virtual silence of the machines.

A new hi-fi audio system has been designed in collaboration with audio specialists, Harman Kardon. This month, Harman Kardon is to go even further, introducing the £70 USB-based iSub – a futuristic, transparent subwoofer, designed to work exclusively on Macs. Its Odyssey sound system uses Spataliser technology to provide "true 3D sound". There are also two headphone jacks in front of the new iMacs. The new iMacs sound noticeably better: sharper and fuller.

iBoosts aplenty

Graphic equalizer Like the Power Macs, all the new iMacs feature an 8MB AGP 2x Rage 128 VR 2D/3D high-end graphics accelerator chip, making gaming and graphics-heavy applications faster, and possibly richer.

Link think USB is the principal connection standard, linking your mouse and keyboard as well as your printer, Zip drive, and scanner, etc. Like the original, all the new iMacs boast two USB ports. Only now each port is independent of the other, making the connections much faster. Previously, the two USB connections shared a single USB controller. As mentioned earlier, the iMac DV and DV SE

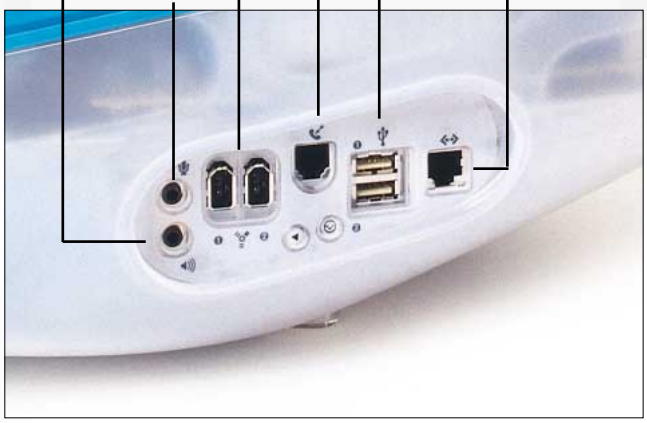
continues page 85

CD and DVD poppers

When the iMac came out I told iMac-designer Jonathan Ive that my nephew Jack would surely smash the flimsy CD tray. His face dropped only a little: "It's tougher than it looks," he claimed. He hadn't met Jack.

Well, now the old tray is history, and my sister and brother-in-law can rest easy – Jack would have to work a lot harder to break this drive. The new drive (CD-ROM on the entry-level, DVD-ROM on the DV and DV SE) is a slot-load, like you find in many in-car CD systems. This is a real design boost. Bingo! The iMac just got a whole lot better.

"No more fingerprints on the laser lens, no more toast in your drive," quipped Steve Jobs. He hadn't met Jack, either, but you'll just love this new drive. Slide your disc in, and, when you're finished, it pops out again. No tray, no fray.



iHardware: 10 things you might want to add to your iMac

While the iMac comes with all the software you need to access and browse the Internet, run a small office, design Web sites, organize your life, play games, and even make movies (with the DV and DV SE models), there are plenty of add-ons available to make your new desktop computer even more useful. Here's ten pieces of hardware you might want:

1 Printer Unless you're so wired that you do absolutely everything online, you'll need a printer. If you plan to print mainly letters and text-heavy documents, try Epson's iMac-styled £149 Stylus Color 740i, or the A3-sized £170 BJC-6100 from Canon (08121 680 8062). If it's pictures you're printing, consider the £232 Stylus Photo 750 from Epson (0800 289 622), or the £279 DeskJet 970cxi Pro from Hewlett-Packard (0990 474 747).

2 Faster Internet access All the new iMacs boast the fastest possible 56Kbps internal modem – but even that gets tired handling bloated Web sites, or heavy downloads. If you feel a real need for speed, you'll want dual-channel ISDN access – offering 128Kbps links. There are several options (see our feature 'Channel hopping', *Macworld*, November 1999), but the best buys are still Hermstedt's £159 WebShuttle (0171 421 1500) and Zoom's £179 ISDN MX/S (0870 760 0060).

3 USB hub With the printer and scanner attached, you may well find yourself short of USB ports to add some of the extra peripherals mentioned here. Hubs offer you up to seven extra ports to link USB devices; or more hubs – USB can handle a maximum of 127 connections, though you're unlikely to need *that* many. Most hubs come in matching iMac colours, although newer Graphite tones might be harder to come across to start with. Prices start at a very reasonable £35. Or check out the £129 three-port iDock from New Motion that is also a swivel stand and PC Serial-port converter. See our round-up of hubs in *Macworld*, October 1999.

4 Digital camcorder If you're interested in the DV or DV SE iMacs, you'll soon want to sit in the director's chair with iMovie, bundled free with these machines. Prices start at £700 for the Digital HandyCam from Sony, but £1,200 for the Sony PC-100 will get you DV-out as well as DV-in. See iMovie review (page 81) for more details.

5 Scanner It's not as essential as a printer, but pretty much everyone buying a computer these days, gets a scanner for inputting documents and pictures. Check out our review (page 73) of the new slim-line CanoScan FB 636U, £99 from Canon (0121 680 8062). It has a healthy 600dpi resolution, and is the thinnest flatbed scanner ever made.

6 Removable storage The iMac famously has no floppy drive. Floppies were good for transferring very small documents (up to 1.4MB) between computers, but that is now the job of email attachments. (If you really must, you can still buy USB external floppy drives, from £59.) There are several options for transferring larger documents. Iomega makes USB-friendly models of its 100MB/250MB Zip and 2GB Jaz drives that use disks (£7/£13 and £60, respectively) a bit like giant floppies. Zip and Jaz drives are fairly common these days on both Mac and Windows PCs, but you must make sure that the person you want to exchange big files with has the same type of removable-disk drive as you. A better option is a CD recorder, particularly a rewritable CD recorder (USB models start at £229). Every computer these days has a CD drive, so everyone will be able to read your discs. But, you don't have to keep asking for your discs backs – as you do with Zips, etc – as they cost only about £1 each. For £5 you can use rewritable media. As they are rewritable, you can re-use them again and again.

7 Digital camera Give Boots the boot by investing in a digital camera. They're still expensive, but prices have tumbled over the last couple of years. And, just as importantly, quality has increased a great deal, too. If you need a camera only for Web publishing, any low-resolution model will do. If you want a much higher resolution for printing A4 photographic images on your printer, splash out £599 for the 2.3-megapixel MX-2700 from FujiFilm (0171 586 5900).

8 AirPort It's not quite ready in the UK yet, but, when it arrives, Apple's fantastic wireless technology is going to take off big time. The AirPort Card costs £79, with the Base Station priced at £239 (both prices include VAT). See main feature for more details.

9 FireWire hard disk iMac DV and DV SE owners who find their 10GB and 13GB hard drives a bit snug for their movie making should buy an external hard drive that they can connect to one of the new FireWire ports. Prices for 20GB giants start at £369. See our feature, starting on page 86.

10 More memory The iMacs now come with 64MB of RAM (the DV SE packs 128MB), which is quite enough for most applications, but if you want to use more powerful programs or more than a few at a time, it's likely you'll appreciate more memory. Maximum capacity is 512MB, using 64MB (£59), 128MB (£99), or 256MB (no prices announced at time of going to press) DIMMs. RAM prices fluctuate, and are currently on the rise – so shop around, but don't dither.

also include super-speedy 400Mbps FireWire ports for linking digital camcorders and hard drives. In the future, scanners and other peripherals may be offered via a FireWire link.

See sleep When the new iMacs are in sleep mode (saving electricity when not in use for a certain length of time), the Power button pulses like the iBook's sleep-light indicator.

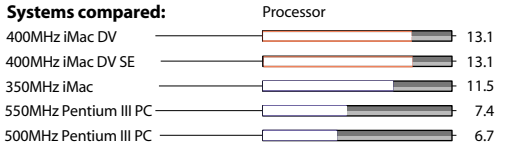
Mac OS 9 At the same time that Steve Jobs unveiled the new iMacs, Apple also announced that Mac OS 9 will be available by the time you read this. Until Mac OS 9 ships, all iMacs ship with OS 8.6 – with a £15 p&p update to OS 9 within 90 days. Probably worth waiting, then.

Macworld's buying advice

If Steve Jobs and Apple have got it right – with desktop video and AirPort wireless networking "the next revolutionary features for home and classroom computing" – the new iMacs are real consumer and educational winners. That growing band of users who want to make their movies easily look professional, or send steaming video over the Internet, should invest in an iMac DV or DV SE right now – or at least when Mac OS 9 is shipping. For the rest, the entry-level iMac is still an amazing computer. If you can live without DVD and FireWire, you're looking at the best Mac bargain ever. And, if you want them, you're still looking at the best Mac bargain ever. If you win, you win, if you lose… you still win. MW

New iMacs vs Windows PCs

How do the new iMacs match up against the Windows opposition? Very well indeed.



Behind the tests These results are BYTEmark integer index processor scores © McGraw-Hill.

Hold your fire

It's been available on Power Macs for nearly a year, but FireWire is still in its infancy. **By Stephan Somogyi**

It was supposed to be one of those Holy Grail technologies, the perfect way – both fast and convenient – to connect external devices to your personal computer. On the PC side, it's known as IEEE-1394; Sony calls it i.Link. But Apple named its cool technology FireWire.

Even though FireWire was officially standardized back in 1995, it has been more a myth than a reality. However, Apple changed all that when the company added two FireWire ports to the back of every blue-&-white Power Mac G3.

Hope blossomed among the many Mac owners who had been eagerly awaiting a SCSI replacement. FireWire was the technology that would put an end to the days of SCSI-termination hassles and ID conflicts that lead to Macs that lock-up, or do nothing but show a blinking question mark.

But FireWire was never positioned as a mere improvement on SCSI: it's also a technology that lets you connect many more devices per chain (63 to be exact; nine times as many as SCSI) and supplies its own power (so that many devices don't need any external power supply).

And then there's speed: FireWire provides a ten-fold increase in bandwidth compared to the built-in Narrow SCSI ports previously found on Power Macs.

Yet nine months after the arrival of the blue-&-white Power Mac G3s, the FireWire universe is still a touch tepid. FireWire devices – such as CD burners, scanners, and hard drives – are only just beginning to appear.

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PHOTOGRAPHY: KEVIN TWOMEY

Like any other technology, FireWire needs time to become prolific, but is this promising new connection gaining momentum or just muddling along?

Light my fire

FireWire is Apple's answer to some of the most annoying and common problems with connecting external devices and getting them to work. Imagine a peripheral-connection scheme that lets you blithely connect a mix of hard drives, CD-R drives, scanners, and digital cameras without worrying about which order they're in – or whether they'll play nicely together at all – on the chain. To anyone who's used external SCSI devices, especially scanners and other miscreants, FireWire is nothing short of a miracle. No longer will anyone have to move devices up and down the chain, with some devices demanding to be at the end and others at the front. With FireWire, it's plug-&-play in the truest sense – plug devices in and they work, at least theoretically.

Hot-swappability is another key FireWire feature: you can connect FireWire devices to and disconnect them from your Mac without shutting down. ID conflicts are a thing of the past, since FireWire devices talk among themselves and sort out which one gets which ID.

A big boost Traditional Narrow SCSI, Apple's original external connection of choice, was first used on the Mac Plus in 1986. This state-of-the-art – for the 1980s – technology had a throughput of only a measly five megabytes per second (MBps). Although there are faster, more expensive versions of SCSI, Narrow SCSI has been the built-in standard against which all comers are measured. Apple's FireWire allows throughput of up to 400 megabits per second (Mbps), which translates to 50MBps – a substantial boost. And an 800Mbps version of FireWire – four times faster than the original 200Mbps rate – is already nearing completion.

Just because FireWire has this tremendous bandwidth available doesn't mean that all FireWire devices will automatically offer such high performance. As with other technologies, the maximum throughput of FireWire doesn't always translate into real-world results.

Today's standard hard drives typically move data back and forth between the computer and the drive at 10 to 15 MBps. So despite the availability of up to 50MBps throughput today, the hard-drive mechanisms – and not FireWire itself – determine the speed of FireWire-connectable hard drives.

Four-alarm Fire Not only is FireWire fast and easy to use but it also supplies power – up to 60W – over its cable. This means that many FireWire devices with smaller power requirements don't need an external power source.

VST's small FireWire drives, for example, contain hard-drive mechanisms that were designed for laptops, and hence have a small appetite for electricity. When you plug the FireWire cable into the drive, you not only establish the data connection to the computer but you also power the drive.

To run one – or two, at most – of these small drives, 60W of power is enough. Sony's take on FireWire, i.Link, omits the power supply from its cables. For this reason, you need a cable adaptor to connect i.Link devices to a Mac.

Building a fire

To help determine the current state of FireWire, Macworld Lab tested a 4GB FireWire hard drive from VST Technologies (**www.vsttech.com**) and found that FireWire's software is definitely still teething.

Not only is Apple's own FireWire system software changing rapidly but the drivers – which form the conduit between the system software and the FireWire hardware device – are also going through a similar evolutionary process. In addition, many FireWire hardware devices contain their own built-in software, known as firmware, that can affect the devices' behaviour and performance.

We compared three software combinations, involving two versions of the Apple FireWire driver software and two versions of the VST driver and firmware, on the same VST hard drive (see the benchmark, "Fire drills"). With the latest Apple software and the most recent VST driver and firmware, the hard drive performed much better than with the software combination that came with the VST drive when it originally became available. Even such simple software upgrades can provide a significant performance increase.

The real world Keep in mind that even with FireWire's flexibility, you must be careful when adding or removing devices. For instance, if you add a hard drive to a chain while you are burning a CD in a FireWire CD burner, you are likely to end up creating a coaster instead of a usable disc. That's because anytime a device is added to or removed from a FireWire chain, all the other devices pause to make sure that their connection is still available. This rechecking of all the connected FireWire devices unavoidably interrupts the CD-creation process.

Today's FireWire on the Mac has other shortcomings that need to be addressed by Apple. For example, you can't currently boot a Macintosh from a FireWire drive, although Apple has promised to offer this ability before the end of the year. In addition, the way Apple's FireWire system software works currently prevents the Finder from displaying the icons of files whose applications are stored on FireWire drives. When reading from and writing to FireWire drives under the Mac OS, the fastest Macs can suffer from unresponsiveness, especially during long file copies. Apple's SCSI system software, though, provides smooth background file transfers.

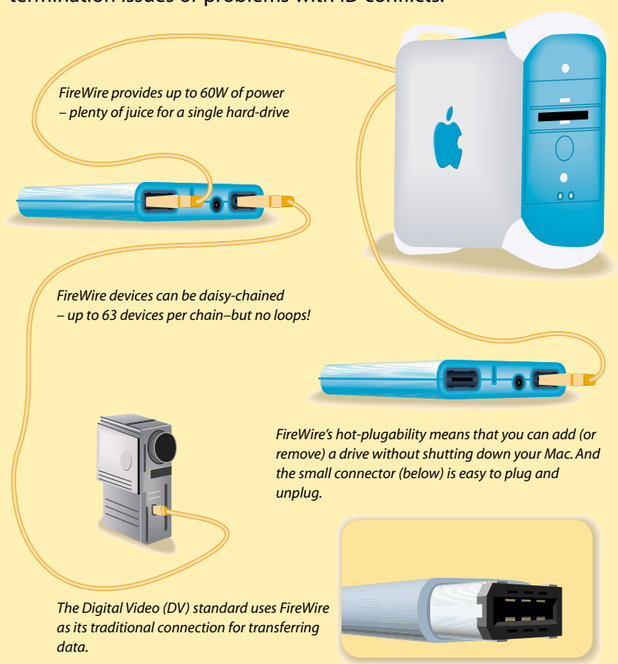
In the hot seat

If FireWire is so wonderful, why isn't it ubiquitous yet? Here's the problem: until there are more computers with FireWire ports,

continues page 90

FireWire at work

FireWire promises hassle-free connections without termination issues or problems with ID conflicts.



FireWire: what's out there?

Although the expected flood of FireWire devices has yet to materialize, there are a number currently available.

The VST range, for instance, includes a full selection of hard drives, Zip drives and a Zip 250 drive. Also, La Cie is offering a 20GB drive and, shortly, its massive 37GB drive will be available for just £749. This is actually cheaper than the SCSI version of the drive.

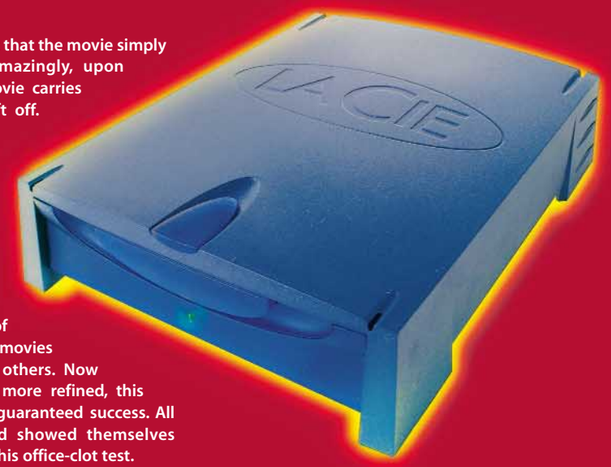
In testing, we found that the drives performed well, though the La Cie model was around 25 per cent quicker than the VST. A disappointing aspect of the test was that FireWire's humongous bandwidth did nothing to make the drives speedier than standard hard drives. The tests were run on a 400MHz G3, using MacBench to test for speed.

