MORE NEWS, MORE REVIEWS

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Air Force

COOL! Flat screens rated

Make your Mac even sexier with AirPort

Mac OS X
Apple reveals more!

Get connected
Make your old stuff work with new Macs

Illustrator 9.0
Reviewed

Web animation
We show you how it's done

MACWORLD

86 Apple's Airport wireless technology lets you throw off the yoke of cabling, giving freedom of movement – whether you're surfing the Net on your home iMac or office Power Mac G4, or on the road with an iBook or PowerBook.

contents

July 2000

read me first
Simon Jary, editor-in-chief

R eaders may be alarmed at our news (page 42) that sales of Apple's phenomenally successful iMac computer seem to have slumped. I'm sure Apple is upset, as the iMac is its flagship product – wooing woozy Windows users and seducing computer novices with its retro-cool design, see-through plastics and nifty DV features.

The iMac is the key to Apple's recovery from the dire state the company found itself in after years of complacency and missed business opportunities. Just look at the numbers... According to the latest stats from analysts PC Data, Apple is the number-four PC vendor with 9.6 per cent of the market – behind eMachines (13%), Hewlett-Packard (32%) and Compaq (34%). Despite PC Data not including direct sales – and so precluding Dell from its figures – these are stats that Apple would have killed for two years ago.

What's galling for Apple is that it recently successfully sued third-placed eMachines for blatantly copying the iMac's design. eMachines even has the cheek to rip off Apple's Think Different brand – its slogan is (ironically) "Changing the way you think about computing".

So why the gloom about iMac sales? Read further into PC Data's figures, and you'll discover that Apple's sales' volumes are actually down on this time last year. Apple's year-on-year growth is below the industry par, despite encouraging shipments of Power Macs, PowerBooks and iBooks. Apple's share at Christmas was 11.6 per cent. Put two and two together, and you get a marked slump in iMac sales. Scary.

PC Data blames Apple for allowing the iMac range to stagnate – it hasn't been refreshed since October 1999, when the iMac went DV with FireWire, DVD and a revamped case design. If the iMac DV seems pretty new to you, then consider this – a PC vendor would have updated the iMac again in January.

By its very nature, the iMac competes with Windows PCs. So, Apple is losing out by letting its competitors race ahead. Sure, they're racing ahead with the inferior Windows operating system and all their PCs are uniformly boring beige, but ahead is still not behind.

More than half of all personal computers sold in April were sold with 17-inch monitors. What's worse, a further 10 per cent came with 19-inch screens. So, even if Apple increases the iMac's 15-inch screen to 17 inches, it'll still be running behind the pack.

PC makers are also offering read-writeable CD (CD-RW) drives in their consumer PCs – a massive 40 per cent of PCs sold in April could copy CDs as well as just read them. Here, Apple is too far ahead. DVD is technologically newer than CD. But the ability to burn your own CDs is functionally more advanced. And, just as consumers want bigger screens, they look for functionality ahead of technology. There aren't that many DVD titles out there, aside from DVD-Video movies – and who'd watch *Gladiator* on an iMac when you've got a 29-inch widescreen telly in front of your sofa?

Apple ignores PC Data's stats because it ignores its direct sales from the Apple Store and doesn't reflect sales of all the iMac's colours as one. It claims that its unit sales in the second quarter of this year were over a million – a 26 per cent jump from the same period last year.

But, with iMac sales slowing down, Apple ignores PC Data's figures at its peril. To drive the iMac's momentum back to its previous record-breaking levels, Apple must act very soon. Here's my suggestions; let me know what you think by emailing me at *editor@macworld.co.uk*.

15 inches is very 1999. Apple must offer an appropriately priced 19-inch iMac as soon as possible. I believe there's still room for smaller iMacs, but we're talking 17 (not 15) inches here. Messing with an undoubted design classic ain't going to be easy, but if anyone's going to do it right, it's Apple.

CD-RW is better than DVD. This may be a hard fact to swallow, but, right now, DVD is for tellies not computers.

Extremely fast is not fast enough. While the iMac's 400MHz PowerPC G3 might blow away 700MHz Pentium IIIs, your average consumer isn't going to understand a word of explanation. Apple must push IBM and Motorola to play the megahertz numbers game.

Five colours do not a rainbow make. Updating the iMac is easier than revving dull-looking PCs. Apple should release some new colour schemes for the iMac. Why has there never been a Banana or Lemon iMac? It really pains me to suggest it, but a less brand-conscious Apple could shift tens of thousands of Manchester United-flavoured consumer computers. iMac Utd, anyone? The iMac is not a niche product. It's for the horrible masses. A Chelsea Cinema Display would be nice, though...

If you look at Compaq and Dell, there's clear evidence that thinking different isn't always the best policy. To maintain the iMac's lead as the top consumer PC brand, Apple should go back to basics and ask the public what they really want from a computer. Think features, think screen size, think similar. **mw**

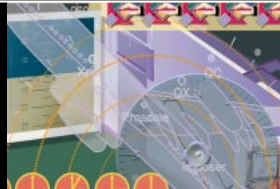# Macworld

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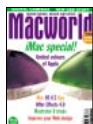**The ultimate reference guide and news source for the Mac market.**

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Macworld

A full working copy of Strata 3D and 30-day trials of Freeway 3 and LiveMotion set the scene for a fantastic main CD this month. There's also 30 top demos and trials plus over 200MB of shareware and 100MB of updaters — Vic Lennard leads the way…
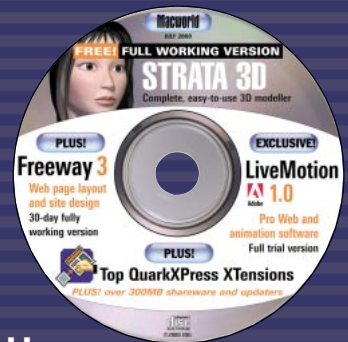
Install Me
Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ **Acrobat Reader+Search 4**
Install this version to be able to read many of the on-screen manuals.

■ **StuffIt Expander and DropStuff**
Versions 5.5, 5.1.2 and 4.5 are included.

■ **System tools**
The CD also carries the latest versions of InternetConfig (2.0.2) and necessary HyperCard items.

■ **QuickTime 4.1**
Some programs on the CD require QuickTime 4.1. This can be downloaded from www.apple.com/quicktime/download.

SoftPress Freeway 3 30-day trial – exclusive!

Freeway 3 is an even better Web editor than its predecessor, including speed enhancements and scripting capabilities. Its 'page and pasteboard' environment and DTP-style layout tools and typographic controls will have you feeling comfortable from the first time you start a Web site – even down to the keyboard shortcuts. Free-form layout is simple, with a wealth of layout tools including transformations, zoom, guide and ruler features, all with both graphical and numeric controls for accurate positioning. Content can be placed in overlapping boxes – text on graphic, text on text, graphic on graphic, even text on animated GIFs!

Adobe Illustrator and Photoshop files can be imported directly into Freeway, where they are automatically converted into Web-ready formats. Freeway can also use Photoshop plug-ins to import (and export) a wide range of non-native graphic formats, and works with Photoshop scanner plug-ins to allow images to be scanned directly on to a page. A new multimedia preview feature combined with an extended set of options for QuickTime and Flash content gives you greater flexibility and control in incorporating multimedia in Web pages.

Multiple master pages, a new link map providing a complete overview of the hyperlinks that connect each page in a site, actions with a built-in JavaScript interpreter – Freeway 3 offers plenty. Try it for 30 days.

Strata 3D – fully working program free!

Strata 3D is a complete, easy-to-use three dimensional creation package. High detail and rendering quality help you produce animation and special effects for film, broadcast and games. The new export features allow you to port stunning content to the Web for e-commerce solutions. Within minutes, create 3D models, apply sophisticated textures, and add dramatic lighting to render stunning 3D effects. Innovative Web connection technology submerged in the software keeps you on course, with an instant lifeline to 3d.com libraries, information, tutorials and resources.

Fire it up, log on to 3d.com for your serial number and you're into three dimensional creation – permanently!

Serious Software

Adobe LiveMotion 30-day trial – EXCLUSIVE

Adobe LiveMotion is the solution for authoring high-impact, interactive elements and engaging animation for the Web. Create everything from individual, dynamic Web graphics to complete pages that incorporate motion, sound and interactivity. Thanks to the object-oriented, vector-based authoring environment, you can work with maximum efficiency while exercising unlimited creative freedom.

Yours to try for 30 days.

VSE Be Found 1.7

If your Web site isn't getting the traffic it should, chances are that it's not ranked highly enough on the major Internet search engines. Without a good listing in these, your site will never be seen.

VSE Be Found automatically submits your Web site to the most important search engines. It's actually four programs in one: a keyword finder; a META tag manager; a search engine submitter; and an FTP client.

The unregistered version is fully functional but save-disabled and submissions can only be made to Alta Vista.

Grammarian 2 v2.1.1 demo

Grammarian is an interactive grammar checker that parses grammar problems and suggests corrections. Version 2 uses a Control Strip module and Apple's Contextual Menus, making it even easier to work with. The perfect partner to Casady & Greene's other checker, Spell Catcher, this demo expires 21 days after first launch.

Inside Macworld

Our Serious Software folder also hosts 22 items that tie in with the Create Print feature, Product News, Reviews and Secrets. These include:

Cleaning Agent 1.0	QC 4.17 demo	UnCoverIt 1.2
Crackerjack 3.1 demo	Table2000 demo	WebPrint Plus 3.0 demo
Cumulus 5 trials	Toast 4.1 updaters	Z-Write 1.0.1

Don't miss...

■ **Cool Extras!**   **Apple Movies**
Latest Mac OS X screenings

AutoPurge
Solve Mac OS 9's temporary folder problem

Enhancement Pack   *Shareware goodies for AppleWorks 6*

Magic Number & Myth II – Soulblighter icon set

■ **Netscape**   **Communicator 4.73**

■ **Mac ISPs**   **Internet access offers from AppleOnline, easyspace & FreeUK.**

■ **plus…**   **Many thanks to Simon Youngjohns for our CD icons.**

Also on the CD

COMMS & INTERNET
17 applications including:
Email Archiver 1.8
HTML OptimizerPro 1.7
StyleSpinner 1.0.1
XML Tools 2.0

EDUCATION
Four programs including:
English-German Dictionary 2.1
Ultra Lingua ES-ENG 1.0
Vocab 1.7.1

FONTS
FontBuddy 1.9.2
FontShowcase 2.0.3
Simplefont 1.2

GRAPHICS
11 items including:
Etchelon Macdoodle 1.1
Etchelon Tracer 3.7
FractalDesigner v2.0
Rainbow Painter 1.9.0

ICON UTILITIES
Four utilities including:
IconBuilder Pro v2.0
Kineticon 1.7
PreviewMaker 2.4.1 PPC

INFO
Five items including:
1984 Online issue 24
ATPM 6.05
MyMac 6.1
plus nine utilities for developers
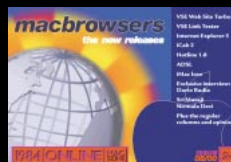
MATHS & SCIENCE
Five programs including:
Periodic Table 2.1
SlideRule 2.4.1

PALM PILOT
Mac Palm Doc
Palm Desktop

SOUND & MUSIC
Nine applications including:
FreeMIDI 1.44
MACAST Lite 2.1
QTKeys 2.1.1

UTILITIES
Eleven categories comprising almost 60 useful tools for your Mac including:
AdobePS 8.7
DragThing 2.8
FinderPop 1.8.6
PrintToPDF 1.5.3
ramBunctious 1.5
ShadowCaster 1.0 (InDesign)
TextBroom 2.0
TextSpresso 1.6.1

UPDATERS
This month's dedicated updaters folder includes over 120MB of patches to bring many popular applications bang up-to-date, including:
Adaptec Toast 4.1
Canvas 7.0.1 SE
Cubase VST 41r2
DiskWarrior 2.0.2
Hermstedt ISDN CD 10
MagicScan 4.4
MAXpowr 2.0.4
Norton AntiVirus 5 & 6 (05/00)
SoundJam MP 2.0.2
StuffIt Deluxe 5.5.1
Virex (05/00)
Virtual PC 3.0.3A

Other demos & trials include:

Bookends 6
CyberGauge 3.0
FontDoctor v4.0
ie Write
OmikronBasic 6.53e
QXP PhotoBook 1.0
REALbasic 2.1.1
VPC Helper 2.1.1

Shareware

Association of Shareware Professionals™

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Macworld

A second cover CD dedicated to games! Top gun is the full version of Casady & Greene's Zone Warrior 2 ably supported by over a dozen major demos and 50 assorted shareware games plus utilities, updaters and total conversions. Vic Lennard comes out blasting!

Zone Warrior 2 – full game!

Zone Warrior 2 has tons of action and enhanced graphics for 3D space flight simulation! The year is 2100AD and human civilization is about to reach the capability to develop interstellar travel. A nearby alien race doesn't like the idea and so they attack. It's up to you to defend your space stations from the alien attack so jump into your space fighter and take 'em out. You'll never want to come down to earth again!

Features include real planet pictures and star maps, fully textured graphics rendered in real-time, texture-mapped galaxies, nebulae, space stations, explosions, alien spacecraft – in fact, everything is texture-mapped!

This is the full game. It requires a Power Mac (G3 or higher recommended) with Mac OS 8.1 or later and at least 10MB of available RAM.

Combat Mission demo

Combat Mission: Beyond Overlord is a tactical 3D game of World War Two combat. It's played by giving orders to your troops each turn, and then watching them carry out your commands in simultaneous real-time action.

If you're new to Combat Mission, the best approach is to play intuitively. Think of how you'd best command a company of infantry and tanks in the real world, and just do what makes sense to you.

The demo is fully playable and includes two scenarios, each of which can be played from either the Allied or German perspective. Full instructions are also included.

To play, copy the entire folder to your hard disk and then double-click on 'Combat Mission Demo'.

Avernum 1.0.2 demo

You are never going to see sunlight again. You will never breathe fresh air, or be warm, or feel safe. That is your punishment. For your crimes, you are to be thrown into a magical portal and banished to Avernum, never to return.

Avernum is a series of caverns, far below the surface of the world. It is a dark, subterranean prison, a place where exiles like yourselves spend the rest of their lives, far from the light. Early one morning, in a low stone building far from any city, you are taken to be teleported. You breathe clean air one last time. Then they throw you in...

Avernum is an epic fantasy role-playing game and this demo will allow you to play about a quarter of the game.

Major games

Nanosaur 1.3.2

You are a dinosaur (a Nanosaur to be exact) from the future who has travelled back in time to collect the eggs of five species before the giant asteroid hits the earth. The 'primitive' dinosaurs attack you as you try to get their eggs, but just remember that it's for their own good as you blast them into oblivion! You can jump, swim, run around, jet around, shoot... and the general rule is 'if it moves, kill it or it'll kill you.' You only have 20 minutes to collect all five species.

Battle Girl demo

Control the fate of battle-girl as she fights Terminus, Weapon of Chaos. This is one very fast game, running at a silky-smooth 60 frames per second. It's hectic yet the controls are easy to use and precise.

This demo features levels 1, 2, 3, 5, 10 and 40 from the complete game. Levels 1-5 are fairly tame, but you will still have to play several times to learn the controls and reach level 5. Level 10 is a moderate jump in difficulty. Level 40 is an advanced level, but don't worry – you get a powerful weapon to even up the odds!

Last Call demo
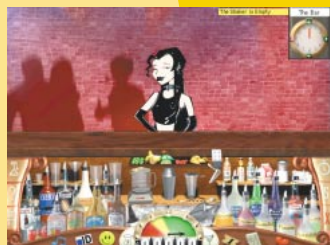
This one's an absolute hoot! The idea behind the game is to earn tips. To earn tips, you must mix drinks quickly and accurately, as well as deal with your customers. Drinks range in difficulty from the no-brainer vodka shot, to the Alabama Slammer. The Last Call demo features seven patrons, each with distinct personalities and quirks. As with life, there are other more subtle goals that become more apparent as you play and enjoy Last Call. The demo is limited to a single save-disabled level.

Other demos include:

Alchemist	Realmz 7.0.9
Bridge Baron	Virtual Wings Pro 1.5
Kawasaki ATV 1.1.1	X-System 5.29
Noemi's World	Young's Modulus 1.35

Also on GamesWorld

The Time to Play! folder contains 50 of the best shareware games around!

ARCADE
Alien Assault 2.0
Blaster Jets
Boom 1.2.1
BrickBreak
Bub and Bob 1.6.3
Captain Bumper
Cave Bombers
Eat-o's 1.1
FirePong 2
GunPlay
Koji The Frog 2.0.4

MacBrickout 4.0.4
Mega Minesweeper
Miniature Golf
Nanosaur Extreme!
NetTower 1.2
Space Dungeon
Steel Fighters
Timewaster Collection

ADVENTURE/RPG
Jewel of Arabia 1.3
Space Can Suck! v2
Worlds Apart

BOARD GAMES
David's Backgammon
Eternity 1.0.2

Fuffy v2.0
Kenzo 3.0.1
MacFIBS 4.1.7
Netzee 1.0
Pork Barrel 1.5
Reversi Unlimited
Screamer Chess
Tic-Mac-Toe 1.0

CARD GAMES
Blackjack Royale 1.2
Mike's Cards
Poker Hole 1.0
Spades Deluxe

PUZZLE/STRATEGY
Blobs 3.1
BlockForge
Candy Crisis
Chocoletters 1.5.6
Dots
Mimic 1.0
Puzz-3D Mini Clock
ScreenTest 1.1
Sliding

SIMULATION
Cricket v5.1
Distant Suns

WORD PUZZLES
C.DEV Boogle 2.0
Crossword Wizard 3.4
MacCrypt

The Goodies folder houses four total conversions for Myth II, Marathon ∞ and Unreal Tournament

In the Utilities folder you'll find ACE! 1.7.3, a saved games editor, Aleph One, an improved Marathon 2 engine, GLQuake and UTilities 2.0

Updaters includes Bugdom 1.1.1, Tomb Raider 2 Gold and Unreal Tournament 413

Inside Mac Games

Don't miss the free sample copy of Inside Mac Games, the CD-based magazine. Check out the latest Mac game reviews and previews, read the news, and enjoy the features, including an interview with LucasArts and info on Mac game publishing.
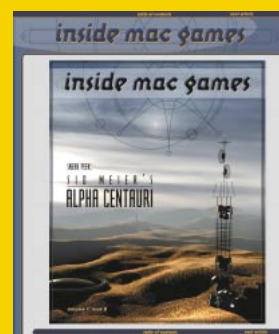
FAULTY COVER CD-ROM?

If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or at kelly_crowley@macworld.co.uk.

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.

Macworld CD catalogue

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2000 – over 173,000 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 (2.0.2) is also included – don't forget to register if you find our library useful.

Mac OS X better but late

Refined OS: X answers its critics

Apple to release public beta of new operating system in July

The next-generation Macintosh operating system, Mac OS X, is a step further to completion with Apple's release of its fourth developer preview to the 4,000 developers attending its annual Worldwide Developer Conference (WWDC) in mid-May. The latest version has been praised for addressing many of the complaints about the earlier version. However, Mac OS X will not be finished in time for its scheduled distribution at Macworld Expo New York in July. Instead of the finished software, a public beta will be released.

Apple CEO Steve Jobs demonstrated the new features in Developer Preview 4 (DP4) of Mac OS X at WWDC. Developers cheered as Jobs showed a more Mac-like OS along with sophisticated graphics capabilities, including tight integration between the Quartz 2D display environment and the OpenGL API for 3D applications. Apple has clearly been taking steps to address the Mac community's concerns.

DP4 addresses complaints from some developers that DP3 was too much a radical departure from the current Mac OS. For example, DP3 used enlarged system fonts while DP4 restores the font metrics from the current OS. See our review of Mac OS X (DP3) in April's *Macworld*.

"When we shipped DP3 we got a lot of feedback and we listened to it," Jobs said. "We spent a lot of time integrating the feedback into DP4."

The new release, he said, has "some rough edges but it's really looking good".

With DP4, Mac OS X now has a more Mac-like Finder. You can clutter the desktop with alias-like files, folders and volumes that point to the original locations. You can arrange icons as you please, without being forced into a grid. New platinum-sized fonts and buttons – in contrast to DP3's oversized elements – allow developers to port applications without re-arranging their screen real estate.

In one of the most eye-catching demonstrations, Jobs showed off Mac OS X's Quartz imaging software by creating a logo of the recent *Toy Story 2* movie. Then, demonstrating Quartz's integration with OpenGL, he opened a separate window with a 3D model of a bottle. The *Toy Story* logo became a label on the bottle; as Jobs modified the logo in the 2D window, the label was instantly updated in the 3D window, even as the bottle rotated.

This preview version of Apple's thoroughly updated operating system includes the final Application Program Interface (API) specifications required by developers to complete upgrades of their applications to take full advantage of Mac OS X's new capabilities. An API is the interface between the OS and applications, including the way the programs communicate with the OS, and the services the OS makes available to the programs.

"With this Preview release, developers now have everything they need to make killer applications for Mac OS X," said Jobs.

Jobs exhorted developers to "stop immediately developing for OS 9". With the release of DP4, Jobs said, "there's no reason not to develop for Mac OS X."

Developers rally for X
"We are incredibly pleased at the support we are getting from many of the world's best software developers for Mac OS X, the future of the Mac platform," said Jobs.

Apple claims that more than 200 developers have committed to delivering products for Mac OS X since early January, including Adobe, Alias|Wavefront (see page 20), Avid, Canon, Dantz, Digidesign, Disney, EarthLink, Epson, FileMaker, HP, IBM, Macromedia, Microsoft, Palm and Sun.

"Adobe is excited about bringing its award-winning software solutions for Web and print publishing to Mac OS X," said Bruce Chizen, president of Adobe Systems.

"With superior 2D graphics and Open GL, the industry's most-widely supported 3D graphics technology, Mac OS X offers an excellent platform for CD-ROMS and interactive games," said Frank Evers, VP production, Disney Interactive.

"Our engineers have been enthusiastically working with Apple to be among the first manufacturers to offer printer drivers that support this new operating system as part of our ongoing efforts to support the Mac market," said Dan Crane, vice president of marketing at Epson.