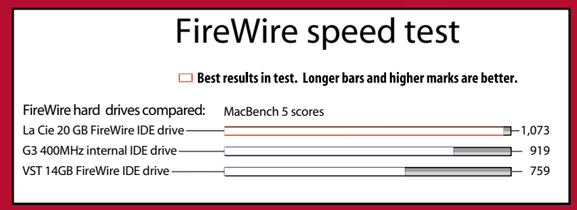
The reason that neither drive came anywhere near saturating the bandwidth is mostly down to the mechanisms used. You can have endless bandwidth, but unless the drive can keep up with the pace, there's little need for it.

Another reason, is that native FireWire drives are yet to appear. All available drives are, in fact, Ultra ATA, with a bridge to FireWire. It isn't clear when totally native FireWire drives will be available – if indeed they ever will. The market is not yet big enough, with only Apple creating the demand.

In his recent keynote addresses, Steve Jobs has done his best to promote FireWire hard drives. His usual trick is to play a QuickTime movie and, halfway through, wrench the cable out of the drive. The result isn't a terrible crash with disk damage, but that the movie simply stalls. Even more amazingly, upon reconnection, the movie carries on from where it left off. Tying to attempt anything like this on a normal drive really would be the height of idiocy.

It's true that early implementations of FireWire hard drives could repeat this trick and get it right most of the time – but some movies worked better than others. Now that the drivers are more refined, this little party trick is a guaranteed success. All the drives we tested showed themselves capable of surviving this office-clot test.





Macworld's buying advice If you need extra storage for your FireWire-ready Mac, then it is often cheaper than SCSI. The new iMac DV offers FireWire with no option for SCSI, so the choice for external storage is limited. There are USB drives available, but these can be painfully slow. At present, FireWire doesn't offer a speed advantage over SCSI, but it does win on cable convenience and hot-swappability.

Down to the FireWire

MANUFACTURER	PRODUCT	STAR RATING	PRICE	CONTACT	TELEPHONE
La Cie	20GB FireWire drive	★★★★/8.2	£365	La Cie	020 7872 8000
La Cie	37GB FireWire drive	★★★★/8.5	£749	La Cie	020 7872 8000
VST	6GB FireWire drive	★★★/6.2	£329	La Cie/Computer 2000	020 7872 8000/01256 868 008
VST	10GB FireWire drive	★★★/6.3	£475	La Cie/Computer 2000	020 7872 8000/01256 868 008
VST	14GB FireWire drive	★★★/6.3	£695	La Cie/Computer 2000	020 7872 8000/01256 868 008

building FireWire devices is prohibitively expensive. Luckily, the paucity of ports will soon be alleviated, with the inclusion of FireWire across the Macintosh product line, not just in the "professional" desktops. Because FireWire is only just arriving on PC motherboards, there are no "native" FireWire storage devices today. All storage devices that use FireWire employ a "bridge chip", so-called because it translates between FireWire and ATA, the mass storage-connection standard used in today's Macs and Windows PCs. But if Windows-based computers offer FireWire, less expensive native-FireWire devices should appear.

Another reason for the slow acceptance of FireWire is the growing popularity of the Universal Serial Bus (USB): many low-bandwidth devices don't need more than the 12Mbps of bandwidth that USB offers (see the diagram, "FireWire speeds ahead").

USB's success means that FireWire will initially become popular only for high-bandwidth applications that simply must have more speed than USB delivers. But don't frown just yet: once it costs less to build FireWire devices, we can expect the number of peripherals to grow rapidly. (See News, page 24).

Although FireWire hasn't been adopted as quickly as Apple would hope, there are interesting technology developments in each of the following categories. And for a detailed list of current FireWire products, see "FireWire: what's out there".

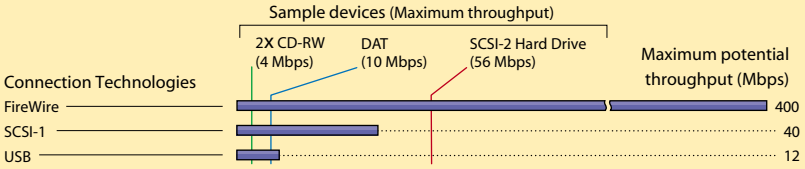
Digital video The Digital Video (DV) standard uses FireWire for connectivity. Typical DV cameras, such as the Canon Elura, can be remote-controlled from a Mac via FireWire, with software such as Apple's Final Cut Pro (see August *Macworld* Reviews, page 45). Such software transfers DV data to disk for later editing.

FireWire has an additional media-specific feature – isochronous transfer – that guarantees that a particular stream of data travelling across the FireWire cable will always have enough bandwidth. This is critical for video and audio applications, because if the available bandwidth drops below a certain threshold, disruptive drop-outs happen.

Storage For hard drives, CD-ROM drives, CD-Recordables – storage is a hot place for FireWire. The Device Bay standard, under development for the Windows OS, is driving many hardware manufacturers – such as VST Technologies, Mactell, Sony, and Indigita – to offer FireWire compatibility. The Mac will benefit as a result. However, until native drives become available, FireWire-to-ATA bridge-chips will be used for mass-storage, including hard drives, DAT drives, and CD/DVD readers and burners. These bridge controllers are still being refined, and performance is improving as new versions of the bridges' firmware are released.

FireWire speeds ahead

As you can see from this chart, many devices simply don't need the speed advantage that FireWire offers over USB. But others – especially fast hard drives – will benefit greatly from FireWire's increased capacity.



PC/PCI cards If you think FireWire is only for owners of new Power Macs, think again. Newer Technology, Racom, and VST Technologies have announced FireWire cards for PowerBooks. These CardBus cards provide greater bandwidth between the card and the computer. Since the PowerBook 3400, Apple's portables have included built-in CardBus support.

Owners of older Macs can also add FireWire to their computers, by purchasing a PCI card from manufacturers such as Orange Micro or Adaptec. One shortcoming of this approach is that some manufacturers, notably VST Technologies, won't support devices running on a Mac unless the Mac came with FireWire already built-in. Currently, there seems to be no way to retrofit FireWire into iMacs, but we expect the next generation of iMacs to have FireWire built in.

Scanners Although there are plenty of inexpensive USB scanners, the USB connection is too slow for frequent high-quality scans. For the best results, you need FireWire, and until now, finding a FireWire scanner was nearly impossible. Thankfully, Umax has unveiled the first scanner for FireWire – the PowerLook F3.

Spreading Like wildfire

FireWire also promises to become a hot ticket in consumer electronics, where it's intended to replace the rat's nest of cables behind today's televisions and stereos. FireWire speakers, DVD players, and amplifiers are coming to a superstore near you over the next year or two. Instead of having your receiver be a home-audio/video cabling hub, you'll be able to simply add FireWire-enabled devices, such as TVs or set-top boxes, to the chain. This is a huge convenience, since each device will have at most two FireWire connections – one going in, and the other going out, to the next device on the chain.

Another clear indicator of this hopeful future is Sony Electronics' forthcoming PlayStation 2, which will have at least one i.Link port built-in.

The Last Word

After a long dormancy period, and many missed opportunities by Apple, FireWire is gaining momentum of its own accord. The current standard is constantly evolving, with 800Mbps and 1,600Mbps versions already well under way. And if the Device Bay standard is adopted widely, FireWire will proliferate through the Wintel world with great speed, making more FireWire peripherals available at lower prices for everyone.

However, what will ultimately happen with FireWire remains a big question. Will this technology on the back of your Mac make the computer easier to use and bring computers and consumer electronics closer together?

Given the recent interest in FireWire from so many directions, we believe that the question for Macintosh users is not whether FireWire will succeed, but whether Apple will be able to keep up with the remarkable technology it created. MW

Displays: look of love

Great deals can be had on 17- and 19-inch monitors. **By David Fanning**

If your work is computer-based, you'd scare yourself if you counted the hours you spend every year in front of a monitor – even discounting your Mac leisure-time. With this in mind, your monitor needs to be your mate.

Here, we take a look at your options when choosing a 17- or 19-inch monitor. There are a number of different technologies used in monitor construction, and each has its own strengths and weaknesses. Size is also an issue: although 17- and 19-inch monitor cases are smaller, our expectations of screen sizes are higher than ever.

Colour fidelity is another consideration. You may not be using these monitors to create colour-critical print documents, but even working with Web graphics requires some indication of colour fidelity.

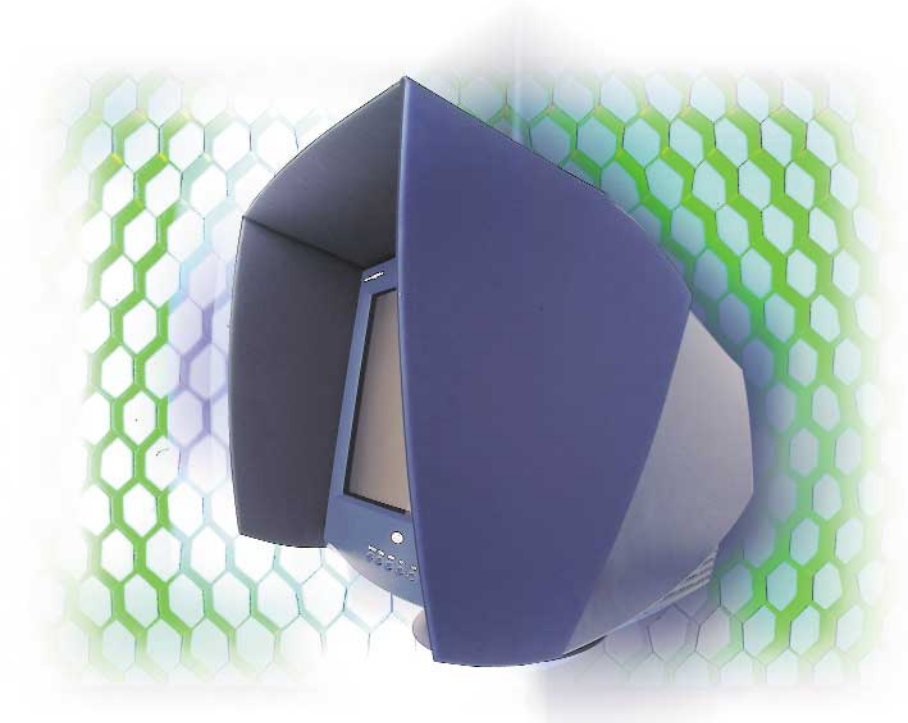
Aesthetics is another factor. The latest Power Macs always look better alongside a colour-co-ordinated monitor.

Whatever your reason for buying a new display, if what you are currently using is more than a couple of years old, most models will be vastly improved.

Screens have become flatter – both horizontally and vertically. Some 19-inch models – from Mitsubishi and La Cie, for example – have perfectly flat glass, which cuts distortion and reflection.

There are, though, still just two screen technologies – aperture-grille and shadow-mask. Aperture-grille (or Trinitron monitors) use a fine vertical grille of wires to define screen pixels. The cathode ray is shot at the phosphor on the back of the glass, through the grille. A similar method is used with a shadow-mask screen, but, instead of a grille, it uses a mesh.

The grille allows more light to pass through it, so the tint in the glass is usually darker than with the aperture method. This means that contrast is better and blacks appear blacker. When the cathode ray is fired through a shadow-mask, more of the light is blocked out. The shadow-mask method gives better colour fidelity because less tint is used – but blacks are not so dark. It's swings and roundabouts, but both are comparable.



If you are looking at monitors in a showroom there are a couple of ways you can tell which method is being used. One of the most noticeable characteristics of aperture-grille is a horizontal band about two thirds of the way down the screen. On larger monitors, there may be an additional one at the top. This is a tension wire that stops the vertical wires from moving around. You will be able to see this wire only when a plain light image is being displayed. It is not a flaw, it is just a feature of aperture-grille monitors. You can't see it most of the time. Most sales people should know this, but if they don't, then why not try for a discount. All's fair in love and shopping.

One of the less attractive features of some aperture-grille monitors is a problem with convergence. It doesn't seem to affect

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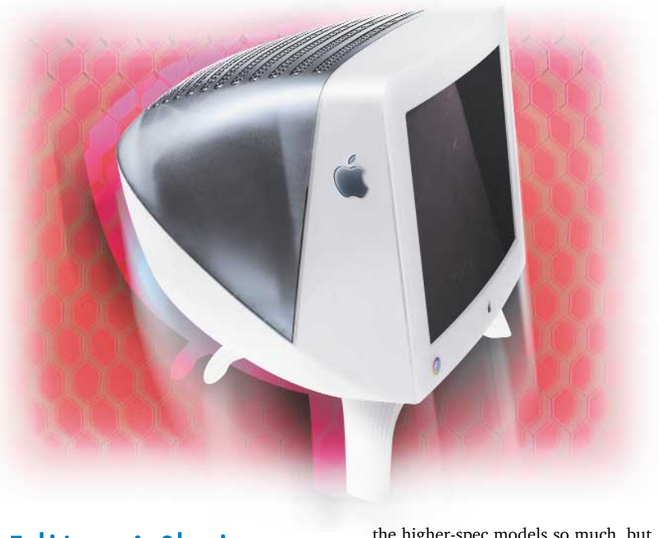
Editors' Choice

La Cie electron19blue

Macworld Rating ★★★★/8.8

In the 19-inch category, the electron19blue takes the tape. Its snazzy blue styling and matching hood helped it win our vote. More importantly, the electron is the most professional monitor in its category: it allows you to use a hardware calibrator, and so its screen-proofing capabilities are high. These features are particularly useful for designers or colour professionals working with a limited budget – or limited space.



Editors' Choice

Apple Studio Display

Macworld Rating ★★★★/8.8

The 17-inch Studio Display wins because it's a top-quality screen with control-panel operated screen controls. The Graphite Studio Display shown will soon replace the Blueberry model, and has a low-reflection matt-surround to the screen.

the higher-spec models so much, but cheaper ones do suffer. Convergence problems manifest themselves as fuzziness, particularly in the screen's corners. To test this, create the thinnest black line you can – ideally one-pixel wide, if you have Photoshop – on a light background. If you see a single-colour "drop" shadow above or below the line, this is misconvergence. Some monitors give you control over this, but it is difficult to get it perfect. The standard Trinitron was invented by Sony, but other manufacturers have advanced the technology, as seen with Mitsubishi's Diamondtron. It is still has an aperture-grille tube, but it's an improved design on the original.

Trinitron screens have traditionally been vertically flat and slightly curved on the horizontal. This means reflections are confined to a vertical strip. When the horizontal plane is flat, the reflections are reduced even further.

Pitching for business

In the battle to be the monitor of choice, manufacturers like to quote a host of numbers – with many meaning little or nothing. One of the most quoted – and least helpful – is dot-pitch. This is the distance in millimetres between the holes in the shadow-mask. The closer the dots, the brighter the image, and the picture should also be sharper. This is all well and good, until an aperture-grille monitor manufacturer wants to quote some numbers. The dots on an aperture-grille screen are closer together because vertical wires separate them. Shadow-mask dots are in a honeycomb pattern, so dots appear close – but are, in fact, further apart. One way of making this larger number appear smaller is by giving the measurement for the horizontal separation, not taking into account the vertical measurement. This produces a number more in line with the aperture-grille monitors. Dot or stripe-pitch values are, consequently, of little use when being compared.

There are other more reliable ways to tell how good a monitor is. The best and most obvious is to look at the screen. Unfortunately, this is increasingly difficult to do, as high-street retailers of monitors rarely have a good range of models on display. Mail-order companies usually have the widest selection, but this further reduces the opportunity to test them first-hand. One solution is to seek personal recommendations from other users – starting with friends or colleagues.

For helpful – as opposed to misleading – monitor-performance stats, refresh rate is about the best. This is the rate at which a monitor "redraws". The rate is not set by the monitor but by its video card. However, a good monitor will be capable of using a higher refresh-rate. Higher refresh rates mean less flicker, making displays easier on your eyes. Maximum resolution can be a good indicator, but monitors are rarely used at their highest possible resolution. What high-resolution capability shows you is that your settings will be well within the capabilities of the screen.

The reason the highest resolution is rarely used is because this makes on-screen text tiny and difficult to read. If you are using a font that is 14-pixels high, at 640-x-480 (14-inch screen resolution) it will appear huge. If you were to change the resolution to 1,280-x-1,024 pixels, the same font would be minuscule. On PCs you can change the resolution of the screen, but also the size of the system fonts. This makes using higher resolutions much more practical, and increases the definition of screen images.

Hopefully, Mac OS X Client will offer a way to use a higher resolution on-screen to improve definition – without shrinking the text and icons. For now, though, super-high resolutions are not that helpful for Macintosh users.