"Microsoft will continue to innovate on the Mac by providing Mac OS X applications that offer features not found in the Windows versions of our products," said Kevin Browne, general manager of Microsoft's Mac Business Unit. "Internet Explorer 5 Macintosh Edition will ship with Mac OS X as Apple's browser of choice."

For more on Microsoft's plans for Mac OS X, see our exclusive interview with Browne on page 24.

"We're going to embrace OS X wholeheartedly," said Michel Rynderman, a consulting engineer for Avid, manufacturer of high-end video-editing hardware and software systems. "Still, there's a lot of work ahead for us."

Chris Bentley, a senior software engineer at ATI, said the default 3D drivers that will be included on Mac OS X systems are being built in conjunction by Apple and ATI.

"We're working hard on Radeon drivers," he said, though he could not comment on whether Apple will include ATI's upcoming Radeon 3D card (see *Macworld*, June 2000) in its systems.

Despite all the official plaudits, many developers did have complaints. "For the third year in a row, it's 'next year,'" said Kelsey Schwind, an Adobe developer. "I'm encouraged by the progress, but I'm worried that there's still so much to do." Some developers said they hoped the revised schedule for Mac OS X would give Apple time to fine-tune the OS and resolve pending issues, such as drivers for peripherals.

Free apps from Apple
Mac OS X includes about 50 applications – all of them optimized to take advantage of the new operating system.

An AddressBook keeps email addresses and other information about people in one place. This links with a free Mail application that lets you send and receive email with pictures, sounds, and movies, as well as text. Like Microsoft's proposed new features for Office 2001 for the Mac (see June 2000), Apple realizes that many people use their Mac as their principal personal-information manager.

First there was TeachText, then SimpleText... now Apple brings you TextEdit – the latest of its simple, free word processors. Stickies remain on board, so you can write notes and "stick" them on your screen with the Cocoa implementation of the current utility. Preview lets you quickly check out your document contents.

QuickTime Player plays movies and views pictures, as well as playing music and QuickTime TV. Grab takes screenshots of your desktop or open window. And of course, the Mac's super-sleuth Sherlock – probably at version 3 – remains the key Internet/disk search engine.

Beta late than never
Apple originally planned to ship Mac OS X to the public this summer. Instead, a free public beta of Mac OS X will be available. The final version 1.0 of Mac OS X will be available in January 2001 at Macworld Expo, San Francisco. Mac OS X is designed to run on all Macs using PowerPC G3 and G4 processor chips, and requires a minimum of 64MB RAM. OS X will be "available for pre-install" on Macs from January. Apple has not yet announced pricing. **MW**

Simon Jary, David Read, Stephen Beale, Daniel Drew Turner contributed to this WWCD report.

Mac OS X revamp
Apple has added Finder-like features for viewing and organizing files. You can now view files through a browser interface, a list view or Mac OS icons. The browser lets you preview QuickTime, QTVR, and MP3 files. DP4 also features a new Save dialogue in the application window with pop-up menus listing the user's favourite folders for storing documents; you can also navigate the file system as you can in the current Mac OS.

> **"Mac OS X is clearly the most important thing we're doing at Apple"**
> — Steve Jobs

Dock dukes docs with puff of smoke

Steve Jobs demonstrated refinements in the Dock, an area in the bottom of the screen for storing commonly used applications and files. The Dock now features a transparent blue-grey background and organizes applications on the left and documents on the right. Items in the dock point to the file's original location. See the main screenshot opposite for the full view. Removing the icon from the dock does not affect the original file. When you do remove an item, it disappears in a cartoon-like puff of smoke (see above).

Top 3D app moves to Mac OS X

After a year of intense speculation from the 3D community, Alias|Wavefront has announced that its high-end 3D animation program, Maya, will be available on Apple's forthcoming next-generation operating system, Mac OS X. The announcement came at May's WWDC and represents a massive turning point for 3D on the Mac.

Maya – currently available for Windows NT and SGI IRIX systems only – is the leading 3D animation and effects software package. It's a system that is ideal for producing 3D actors and creatures for films and broadcast, while its sophisticated dynamics simulation system was used by ILM in *Star Wars Episode 1: The Phantom Menace* for the incredible pod-race crashes.

Maya has an extensive toolset for the creation of 3D graphics such as advanced NURBS and Polygonal modelling, a visual shading network, and powerful flexible rendering features such as IPR (Interactive Photoreal Rendering) for previewing final quality output as users make changes. Innovative and exciting technologies, such as Paint Effect and the Trax nonlinear animation system in Maya will help revitalize 3D on the Mac.

Ideal fit

The move to Mac OS X was prompted by "overwhelming requests from the Macintosh community to make [Maya] available for the Mac" says Richard Kerris, Alias' head of Maya development. The fact that there are already over 1 million G4 Power Macs in the marketplace also had an impact on the decision. He went on to say that most of the development team themselves used Macs, and that Maya on OS X was an ideal fit, not least because of the OS's solidity, performance and superb OpenGL
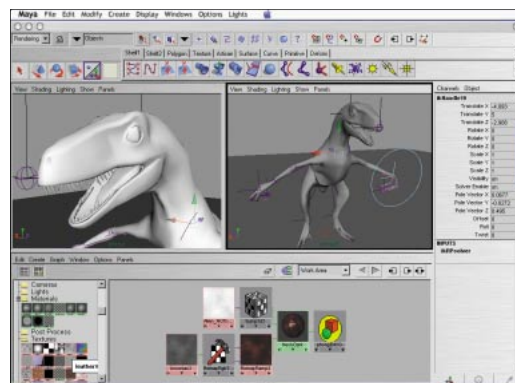
implementation. Kerris also praised Apple's staff for their help and commitment in making this happen. Maya OS X will be a fully fledged Mac OS X app that can be easily integrated with any other Mac graphics application and compositing solution through common image and movie formats.

Development for OS X will run parallel to Windows 2000 and IRIX, and will not lag behind asserts Kerris. Initially, however, only Maya Complete will be available on OS X. Maya Unlimited, which adds fur and cloth simulation as well as advanced camera match moving to the base Maya package, has yet to be announced for OS X.

The prospect of Maya running under OS X on dual- and quad-G4 multiprocessing systems (see page 26) should be very attractive to 3D-graphics pros who currently either have to suffer Windows NT or use very expensive SGI workstations. It is rumoured that ILM has used prototype quad-G4 systems running Mac OS X and early versions of Maya to produce the animatics for *Star Wars Episode Two*.

A number of other things can be inferred from the news. In order to take advantage of Maya's high-end graphics, a high-end OpenGL graphics card is needed, and these are as yet unavailable for the Mac. Apple's purchase of Raycer Graphics suggest that Apple itself will be able to fill the void and offer a fast OpenGL card for this purpose. With a 3D program the calibre of Maya on OS X, it is inevitable that third-party graphics-card manufacturers will make Mac-compatible cards too – see page 33.

Pixar, the animation company responsible for *Toy Story* (who's CEO also happens to be Apple's Steve Jobs) may also port its rendering software Photorealistic RenderMan to OS X. There are many Maya customers who use RenderMan rather than Maya for rendering, Pixar itself being one. Pixar also needs to replace its aging Sun Renderfarm and what better than with a fleet of G4s running RenderMan.

Pixar in the past has asserted it would port the software only if it was financially beneficial to do so. With Alias' announcement it clearly would be.

The first version of Maya 3 for OS X has been slated for release early in 2001. You can find out more at www.aw.sgi.com/entertainment/news_events/osx/index.html. **Simon Danaher**   MW

'No Palm' from Apple

Apple took the unusual step of quashing widespread rumours of a planned Apple-branded handheld device at its Worldwide Developers Conference in San Jose. Phil Schiller, Apple's vice president of worldwide marketing, denied the rumours in an interview with the *San Jose Mercury News*. "We are focused on the personal computer space, not the handheld space, and that's that. I hate to use these words, but there's nothing going on," he said.

However, Schiller's attempt to end speculation was soon followed by news that IBM has introduced a new low-power microprocessor that "will be available to Apple" and "will appear in a portable device this year", according to an IBM spokesman (see page 34). The chip uses silicon-on-insulator (SOI) technology, which reduces electrical leakage and allows the transistors to use less power.

Rumours of an Apple handheld have been circulating for some time. Steve Jobs was reported to have once approached 3Com with a view to buying its Palm division. Then, during his keynote speech at Macworld Expo 2000 in San Francisco, Jobs invited Palm's CEO Carl Yankowski onto the stage with the words "We've been working with these guys a lot recently". This, said industry watchers, was another signal that Apple has been working on licensing Palm's technology.

And it doesn't end there - during an interview with *Time* magazine in October 1999, Jobs let slip that Apple's design chief Jonathan Ive was "working on a device that would appear a year from now". And in January of this year he told *Fortune* magazine "we're working on other digital devices like everybody else".   MW

iMac Movie
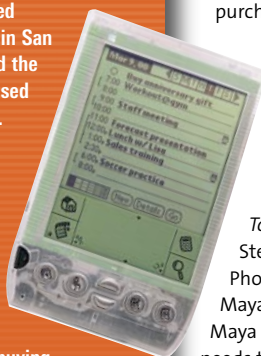
Apple previews new QuickTime version

At its Worldwide Developers Conference (WWDC), Apple offered Mac developers a sneak preview of new features to expect in the next version of QuickTime, which is slated for release this summer. Apple CEO Steve Jobs also rolled out a list of impressive statistics about its multimedia system software. However, a forthcoming spherical immersion function in QuickTime VR could cause legal headaches for Apple; as it resembles patented imaging technology from a company called Ipix, which has successfully blocked other developers from including similar capabilities in products.

Attendees applauded loudly when Jobs announced that QuickTime will support encoding and decoding of MPEG-1 and MPEG-2 video formats. This means that any QuickTime-enabled application will be able to open and save files in either format when Apple releases the update. Web producers can also stream MPEG-1 and MPEG-2 video using Apple's QuickTime Streaming Server software.

"This is easily one of the most frequently requested features" in QuickTime, said Apple product marketing VP Phil Schiller.

MPEG-1 is the basis for the popular MP3 audio format; QuickTime 4.x can already import MPEG-1 files, but lacks export capability. MPEG-2 is the standard on which DVD is based. QuickTime itself provides the basis of MPEG-4, a new variation of the MPEG standard designed for Web-based media.

The upcoming QuickTime version will also include support for Macromedia's Flash 4 format; QuickTime currently supports Flash 3. Apple also plans to include a Velocity Engine-enabled version of QDesign's music encoding software for the G4; Apple claims the new codec will work up to three times faster than the current version.

New features for QuickTime VR

Schiller previewed a new version of QuickTime VR that allows playback of what Apple describes as "cubic panoramas". In a QTVR movie, a panoramic image is mapped to a virtual cylinder, creating an illusion that you are inside the scene. The new QTVR will permit panoramas in which the image is mapped to a sphere, so you can look up and down in addition to left or right.

Ipix offers a similar immersive VR technology on which it claims several patents. A few years ago, the company threatened legal action against Live Picture, which had added spherical panorama capabilities to its PhotoVista software; Live Picture relented and removed the feature. Ipix took similar action against a company called Infinite Pictures.

"Ipix does not yet know the details of Apple's new QTVR technology introduced at the WWDC," said Ipix PR manager. "As such, we cannot comment one way or the other as to what, if any, legal action is appropriate. Ipix expects others to respect its intellectual property. Where appropriate, Ipix will enforce its patent rights against unlawful infringers, as it successfully did against Live Picture and Infinite Pictures."

Apple representatives were unavailable for comment on the Ipix technology. **MW**
Stephen Beale

Real champions' league
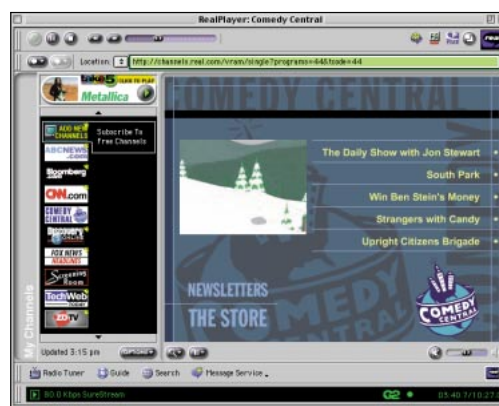
QuickTime isn't alone. RealNetworks has released a beta of RealPlayer Plus 8, its cross-platform media player. It features a variety of enhancements designed to make streaming media more user-friendly, including a Search function and personalized programme updates. An Integrated Media Guide lets users choose the audio-visual programming needed.

A Radio Tuner capable of accessing 2,500 Net radio stations with MP3 support is also featured, as is a 'Visualization' mode that offers five pre-built visual effects that move with the music. iQfx 2.0 Basic adds 3D audio effects to music.

The software was jointly developed with Intel, and aims to significantly improve streaming-video quality over the Internet. The authoring/streaming environment delivers VHS-quality images at one third the file size of previous streaming apps, the company claims. RealNetworks says users can expect delivery of DVD-quality streaming movies on high-bandwidth connections. Full-screen streaming is also supported.

Think very different

In a perceived dig at Apple, Real announced that Francis Ford Coppola, star of a 'Think Different" ad, said: "RealNetworks has broken through the Net's video barrier and provided unprecedented opportunities for filmmakers and broadcasters."

Real's authoring environment, RealSystem, does not run on Macs, and is set to provide major competition to both Apple's QuickTime and Windows MediaPlayer technologies.

MacNN reports Rick Doherty, director of research at the Envisioneering Group, saying: "RealNetworks has a set of solutions that go way beyond QuickTime 4. It's an extreme challenge for Apple."

The player is available from **www.real.com**. **MW**

Microsoft: 'Mac innovation or bust'

Outlook Express pumps iron
Users can customize Alpaca's email views. For example, all the email items you received today can be seen at once, as could anything to do with a particular meeting or project. These functions can be colour labelled into easy-to-use, repeatable categories. OE5's auto-complete functions are beefed-up, with Alpaca caching your last 150 email recipients for speedier auto-completion of names and email addresses.
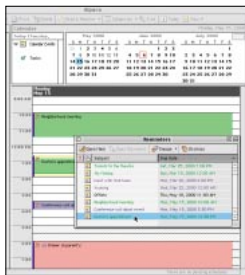
"We have to innovate and surpass our Mac customers' expectations"
– Kevin Browne, head of the Microsoft Macintosh Business Unit

For the full Macworld-Microsoft interview, visit:
www.macworld.co.uk/microsoft

As reported last month (*Macworld*, June 2000), Microsoft is readying the next version of its giant Office suite of Mac business programs for release later this year. So far, the company has released details of a new Office application – code-named *Alpaca* – that aims to act as the personal-information manager (PIM) for consumers and general business users.

During an exclusive interview with key Microsoft officials, I was given a demo of the whole new suite and chatted about the company's current Macintosh strategy.

Details of the 800-plus new features in Office 2001 for the Mac are under a non-disclosure agreement for the time being, but Microsoft is keen to promote the new Alpaca parts of Office – as well as give commitments to Apple's next-generation operating system, Mac OS X.

Kevin Browne, general manager of the Macintosh Business Unit (MBU), emphasized the "intense focus" on the Mac of his team of Microsoft employees. Office 2001 was engineered entirely for the Mac. Microsoft no longer works on a shared "core-code" strategy. What's written for the Mac applications is written for the Mac alone.

Although the company has been making Mac products since 1984, Microsoft's Mac Business Unit (MBU) wasn't formed until January 1997. Since then, there's been a $150 million Microsoft investment in Apple, and a patent cross-licence signed between the two companies. Relations between long-term rivals Steve Jobs and Bill Gates seem to have thawed since Jobs' return to the Apple helm, with Microsoft officials present at many of his Macworld Expo keynote speeches. The MBU has released several award-winning Mac applications, including the acclaimed Office 98 and several versions of the Internet Explorer Web browser and Outlook Express email client.

The MBU is "almost like a separate company within Microsoft", according to Browne – even though most of the 200 staff are based at the company's giant campus in Redmond, near Seattle.

"Being a totally separate section, we're not constrained to make sure the Windows version looks better than the Mac. In fact, it's quite the opposite – we believe our Mac products are better than Microsoft's Windows applications!" claims Browne.

Mac No.1 at Microsoft

"We *have to* innovate and surpass our Mac customers' expectations," he adds – pointing to Office 98's first-time drag-&-drop installation. "Internet Explorer 5 on the Mac has lots and lots of features that you won't find in the Windows version. It has the best standards support of any browser on any platform," he claims.

For Office 2001, as for all its Mac apps, Microsoft identified three main principals in its software design.

First is to make the product "as Mac-like as possible" while keeping Windows interoperability at the highest level. Second, Microsoft wants Office 2001 to make its Mac customers even more productive – mainly through Alpaca's PIM functionality being supported all the way through Office's other applications (Word, Excel and PowerPoint). Third, Browne is keen to further simplify Microsoft's Mac products without losing any of their functionality.

Browne believes that Microsoft has to take a "very broad approach" when writing programs for Macintosh
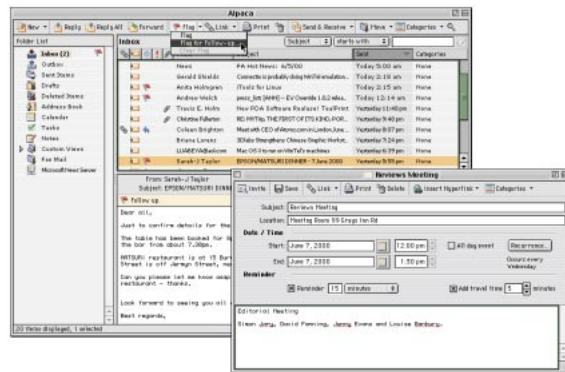
users. The iMac has galvanized a new generation of Mac customers, to add to Apple's traditionally strong publishing and educational markets.

Browne says that the original ideas for Alpaca's PIM functionality came about because "iMacs are about communicating with people". Microsoft is determined that Office 2001 will centralize users' personal information – building on the features of Outlook Express 5.0.

In effect, Alpaca becomes OE5 on steroids, controlling an advanced Address Book and calendar. Users frustrated by the often-different rules for Word 98 and OE5 will be delighted that, in Office 2001, things happen the same way in Word 2001 as they do in Alpaca. You will also be able to synchronize your PIM info with Palm Organizer. Microsoft hasn't yet settled on a formal name for the Alpaca applications.

Bill and the Mac

How much Mac input comes from Microsoft's Chief Technology Officer, Bill Gates himself?

"Bill loves the Mac," answers Browne. "He encourages us to build the right products for the Mac, and points out when we don't design them right. Bill loves innovation on any platform, and he's enjoying the work we're doing now".

Browne is proud when he gets compliments from Office's Windows engineers – the forthcoming Mac version innovates in so many different areas.

"Even our marketing is completely different," said Mary Rose Becker, group product manager for the MBU. "The Mac Unit has its own dedicated marketing team that focuses solely on the Mac customer, instead of Windows and Mac customers being lumped together like many companies do."

The MBU is gearing-up Carbonized versions of IE5 and OE5 for the eventual release of Mac OS X next January. The MBU is working "very closely" with Apple on OS X. Thirty-five Microsoft engineers attended Apple's recent Worldwide Developers Conference. Browne promises that "our level of involvement is increasing".

Microsoft's Mac Business Unit is investing in specifically Mac innovations – in an area that Apple needs to have a strong presence. Perhaps the fervour of Browne, Becker and the whole MBU will help further cool any historical animosity between the two companies – while keeping the fight between the two platforms as hot as ever. **MW**

Simon Jary

Multiprocessing Macs: the wait goes on

Two PowerPC G4 processors could give you 2.3-times the power

The G4 is far and away Apple's best choice for an MP Mac

Kodak 'mystery product' will use QuickTime

Kodak has licensed Apple's QuickTime technology for use in a mysterious image-capture product that will be released late this year. The device will let users "quickly and easily create video clips" in the QuickTime format.

Neither Apple nor Kodak would offer details about the product, but Kodak spokesman Joe Runde dropped a few hints in an interview with *Macworld*'s sister publication *MacWeek*.

Cool movie

"It is more a 'device' than a camera," Runde said. "QuickTime is a key part of it and it's going to be a cool product."

Frank Casanova, Apple's director of QuickTime marketing, said the device will store QuickTime files internally.

Casanova told us that the deal is one more sign of QuickTime's growing strength as a cross-platform media standard. "They selected us because we're compatible with the formats they want to use, and because our implementation of QuickTime plays exactly the same on both platforms," he said. "We don't force Windows users to be second-class citizens. No one else can promise that level of compatibility between platforms."

For more on the rise and rise of QuickTime – plus news on one of its main rivals – see pages 23 and 40.   Stephen Beale

Macintosh users are thinking "multiprocessor" with the revelation that Apple offered a technology demonstration of a multiprocessing (MP) Mac during a closed-door session at the Worldwide Developers Conference. The news came as no surprise; Motorola has long touted the MP potential of the G4 chip.

Apple has refused to comment publicly on its MP strategy, but it has been feeling pressure from consumers because the Power Mac G4 runs at slower clock speeds than current offerings from Intel and AMD. Even though tests show that a 500MHz G4 can outpace AMD's 800MHz Athlon when performing Photoshop operations, consumers view the processor's MHz rating as paramount. The AIM consortium (Apple, IBM, and Motorola – the troika that created the PowerPC) has promised faster processors, but it's a safe bet that the G4 will not see 1GHz before the end of the year.

To remain fast in the public's perception, Apple could market systems with two 500MHz G4s to compete with AMD's single 1GHz chip. Apple could thus get a strong speed boost even if PowerPC G4 clock speeds are not rising as quickly as was originally hoped.

Apple is not new to MP machines. In 1996, Apple had a few MP 9500 and 9600 systems that featured two or four PowerPC 604 processors. These Macs were effective in their day, but they were quickly eclipsed by faster, single-processor G3 Power Macs. A G3 alone is faster than an MP 604 configuration.

Almost any processor has the potential for supporting MP, but some lend themselves to MP more than others, requiring relatively little work on hardware and software to enable multiprocessing. The PowerPC 604 was designed to be a capable MP component, but the less-powerful PowerPC 603 was not. The G3's design was based on the 603, and thus it is not a good candidate for MP. Derived from the 604 design, the G4 is MP capable.