Flat mate
The Sony Multiscan F400 boasts the company's impressive flat-screen CRT, called FD Trinitron.

Size matters

Bulk is a big issue for monitors. Even those who need a large screen for DTP work, nobody wants a screen to dominate their desk. The screens we've looked at are all 17- and 19-inch models. Many people find a 15-inch screen too cramped nowadays, and I would certainly recommend a 17-inch screen as a minimum. If you can get by with a 15-inch monitor, why not buy an iMac?

Older screens were often deeper than they were wide, making even smaller models cumbersome. The newest monitors use a short-neck tube, so can be squeezed onto smaller desks. We have provided the dimensions of each monitor, so it's worth measuring up if space is tight. You might imagine that the 19-inch models would be substantially bigger that the 17-inch screens, but this isn't always so. Modern 19-inch monitors are smaller than some of the older 17-inch models.

A 19-inch monitor gives you a bigger computer desktop, and a compact short-neck design maximizes space on your real desktop.

The best screen for the average user would have the following features: a flat screen – both vertically and horizontally – to reduce distortion and reflection; and a high resolution and refresh rate – even if you don't use the top resolution, it's a good indication of quality. Refresh rate should ideally be a minimum of 85Hz, ideally 100Hz at a resolution of 1,024-x-768 pixels – see our table for specs.

With regard to looks, some

continues page 96

Mask of sorrow
The NEC MultiSync E950 is an excellent monitor, yet its shadow-mask CRT appears bowed compared with modern flat screens.

17- and 19-inch monitors: the bigger picture

COMPANY	MODEL	STAR RATING	PRICE	SCREEN SIZE (INCHES)	REFRESH RATE (AT 1,024-X-768 PIXELS)	MAX RESOLUTION (pixels)	SCREEN TYPE	SCREEN SHAPE	DIMENSIONS (mm)	CONTACT	TELEPHONE
ADI	MicroScan G66	★★★★/7.5	£325	19	85Hz	1,600-x-1,200	Shadow-mask	Curved	470-x-483-x-420	ADI	0181 327 1900
ADI	MicroScan GT56	★★★★/8.1	£235	17	85Hz	1,600-x-1,200	Trinitron	Vertically flat	439-x-441-x-441	ADI	0181 327 1900
Apple	Studio Display 17	★★★★/8.8	£325	17	85Hz	1,600-x-1,200	Diamondtron	Vertically flat	427-x-411-x-447	Apple	0870 600 6010
Eizo	FlexScan F520	★★★★/7.2	£239	17	85Hz	1,280-x-1,024	Shadow-mask	Curved	410-x-413-x-439	Eizo	01483 719 5000
Formac	17/600	★★★★/8.6	£180	17	75Hz	1,600-x-1,200	Trinitron	Vertically flat	425-x-408-x-435	Formac	0181 533 4040
Formac	17/550	★★★★/8.5	£180	17	75Hz	1,152-x-864	Trinitron	Vertically flat	425-x-408-x-435	Formac	0181 533 4040
Formac	17/250	★★★★/8.5	£165	17	75Hz	1,280-x-1,024	Shadow-mask	Curved	410-x-410-x-410	Formac	0181 533 4040
Hansol	Mazellan 900P	★★★★/7.8	£259	19	75Hz	1,280-x-1,024	Shadow-mask	Curved	468-x-499-x-483	Hansol	01252 360 400
Hitachi	CM 769 ET	★★★★/7.9	£380	19	75Hz	1,800-x-1,350	Shadow-mask	Delayed	448-x-442-x-447	Hitachi	01628 643 307
Iiyama	VisionMaster Pro S704HT	★★★★/7.2	£229	17	85Hz	1,600-x-1,200	Shadow-mask	Curved	424-x-415-x-412	Iiyama	01438 745 482
Iiyama	VisionMaster Pro A901HT	★★★★/8.4	£389	19	75Hz	1,920-x-1,440	Diamondtron	True flat	447-x-447-x-450	Iiyama	01438 745 482
La Cie	electron19blue	★★★★/8.8	£459	19	100Hz	1,600-x-1,200	Diamondtron	True flat	452-x-462-x-454	La Cie	020 7872 8000
LG	Flatron 795FT Plus	★★★★/7.7	£280	17	85Hz	1,600-x-1,200	Trinitron	Vertically flat	415-x-439-x-436	LG	0870 607 5544
Maxdata	Belinea 10 60 60	★★★★/7.8	£339	19	115Hz	1,600-x-1,200	Shadow-mask	Curved	451-x-464-x-466	Maxdata	01344 788 900
Maxdata	Belinea 10 30 70	★★★★/8.1	£229	17	115Hz	1,600-x-1,200	Diamondtron	Vertically flat	420-x-442-x-440	Maxdata	01344 788 900
Mitsubishi	Diamond Pro 710	★★★★/8.0	£249	17	75Hz	1,600-x-1,200	Diamondtron	Vertically flat	410-x-412-x-435	Mitsubishi	01707 282 837
Mitsubishi	Diamond Pro 900U	★★★★/8.4	£399	19	85Hz	1,600-x-1,200	Diamondtron	True flat	458-x-442-x-454	Mitsubishi	01707 282 837
NEC	MultiSync E950	★★★★/7.0	£436	19	119Hz	1,600-x-1,200	Shadow-mask	Curved	440-x-452-x-404	NEC	0181 9938111
Nokia	446XPro	★★★★/7.3	£399	19	85Hz	1,600-x-1,200	Shadow-mask	Curved	450-x-464-x-473	Nokia	01793 512 809
Nokia	447 Pro	★★★★/7.3	£289	17	120Hz	1,600-x-1,200	Trinitron	Vertically flat	433-x-432-x-441	Nokia	01793 512 809
Samsung	SyncMaster 700 IFT	★★★★/7.5	£316	17	85Hz	1,600-x-1,200	Trinitron	Vertically flat	415-x-437-x-418	Samsung	0181 391 0168
Samsung	SyncMaster 900 IFT	★★★★/7.8	£429	19	85Hz	1,600-x-1,200	Trinitron	True flat	468-x-483-x-466	Samsung	0181 391 0168
Sony	Multiscan F400	★★★/6.5	£699	19	85Hz	1,600-x-1,200	FD Trinitron	True flat	415-x-439-x-436	Sony	0990 424 424
Viewsonic	PT 795	★★★/6.7	£505	19	133Hz	1,600-x-1,200	Sonictron	True flat	458-x-458-x-459	Viewsonic	0800 833 648

Jewell control
The flat-screen Mitsubishi Diamond Pro 900U is still a popular choice with designers, but the same tube can be found in Iiyama, Nokia, and La Cie monitors.

Couldn't glare-less
The Samsung SyncMaster 900 IFT has a screen which is flat both vertically and horizontally, meaning less reflection and glare.

of the models tested are designed with Apple hardware in mind. This does add value to the monitor – but how much depends on whether you care about colour co-ordination.

The model that will match your Power Mac G3 the closest is, of course, the Apple Studio Display. But it's big and its styling will not be to all tastes.

Now that the Power Mac G3 has been replaced by the G4, Apple's Studio Display is cased in Graphite plastics. This means that, if you have a Power Mac G3, you'll need to move fast if you want the old Blueberry flavour. If you don't want a Studio Display – but still require something a little less grey than the average monitor – Formac has a translucent solution. The Formac 17/250 comes in ice blue, and represents a cheaper way to colour co-ordination.

If you want a flat screen, you are spoiled for choice. Since Mitsubishi released the first totally flat screen last year, similar technology has appeared in many other screens. The flat-screen Mitsubishi Diamond Pro 900U is still a popular choice for designers, but the same tube can be found in Iiyama, Nokia, and La Cie monitors, to name but a few. The La Cie electron19blue is probably the best adaptation of the tube. This is because La Cie has implemented a hardware calibration option for its version.

The Blue Eye colour calibrator works with the elecron21blue, as well as the +19-inch version. You need only buy one calibrator tool for any number of the electron monitors, which makes it an extremely cost-effective professional solution.

Calibration is not as important on consumer screens as it is on professional models. However, if you do have some form of calibration it will increase the life-expectancy of the screen. This is because, with time, monitor settings will require re-calibration, or screen-images will be surrounded by a colour-cast, or become darker.

The electron19blue also features a dark blue case and matching hood. It may look like a fashion statement, but there are sound reasons for these apparently frivolous extras. Its dark blue colouring is supposed to be neutral, so it won't clash with any colour work you do. The hood acts to block reflections, even though there are minimal, because of the flat screen. It may seem over the top, but it does give you a better viewing quality – plus you can hide behind it when you are feeling lazy.

Sony, the inventor of Trinitron, has also come up with a very impressive flat-screen CRT called the FD Trinitron. It can be found in the Multiscan F400. Because there is only a handful of companies that produce the tubes used in monitors, it's likely that the FD Trinitron will show up in other cases before long. There are differences when manufacturers use the same tube, but different casings and controls. However, images from a good tube will vary only slightly from manufacturer to manufacturer.

One notable newcomer to the Mac market is ADI. The ADI MicroScan models are highly specified and include Colorific software. Colorific is a simple calibration tool that lets you tweak your monitor's colour setting. It isn't the most accurate way of doing things – the La Cie Blue Eye is much better – but it does get your settings into the ballpark, and is all you need for everyday work. It also means you don't have to worry about presentations having a green or red tinge.

Apple's simple yet powerful solution to the calibration issue is self-calibration technology. This doesn't give you the control that you get with the Blue Eye, but nor it doesn't require you to make any colour judgements, as with Colorific.

Some of the Monitors tested have built-in USB hubs – and most companies now offer a USB hub option. This is a good place for a hub: convenient for plugging in both your keyboard and mouse, especially if your computer is under your desk.

If you own a pre-USB Mac you may still want to include this option, to allow for machine upgrades in the future. Similarly, some manufacturers offer a built-in microphone. If you're considering a shiny new G4, a microphone may be a good idea. Apple has now stopped shipping microphones with the latest Macs.

Macworld's buying advice

Most manufacturers offer options on each model, and such choice can be confusing. The best way to approach buying a monitor is to decide what features you want and how much you want to spend. With brand names, you can end up paying extra for features that lesser-known names offer for less. Take speakers, for example. You can buy great stand-alone speakers for less than £50, whereas built-in speakers are always limited in terms of sound quality. Good speakers need big magnets – something built-in speakers are unlikely to have, because they can interfere with the tube.

Monitors technology is mature and there's little qualitative difference between models – which means even the cheapest models are high quality.

If you decide to go for a flat-screen, the chances are that the same tube is being used in almost all models. It may a little more for a flat-screen model, but I believe it's worth the extra. MW

OS and them

Apple has once again bestowed on Macintosh users an improved version of the trusty Mac operating system. But this time, there's uncertainty on the horizon: Mac OS X. With Mac OS X due early next year, is Mac OS 9 nothing but an interim step you should ignore? Is Apple still committed to the original Mac OS, or is it merely marking time until OS X ships? **By Jason Snell**

DAVID ANGEL

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With Mac OS 9, Apple has once again bestowed on Macintosh users an improved version of the trusty Mac operating system. From what we've seen, Mac OS 9 is just as relevant an update as Mac OS 8.5 was last year. Not only does it make the Macintosh far more Internet-savvy than it once was, it also makes some fundamental changes to the way the Mac OS works.

Mac OS X, which Apple says is due early next year, certainly is the future of the Mac OS. But even when it arrives, it probably won't eclipse OS 9 right away. Many users will likely avoid the first version until the bravest among us have given it a thorough testing-out – and after any bugs are repaired by Apple. And for users of pre-G3 Macs – which Apple says won't run Mac OS X – Mac OS 9 may be the most advanced Mac OS version you'll ever run – and will serve as an important bridge to those who make the move to Mac OS X.

So put the future out of your mind for a while, and consider instead the exciting present: Apple's brand new Mac OS 9.

The most radical change with Mac OS 9 is Multiple Users, which lets different users share a Mac without them being able to alter one another's files or application preferences.

The return of Sherlock

Apple made Sherlock the banner feature of Mac OS 8.5, despite the fact that it was really a collection of several different features, some of which had the appearance of being hastily dropped into the Mac OS at the last minute. The old Find application, which once just found files on your local hard drives, was renamed Sherlock after sprouting two new appendages: Search Internet, a feature that connects to various Internet search engines and collected the results in a single window; and Find by Content, which lets you search the contents of files on your hard drive.

It's elementary With Mac OS 9, Sherlock no longer looks like a three-headed Find application; it's received a major makeover. The new Sherlock 2 puts a much more integrated interface on top of the powerful features of the original, correcting most of what was wrong with the first Sherlock. Gone are the three tabs that were at the top of the original Sherlock interface. In its place is a brushed-aluminum look, following the design statement of QuickTime 4.0. Unlike the new QuickTime Player, however, Sherlock's new interface actually improves its application's usability. By featuring eight different 'channel' buttons. The buttons contain only icons, but corresponding text appears if you hold the cursor over one momentarily.

Channel challenge By organizing Sherlock searches around channels, Apple has cleverly solved several problems at once. The first channel, Files, eliminate the need for the original Sherlock's Find File and Find by Content tabs; radio buttons let you choose between searching file names or their contents. Collectively, the other channels solve the biggest complaint users had about Sherlock: there was no easy way to choose specific search engines to use for particular kinds of searches. If, for example, you were searching only for news, for Mac-related information, or for books and then had to save those choices for later re-use.

Sherlock 2's next six channels – Internet, People, Shopping, News, Apple, and Reference – are pre-organized sets of search sites that are appropriate for different kinds of searches. Now, if you're searching the whole Internet, you can use the Internet channel, which will search most of the major search engines. But if you're just looking for a book, you can choose the Shopping channel, which searches Amazon.com, Barnes and Noble, and more.

But subject matter isn't the only difference between Sherlock's Internet-searching channels: when your search is done, you'll receive your results back in different formats, depending on what channel you're searching. So, while an Internet search will bring back a list of page names and a relevancy ranking, the list of results you receive after searching the People channel contain columns more appropriate for that type of search: Name, email, and Phone. Shopping searches, as you might expect, will return prices and availability information.

As before, you can download new Sherlock plug-ins – each plug-in allows you to search an additional site – and add them to the appropriate channel. Sherlock 2's final Internet channel is called My Channel, an empty holding-bin ready for any plug-ins you'd like to add. If you installed any new Sherlock plug-ins while using Mac OS 8.5 or 8.6, those will appear in My Channel when you upgrade to Mac OS 9. You can also make new channels by choosing New Channel from the Channels menu.

Interface touches Don't let the silver interface and new channels distract you from Sherlock 2's other interface improvements, chief among them the consolidation of information in one window. When you perform a search, the results appear in the Sherlock window itself – you no longer have to wait for a results window to pop up atop the Sherlock window. The adverts that show up when you do an Internet search now appear in their own window, meaning you can't hide them – but also that you don't need to scroll past them to see the information about the items you've found.

Also, two important touches for anyone who's ever typed in an Internet search query, only to discover they've been typing it into the Find File tab (or vice versa): First, typing ⌘-F in the Finder will launch Sherlock 2 and choose the Files channel, whereas ⌘-H will choose the Internet channel. Second, if you still mistakenly type your search term while the wrong channel is selected, you won't lose it when you click on the new channel. The item you typed will carry over, something that didn't happen when you clicked from tab to tab in the original Sherlock.

Security measure
Multiple Users means you log-in by clicking on your name and then entering a password. Optionally, you can log-in using your own voice as your password.

The many-faced Mac

The most radical change to the Macintosh in Mac OS 9 comes courtesy of a new control panel with the unassuming name Multiple Users. When Multiple Users is turned on, your Mac will no longer start up, load all your extensions and control panels, and then load the Finder. Instead, after the extensions and control panels have loaded, you're prompted with a screen that asks you to log in.

This new system – which isn't required and is turned off by default – lets different users share a Mac without having the ability to alter one another's files or application preferences. To log in, you click on your name (or, in higher-security environments, type in your user name) and then enter a password. Optionally you can log in using your own voice as your password. Mac OS 9 will ask you to speak a pass-phrase, and will then analyze your voice to see if it matches the one it has on file for you. Once you pass the test, it'll grant you access to the Mac.

If the log-in approach of Multiple Users sounds familiar, it's probably because it bears a striking resemblance to NetBoot – a system for letting multiple Macs load their system files over a network from a server running Mac OS X. Unlike NetBoot, however, Multiple Users is meant to work only with individual Macs. While a lab of Macs running Multiple Users is capable of using the same set of user names and passwords, Multiple-Users Macs store information on their local hard drives, not on a shared remote server.

When you want to log-out at the end of your session, just choose Log Out from the File menu in the Finder, or press ⌘-Q. The Finder will disappear and you'll return to the log-in screen, where the next user can log in to begin his or her session on your Mac.

Special folders By default, there's one user of a Multiple-User Mac: the 'owner.' That person has the power to create and manage other user accounts, and their documents reside, where we've always expected our documents to reside on our Macs: the owner's preferences are stored in the Preferences folder, for example, and the Documents folder lives at the root level of your hard drive. This is necessary because if Multiple Users is turned off, a Mac will go back to looking in those usual places for preferences – and the owner's preferences are the ones that it'll find.