Cache advance

The biggest hardware problem encountered when building an MP system is keeping the cache (or caches) in agreement with data in main memory. The cache is a holder for often-used data; the processor can access data in the cache much more quickly than it can in RAM. Apple's 604-based MP systems featured one central cache on the motherboard; with the G4 in an MP configuration, each chip has its own cache.

The cache is only a copy of data in main memory; ultimately all changes made to the cache need to be made in main memory as well. Because the cache is so much faster than main memory, protocols are required to keep the two in sync. If there are multiple caches, then protocols are needed to keep all of the caches coherent – meaning they all have the same data. Without these protocols, different processors could be working on the same data, unaware of changes made by another chip.

The G3 and 603 processors use a protocol called MEI (Modified, Exclusive, and Invalid) to maintain cache coherency between a single cache, a single processor and main memory. The 604 processor uses the MESI (Modified, Exclusive, Shared, and Invalid) protocol, which can maintain coherency among multiple caches, multiple processors and main memory. The 604 can easily maintain cache coherency in hardware.

The G4 supports three cache coherency protocols: MEI, MESI and a third protocol called MERSI, which allows for more communication among multiple processors and caches. Additionally, the G4 supports on-chip "snooping", in which the chip monitors bus traffic to further enhance cache coherency. Taken as a whole, the G4 is far and away Apple's best choice for an MP Macintosh.

Software symmetry

Hardware is only part of the equation; an MP system also requires an OS capable of managing the interactions among the multiple processors, and applications that know how to take advantage of the MP system.

The Power Mac 9500 and 9600 MP used an asymmetric MP design developed by Apple and DayStar. Here, the OS designates one chip as the primary processor and the remaining chips as secondary, tertiary and so on. The primary processor is responsible for system tasks. The secondary processor handles an application that has been coded to support the MP system. For example, the secondary processor would handle most of the load of resizing an image in Photoshop, and the primary processor would save the image. If the primary processor were idle, it would take the secondary chip's overflow.

Mac OS 9 and Mac OS X, in contrast, support symmetric multiprocessing (SMP). Here, all processors are treated as equals, and the OS automatically threads tasks to any available chip. An application that supports Apple's SMP will spawn threads as it runs. The system then puts these threads on CPUs with available bandwidth to perform the operations.

One benefit of this scheme is that operations that once took over a Mac, such as burning a CD, now can be performed in the background.

Developers will need to code their applications to take advantage of Mac OS X's symmetric-MP scheme. However, Apple's SMP libraries and other MP-support software – as well as the elegance of the symmetric scheme – will make development far easier than it was in the days of the 9500 MP. Although Mac OS 9 supports SMP, a Carbonized version in Mac OS X will be the fastest available.

Better performance

Symmetric MP also has performance advantages. In the asymmetric scheme, two processors will give you 1.1 to 1.8 times the power of a single chip, depending on the application. Combine two 150MHz processors, and you get far less than 300MHz performance. The performance hit is even worse if you add more than four processors.

With symmetric multiprocessing, two processors could give you 1.3 to 2.3 times the power of a single chip,

according to some developers. That's right: In some cases, you get more than twice the performance because the threading scheme allows for more-efficient use of both processors.

The G4 allows for up to 2MB of cache on each processor, and the cache is physically located as close as possible to the processor. This is a vast improvement over the MP implementation in the 9500 and 9600 MP systems, where there was one cache centrally located inches away from the processors on the motherboard. The G4's cache configuration should allow for significant performance improvements.

Multiple processors are not only coming to Apple's Mac systems; they should also be showing up in CPU upgrades. At Macworld Expo in January, Powerlogix R&D announced a dual-G4-processor upgrade. At the time, Powerlogix engineering chief Marc Reviel showed a prototype intended for the processor slot of PCI Power Macs, such as the 7300.

Reviel has recently told us that the company has nailed down the hardware design, but delays in developing the software – due in part to frequent changes in Apple's system software in recent months – have prevented release of the card.

"It has not been a trivial development," he said.
David Read   MW

'New layers and text' in Photoshop 6.0

Good news for Photoshop users. News leaks concerning the progress of Photoshop 6.0, the next version of Adobe's image-editing program, report the beta as the most significant revision yet. Photoshop 6.0 – code-named 'Venus in Furs' – is expected to ship with a new version of Image Ready (v.3). Adobe refused to comment on the release schedule or cost of the product as we went to press, though Web reports hint at September – possibly at Apple expo Europe in Paris. Photoshop 5.5, the current version, costs £379.

Layer layer
Macworld sources suggest Photoshop 6.0 will carry many interface improvements, with enhanced layer and type options. New layer functions include the ability to create layer styles, sets of layer effects, and blending options that can be applied to any layer. The application is expected to have a pre-set series of these, as well as the facility to create your own. It will be possible to apply both layer masks and layer clipping paths to the same layer, with both types of mask appearing as additional thumbnails to the right of the layer thumbnail in the Layers palette. Photoshop 6 users will be able to add hundreds of layers to an image rather than today's 99-layer limit.

Photoshop 6 will have a new context-sensitive dockable toolbar, providing access to boolean operations, a built-in Brushes palette,

and a new palette "well" for storing palette tabs to conserve screen space. Some reports suggest that palette management will be optimized, including the opportunity to resize Brush and Swatch palettes.

Users will be able to create new brushes or sets of brushes, and save or reload them using the Preset Manager, which will permit shared libraries of brushes, gradients and other elements. New shape-drawing tools are also expected.

It is claimed that, for the first time when using Photoshop and ImageReady, users will be able to type to an image and edit type directly in the document window. It will be possible to manipulate fonts, styles, size and alignment and specify leading, kerning, and tracking – a welcome enhancement to Photoshop's previously limited font-handling abilities.

Word-wrapping features will also be customizable, and it will be possible to convert text layers into outlines.
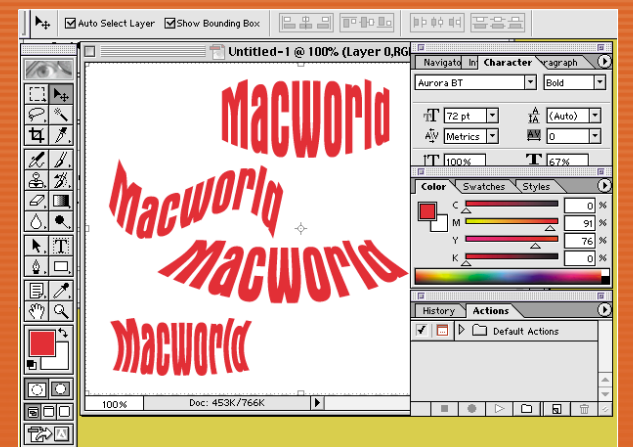
Editable text at last Now you can create TypeStyler-like text effects right there on any Photoshop page – and change it without opening a dialogue box.

Adobe has continued its mission to its products integration, so Photoshop 6.0 is expected to be capable of opening many flavours of PDF files, with the capacity to save images to Photoshop PDF format "channels".

Though much information is now in the public domain, indications are that Photoshop 6.0 will offer many more additional features, with a number of enhancements that promise extra functionality as well as much-improved workflow patterns. Watch this space.   MW

Web's show business

Although Apple had only a minor presence at the show, May's Internet World, held at London's Earl's Court, was a triumph for the latest Mac design applications such as Adobe GoLive 5.0, Illustrator 9.0, LiveMotion 1.0, QuarkXPress 5.0, Macromedia UltraDev, Dreamweaver 3 and FreeHand 9.

The show was four times the size of the 1999 event, attracting large numbers of business people. With 130 seminars and workshops and 400 exhibitors, the event, like LA's Internet World, underlined the developing importance of the Internet to the business community.

Sarah Mowatt, Macromedia's UK PR manager, said: "It was the first time we have shown UltraDev to the public, and we got a great reaction from existing Drumbeat and Dreamweaver customers. It was a fantastic show for us."

Ricky Liversidge, Adobe's UK marketing director, said: "We got a very strong audience reaction, and lots of strong leads. We attracted a lot of interest at both our stands."

Adobe's Lisa Flexner, e-commerce products manager, and Sam Hui, senior Internet product manager, ran *Macworld* through the enhanced features of the forthcoming GoLive 5.0 application (available June, £199).

Hui claimed that Adobe now has "the leading code-solution". GoLive 5.0 can handle HTML, XML, CGI and more. With dynamic links, a Web designer can repurpose a Photoshop image for the Web in the usual way, upload the results to the server, and GoLive will track and update the original file when changes happen. It can meld different movie formats, using QuickTime as the glue to bond results. Dynamic Link 4.0.1, Adobe's module to connect GoLive to databases for dynamic Web site creation, produces pages automatically, and lets users push and pull information straight from their databases.

Quark demonstrated QuarkXpress 5.0, avenue.quark, QuarkDMS and eStage: "XPress 5.0 got a great reaction," said Quark's European communication manager, Gavin Drake. "Visitors recognized the benefit of having a single tool that could publish to different media types. They understand the importance of managing the growing amount of content necessary in a large Web site, especially when such content is used both online and in print."

■ Quark has established a new company, NetMidas, offering clients "enterprise applications to harness the digital components of their business". The company plans to roll out a complete set of integrated modules designed to help large clients establish and maintain consistent, stable Web sites.

SiteMidas modules enable efficient site administration and content posting; streamlined content creation, versioning and storage; and Web infrastructure programming and design. **MW**

Jonny Evans

Ive scoops top D&AD award for Apple Cinema Display

Apple repeated last year's iMac success by scooping a Gold Award at May's prestigious D&AD (British Design and Art Direction) Awards 2000 ceremony in London. The company also walked away with two Silver Awards.

The Apple Cinema Display took the Gold Award for Product Design for Work. The Power Mac G4 won a Silver in the same category, while the iBook won a Silver Award for Product Design for the Home. Apple's British-born design guru Jonathan Ive collected the awards (shaped like giant pencils), handed out before a crowd of 2,500 at London's Olympia.

Comedian, writer and avid Mac fan Stephen Fry hosted the ceremony, referring to Ive as "Jonathan God Ive", and offering to lick any "nook or cranny or crevice of anyone's body" if they would give him a Cinema Display.

Clive Grinyer, head of design at TAG McLaren Audio, was foreman of the product-design jury.

He had nothing but praise for the Cinema Display. Its simplicity and subtlety, the beauty of the translucent material, the unique "easel" design, and the level of detail helped to make it "one of the most amazing pieces of manufacturing ever seen," he told *Macworld*.

"It's even better than the iMac. The iMac was a revolution. The Cinema Display is less of a revolution, but it takes product design to a new height. One comment from the jury was that 'Apple is the only company making 21st-century products'," he said.

In Grinyer's opinion, Apple has changed the face of computer design, and been a boost for product design as a whole: "The iMac and the Cinema Display caught people's imagination in the way in the past only an advertisement or a poster would have done. Apple has shown that a product can have so much emotion. You can have a nice logo, and a nice box, but it's the product that people respond to."

The D&AD aims to set creative standards, and to inspire the next generation of designers. The Awards are not easy to come by – there were a record 17,823 entries this year, and they all went through four rounds of judging by experts (seven for each of the 21 categories).

Louise Banbury **MW**

Connectivity conflict

USB 2.0 vs FireWire: high-speed data transfer

Gentlemen, prepare to duke it out. In one corner, we have USB (Universal Serial Bus) 2.0, beloved by the Wintel community. In the other corner is FireWire, developed and promoted by Apple. Who will win?

This, of course, is an oversimplification of the intense debate that's underway. But Intel does have a vested interest in the PC-controlling peripherals, the debate will only intensify in the days ahead.

The target speed for USB 2.0 is 480 Megabits per second (Mbps), or 40 times faster than USB 1.1. Meanwhile, FireWire already operates at 400Mbps and is expected to reach 800Mbps and 1,600Mbps later this year.

Although Apple has brought USB to the general public and popularized the technology with the iMac, the standard's inventor is trying to change USB into a high-speed implementation that can compete with Apple's now booming FireWire connectivity.

As part of his keynote address at this year's Intel Developer Conference, Pat Gelsinger, Intel Desktop Products Group vice president and general manager, featured a USB 2.0 system demonstration with a USB 2.0-ready PC and scanner.

"Intel Developer Forum is known for identifying industry trends and the technologies that will make them happen, so we are delighted to be one of the first to demonstrate the capability of USB 2.0 using NetChip's device technology in the scanner," Gelsinger said.

"This demonstrates that USB 2.0 is real, and goes a long way toward building momentum for this technology."

Not surprisingly, Apple hasn't yet commented on its plans, or lack of them, for USB 2.0. But to put the matter in perspective, let's look at the big picture.

USB: whassup?

USB is a cross-platform industry standard for connecting peripherals to computers, and offers a 12Mbps data-transfer rate, which is pretty fast, though not earth-shattering. USB provides the ability to connect up to 127 devices to a single computer – though we've never heard of anyone actually doing this.

Although USB was developed for the Wintel world, Apple has become one of its major proponents – first adding it to its innovative iMac, and then installing it on all its computers..

What's so nifty about USB? Several things

It's "hot swappable," eliminating the need to reboot or restart your Mac when attaching a device. You attach peripherals through interconnected external hubs. When your Mac's ports fill up, just attach a "hub" that provides additional ports (usually four or seven), and keep on plugging in more peripherals and hubs as needed.

With USB, there's no need for terminators, memory addresses or ID numbers for peripherals. There's only one kind of cable (USB A-B), which has different connectors at each end, so you can't connect a USB device incorrectly.

Various sorts of devices can plug into a USB port: digital cameras, printers, Zip drives, SuperDisk drives, floppy drives, mice, keyboards and lots of other peripherals.

Which brings us to USB 2.0. In February of 1999, Intel announced that they were creating a consortium of companies to bring USB to faster speeds, and allow it to compete with IEEE-1394 FireWire. This USB 2.0 spec, is supposed to allow USB to utilize the full range of devices including cameras, drives and other things that USB was never intended to work with. This is quite a shift from the original goal of USB, which was to provide connectivity for low to medium speed devices. Intel and its USB 2.0 consortium buddies plan to ramp up USB speeds 40 fold or more, going from 12Mbps to 480Mbps.

Despite the fact that there are still technical hurdles to leap, USB 2.0 won't be supported by motherboard chipsets – in other words, appearing on a computer near you – for probably another year at least. Then it will be longer still until peripheral manufacturers jump aboard.

FireWire: whaszat?

FireWire is a high-performance connection standard for personal computers and consumer electronics that makes USB look sluggish. FireWire can move large amounts of data between computers and peripheral devices at transfer rates of 100, 200 and 400Mbps (12.5, 25 and 50 megabytes per second, respectively). In simpler terms, it's a heck of a lot faster than USB.

At such speeds, you could plug in a digital camcorder and transfer video data into your Mac as a pure digital signal without going through the usual digital-to-analogue and analogue-to-digital conversion process. FireWire also supports device-to-device transfers for which you'd not even need a computer. Want to transfer digital-video data from your digital camera or camcorder to a digital VCR? No problem – if the manufacturers of such devices build them to take advantages of FireWire's capabilities.

Like USB, FireWire is hot pluggable; up to 63 devices (using cable lengths of up to 14 feet) can be attached to a single bus and connected and disconnected as needed. FireWire cables are easy to connect because there's no need for device IDs, jumpers, DIP switches, screws, latches, or terminators.

FireWire speeds up the movement of multimedia data and large files and enables the connection of digital consumer products – including digital camcorders, digital VCRs, digital videodisks, set-top boxes and music systems – directly to your computer. The technology allows for video capture directly from both new DV camcorders with built-in FireWire ports, and from older analogue-only equipment using A/V to FireWire converters.

FireWire was developed with streaming digital media in mind. The technology allows for isynchronous transport, meaning that any two devices on the bus can have guaranteed bandwidth through which to pass data.

Besides the aforementioned products, FireWire-savvy scanners, storage devices, printer interface cards, A/V converters, digital audio mixers and printers exist.

Of course, you may not have the time, desire, or, most importantly, money to indulge in such extravagances, but, hey, it's possible.

FireWire versus USB

While FireWire sounds like USB on steroids, the technologies serve different purposes. FireWire – a much cleaner and more advanced spec than USB – is for peripherals that need maximum bandwidth. USB is a medium bandwidth connection for peripherals such as digital still cameras, monitors, keyboards and mice.

But with USB 2.0 looming on the horizon, will FireWire wilt and fade? Possibly, but not likely.

Our prediction (that is, the prognosis of Yours Truly) is that, even if version 2.0 does what's being promised – and that's probably not going to happen anytime soon – it and FireWire will co-exist peacefully.

It seems doubtful that USB 2.0 will encroach too much on the digital video and audio territory that FireWire has slowly but surely conquered.

Why? FireWire can transfer data point-to-point (one device to another) while USB requires the computer to server as a go-between. In other words, moving data with USB means you have to move it from one gadget to your computer, then transfer it from the computer to the other gadget. FireWire can move data directly from one device to another.

Plus, as we mentioned, FireWire will hit speeds of 800Mbps late this year or early in 2001. And there's speculation of speeds of up to 1.6Gbps a year or two down the road.

So expect USB and FireWire to live together, if not in harmony, at least in some sort of truce. As soon as USB 2.0 peripherals come on the market, we'll test the two rivals. **Dennis Sellers**   MW

ADSL: BTopenworld closed for Macs

From June 29 much of Britain will have access to ADSL, the new broadband Internet connection. As we reported in the June issue of *Macworld*, ADSL (Asymmetric Digital Subscriber Line) users will never have to dial-up an ISP (Internet Service Provider) again because the high-bandwidth connection is live all the time. It also offers speeds of ten times that of a 56Kbps modem. However, anybody with a Mac will have to wait, because BTopenworld (www.openworld.co.uk) will support only Windows PCs at its launch.

The reason for the frustrating Mac delay is that BT uses USB hardware to connect to the ADSL network, but has no drivers for the Macintosh. Mac access to the new broadband Internet connectivity standard will be available "in late summer", a BT spokesperson told *Macworld*.

On a more positive note, BT has signed partnership agreements with Apple – as well as Hewlett-Packard, IBM and Intel – to make mass market, broadband-ready computers with Btopenworld pre-installed.

Are you enabled?

Even then only 50 per cent of homes will have ADSL available in the first year, with 70 per cent coverage by 2002. This is because only people connected to an ADSL-enabled exchange will be able to subscribe to BTopenworld. If you live in Birmingham, Belfast, Cambridge, Cardiff, Coventry, Edinburgh, Glasgow, Leeds, London, Manchester, Milton Keynes and Newcastle you are most likely connected to an ADSL-enabled exchange. If you are in the Home Counties, Oxford and Newbury, the south coast (Brighton, Bournemouth and Hastings), the south west (Bristol, Exeter, Plymouth, Portsmouth and Taunton), and the north (Blackburn, Carlisle, Durham, Liverpool, Warrington and York) the local exchanges should be upgraded later this year. BT is also aiming to have services in Wales, Northern Ireland and Scotland by mid-2001.

The introduction of ADSL has posed problems for Macintosh users in the US, as well. Many of the US ADSL suppliers initially said they couldn't support Macs, and only pressure from consumers made them reconsider.

BT's business solution uses a router and ethernet – rather than the troublesome USB – to connect to a PC.

Theoretically, this should work with a Mac equally well. Unfortunately, the only way to find out if this is the case is to order Btopenworld's business service. The single-user business option costs £39.99 (plus VAT), whereas the consumer option costs £39.99 (including VAT). The ethernet option is therefore an extra £6.99 a month. However, as BT doesn't officially support Macs, it is unlikely you would get a refund if the ethernet solution also refused to work.

In the future, there will be a faster business service offered that runs at 2Mbps speeds for downloads and 512Kbps for upstream connections. This is around four times faster than the basic service and 40 times faster than normal modems.

BT will not be the only company offering an ADSL connection. But, for at least the next year, all ADSL connections will use BT's lines. Next year, BT must open up its Local Loop to third-parties. This should force prices down for many users. As we went to press none of the ISPs we spoke to had been able to announce a service, because BT has not fully clarified its position. Keep watching our Macworld Daily News for updates on the situation.
David Fanning   MW

Nvidia Mac 3D graphics 'soon'

Graphics chipmaker Nvidia, whose GeForce2 GTS 3D graphics processing unit is popular among PC users, says that the company is strongly considering an entry to the Mac market. The company has had discussions with Apple and third-party manufacturers about offering a Mac product, said Nvidia public-relations director Derek Perez.

"We will most likely have an announcement about a Mac product within the next six to eight months," he said.

Nvidia does not manufacture its own boards to sell to end-users. Instead, it sells graphics processors to other companies, such as Dell or Creative Technology, to incorporate into their products. As a result, Nvidia would have to team with Apple or another vendor to bring its technology to the Mac.

Mac gamers have long called on Apple to offer Nvidia-based graphics boards as an alternative to ATI's Rage 128, which is bundled with current Power Mac systems. ATI has announced a next-generation graphics chip, the Radeon 256, but neither Apple nor ATI has announced when – or if – the chip will appear in Mac hardware. Another chipmaker, 3dfx, demonstrated Mac versions of its Voodoo4 and Voodoo5 PCI graphics cards at the recent E3 show in Los Angeles. See *Macworld*, June 2000.

Nvidia's technology could also find a home among 3D graphics professionals on the Mac. "Right out of the box, (the Power Mac) is impressive, but I certainly hope that companies like Nvidia are taking a serious look at the platform," said Alias|Wavefront's Richard Kerris (see page 20).   MW

SideWinder G3 'to boost PowerBook'

Motorola continues to grapple with unexpected issues that have hindered the development of its PowerPC G4 chips. The Windows PC world, meanwhile, has broken the 1GHz speed barrier with AMD's Athlon chip and Intel's pumped prototype Pentium III. So how is Apple to maintain its need for speed against the Windows PC world?

Waiting in the wings is IBM from the AIM alliance (Apple, IBM, Motorola). IBM recently began producing G4 chips containing Velocity-Engine capabilities under licence from Motorola to ease the supply issues that caused such problems for Apple late last year. However, as is widely reported, G4 chips run at higher temperatures than PowerBooks can easily accommodate. So, the portable Macs are stuck at the G3 level.