After the owner creates other users, however, their files are stored in new locations. At the root level of your hard drive is a new folder called Users; inside that folder is one folder for each other user of that Mac, plus a folder called Shared Documents, which is where users on the same Mac can share files with other users.

Inside a user's folder are all the special folders that belong to that user: Preferences, Documents, Desktop, and the like. When a user logs in, the Mac OS by-passes the 'usual' Preferences, Documents, and Desktop folders, and instead uses the current user's folders.

For example, the owner of a Mac can have Internet Explorer set as a default Web browser and have files strewn randomly all over the desktop; but another user logging on to the Mac, might have Netscape as the default browser and a tidy desktop, with only a few file aliases showing. The Mac is truly personalized based on which user is logged in.

That said, there are several limitations to the customization that can happen from user to user. Since the log-in screen doesn't appear until after Extensions and Control Panels have loaded, you can't have different sets of Extensions and Control Panels for different users. Also, applications have to be savvy about looking in the appropriate folder for the currently logged-in user; Apple says that most applications handle Multiple Users with aplomb, but if you've got an older version of an application (Outlook Express and Eudora are two offenders which have recently been updated to become Multiple

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The secret Mac

As the Internet becomes pervasive, so do all the security measures that go along with networking every computer in the world together – most notably passwords. Mac OS 9 is the most savvy Mac OS release yet in terms of security, helping you protect your information from prying eyes – whether it's on your hard drive or somewhere else on the Internet.

Keychain returns Probably the coolest feature in Apple's PowerTalk technology – introduced with System 7 Pro and killed not too long after – was the Keychain, a storage system for all your passwords. Though PowerTalk is dead and gone, with Mac OS 9 the Keychain has come back to life.

And this Keychain does a whole lot more than store the passwords to AppleShare servers. Any application can store information in the Keychain – though it has to be specifically written to do so. This means that, while FTP programs such as Anarchie and Fetch support the Keychain already, you won't be able to use it with a Web browser until Microsoft, Netscape, or both choose to support it.

Here's how the Keychain works: when you use a program that supports the Keychain and are prompted to enter a password, you'll also be given the option of storing that information in the Keychain. From that point on, the Keychain will know your password and will be able to enter it for you, so you don't have to remember it.

Security Hole? Now wait, you're saying to yourself – what's the point of having passwords if I never have to type them in? The answer is that the Keychain doesn't eliminate the need for passwords; it just reduces the number of passwords you need to know down to one: your Keychain password. By default, the Keychain is 'locked' – inaccessible – until you enter in the Keychain password. Only after you've unlocked the Keychain can other programs use it to look up the passwords they need to know.

Keychain information is stored in a Keychain file and encrypted with a strong (128-bit) encryption system developed by Apple called Fast Elliptical Encryption. You can have more than one Keychain file, each with a different password.

The Keychain unlocks automatically when you log in if you're using Multiple Users; you can lock the Keychain at any time – either via the Keychain Access control panel or the control strip – and it can automatically lock when you put a Mac to sleep or after a user-specified length of idle time.

The Keychain was a great idea back when PowerTalk first appeared, and it's an even better idea today. For people who spend a lot of time logging into file servers and secure Internet FTP sites, it will be a blessing immediately. But for the bulk of Macintosh users, most of the passwords they use are on Web sites – and for them, the Keychain won't really come into its own until one of the Web-browser makers supports it for password-based Web sites.

Secret Files Mac OS 9 also includes a facility to protect your files from prying eyes, even on your own computer. From the Finder's File menu is a new command, Encrypt. It's also available on the contextual menu that appears when you Control-click on a file. To encrypt a file, you'll need to assign it a password, which you can store in your Keychain should you so desire. Then the file will be encoded so that nobody will be able to open it without a password. You can tell a file is encrypted by looking in the lower-left corner of its icon: Encrypted files' icons will have a small key superimposed.

It's a great feature, but it's not without some snags. First, it's impossible to encrypt an entire folder – you can only encrypt individual files. Second, in order to decrypt a file, you must open it. There's no way to decrypt a file in place; you've got to double-click on it and launch its associated application, even if you really don't want to.

Keychain open doors
When you use a program that supports the Keychain you are prompted to enter a password.

Under lock and Keychain
By default, the Keychain is 'locked' – inaccessible – until you enter in the Keychain password.

Internet everywhere

With Mac OS 9, it's clear that Apple is making a transition from AppleTalk to TCP/IP, the communications system used on the Internet. Apple's move to TCP/IP doesn't mean that AppleTalk is necessarily leaving the Mac OS. We expect that you'll be able to print to AppleTalk-only printers, for example, for a long time to come. But, in parallel to AppleTalk, Apple is building a similar set of networking features, all based on TCP/IP. What this means is that two Macs running Mac OS 9 on different parts of the Internet – a world without AppleTalk – can communicate with one another far better than they can today.

Share anywhere You've been able to use the Chooser to connect to a file server via TCP/IP for some time now. But now your Mac can be that server. Just as System 7 enabled direct user-to-user file-sharing over AppleTalk networks, Mac OS 9 enables it over the Internet. As long as two Macs are both connected to the Internet, OS 9 will let you exchange files without AppleTalk ever getting involved. This will be a big boon for anyone who's constantly e-mailing files back and forth with a co-worker who's not on your local AppleTalk network, but is on the Internet.

OS 9's Internet-savvy ways continue: it's also able to perform file transfers via FTP, the most common system of transferring files on the Internet today, via the Network Browser application. However, FTP isn't really integrated into the Finder – you can't mount an FTP server on the desktop like you can with a shared Mac volume.

Will this new feature put stand-alone FTP programs such as Stairways' Anarchie and Dartmouth College's Fetch out of business? Probably not. Apple's FTP interface isn't nearly as refined as those programs, and all of them offer features that the Mac OS 9 Network Browser doesn't offer. These include resuming partial file downloads, automatically opening text files in Bare Bones Software's BBEdit for editing, and automatically syncing the content of remote servers with files on your own system. But if you only connect to an FTP server once in a blue moon, the Network Browser should suffice.

Far-flung AppleScript Sharing files isn't the only new feature making the move across the Internet in Mac OS: AppleScript's going along for the ride, too. While previous versions of the Mac OS let you run AppleScript scripts that could control programs running on other Macs, those Macs had to be on the same AppleTalk network.

Now you can use AppleScript to control correctly-configured Macs anywhere on the Internet – as long as the Mac on the other end has Program Linking turned on in the File Sharing control panel.

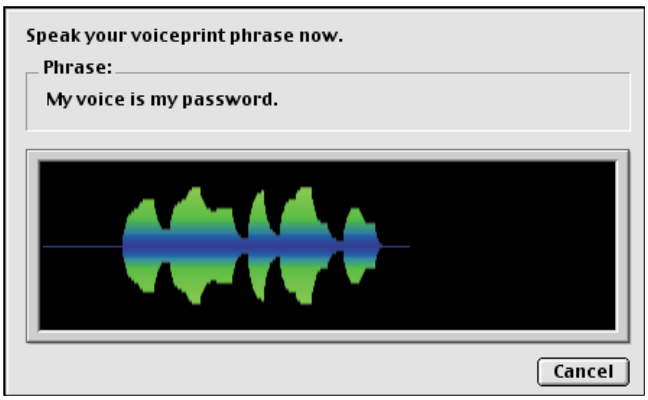
For example, you could use AppleScript to extract an image from a scriptable database application on a Mac in Manchester, then place that image into a QuarkXPress document on a Mac in London – while you're in Bristol.

Channel hopping

Channels mean its easy to choose the right search engine in Sherlock for particular kinds of searches.

Shop till the line drops

In the new Sherlock, if you're just looking for a book you can choose the Shopping channel.



Voice no concerns

OS 9 lets you log-in by speaking a pass-phrase that helps it identify your voice

User-savvy) you may need to upgrade it in order to customize it for various users of your system.

Three views Not all users on a Multiple Users Mac are created equal. The owner of the Mac must choose whether a user is a Normal, Limited, or Panels user; all three are distinctly different. Normal users see the Mac pretty much as you see your Mac today; you can poke around the hard drive to your heart's content – but not in other users' folders – and launch any applications you want.

Limited users, in contrast, are locked out of many folders on the Mac and can only launch applications that have been approved for use by the owner of the Mac. Those options are all set by the owner from within the Multiple Users control panel. A Limited user's desktop includes an Items For folder – created automatically, inside which are aliases to all the applications they're allowed to run. Limited users can also be locked out of CD- and DVD-ROM drives, removable-media drives, shared folders, and even printers.

Panels users are very much like Limited users in terms of what they can access; the difference is that Panels users don't use the Finder. Instead, they use an interface made up of colorful tabbed folders. One folder contains documents they can open; another contains all the applications they can launch. The icons in Panels mode are blown up to twice their original size; it only takes a single click to open one. This is undoubtedly the interface Apple expects parents to choose for their young children.

9's niceties

Mac OS 9's innovations don't end there. Here are some other improvements that this new Mac OS brings to the table:

Voice recognition With Mac OS 9, your Mac will listen to your voice better than it ever has before. No, the Mac OS won't let you dictate text via a microphone – for that you'll need forthcoming Mac versions of speech-recognition products such as IBM's ViaVoice or Dragon Systems' Naturally Speaking, or the Mac-only iListen from MacSpeech. But as we've already described, it will let you log into your Mac simply by speaking your name and repeating a passphrase that helps it identify your voice.

Beyond that, Mac OS 9 provides several improvements to Apple's PlainTalk speech-recognition engine. In previous versions, PlainTalk used one vocabulary that was in action systemwide. In Mac OS 9, that vocabulary can vary from program to program, a trick that will improve the speed and reliability of speech recognition. Now your email-specific commands don't need to get in the way of your word-processing items.

Bigger, faster, more Some limitations of the Mac OS that most regular users will never bump up against – but which are the bane of

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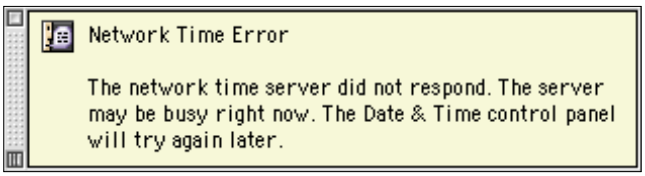
the most powerful of power users – are fixed in Mac OS 9. Files can be as large as 2 terabytes – that's 2,000 GB – and the number of open files allowed in the system has been increased. Mac OS 9 also offers improved support for Macs with multiple processors, which begs the question: when will Apple release a Power Mac G4 with multiple G4 processors inside?

Mac up-to-date With Mac OS 9, Apple goes beyond simply using the Internet as a place Mac users can go to find and share information – it uses it as a way to keep your version of Mac OS 9 up to date. Via the Software Update control panel, your Mac can check with Apple via the Internet to see if any new updates to the Mac OS have arrived, and then automatically download and install them. This option is turned off by default, but you can set it to check with Apple on a regular schedule or just check manually by clicking on the control panel's large

Update Now button

Mac OS 9 will also automatically download driver software for items such as USB devices; if you plug-in a device such as a USB mouse and your Mac doesn't have the appropriate software to run it, it will check to see if it can download it from Apple's server and then install it automatically.

Yellow alert One of Mac OS 9's minor touches still tickles our fancy in a big way. In previous versions of the Mac OS, you'd often be nagged by impossible-to-ignore dialogue boxes that would stop whatever your Mac was doing until you read the message and clicked on the OK button. With Mac OS 9, most of those annoying dialogue boxes have been replaced by yellow floating windows. You don't need to read them right away; your Mac will continue working even as they're being displayed, and you can send them away with a click of the box in their upper left corners.



Mellow yellow
With Mac OS 9, most of those annoying dialogue boxes have been replaced by yellow floating windows.

Carbon compatible The most invisible feature of Mac OS 9 will end up being one of the most important. In the Extensions folder is an unassuming file called CarbonLib. Inside it lies support for Carbon, the new Mac OS application standard for Mac OS X – see News, July 1999. With CarbonLib in place, Mac OS 9 will be able to run Carbon applications designed for Mac OS X without modification. Of course, Mac OS 9 won't be able to run those applications with the special features that Mac OS X brings, such as protected memory and pre-emptive multitasting, but it will be able to run them with a simple double-click, as if they were 'classic' Mac OS programs. That makes Mac OS 9 an important intermediate step between Mac OS 8 and Mac OS X – or at least, it will be once Carbon applications and Mac OS X arrive.

Keeping posted
The Software Update control panel means you can check with Apple via the Internet for updates to the Mac OS.

The last word

There's no doubt about it: Mac OS 9 is a solid improvement over Mac OS 8.5, which itself was an appealing update from Mac OS 8. Even as Apple scrambles to unleash the revolutionary Mac OS X on the world, it's also continued to skilfully update the original Mac OS.

Is Mac OS 9 worth its £65 price tag? We certainly can't say that every Macintosh user should rush out and buy it. If you are desperately in need of support for multiple users, can't wait to get your hands on the Keychain, are a huge fan of searching with Sherlock, or just want to keep your Mac current, Mac OS 9 will probably be worth it for you.

But if what Apple has cooked up for Mac OS 9 doesn't excite you, there's no compelling need for you to upgrade. What we said about Mac OS 8.5, we'll say again about Mac OS 9: this isn't a must-have upgrade, but it certainly is a nice-to-have upgrade. For Mac fans living in the connected world of the Internet, it's a relief to see that Apple is hard at work making the Mac OS as Internet-savvy as it can possibly be. **MW**

Third-party incompatibility

On the eve of Mac OS 9's debut, several third-party developers were still finding compatibility problems between the new operating system and their products. Since its launch, there has been a number of notable third-party OS 9 bug-fix upgrades.

Adobe has released released Mac OS 9-compatible versions of its Adobe Type Manager, Adobe Type Reunion and Adobe Type Manager Deluxe font utilities.

Adobe Type Manager and Type Manager Deluxe have been updated to version 4.5.2. Adobe Type Reunion reaches version 2.5.2. Earlier versions of Adobe's font utilities are incompatible with OS 9, and can cause serious problems. The free updates can be found at **www.adobe.com/support/downloads**

Meanwhile, Casady & Greene announced Conflict Catcher 8.0.6. Among its changes is a revised reference library, which now includes more than 4,750 file descriptions, including many specific to OS 9. The new version also includes new sets and links for Mac OS 9 and fixes a handful of minor bugs. The new update is available as a free download (**www.casadyg.com**) for current users of Conflict Catcher 8.

Also available here is Casady & Greene's updated MP MP3 1.1.1, which was affected by changes in the Mac OS Sound Manager. The company says that incompatibilities between Mac OS 9 and its Spell Catcher 8 and Grammarian are "minor", and that a maintenance release to Spell Catcher 8 will be "out soon". But it revealed that a fix for Grammarian will be held until a Version 2 upgrade, due in early November.

Aladdin Systems has also been experiencing Mac OS 9 headaches: StuffIt Deluxe, DropStuff and the freeware StuffIt Expander, are all incompatible with the new OS. Aladdin says compatible versions of Expander, DropStuff and the StuffIt engine extension will be included on the Mac OS 9 CD. Current StuffIt 5.x registration numbers should work with the new versions. A revised StuffIt Deluxe is "in the works".

Another developer forced into action by OS 9 is Alsoft, whose PlusMaker 1.0.3. adds Mac OS 9 compatibility – while retaining compatibility with previous versions of the Mac OS. PlusMaker converts disks in place, without the need to go through the procedure of initializing each disk with the new format, and then restoring each disk from backups. It allows Mac OS users worldwide to convert existing disks, regardless of the language and writing script they're using.

The cause of third-party incompatibilities is a real bone of contention. Some developers point the finger at Apple – but Apple sources attribute the problem to the developers' programming methods.

Apple insiders say Adobe, for example, was relying on access to the Mac OS's File Control Block (FCB) – its way of tracking open files. Apple says it made it clear to developers that it would change the FCB structure – and that OS System Error 119 was created to flag this incursion.

Daniel Drew Turner

create web

Online XPress

Tips and tricks to make QuarkXPress files look great online.

By David Blatner

The words can strike terror into the heart of any QuarkXPress user: "This printed piece looks great. Why don't you just stick it up on our Web site?" Ah, if only it were that easy. But contrary to what some people think, you can't just upload a QuarkXPress document to the Web – well, technically you can, but no one would be able to view it.

First, you must convert the file to some other format, such as HTML, suitable for Web viewing. Second, you must keep in mind that the Web page you're looking at in your favourite browser will rarely look exactly the same in someone else's browser.

These two problems – the need to wrench your QuarkXPress documents into Web-compatible formats, and the general inconsistency among Web browsers – may be enough to quell your desire to re-purpose any QuarkXPress file, but they probably won't change your boss's mind. So, in the spirit of compromise and peace in the workplace, I offer these tips.

There are basically four ways to get a QuarkXPress document onto the Web: convert it to HTML; rasterize it into a picture; save it as an Adobe Acrobat PDF file; or use it to build a QuarkImmedia multimedia project. None is a perfect solution; choose the one that best fits your particular audience and needs.