Recently, some Mac magazines speculated that Apple would resort to acquiring its microprocessors from outside AIM. Such speculation was laid to rest by Apple CEO Steve Jobs during the company's shareholders meeting in April, where he asserted that the company had the "highest faith" in the alliance.

Microprocessor Watch, the industry bible, points out that IBM is seizing the lead in semiconductor technology, building on its two-year competitive lead in copper technologies and its one-year lead in silicon-on-insulator (SOI) technology.

Apple's continuing relationship with IBM could offer future opportunities, particularly given Apple's need to offer a significant speed-bump to its PowerBook users and the desire to achieve a psychological advantage in the minds of consumers over those speeds boasted by the Wintel world. And Apple doesn't need to wait for G4s to cool down.

IBM is set to reveal a new PowerPC architecture at June's Embedded Processor Forum. There, the company will display a new G3 series (code-named SideWinder). It will be manufactured using IBM's 0.18-micron process with copper interconnects, which are expected to consume very little power – running at about 4 watts. These new G3 processors are expected to reach speeds of up to 700MHz – reducing the speed gap between G3 and G4.

Analyst John Jones said IBM is "starting to look like a dominant supplier of semiconductor equipment" – even though semiconductors comprise less than ten per cent of IBM's business. IBM is reaping the fruits of years of heavy research into chip technologies, with the shift to advanced, higher-margin products . A Reuters report said that Apple is likely to contract IBM to build its chips with both SOI and copper-wiring technology.

Expo entry

If Reuters is to be believed, and SideWinder chips enter major production in August, then Apple could introduce a 700MHz G3 PowerBook as early as July's Macworld Expo in New York and September's Paris Apple expo Europe – where key Apple announcements are expected. It could then be available in large quantities shortly before Apple's quarterly report in October, driving much-needed portable sales.

IBM also recently introduced a new line of AS/400 servers. These combine IBM's SOI technology with its copper technologies in a new Alpha chip, and offer less electrical leakage, less power consumption and a major performance boost. IBM claims its servers are 3.6 times faster than their predecessors. It's also possible that they'll appear in an Apple portable device sometime this year – see page 20. Whatever the alternative, the signs are strong that IBM is about to furnish Apple with microprocessors boasting IBM's world-class technologies at Wintel-wounding speeds. **MW**

Jonny Evans

ORIGINAL POWERBOOK PHOTOGRAPHY BY KEVIN CANDLAND

Apple updates Mac firmware

Apple has released firmware updates for FireWire PowerBooks, iBooks, Power Mac G4s with AGP slots, and iMacs with 350MHz-or-faster CPUs. In addition to fixing bugs, the updates improve support for external startup devices.

■ The PowerBook (FireWire) Firmware Update 2.4 allows use of a FireWire hard drive as a startup device, improves support for starting up from USB hard drives, and betters support for FireWire target-disk mode.

■ The iBook Firmware Update 2.4 allows the consumer laptop to use 256MB memory modules and improves support for using a USB hard drive as a startup disk.

■ The iMac Firmware Update 2.4, for iMacs with 350MHz-or-faster CPUs, allows use of a FireWire hard drive as a startup device. It also fixes a rare startup problem and helps the iMac better handle temporary AC power fluctuations.

■ The Power Mac G4 (AGP) Firmware Update 2.4 fixes a startup problem with some third-party memory modules, as well as a problem encountered when more than 1GB of RAM is installed. Additionally, it allows early models of the Power Mac G4 AGP to use a FireWire or USB hard drive as a startup disk.

To install the updates, go to www.macworld.co.uk/updates to find out where to download them from the Apple Web site, and follow the instructions in the "readme" file. At the time of going to press, these firmware updates were for North-American English versions of Mac OS 9 only. Apple claims to be working on UK-friendly versions, but could not give a date for the release of International-English versions.

■ Apple has finally released an International-English version of ColorSync 3.0.1. See *Macworld's* review on page 70.

■ There's also an AppleWorks 6.0.4 update available that "improves the performance, compatibility and stability of AppleWorks 6" according to Apple. It also adds RTF translation, and addresses a compatibility issue with AppleWorks 6.0.3 and DataViz translators. This works with "any English AppleWorks 6.0 or 6.0.3 for Mac". **MW**

'Digital printing Olympics' at drupa 2000

Like Seybold, the focus was on digital technologies at drupa 2000 – the world's largest printing and graphics trade show, which took place in Dusseldorf in May, and attracted 400,000 visitors.

Apple showcased its key graphics technology here: FireWire, USB, ColorSync, AppleScript, QuickTime and, of course, Mac OS X. Apple demonstrated Mac applications for cross-media publishing, package design, proofing, colour management, PDF workflows and pre-press operations at its packed booth during the show.

Quark showed QuarkXPress 5.0. Scheduled for US release at the end of the year, this offers new table and layer functions as well as HTML/XML/PDF export features. Attendees also saw previews of several programs under development, including eStage, a database-driven catalogue publishing package, and QuarkWrapture, a 3D package-design program. Quark also showed a media-independent publishing workflow solution that combines QuarkXPress with Quark DMS, a digital-asset management system, and avenue.quark, an XML-export utility.

Adobe showed InDesign 1.5, and invited visitors to print customized four-page exhibitor booklets using the Personalized Print Markup Language (PPML); see below.

Supa drupa

Digital printing is big this year. Benny Landa, president and CEO of digital-press manufacturer Indigo, described drupa 2000 as "the digital printing Olympics". **Indigo** showed the Ultrastream 2000 (pictured above), a 68-ppm digital press, and the Ultrastream 4000, which uses two print engines to print 136 colour pages per minute. Indigo's Ebony is a black-&-white model that offers 800-x-2,400-dpi output.

Xerox built a spectacular 66,000ft^2 hall, oufitted with dazzling multimedia displays. Its exhibits were also larger-than-life, including its next-generation digital press, the "FutureColor". This system will be able to produce offset-quality full-colour booklets, catalogues, magazines, brochures, manuals and newsletters, and is expected to support speeds up to 100ppm.

NexPress Solutions (a joint venture of **Heidelberg** and **Kodak**) unveiled its widely anticipated NexPress 2100 digital-colour press. Expected to ship next year, it features 600dpi "DryInk" (xerographic) imaging technology and prints on 13.8-x-18.5-inch sheets at a speed of 70ppm. It includes variable-data features and is driven by Adobe's Extreme PostScript/PDF software.

Banta Integrated Media demonstrated variable-data printing technology in Datamerge 4.0, which enables QuarkXPress users to use standard databases to create personalized printed pieces.

MarkzNet, from **Markzware**, is a Web-based system that lets content creators submit projects to production vendors via FTP sites with customizable preflight controls. MarkzScout 2.0, an upgrade of Markzware's automated preflighting/publishing-workflow tool, includes the ability to create PDFs from native files, expand FlightCheck and Photoshop action points, and adds a "Job Flattening" tool.

X-Rite showed a system that allows files with measured colour values to be transmitted across the Internet, ensuring accurate colour calibration between remote locations.

PDF-related technologies also attracted attention. **Enfocus** previewed new features in its PitStop preflight and editing plug-in for Adobe Acrobat. These include new colour conversion functions and the ability to repurpose PDF print documents for Internet use.

Farrukh Systems launched Imposition Publisher 4.1, and previewed its forthcoming updates. Version 4.5, available later this year, will offer automation and workflow-integration features. Version 5 (early 2001) will impose native PDF pages.

Delivery systems also took their share of the spotlight, with **Farallon** showing its networking solutions on the Apple stand and in collaboration with a number of other companies, including Adobe, at the show. **MW**

Joe LiPetri

Mail merge on steroids

Personalized Print Markup Language (PPML) is a new XML-based publishing standard designed to kick-start the market for personalized digital printing.

Originally developed by the Print On Demand initiative (PODi), a non-profit trade group representing over 60 companies involved in digital-printing technology, the standard hopes to open the variable-data market by making virtually all vendors' software and hardware compatible with one another. Companies involved include Adobe, Xerox and Agfa.

Digital presses have been around since the mid-1990s, but few users have taken advantage of their ability to produce short-run, personalized print jobs.

PPML builds on the mail-merge functions available to word-processors, which already allow users to plug names and other data into form-letter templates.

Variable data-publishing systems let you plug variable text-blocks, photos and other graphics from a database into printed documents that can also include constant text and graphics elements.

Automatic fire

Although it is based on XML, PPML is not intended for deployment on the Web. However, it allows output devices to handle print jobs much as a browser renders Web pages, storing recently used text and images so they don't have to be reloaded.

An optimized PPML system can download text and graphics elements and re-use them on any page as long as they remain in the printer, providing substantial performance improvements. PODi claims that in many cases, PPML will allow print engines to run at full speed, even for jobs consisting entirely of variable-page content.

Film 2005 – forget it

An InfoTrends Research Group (**www.infotrends-rgi.com**) report shows digital-camera sales exploding, projected to reach revenues of $1.9 billion this year in the US alone. The research predicts that digital-camera sales will exceed those of film-based cameras by 2002, reaching 42 million by 2005.

Mary McNulty, PR manager of Epson UK, told *Macworld*: "As far as Epson is concerned, the key drivers for sales this year will be price per megapixel. Currently, the majority of the market is based on one megapixel or less. This is the cheaper end of the market, where quality is questionable."

International Data Corporation (IDC) predicts that the worldwide entry-level digital and 'toy' digital-camera markets combined will enjoy 23.2 million shipments by 2003. IDC's Kevin Kane commented: "Shipments will continue to grow as more and more casual users take advantage of this technology, which until recently was out of their reach."

Epson's McNulty added: "The UK digital-camera market is still relatively small, but growing. The market doubled in 1998-99, and Epson expects similar growth this year."

IDC figures cast Sony as the leading digital-camera vendor in the US, seizing 35 per cent of that market in the three months ending September 30, 1999. IDC expects the market to expand at a compound rate of 50 per cent until 2003. Kodak has 20 per cent of the US digital-camera market, with Olympus holding 17 per cent. The market leaders could face opposition as a new wave of affordable, sub-£150, non-toy digital cameras hit the market – sales of these are expected to exceed 2.2 million units this year.

Nikon Digital's Chris Hoare said: "We do not see the introduction of cheap product affecting us, although the surge in consumer interest at all levels will help to grow the acceptance of digital photography".

InfoTrends Research discovered that film cameras exist in over 90 per cent of US homes – but digital cameras in less than 10 per cent. By 2005, film camera sales are expected to decline, though this does not include the single-use, disposable camera sector, which sells about 100 million units a year in the US.

InfoTrends analyst Michelle Lampmann says: "We are entering an era of personal visual communication. People like the gratification of sharing photos over the Internet."

According to UK research carried out by Inteco, over half of PC owners have printed photos at home, Epson's McNulty told *Macworld*. The growing popularity of digital cameras is also driving US printer sales – InfoTrends predicts there'll soon be over 12 million printers. Scanner sales should also expand as digital imaging becomes more popular. Other research shows that 64 per cent of amateur photographers plan to buy a digital camera within the next six months, according to a report from Lyra Research (**www.lyra.com**) detailing a survey of amateur photographers. 34 per cent planned to buy photo-capable printers, and 42 per cent intend buying scanners.