PAUL WATSON

1. Exporting HTML

While HTML is certainly the most popular foundation for Web pages, its limitations can frustrate creative designers. For example, HTML cannot reproduce all the complex formatting QuarkXPress allows. Kerning, tracking, justified columns, bézier-shaped boxes and clipping paths – none of these are available in HTML. Each iteration of HTML has become more powerful, however. For instance, version 4.x Web browsers understand commands to overlap text and graphics. But, browsers based on earlier HTML versions will not be able to display such attributes.

Still, if you want to export your QuarkXPress document to HTML, there are several options. QuarkXPress 4 alone cannot export HTML, but the addition of one or more XTensions will allow you to prepare QuarkXPress files for the Web.

HTML Text Export Filter This free XTension from Quark (**www.quark.com**) lets you export text, and only text, in HTML format. It's very basic – it assigns only font size, font name, and text colour – but if you need to get a story from QuarkXPress to a Web authoring program, it's fine.

BeyondPress This £199 XTension from Extensis (Computers Unlimited, 0181 358 5857) is probably the most popular and powerful XTension for exporting HTML from QuarkXPress (see "Exporting HTML with BeyondPress"). Its Conversion mode lets you mine your document for the text and graphics you want to export. The result is a linear flow of information. The authoring mode creates HTML that tries to reproduce your page geometry, either with complex tables or

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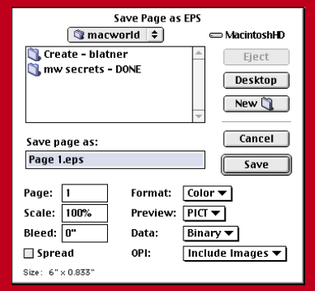
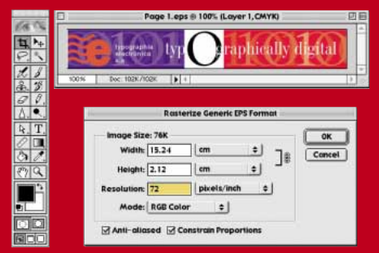
Master the raster

QuarkXPress has great tools for handling type, so I often use it to create logos, graphics, and text for my Web pages. The key is to export your QuarkXPress file as a graphic that you can incorporate into a Web page. Here's how to do it.

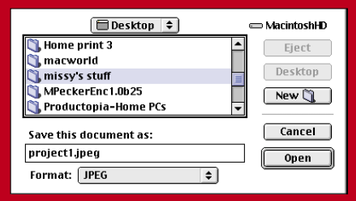
1 Save your QuarkXPress page as an EPS file. Choose Save Page As EPS from the File menu.



2 Open the EPS file in Adobe Photoshop. Versions 4 and later can rasterize most EPS files (translate them into bitmapped images). A word of warning: TrueType text and QuarkXPress's blends often don't work.



3 Save the file in Photoshop as either a GIF or JPEG file, depending on your needs.



4 Place this graphic in your Web page. You can use transparency, or similar colours, to make the graphic blend into the Web page.

Dynamic HTML (DHTML) tags. BeyondPress even lets you author Web pages directly in QuarkXPress, and also liven up your site by including dynamic media, such as animated GIFs and QuickTime movies.

HexWeb If you create a daily newspaper or magazine and you need to extract text and graphics for your Web site, check out HexWeb, a £349 XTension from HexMac Software Systems (XChange, 0171 637 2966). It includes excellent site-management and indexing tools.

WebQuarkXPressXT WebXPressXT, a $89 XTension – available online from Gluon (**www.gluon.com**) is a very good intermediate step between Quark's free export filter, and the higher-end tools. If your primary job doesn't involve converting documents all day long, take a look at this option.

Another choice for occasional document conversions is Myrmidon, a $69 product from Terry Morse Software, available online (**www.terrymorse.com**). It acts like a printer driver and works not only with QuarkXPress, but also with most Macintosh programs. When you print your document, the software converts it to the nearest HTML equivalent.

In general, no matter how you convert your QuarkXPress documents to HTML, the results may not be exactly what you envisioned. Plan on tweaking the files in another program, such as Macromedia Dreamweaver, BareBones BBEdit, or Adobe GoLive.

2. Exporting Graphics

One of the main problems with HTML is its difficulty with fonts. The XTensions mentioned above let you specify which fonts to use, but unless your audience has those fonts installed on their machines – or unless their Web browsers support certain font standards – the typefaces those people see on their screens won't be the ones you had in mind.

If your QuarkXPress document has a lot of cool type, you can make sure your Web page maintains that look by exporting the file as a graphic (see "Master the raster"). You'll need a program that contains a PostScript

RIP, such as Adobe Photoshop (£425; Adobe, 0181 606 4001) or TechPool's Transverter Pro (**www.techpool.com**), to convert XPress's vector graphics to bitmapped images.

3. Exporting Acrobat PDF

Adobe's Acrobat PDF format was designed to display print files on anyone's screen – even the screens of those who don't have the proper fonts – so it should be a perfect solution for re-purposing QuarkXPress documents for the Web. But, there are always trade-offs. While PDF is similar

Exporting HTML with BeyondPress

create web

So, you've decided to take the HTML route to the Web. One of the best ways to convert your QuarkXPress file to HTML is with Extensis's popular BeyondPress XTension. It gives you several methods for converting documents, and even lets you author Web pages right in QuarkXPress. Here's how to get started.

1 In Conversion mode, BeyondPress exports text and graphics into a linear flow that you can import into another Web authoring tool.

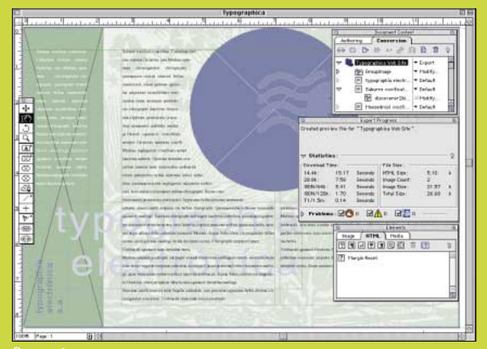


figure 1

figure 2

2 BeyondPress converted the text box in the lower left of Figure 1 (typographia electrónica) into a GIF image in Figure 2 to retain its look.

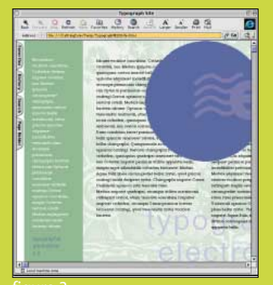


figure 3

3 Using Authoring mode, you can re-create the look-&-feel of a page. BeyondPress creates HTML that tries to reproduce your page geometry, with either complex tables, or DHTML tags. It's not a perfect system, though: HTML doesn't recognize drop caps and other special formatting.

to PostScript, and can therefore simulate almost anything you can create in QuarkXPress, PDF file sizes are usually slightly larger than corresponding HTML documents – so they take slightly longer to download.

To display PDF documents within a Web browser, your audience needs both the Acrobat Reader software, and the appropriate browser plug-in – both come as standard on most new computers. Without the plug-in, people can still download the PDF files to their hard drives and view the files with Acrobat Reader – and this may be a better solution, as the plug-in is notoriously buggy.

You've got three options for exporting your QuarkXPress documents to PDF format; all of them require Adobe Acrobat (Adobe, 0181 606 4001). The simplest method is to print the QuarkXPress file to disk as PostScript, and then process it with Acrobat Distiller. You can streamline the procedure slightly: select the AdobePS printer driver in the Chooser, and then print a PDF file directly to disk – select Printer in the QuarkXPress Print dialogue box to tell the program where to save the file. This method still requires Acrobat Distiller, but it runs automatically.

If you want interactive features in your PDF file, such as bookmarks or hyperlinks, use one of the following XTensions to write the PostScript to disk before distilling it.

Quark's free PDF Filter, available on the company's Web site, automates the process of building PDF files from QuarkXPress documents (see "Quark's PDF Filter"). And Techno-Design's PDF Design XT (**www.techno.nl**) offers additional features that can merge multiple documents into a single PDF, insert additional hyperlinks, and so on.

4. Building with QuarkImmedia

Finally, there's QuarkImmedia, Quark's XTension for building multimedia projects directly within QuarkXPress. (See "Immedia a Web hit", Create, July 1998.) While Quark has reduced the price of Immedia dramatically, to £395, it's clear that the company has tabled further development of this powerful XTension.

Like PDF files, Immedia files have two downsides for Web publishing: they require the Immedia Viewer (free from Quark's Website), and Immedia documents can easily become too large to transmit well across phone lines. However, if you forgo QuickTime movies, and other data-intensive items, your files should play trouble-free.

Quark's future on the Web

Like many companies, Quark was slow to realize the importance of the Internet. However, in the past year, the company has announced, and demonstrated, several products that make clear its rapid progress.

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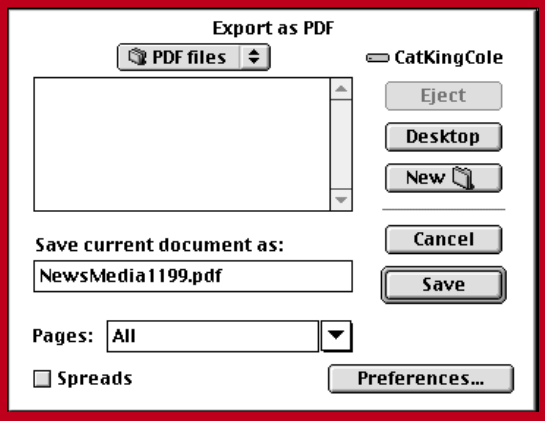
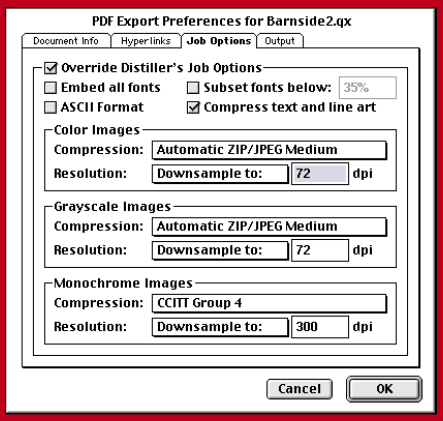
Quark's PDF filter

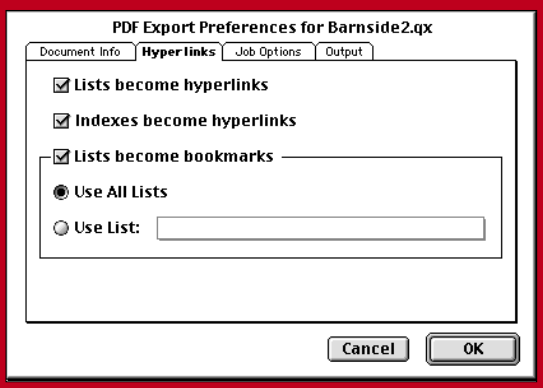
After Quark was accused of ignoring the PDF needs of the desktop publishing market, it responded by releasing a free XTension that automates the process of building PDF files from QuarkXPress documents. (You can download the XTension from **www.quark.com**.) This filter also lets you import PDF files – but they import as graphics and are not editable. Here's an example of how to use the filter.

1 Select Export As PDF from the Utilities menu, and choose the pages or spreads you want to export.



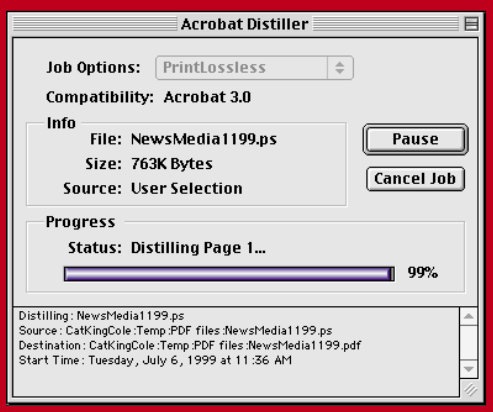


3 You can always override Acrobat Distiller's job options if you have specific font-embedding and image-compression needs for your document. You can even control separation features – such as registration marks, and bleed – by selecting the Output tab of this dialogue box.



2 When you click on Preferences, you can control various aspects of the job, including whether lists and indexes are converted to PDF bookmarks, or hyperlinks.

4 When you click on Save, QuarkXPress automatically writes the PostScript to disk, launches Acrobat Distiller – yes, you still need Distiller to build PDF files – and converts the PostScript to PDF format.



For example, Quark has announced support for the Macromedia Flash standard. While details are sketchy, with luck you'll be able to export QuarkXPress pages in Flash format before long.

Quark will also soon release three Web programs, code-named Troika, that will export information from QuarkXPress documents in XML format (avenue.quark, see previous issue), build templates for DHTML generation, and interact with XML databases to generate these dynamic pages.

Finally, QuarkXPress 5 will be able to import and export HTML and PDF files – even without Acrobat Distiller.

In the meantime, these XTensions, and other useful tools, help make some of those "unreasonable" re-purposing requests less of a compromise. MW

David Blatner aurthored *The QuarkXPress 4 Book* (Peachpit Press, 1998)

What you need

QuarkXPress
Web browser
Optional:
Adobe Acrobat
Adobe Acrobat Distiller
Adobe Photoshop

create motion

Flexi-QuickTime

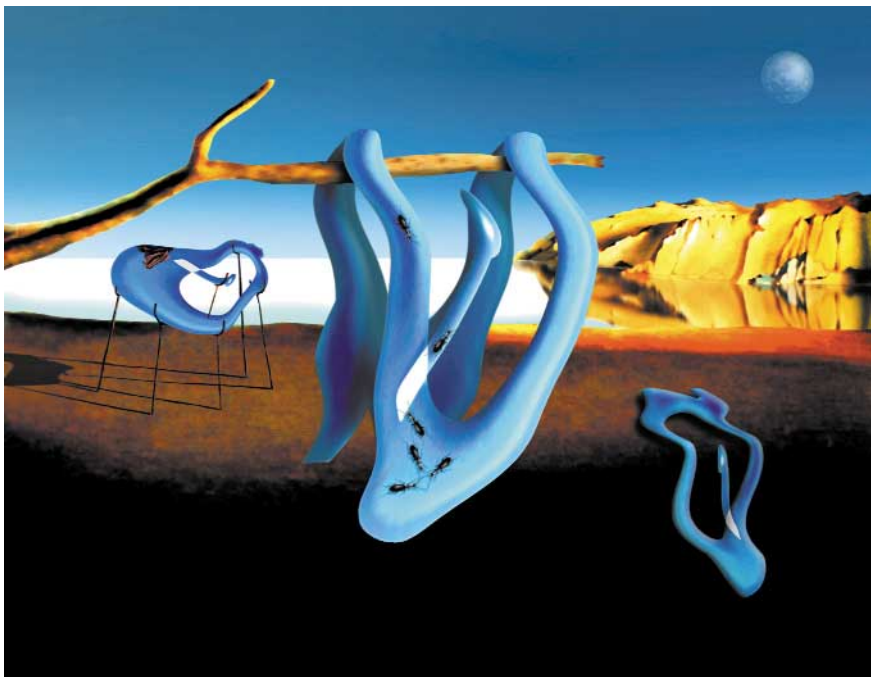
Produce live and on-demand streaming movies

By Jim Heid

When it comes to streaming audio and video over the Internet, there are two approaches you can take: you can deliver files with the same old HTTP server that delivers your Web pages and graphics, or you can use a streaming technology that provides real-time streaming for more reliable, and more flexible results.

The HTTP method is easy and inexpensive, since you don't need any special server-software (see "Get moving with Web video," Create Web, April 1998). But, HTTP streaming has significant drawbacks. Besides being less reliable, it doesn't permit seeking: if users try to fast-forward to a particular spot, playback stops until everything up to that point downloads. Also, HTTP can't do live Webcasting, so it's unsuitable for special events such as live concerts or speeches, and for radio or TV stations that want to expand to the Internet.

Until recently, QuickTime was an HTTP-only medium. But with version 4, QuickTime joins RealNetworks' RealSystem G2, and Microsoft's Windows Media Technologies (formerly Netshow), in providing support for true, real-time streaming.



DAVID ANGEL

Your flexible friend

QuickTime 4-streaming has a lot going for it. You can use most of the same tools and techniques you've been using to create HTTP-streaming QuickTime-movies. And, talk about flexibility: streaming quicktime movies play back in any program that supports conventional, non-streaming QuickTime flicks. Therefore, you can embed streaming QuickTime movies in a Macromedia Director project, a Microsoft PowerPoint presentation, or even a Microsoft Word document.

Although QuickTime isn't the best product for all users – it can be much harder to use than RealSystem G2, and it lacks features that broadcasters and other professionals require (see Reviews, July, 1999) – it still has some advantages. It's inexpensive, making it well suited to educational institutions and budget-minded businesses. And, because QuickTime streaming is part of the QuickTime architecture, you can do some slick things that you can't do with the competing products.

With this in mind, let's take a look at the QuickTime-streaming production process. Along the way, I'll pass along some production tips for both on-demand, and live-event streaming.

You can create QuickTime 4 streaming movies on almost any Mac, but to serve the movies, you need at least a Power Mac G3 running Apple's £349 Mac OS X Server software. Mac OS X Server includes a program, QuickTime Streaming Server, that dishes out streaming QuickTime movies.

This Mac OS X Server foundation is both an asset and a liability. On the plus side, Mac OS X Server is built on a rock-solid Unix foundation, that makes it more resistant to crashes and gives it greater

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Preparing movies for on-demand – as opposed to live – streaming is a multi-step process. First, you compress the movie to accommodate your target bandwidth. This step is identical to preparing a movie for HTTP streaming or even CD-ROM playback. In this phase, you also hint the movie, a process that adds streaming data used by QuickTime Streaming Server. You store the hinted movie in the default directory of QuickTime Streaming Server.

Finally, you create a pointer file, which sets up the dialogue between QuickTime Streaming Server and a user's QuickTime Player, or browser plug-in. You stash this pointer file on your HTTP server and link to, or embed, the file in your Web page.

Here's how to perform each step, using Apple's QuickTime Player – if you'll do a lot of streaming, do yourself a favour and get Terran Interactive's Media Cleaner Pro 4, which streamlines many of these chores.

Sizing and compressing

For movies containing a video track, one of your first steps involves deciding on a final movie size and frame rate. For streaming to 28.8-Kbps modems, a typical size is a tiny 128-x-96 pixels – or a slightly better 160-x-120 – with a lowly frame rate of two or three frames per second (fps). That won't exactly yield a dramatic movie experience, but hey, these are modems we're talking to. If your movie contains very little motion, you might try a 192-x-144-pixel frame size, and four to six fps. If you are talking to 56Kbps modems, you might try a 176-x-144, or 192-x-144 frame size, with four to six fps. And, for ISDN and better connections, you can bump the frame rate up to about ten fps.

When specifying compression settings for both video and audio tracks, you must choose data rates carefully, so as not to exceed your target bandwidth. For example, to deliver a streaming movie to users with 28.8Kbps modems, you will want to keep a movie's data rate to about 22Kbps – this provides you some breathing room to allow for noisy connections. Consider a data rate of 12Kbps to 14Kbps for the video track, and about 8Kbps for the audio track.

You can use the Options button in the Export dialogue box to specify data rates and frame rates by hand, but there's an even easier way. Apple has endowed QuickTime Player with a variety of pre-sets for the most-common streaming scenarios. These pre-sets also add the hinting required for streaming. The video settings use either the Sorenson Video, or H.263 compressors. The audio settings use the QDesign Music compressor for music, or the Qualcomm PureVoice compressor for spoken audio.

Not everyone agrees with all of the settings choices that Apple made – for example, compression guru Jim Baker prefers the Sorenson Video compressor, to the H.263 compressor Apple chose, for several of the modem-oriented pre-sets. Every compression scenario is unique, however, and Apple's pre-sets are a good starting point for your own compression adventures.

To export a movie for QuickTime streaming, just open the movie in QuickTime Player and then choose Export from the File menu.

Create the pointer file

Now you're ready to create the pointer file. This requires that you access the hinted movie through QuickTime Streaming Server, so be sure the server software is running. If you're running Mac OS 8.5, under Mac OS X Server, you can perform this step on the same computer that's running the server software. Or you can use any computer running QuickTime 4 – including a Windows machine – as long as that computer has Internet or network access to the machine running QuickTime Streaming Server.

1 Choose Open URL from QuickTime Player's File menu.

2 Type the URL of your hinted movie – such as **rtsp: // yourserver/ mymovie .h .mov** – and press return. QuickTime Player will connect to QuickTime Streaming Server, and begin streaming the movie. Let the movie play for a few seconds if you like, and then click on QuickTime Player's stop button.

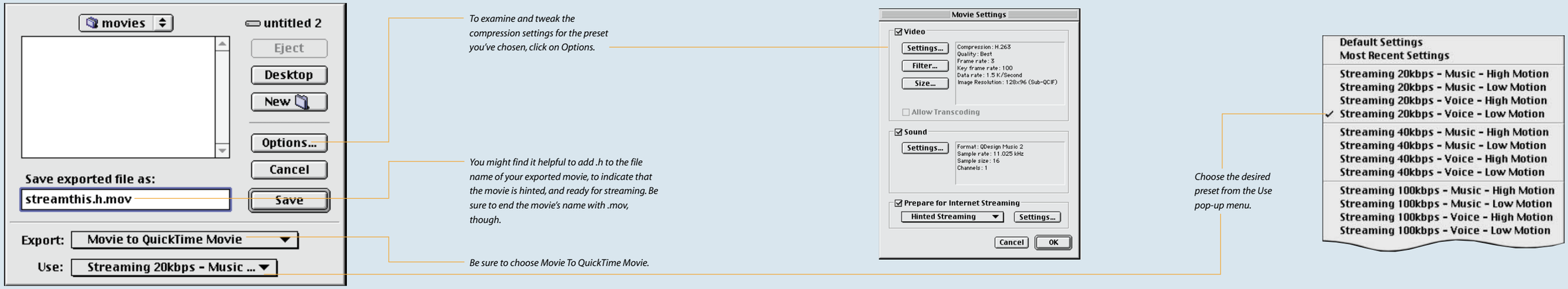
3 Choose Save As from the File menu. In the Save As dialogue box, click on the Make Movie Self Contained button, name the movie, and click on Save. In doing so, you'll make a small – about 1K – movie that points to the hinted movie.

4 Copy this pointer file to your HTTP server – not to the machine running QuickTime Streaming Server – and then link to, or embed, the pointer file in your Web page.

Create multiple–data-rate movies

As mentioned in the main text, you can use a QuickTime reference-movie to access separate versions of a movie for various connection speeds. After compressing and hinting each movie, copy them to the Mac running QuickTime Streaming Server. Next, create a pointer file for each movie, storing each pointer file in the same folder.

Finally, using Apple's free MakeRefMovie utility, assign each of the pointer files to its appropriate connection speed. Save the reference movie in the same folder as the pointer files, copy it all to your HTTP server, and link to, or embed, the reference movie in your Web page.



multi-tasking abilities than the Mac OS currently provides – both critical components for true streaming.

But, Mac OS X Server isn't nearly as easy to use as Mac OS 8.x. You don't have to know anything about Unix to be able to serve QuickTime streaming content and manage your server, but you may have to wade into Mac OS X Server to get streaming working in the beginning.

Of streams and bits

It's common practice to provide several versions of a movie or audio clip, each compressed for a particular connection speed. Since version 3, QuickTime has supported multiple-data-rate movies, that enable you to accommodate various connection speeds – without having to litter a Web page with multiple links.

To recap briefly, when creating a multiple-data-rate movie, you have to make a separately compressed version for each connection speed, and then create one reference movie that points to each version. Then you must link to, or embed, the reference movie in your Web page. To create reference movies, use either Apple's free MakeRefMovie utility (available from the Authoring area of the QuickTime Web site, at **www.apple.com/quicktime/**) or Terran Interactive's wonderful Media Cleaner Pro (**www.terran.com**).

These concepts apply to QuickTime streaming movies, too. But there's one additional step: after compressing the final movie, you must create a small pointer file that sets up the conversation between QuickTime Streaming Server and a user's computer (see "Create on-demand streaming movies"). If you've worked with RealNetworks' technology, you're familiar with this concept – in the Real world, this file is called a metafile.

Let's go live

Being able to Webcast live streams is one of the best things about true, real-time streaming. QuickTime 4 delivers nicely, thanks to Sorenson Vision's $199 (£120) Broadcaster (**www.s-vision.com**). Broadcaster performs real-time encoding, compressing audio and video on the fly, and then sends that single stream to a second Mac running Mac OS X Server and QuickTime Streaming Server (see "Broadcasting with Broadcaster").

That's right: you need two computers to do a live Webcast with QuickTime 4. One computer, running Broadcaster under Mac OS 8.x, does the real-time compression, while the other, running QuickTime Streaming Server, serves the streams. You'll almost certainly want to run Broadcaster on a G3-equipped Mac – in my tests, I successfully used an old Power Mac 7600 to live-encode a low-fidelity – voice-only – stream, but the computer was too slow to encode a stream of music.

What if you want to deliver multiple-live-streams for various connection speeds? You'll need multiple G3 Macs, each running a copy of Broadcaster that encodes for a different speed. Unlike RealNetworks' RealProducer G2 family of encoders, Broadcaster can't encode multiple streams simultaneously.

This multiple-Mac scenario sounds

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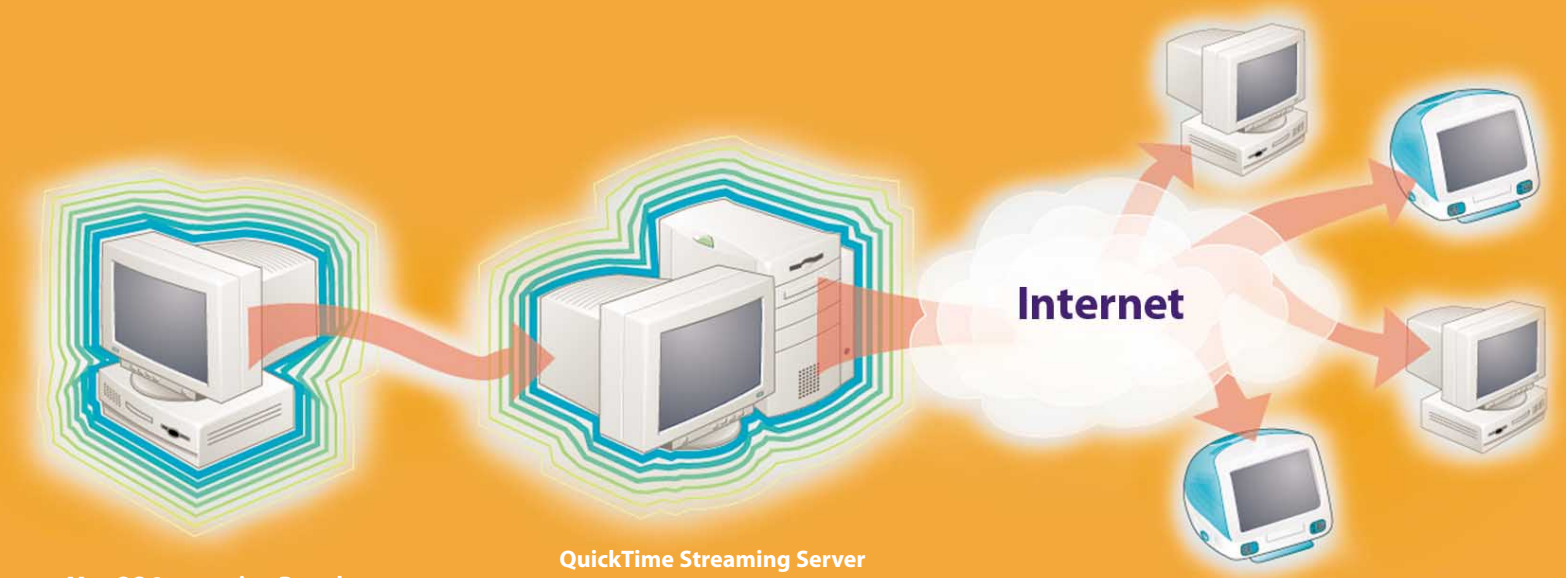
Broadcasting with Broadcaster

Setting up a live QuickTime streaming broadcast involves running Sorenson Vision's Broadcaster on a Mac with OS 8.x – the encoding machine – and configuring that Mac to send a stream to a second Mac running QuickTime Streaming Server and Mac OS X Server.



Mac OS 8.x running Broadcaster

Connect your video and audio equipment to the encoding Mac – to encode video, you'll need a Mac equipped with video-digitizing hardware.

QuickTime Streaming Server

In the configuration shown here, QuickTime Streaming Server is being used as a replication-server. It's taking the single-stream supplied by the encoding machine, and replicating it as multiple-streams: one for each user who's listening to, or watching your stream.

Internet users running QuickTime 4

To allow users to connect to your stream, you must create a pointer file for the stream, and then link to – or embed it in – a Web page.

expensive, and indeed, it can be. But depending on your situation, it can still be less expensive than buying RealSystem G2 server software. For instance, the 100-stream RealSystem G2 server software costs £5,082. You can buy a few G4 Macs for that price – and be able to serve up to ten times the number of streams. For heavy-traffic live-streaming, then, QuickTime's multiple-Mac requirement isn't a significant drawback. For lighter-traffic scenarios, though, the scale tips in RealSystem G2's direction.

Tuning Out

When you look closely at QuickTime 4 streaming, it's clear that Apple is behind the competition in key areas. But that doesn't mean that QuickTime is out of the running – far from it. It has some unique assets that other streaming technologies lack. I've already mentioned one: the ability to embed streaming QuickTime movies in any program that supports conventional QuickTime movies.

Another QuickTime advantage has to do with interactivity within movies. With tools such as Totally Hip Software's LiveStage (**www.totallyhip.com**) or Electrifier's Electrifier Pro (**www.electrifier.com**), you can create clickable buttons and hot spots within movies. With QuickTime 4, these so-called wired movies can also stream. RealSystem G2's support for the Synchronized Multimedia Integration Language (SMIL) also allows for powerful streaming interactivity, but SMIL is an HTML-like tagging language, with a fairly steep learning curve. With QuickTime, if you're creating wired movies for other media, such as CD-ROMs, you can use the same tools and skills to create wired movies for streaming.

So, although QuickTime streaming may not out-stream the competition in every area, it still has a lot going for it and is the right choice for some applications. It's definitely a technology worth watching – and listening to.

Special thanks to Jim Baker of *Compression Factory* (**www.compressionfactory.com**) for his insights and recommendations. For samples of video and sound he has compressed, visit the Apple QuickTime Showcase page, at **www.apple.com/ quicktime/ showcase/**. MW

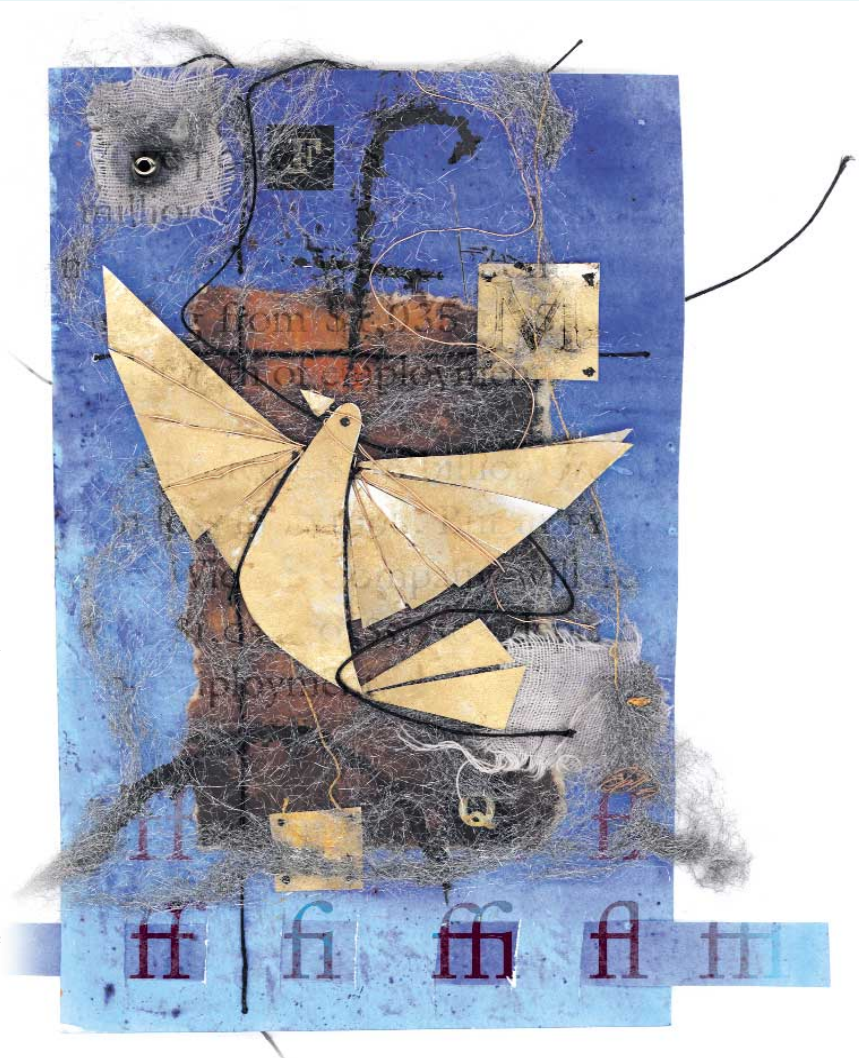
Jim Heid (www.heidsite.com) has been a contributor to *Macworld* since 1984, and is Web-multimedia-technology consultant.

create print

The golden age of type

Make your text look more professional.

By Kathleen Tinkle



KARLI HENSHALL

At no other time in history have so many people had the wherewithal to set type. As far as technology goes, this is typography's golden age. We have more power than the commercial typesetters of a decade ago: faster computers with larger hard drives; WYSIWYG software – such as Adobe InDesign and QuarkXPress – that allows us to assemble whole pages with type and images in place; and access to any commercial-quality font we can think of – at a tiny fraction of the cost typographers used to pay.

One thing hasn't changed – good typography still aims to give readers easy access to the printed word. The craft of typesetting is a never-ending quest for perfect spacing, and good typographic colour.

Dodgy character

Some of the problems that mar the graceful flow of text, and impede reading, are caused by a lack of appropriate characters in the fonts we use. Software is getting better at helping us solve these problems – QuarkXPress and Adobe InDesign both automatically replace appropriate letter combinations with the fi and fl ligatures, for example; and InDesign can, in some cases, go even further, fetching old-style figures (numerals) or small caps – so long as you're using OpenType fonts that include these characters (see "The hope of OpenType").

For now, however, we still need to search out other solutions for at least two of the problems that plague contemporary text. One problem is the tendency of some characters – the "f" in many typefaces – to collide with their neighbours, which creates distracting blobs that not only mar the graceful flow of text, but, also impede reading. And the other problem is the increasingly common use of acronyms, abbreviations, and runs of figures, which create small barriers to swift reading – it's as if the reader must climb over these rectangular objects. To solve these problems, you can turn to supplemental, expert, alternate, or SC&OSF (small caps and old-style figures) fonts.

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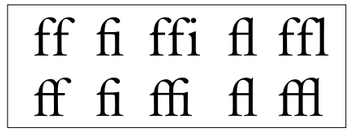
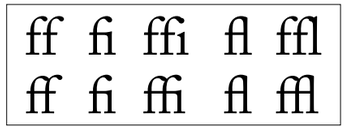
That uncontrollable f

It's almost certain that you'll need the standard five f-ligatures (ff, fi, ffi, fl and, ffl) to set readable, professional-looking text. This is because the lowercase "f" – which in many typefaces is topped by a sweeping arch that bows into the next



ITC Galliard
Without ligatures (see above, top) ; with ligatures (see above, bottom).



Adobe Caslon
Without ligatures (see above, top); with ligatures (see above, bottom).

ITC Winchester New
Some fonts offer ligatures (see above, top) that you may not need. The f in this font behaves without ligatures (see above, bottom).

letter's visual space – fits awkwardly next to some letters, including the l, the i, and the f itself. This ugly collision of letters can distract even casual readers, and make the words hard to read. Combinations with f are likely to cause problems, because we use ff, fi, and fl frequently in English.

Look at what happens with Carter & Cone Type's ITC Galliard and Adobe Caslon in the examples on the left and above. In each case, the serif, or finial, at the end of the arch bumps into the dot of the i, or the stem of taller letters, and the crossbars are the wrong length in these combinations. Using ligatures fixes these problems. Here are ways to find the ligatures you need.

1 Choose a font package that includes at least five of the f-ligatures in the base font. Although the mainstream font companies – among them Adobe, Agfa, Monotype, and Linotype-Hell – include only fi and fl ligature, some smaller companies make room for five f-ligatures. Most Font Bureau (**www.fontbureau.com**) fonts have all the ligatures, for example. So do the FF Thesis fonts from FontShop (**www.fontshop.com**); Winchester New, Founders Caslon, and Johnston from ITC (**www.esselte.com/itc**); and Adagio Didot from PrecisionType (**www.precisiontype.com**). This approach narrows your typeface choices considerably. But, having all the ligatures available at a keystroke – rather than in an expert set – is easier, and less likely to cause the expert character ligatures to revert to the regular face, the font defined in your style sheet. It also helps ensure even spacing, and saves on manual kerning.

The main drawback to using fonts with custom encoding schemes, is that the wrong characters show up if you reset the text in a different font, or if you exchange files across platforms.

2 Choose a font package that has a supplemental expert set available with the full set of ligatures. Most foundries produce these for their lines: the Adobe Original fonts, including Minion, Myriad – the font you are reading – Utopia, Adobe Caslon, Adobe Garamond, and Jenson; some classical fonts from Monotype (**www.monotype.com**), including Bembo, and Perpetua; and Cataneo and ITC Charter from Bitstream (**www.bitstream.com**).

The drawback to expert sets is that since kern pairs do not work from one font to another, you'll probably need to kern the imported ligatures manually to adjoining letters. If you use style sheets, there's also a risk that text will revert to the base font, so you'll have to proof-read carefully just before output.

3 Choose typefaces whose "f" doesn't overhang – they don't require f-ligatures. Paradoxically, this could include ITC Winchester New (see below, left), which has lovely ligatures in the base font. Other text faces with little need for f-ligatures include Sabon, Meridien, and Trump Medieval.

Lumps in the text

Another impediment to well-spaced, easy-to-read text, is strings of large characters, usually capital letters or figures (also called lining figures – the kind normally provided in standard fonts today). These are as disastrous to text as lumps are in custard. They're common nowadays, with our use of acronyms and abbreviations, pound figures, long telephone numbers, and mixed letter-and-number expressions – such as FY1999 or Millennium 2000. These unyielding strings of bulky characters form dark clots in the text, which is unattractive and distracting to readers (see "Remove the lumps"). Worse, they become barriers to easy reading. They can also cause spacing problems, forcing gaps or crowding to avoid breaking a problem term.

Get rid of such nuisances by using old-style figures for the numbers in running text, and designed small caps instead of all caps for acronyms. Today's type designers provide old-style figures and small caps for fonts inspired by many historic periods, even for that quintessentially modern invention, the sans serif typeface. Berthold Formata (from Adobe), Scangraphic's Today Sans DsgnHaus (**www.dsgnhaus .com**), FF Scala Sans (FontShop), and non-Adobe versions of ITC Legacy Sans (from DsgnHaus or FontShop in the US) are among the sans serif font sets that include these useful characters.

Old-style figures

Old-style – lowercase, non-lining – figures have ascenders and descenders like those in the text around them, and normally vary in width just like other lowercase letters, so they fit together more gracefully when mixed with text. You have a few options for incorporating old-style figures into your text:

1 Use fonts that have old-style figures with the basic character set. This is the easiest way to get old-style characters into your text, although there aren't many of these fonts. With some of its newer fonts, including ITC Octone and ITC Winchester New, ITC gives you the choice of sets with either old-style or lining figures, each with standard bold and italic variants.

2 Although only a handful of fonts – such as Monotype's Bell and Dante, and Carter & Cone Type's Miller – have them, you can also use three-quarter-height figures instead of full lining figures (see "Three-quarter-height figures").

3 Use fonts that come with an expert set. This solution gives you all the characters you need, including the f-ligatures, but means that you'll be using two fonts in your text, and therefore, you'll need to proof-read extra carefully before printing the job.

4 Use fonts that come with an SC&OSF set. The main drawback to using a type family with only an SC&OSF supplemental font, is that you have no access to the three missing f-ligatures, which are essential for many type designs that feature a dramatically overhung "f" – and useful for aesthetic reasons in many other type designs as well.

Small caps

Designed small caps were out of style for decades – except in traditional book design – but they've had a renaissance in the past few years. These are not crudely reduced versions of the standard uppercase letters – they're proportioned differently and are usually wider than their larger cousins, with line weights balanced for use in text that includes both upper- and lowercase characters (see "Small-cap comparison"). If your software has a small-caps function, it's simply reducing the regular caps; one of the tip-offs is a kind of pinched look to the characters, along with spindly line weights, that appear awkward next to all the standard characters.

Although the small caps in many fonts today are just about the same height as the lowercase x-height, they should actually be a bit taller. You may need to increase the type size of small caps by half a point, or a point, to make them fit more gracefully amid lowercase letters.

Small caps are useful, in lieu of italics, to set off book titles in text, or for acronyms of three or more letters – but you'll have to convert the text to lowercase first. Small caps make a graceful transition into standard text from a rising or dropped cap at the beginning of a chapter, or article. They are also traditional for running heads and secondary titles in books.

Gently add letter-spacing for small caps – that is, add space between the letters – just as you would for all caps.

The ways to create small caps are similar to the methods for attaining old-style figures:

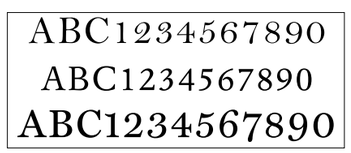
1 Use fonts that come with an expert set that includes small caps – this also gives you the f-ligatures.

2 Use fonts that come with an SC&OSF set. These fonts, available from Linotype, Adobe, and other mainstream companies, should have regular caps on the uppercase keys, which makes using caps with small caps much easier.

Traditional wisdom

Our Macs may have brought typesetting to a golden age, but for all its magical powers, the computer doesn't automatically produce professional-quality type that is both appealing to the eye, and, easy to read. For that we need expert characters, as well as some of the tricks of the ancient typographic trade to help us use them. MW

Kathleen Tinkel monitors design, type, fonts, and other aspects of publishing from Tinkel Design.



Three-quarter-height figures
Three fonts whose figures are three-quarter-height: Bell, top; Dante, middle; and Miller, bottom.

The hope of OpenType

Adobe and Microsoft have been collaborating on a new cross-platform font format called OpenType, that can include thousands of characters in a single font, with either Type 1 or TrueType outlines. On the Mac, Adobe's new InDesign page-layout program will be the first major application to support the new format, and some new "wide" fonts are expected from Adobe and others at the time of InDesign's release.

Unlike the case with Apple's QuickDraw GX a few years ago, users will not have to choose between traditional font formats and the new one – applications are supposed to be able to use any of the formats interchangeably. Users will be able to convert existing fonts to OpenType for purposes of exchanging fonts across platforms – although this will not cure the inherent conflicts between the Mac and Windows character sets – but no utilities will be capable of merging, say, regular and expert sets to create new wide OpenType fonts. We'll have to wait for the foundries to release these at some time in the future. So it doesn't seem that OpenType will help most of us solve problems with the use of expert characters in the next year or so.

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Remove the lumps
Text without expert characters (see above,top); text with old-style figures and designed small caps (see above, bottom).

Small-cap comparison
A designed small cap (see above, top right) is more graceful than a regular cap, reduced to match the small-cap height (see above, top left).

create graphics

Art history

Use vintage images to create traditional-looking artwork

By Jackie Goodman

Creating authentic-looking period pieces requires the right touch – details, colour, and images must all add to the effect. Graphic-artist and illustrator John Craig creates collages with that in mind. He combs antique stores and estate sales for vintage wood engravings, photos, and illustrations. His work goes further than appearing nostalgic – he uses digital tools to mimic old-fashioned production techniques and styles.

Craig started making vintage collages years ago, without any help from computers. But, the work process he established then, still affects how he works with a digital system. In the beginning, he used a stat camera to photograph engravings and images, pasted them up by hand, and colourized the whole image with Pantone film overlays. He also experimented with different ways to use film. For instance, he noticed that using the acetate side of the film gave his collages a cream-coloured, aged-looking background.

Them were days

Now that digital tools are so powerful, he includes them in his process, but still relies on some of his original hands-on techniques. He has also kept his original colour palette, so that his digital creations maintain that nostalgic feel.

Craig creates each composition manually, scans it, and colourizes it in Photoshop. He converts his scan to bitmap format, restoring the image to line art, while preserving its details. Converting an image to a bitmap lets him selectively apply colour, by lassoing only those details in the original line art that he wants to colourize.

For this project, Craig used a Canon CJ10 scanner/printer/photocopier and Adobe Photoshop 5 – running on a Power Mac G3. You can see more of his work at ***www.theispot.com/artist/craig***. MW

Jackie Goodman is a *Macworld* design associate.

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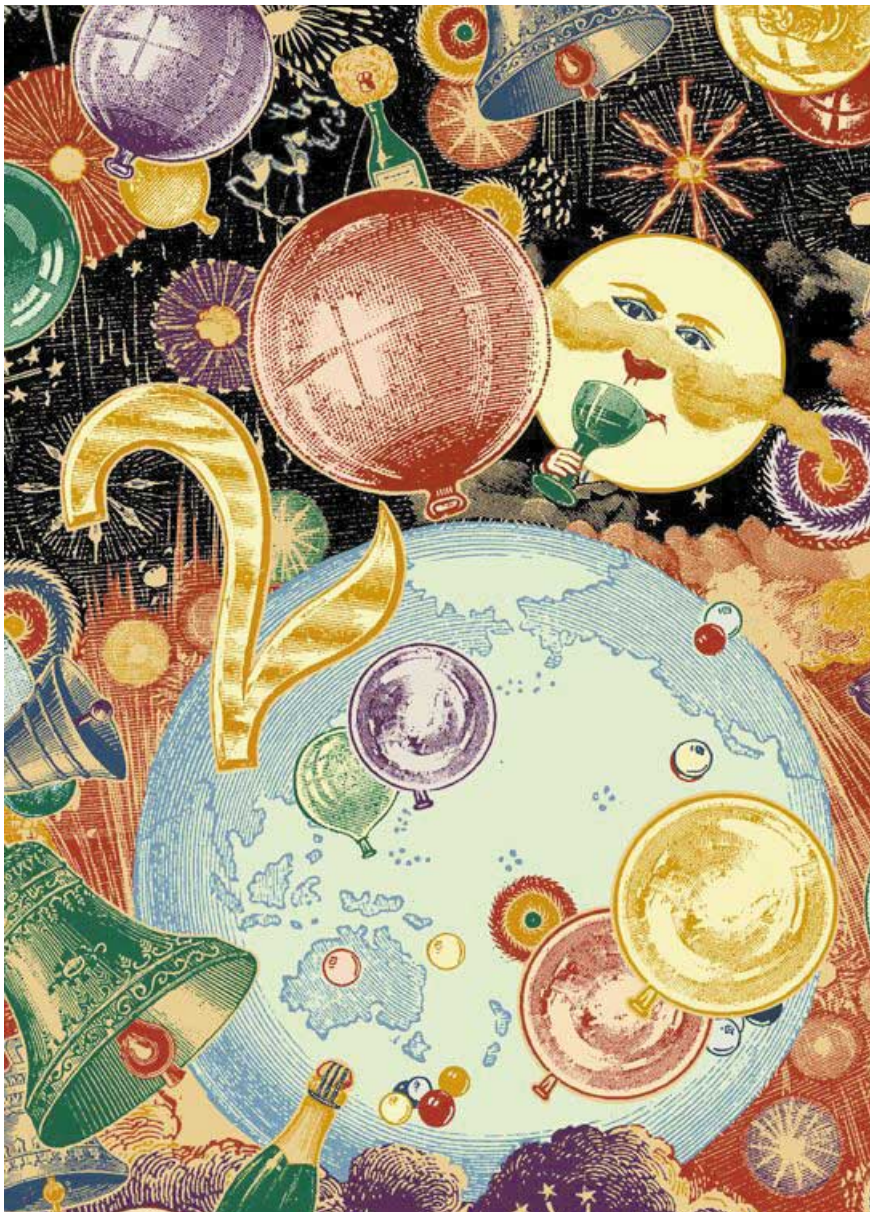

Countdown to 2000

Craig uses a palette that includes only seven dark colours, but his detailed application of colour gives the piece beauty and impact. His lasso-&-fill technique, with its sometimes painstaking pixel-by-pixel selection, preserves the detail in the original images. His patience pays off, as does his artful use of turn-of-the-century images to provide a nostalgic look at this century's passing.

Take a step back in time

1 For this composition, done for a travel magazine's survey of worldwide millennium celebrations, Craig began with illustrations taken from antique, novelty, and party-supply catalogues. He cut out the images, sized them on a photocopier, and created a collage.

2 Setting his scanner to ensure high contrast, he scanned the image, converted it to a bitmap, and then back to greyscale for editing. He used Photoshop's pencil and lasso tools to clean up stray lines.

3 In Photoshop, Craig began with a parchment colour as the background and placed the scanned line art on another layer. Then he chose Preserve Transparency, so that Photoshop would only apply colour to black pixels within the areas he would be selecting. Next he created a third layer for his highlight colours. Using the line-art layer as a guide, he traced various items – such as the balloons – in the collage with the lasso tool, and filled them with light colours. He derives some of these tints from the darker colours in his palette, and some from secondary colours. This gives tone and depth to the highlights, without competing with the richness of the darker colours.

4 Craig then filled all non-coloured areas with a gold tone. Note that the cream base is still visible in the moon face, and the selected fireworks centres.

5 Next, Craig coloured the entire line-art layer red – using Fill. He then selectively coloured the balloons, bells, fireworks, and portions of the background with the darker colours in his palette. To select each item, he used the lasso tool, and simply used the paint bucket for shapes that were fully outlined in the original engraving. Craig wanted a deeper background tint, so he created a new layer and gave it a butterscotch fill. Finding that a bit too dark, he added another layer of white, with an opacity of 50 per cent.

secrets

Follow the AppleScript

Even a complete novice can use AppleScript.

By Joseph Schorr

When AppleScript was introduced in the early days of System 7, it sounded like a dream come true: here, at last, was a scripting language for normal people – a language with a syntax built around plain English, one that would let average users automate their Macs without requiring the skills of a software engineer.

Then, I got my first taste of AppleScript. I found myself staring at code like this:

```
if (not (exists (file PrefFileName of¬
folder "Documents" of preferences folder)))¬ then
   set |state| to "New"
else
   if askOnRun then
      display dialog "Continue to¬ watch" &
((FolderToWatch) as string)¬
buttons {"OK","New","Cancel"} default ¬
button 1
      set |state| to the button¬ returned of the
result
   else
      set |state| to "OK"
   end if
```

To my non-programmer's brain, this looked less like English, and more like a cross between C++ and a bad EE Cummings poem.

I discovered, however, that you don't have to write code to create scripts. You can record AppleScripts using Script Editor, a little script-making program that comes with every Macintosh: it's in the AppleScript, folder inside the Apple Extras folder. If you click on Script Editor's Record button, and then perform tasks in any application that supports AppleScript recordability – such as the Finder in Mac OS 8.0 and later – Script Editor will record your actions, translating them into lines of AppleScript code on-the-fly. This capability lets you build useful AppleScripts that require little, or no tweaking. Consider a few examples that take advantage of some of the Mac's easily recordable system components.

Ultimate desktop clean-up

The Finder's built-in Clean Up command tidies things up by snapping your icons – on the desktop, or in a folder – into position along an invisible grid, but you can't control where it places those icons. With AppleScript, you can create a smart Clean Up command.

To start, launch Script Editor and click on the Record button in the Script Editor window. With Script Editor still running (you can collapse the window, drag it to a corner, or hide it in the background), clean your desktop – making it look precisely the way you want it to. One by one, drag each desktop icon to the exact place you want it to appear. Even if an icon is already where you want it, drag it slightly out of place and then back into position.

For the record

The Script Editor window records every action you perform in the Finder, capturing the final screen co-ordinates for each item you've selected and moved (see "Clean-up code"). When you're done, click on the Stop button in the Script Editor and choose Save from the File menu. In the Save dialogue box, change the Kind pop-up

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The voices of AppleScript

AppleScript can do more than streamline automate your workflow. It can also talk. AppleScript provides access to all those lovely voices used in the Mac's text-to-speech functions – the same ones you can choose from the Sound menu in SimpleText, or from the Voice pop-up menu in the Speech control panel.

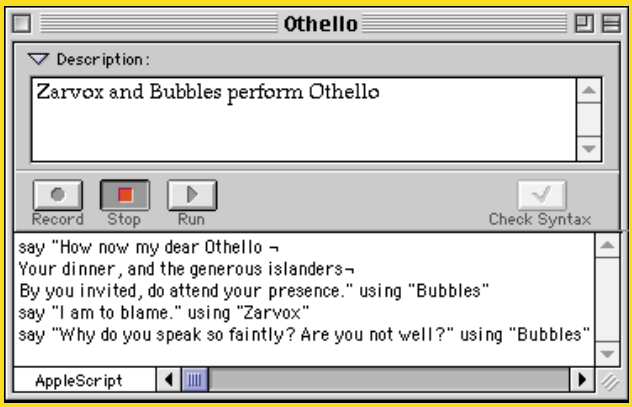
Adding speech to a script involves typing code, but it's pretty painless. Just type the word "say", followed by the phrase you want to have spoken, enclosed by quotation marks, like this:

```
say "boy, this script is sure going to save you a lot of time!"
```

If you want a voice other than the Speech control panel's default voice to speak the phrase, add the word "using" to the end of the phrase, followed by the name of the voice, again in quotation marks. For example:

```
say "your files have been copied" using "Kathy"
say "have a nice day" using "Zarvox"
```

You can place the voices anywhere in a script. You can even create a script that contains nothing but voices(see "Shakespeare in code"). For information about controlling the pace and pitch of voices used within AppleScript, choose AppleScript Help, from the Help menu in Script Editor, and do a search on the word speech.



Shakespeare in code

By following a sample syntax, you can have Mac voices talk to each other within any AppleScript. In this case, Zarvox and Bubbles perform Othello.

Write multiple-macros

Officially, AppleWorks (formerly known as ClarisWorks) allows you to create only one automatic macro, that will play whenever you open any document in a particular AppleWorks environment – such as word processing or drawing. But, *Jeffrey McLean* has discovered a workaround. He has figured out a way to make individual automatic macros for any number of AppleWorks documents – and without the help of AppleScript.

First, in each environment, create an automatic macro that triggers a keystroke combination, such as ⌘-option-A, that can play another macro. For instructions on creating an automatic macro, see the AppleWorks help topic "Create automatic macros". Or, go to the AppleWorks Web site (www.apple.com/appleworks)

Now, whenever you want a document to have its own automatic macro, just create a document-specific macro that plays whenever ⌘-option-A is pressed. The next time you open this document, the automatic macro for the environment will "press" ⌘-option-A, causing the macro to play – AppleWorks does the right thing, nothing, if you open a document without a macro that responds to ⌘-option-A.

Irksome Icon files

Sometimes when I create a new folder, it contains an odd file – an invisible Icon file with a size of 0K. This is annoying because I transfer entire folders to a Unix Web server, where the Icon file becomes visible. Why are these files created? Can I do something to prevent them from being created in a new folder?
Rene Kanters

The Finder creates an invisible Icon file to store a folder's custom icon. The name of this file begins with the word Icon, and ends with a return character. In Mac OS 8.5 and later, the Finder also uses this file to keep track of some folder view settings, such as custom column positions and sizes in a list view.

To prevent the Mac OS from creating an invisible Icon file, don't give a folder a custom icon. And, in Mac OS 8.5 or later, don't change any view settings that are stored in this file. Since Apple has not disclosed which view settings are kept in the Icon file, and which are kept elsewhere, you'll have to find this out through trial and error.

Icon files are of no use in Unix, so you can safely delete them on a Unix system. Not so fast on your Mac, however – Apple doesn't document all the settings that the Finder stores as resources in Icon files. So, don't delete an Icon file in Mac OS 8.5 or later – unless you are certain the file contains no resources. To see if a file has resources, open it with Apple's free ResEdit utility. ResEdit displays an alert when you open a file without resources.

Here's how to eliminate an invisible Icon file: drag the contents of the folder, that contains the Icon file, to a new folder that, doesn't contain one. Now you can drag the folder with the Icon file to the Wastebasket. Note that in Mac OS 8.5 or later, you must create the new folder inside the window of a folder – or disk – that doesn't have an Icon file, because a new folder inherits the view settings of its enclosing folder, or disk. If the enclosing folder, or disk has custom view settings stored in an invisible Icon file, so will a new folder created in it.

Unclog a jammed folder

I have created an unusual problem – I've stored so many files in one folder, that I can't open it. When I double-click the folder to open it, the folder window displays no files, no total number of items, and no total MB available. The watch pointer keeps spinning, but the folder contents never appear. Is there a limit to the number of files in a folder? How can I access my massive folder?
Paul Wermager

The Mac OS file system cannot access more than 32,767 items in a single folder, but the Finder can get bogged down or, even run out of memory, trying to open a folder containing far fewer files. You can correct this problem by employing the free Fat Folder Fixer utility, from Alsoft (**www.Alsoft.com/ AskAl/ download.html**); this utility distributes files from an over-filled folder to new folders it creates. You specify the number of files to put in each new sub-folder.

Remote lock-out

I use Mac OS 8.5's Web Sharing feature to access my office computer's hard drive, via the Internet. But, when I connect as the owner, I can see all the files on the hard disk, but, can't download certain files from non-shared folders. For instance, SimpleText and Deneba.

Unlike File Sharing, Web Sharing doesn't allow someone connecting as the owner to access all files on the hard drive, unless the drive has been explicitly set for sharing.

Speak volumes

For a great effect, make your MP3 player voice-activated by using a derivative of a previous tip, that showed how to open any document by voice command.

In your MP3 player application, create a playlist, set it to auto-play when opened, and save it with a name such as Play Tunes. Then in the Finder, select the playlist, hold down the escape key, and say into your Mac microphone: "Make this speakable". If you have set the Speech control panel to use a different key – or a spoken name – to alert the speech-recognition software, press that key – or speak that name – instead of pressing escape.

From now on, you can start playing this playlist by pressing escape and saying: "Play " into your Mac microphone.
Byron Bray

Apple's speech-recognition software is included with Mac OS 8.5 and later, but, might not be installed by default. You can use the Mac OS Install program to custom-install English Speech Recognition. You can also download the free software from Apple, at http://asu.info.apple.com/swupdates.nsf/artnum/n11400. After installation, turn on the Speakable Items option in the Speech control panel. If this doesn't work when a playlist is opened, try MacAmp Lite, $10 shareware from @soft (www.macamp.net).

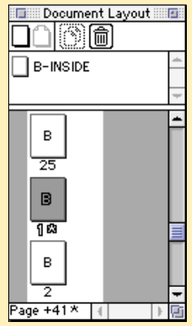
Reminder at shutdown

If you forget to turn off your monitor when you shut down, here's an easy way to create an on-screen reminder.

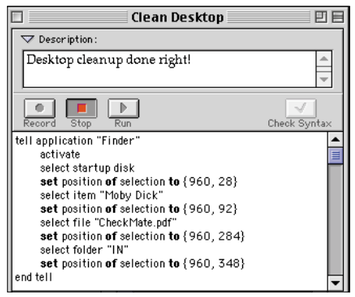
In SimpleText, or any other application, create a document that reads: "Don't forget to turn off the monitor!" Then select the message, and drag it to the desktop to make a clipping file. If this doesn't create a clipping file, select the message, copy it, open the Scrapbook, and paste it in. Then, drag it from the Scrapbook to the desktop. Next, double-click the clipping file to open it, and adjust the size and position of its window to your liking. Rename the clipping Monitor Reminder, and place it in the Shutdown Items folder – inside the System Folder. Now, whenever you shut down, the message will appear.
Garrett Albright

Print discontinuous QuarkXPress pages

Need to print discontinuous pages from a QuarkXPress 4.x document, in which the pages are not uniquely numbered? For example, the pages in each section may be numbered 1, 2, 3, and so on, and have no section prefixes (such as III-2). You can print discontinuous pages by specifying absolute page numbers in the Pages field of QuarkXPress's Print dialogue box. To specify an absolute page number (which defines a page's sequential order in the document), enter a plus sign (+) before the number. But, determining absolute page numbers can take a long time in a lengthy document. For a greta shortcut, see "Absolute page number."
Robert Nemoz



Absolute page number
To see the absolute page number of a page in a QuarkXPress document, option-click the page in the Document Layout palette and look at the lower left corner of the palette.



Clean-up Code
Here's an entire AppleScript created without typing a word of code. All you have to do is drag icons around on the desktop with Script Editor's Record function activated. Playing back the script automatically moves the icons into the recorded positions.

menu to Application, check the Never Show Startup Screen check box, and then save.

You now have a genuine AppleScript, that will reposition all your desktop icons exactly where you want them. Test the script by dragging the icons out of place, and then launching the script to neaten them instantly. You can set up similar scripts to clean up particular folders instead of the desktop, but beware: this simple script will always look for the exact icons you've specified, so use it only with items that will continue to be present.

Background Switcher

Suppose you're fond of the Bondi Extra Dark desktop pattern, but your better half prefers to work against a background photo of a Golden Poppy. You can record an AppleScript that will allow you to switch automatically between the two backgrounds, stopping those devastating arguments.

Again, start with a fresh script window in Script Editor, as outlined above. Click on the Record button, and then open the Appearance control panel, choose the pattern or picture you want, click on Set Desktop, and close the control panel. Then stop recording.

This script requires just a tiny tweak, due to an ugly recording bug. Notice that when you selected a pattern from the list, Script Editor recorded a line of code that says something like:

set background pattern to "3Ñ˘¿3Ñ˘¿3Ñ"

Replace the garbage characters between the quotation marks with the actual name of the pattern you chose, such as Bondi Extra Dark, so the line reads

set background pattern to "Bondi Extra Dark"

You must type the name of the pattern accurately, including the correct case, for the script to work. Save the script as an application, as described in "Ultimate desktop clean-up" above.

You can create a script for several favourite backgrounds, and place them in the Apple menu for easy access. Once they're in place, you'll be able to switch backgrounds by simply choosing a different script from the Apple menu.

Windows on demand

If you find yourself opening the same folders day after day, simply create a single AppleScript that opens all the folders you need simultaneously – and sets the sizes, positions, and view options of the resulting windows all at the same time?

It's easy with Script Editor's recording feature. Once you've started a new script and clicked on Record, open the folders you want. Set the view – such as icon or list – in each window, as well as the size and position of each window. Finally, close unwanted windows, so that only the items you want revealed are on screen. Then click on Stop and save the script. The finished script will fetch multiple folders in rapid succession, opening the windows just where you want them.

If these examples inspire you to create scripts for your favourite applications, first check to see how AppleScript-aware they are – actions may not be recordable in every program.

Of course, if you take the time to actually learn AppleScript, there's much more you can do to automate your Mac. But, even if you're not ready for this, experimenting with AppleScript's record-&-play approach to automation can make at least some of your work a little easier. MW

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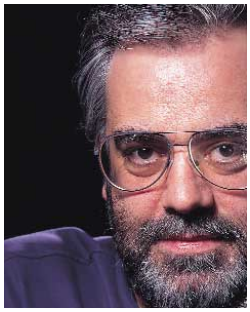
Macworld's features editor David Fanning and contributing editor Lon Poole answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send 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.

Peter Worlock



Welcome to Mac OS 9 – the least-impressive upgrade in living memory

Tired and tested

Sometimes you simply have to throw up your hands and laugh at Steve Jobs' sheer brass neck. The man has an outrageous effrontery that you can't help but admire (however begrudgingly, in my case). There have been any number of examples over the years, but none as daring as the recent launch of Mac OS 9. Has any piece of software ever been less deserving of a "whole number" designation? OS 8.7 would have been more appropriate. Apple's Web site promoting the "new" OS claims 50 new features, but seems to list only 20. The excellent Macintouch Web site repeats the claim for 50, but appears to have found only 17.

However many features there are, you can't help but stifle a yawn when you examine the headline list. Sherlock 2? As reviewer David Fanning pointed out in these pages (November Reviews, page 61) there's a handsome little utility called Copernic99 that does pretty much everything Sherlock does, does it cross platform, and costs a lot less than Apple's offering.

Voice-recognition for start-up passwords? Well, excuse my scepticism. Try that in business class on a trans-Atlantic 747 and listen to the uproarious guffaws of your fellow corporate road-warriors. The "Keychain" idea is no better: we had that in System 7 and Apple dropped it because of universal indifference. As for start-up passwords in general, Windows 98 and NT has had them for ages.

I've commented on this before, but the number of "new" features in the Mac OS that Apple is simply stealing from Windows is now becoming a major embarrassment. Weren't we supposed to be the innovators?

Which leads us to OS 9's remaining headline features: auto-updating and multiple personalities for multiple users. Both have been in Windows 98 since Day One and aren't that compelling anyway. Auto-updating would be far more impressive if it actually automatically downloaded all of the software fixes you'll need if you switch to OS 9, since Apple has managed to break a surprising number – including Adobe Type Manager. How did they overlook that one?

And, is it just me, or do I really remember an Apple-Adobe deal some years ago, under which ATM was meant to be built into the OS anyway?

There are reports of rather more serious problems with high-end graphics packages, such as Electric Image and Lightwave – with no fix imminent.

So there you have it: the least impressive software upgrade in living memory. But at least we got a laugh out of it: the notion of US retailers holding special midnight openings and OS 9 parties was simply eye-watering.

However, there'll be nothing amusing if Apple screws up the next major OS event: the launch of OS X. It's officially due next year, but the Mac community worldwide is talking itself into a frenzy of expectation for Macworld Expo in San Francisco in January. Jobs is too much of a showman to not to have that date – four days into the new millennium – at the forefront of his mind, too.

Every Apple CEO, either interim or 'permanent' (odd that the interim one lasts longer than the permanent sort), has promised us this operating system – really the only Mac OS upgrade that has mattered a damn for the last ten years. Every one to date has failed miserably.

OS X should deliver the things that we genuinely need: multi-tasking, multi-threading, and memory protection. I don't remember Unix being part of the deal, but if that's what it takes …

Beyond that, it would be nice if Apple could also steal some of the better ideas from Windows. How about a disk-formatting utility that doesn't spit in your eye if you've had the temerity to install a non-Apple drive? How about some genuinely useful tools for managing and protecting your data – and I'm not talking about fingerprint recognition on a touchpad. How about the disk defraggers, de-duping tools, data compression and other utilities that Windows users have enjoyed for years?

How about a tool for uninstalling software? Although the Mac still shines brighter than competing systems for the ease of installing software, the process has become extremely messy lately, with applications scattering extensions, libraries, preferences and other fragments of code throughout your System Folder. An Uninstall utility would be a genuine OS improvement. One of OS 9's little-discussed features – Packages – may or may not help here.

In the final analysis, how about some of that genuine innovation and software-engineering brilliance that used to be Apple's stock-in-trade? MW