Epson's McNulty believes that the market will progress "in much the same way as the scanner market, which was flooded with cheap, low-quality products". "As soon as users realized what they could do with the equipment, they began to see how important quality is, and brands like our own experienced substantial growth," she added. **MW**

Epson's newly announced three-megapixel USB zoom digital camera, the PhotoPC 3000Z, offers 2,544-x-1,904 resolution with 3x optical zoom, a 25-second video-clip feature and 16MB CompactFlash Memory Card for £799 (inc. VAT). Epson, 0800 220 546

Apple slashes price of WebObjects

Apple has slashed the cost of WebObjects, its powerful Web-based application server software, which now costs £479, rather than the previous US price of $50,000 (about £33,000). Apple also revealed that the next version of the program will be written entirely in Java.
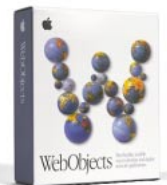
The application grew from work done at Steve Jobs' NeXT Computer, and passed over to Apple on the company's acquisition of NeXT. In March 1999 Apple announced the adoption of WebObjects by Nortel, the Disney Store Online and Standard & Poors, among others.

Java jubilation

WebObjects 5 for Java will ship later this year. The concentration on Java means Web developers will be able to build Web-based applications to run on any Java-supporting server. Enterprise Java Beans (EJB) and Java databases will also be supported. WebObjects 4.5, the current version, runs only on Mac OS X Server, Solaris, Windows NT/2000 and HP-UX. The future, Java-based product will run on almost any server.

In his keynote speech, Apple's CEO Steve Jobs said: "There aren't many customers who can pay $50,000, so we decided to take this awesome technology and put it in the hands of a lot more people". He also claimed that WebObjects allows developers to create Web applications "ten times faster than anything else on the planet".

Avie Tevanian, Apple's senior vice president of software engineering, demonstrated the power of the application – he ran the project builder, directed it to build a Java client, and connected it to a database. The resulting client-side Java application had full Aqua interface features and connectivity with the WebObjects server. The client supported all data types from the original database, including the ability to play QuickTime movies. **MW**

FireWire finally burnt by Toast

Adaptec has released an update for Toast, which finally offers support for FireWire CD recorders. Toast 4.1 also offers improved MP3-decoding technology that speeds up the conversion of MP3 files to standard audio CD formats and offers improved sound quality.

FireWire support means that 12-speed CD recorders are now supported. Tom Shea, vice president of Adaptec's software products, said: "Adaptec is committed to supporting Apple's FireWire initiative on the Macintosh".

Clent Richardson, vice-president of worldwide developer relations at Apple, said: "Toast 4.1 users will be able to take advantage of one of the fastest peripheral standards ever developed."

LaCie has acted quickly in light of Adaptec's move, with the company now shipping its FireWire CD-RW drives.

George Leptos of LaCie said: "All FireWire solutions that you can see on the market and that are not delivered with Toast 4.1 are not stable solutions."

Toast 4.1 costs £49. The updater is available from Adaptec's Web site at www.adaptec.com/support/advisor/cdrup-dates/toastversions.html, or, of course, on this month's cover CD. **MW**

Online music: Blood on the tracks

Musicians have enjoyed the Mac's superior sound-handling capabilities for many years. Toby Marks, of Banco De Gaia, even uses Macs during live performances. But there's a battle brewing about how pirates are using digital technology to freely distribute commercially copyrighted material.

Heavy rockers Metallica have hounded one alleged offender, Napster, but this has merely driven more traffic to Napster's Web site, according to PC Data. With the ongoing Recording Industry Association of America's (RIAA) prosecution of MP3.com, this is driving both the 'old' and 'new' music business to agree a framework to benefit musicians, the music business and the consumer. May's Digital Distribution and the Music Industry (DDMI) conference in London was a chance to consider the solutions available as the world's entertainment industries look forward to a broadband future.

RIAA president Hilary Rosen recently said: "The level of anti-piracy work that we do is not geared to stopping progress, but fostering legitimate business and allowing legitimate entrepreneurs to have a shot."

At the DDMI, EMI's Fionnuala Dugan said: "We are trying to open up as many distribution methods as we can. We are fighting to maintain copyright protection for our artists and to create sustainable models for distribution."

But, Scott Moskowitz (CEO of Blue Spike) disagreed: "I think the music business is running away from the Internet. The issue is that the line between piracy and marketing is non-existent. Free distribution of music boosts the word-of-mouth appeal of an artist."

DDMI focused on creating a sustainable business model for music online. Most delegates agreed that musicians have a right to profit from their work, and some degree of copyright control must be found – but Internet consumers have grown used to free music downloads.
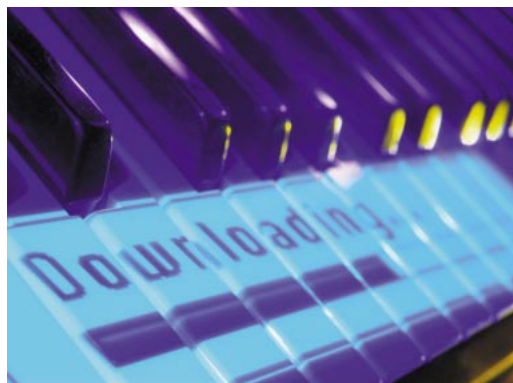
Angelo Consoli, general secretary of the International Federation of Independent Phonographic producers (**www.ifpi.org**), talked about education: "We're trying to get governments to fix definite dates to establish a regulatory framework for online content distribution, and agreed payment standards."

Ethic proportions

With big business in one corner, and emerging music business innovators in the other, Gerard O'Farrell, founder of Fivetrees.com, sees two different online music business models emerging, with different ethics and different business practices.

Piracy is the bugbear. Entertainment lawyer, Jodi Sax, explained: "There is twice as much CD manufacturing capacity as there are CDs legally pressed each year."

Harry Leckstein of Eunite said: "We have to develop micro-payment schemes, so music online is not limited to people with a credit card. It's vital we find and implement a security standard to ensure future development."

Three dominant models for online music distribution emerged during the event. The first is an ads-based model, as practiced by EverAd.com, that encourages free distribution of digital music, but attaches advertising to the MP3 tracks, generating revenue for the artists.

The second system – pay-as-you-go – is championed by Blue Spike and others. It embeds digital watermarks within music files, recording information about the vendor, purchaser and original point of purchase. Online music consumers are then responsible for purchase protection.

The third, growing model is the subscription-based service. Here, consumers pay for the right to download tracks from a particular service provider – in a similar vein to a number of satellite and cable TV channels. Subscription is currently being rolled-out by Yahoo, Lycos, and AOL in league with members of the 'Big Five' record labels: EMI, BMG, Sony, Universal and Warner.

These companies account for over 78 per cent of UK music sales. This has driven independent labels to move online. An anonymous Acid Jazz representative confirmed this, discussing his company's plans to distribute its sounds online: "It's hard for independents to compete with the majors in terms of advertising, distribution and even getting good spaces on the shelves of the record shops. We are more equally matched online." **MW**

Jonny Evans

QuickTime reaches 50m

Along with the new features, Jobs boasted that Apple has counted 36 million QuickTime downloads; if you include copies pre-installed on Macs and PCs, the total reaches 50 million. There could be other users as well: QuickTime ships as part of many CD titles, and Apple does not track whether the customers actually install the software. For example, Brittney Spears' *Baby One More Time*, an enhanced music CD with QuickTime content, sold 12 million copies. Jobs even showed a QuickTime-based CD title offered as a giveaway in Cheerios cereal boxes.

Citing an April 2000 study from Nielsen//NetRatings, Jobs said that Apple.com is the most popular destination for downloadable movie trailers on the Web. Most recently, Apple counted 12 million downloads for a *Lord of the Rings* preview (pictured here).

■ Apple also announced that it is expanding its iServices professional services organization to offer consulting, integration and training services for QuickTime Streaming Server, as well as Mac OS X and WebObjects. **MW**
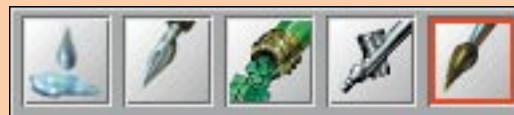
Corel escapes bankruptcy, loses execs

Troubled Canadian software company Corel has received some much-needed extra financing, but the news was dampened by the resignation of two senior executives. The company also denied it is to sell off its newly acquired MetaCreations graphics applications.

Alarm bells rang regarding Corel's financial standing when, in a filing in April with the US Securities and Exchange Commission (SEC), the company said it could run out of cash "in 90 days" if its planned merger with Inprise/Borland didn't proceed.

Corel then announced in May that it wouldn't be going ahead with its plan to acquire Inprise/Borland, another company with a troubled financial history. The pair had hoped to focus the combined entity on the lucrative market for the Linux open-source OS, but Corel's falling share price led to both parties agreeing to terminate the deal. Corel had to quickly find alternative financing.

Corel has now struck a C$15 million (US$9.98 million) 'bought deal' agreement with investment firm, Canaccord Capital. 'Bought deal' is a term used in securities underwriting, implying a firm commitment to buy an entire issue of shares outright from the issuing company.

The cash-injection agreement is subject to regulatory and stock exchange approvals. Should the arrangement go ahead, Corel intends to use the money raised to put in place a cost-savings plan and expects to announce details of such a move in the near future.

Strategy in sight

"Having secured this source of financing, we can now turn our full attention towards executing our short and long-term strategy, which will include an aggressive cost-savings plan," said Corel's CEO Michael Cowpland (pictured left).

Corel also announced the resignations of Eric Smith, vice president, general counsel and corporate secretary and Sandra Gibson, executive vice president, corporate services.

Corel currently is in a quiet period leading up to the release of the financial results for the second fiscal quarter, due in mid-June. Corel claimed that the executive departures weren't tied to its financial problems, and would not comment on reports that more than 400 job could be cut.

For Meta or worse

Corel, responding to a Canadian newspaper report that it may divest "non-core" assets as part of a drastic cost-cutting move, says that it has no plans to sell the graphics products recently acquired from MetaCreations, which include Painter, Bryce and Kai's Power Tools.

Corel's Meredith Dundas said "these products place Corel in an exceptional position in the graphics area".

Ian LeGrow, Corel's VP of graphics software added: "We expect these products will mean increased market share on the Mac platform. Corel is dedicated to developing quality graphics products for the Macintosh, including Corel KnockOut, CorelDraw, Corel Photo-Paint, Corel Painter, Bryce and KPT." **MW**

Ageing iMac sales slump

As Apple moves toward its stock split on June 21, analysts are concerned that its third-quarter earnings will disappoint. Apple CFO Fred Anderson is alleged to have warned them that iMac sales have been dropping since April.

These concerns have been verified by UK retail sales sources, who see iMac sales here "bottoming" out. These sources also express concerns over inventory of Apple's high-end products, where UK demand exceeds supply.

US market-research firm PC Data released figures showing that US Apple sales rose 9.6 per cent in April. Overall sales are six per cent below unit share last year, though Apple still came fourth in retail/mail-order market share.

Merrill Lynch analyst Steve Fortuna explained that Apple's long-term sustainability depends on its actions over the next two years, with its success in breaking new markets reclaiming strength in the US education sector.

Fortuna also revised his estimated iMac sales for this quarter (which ends June 30) to 445,000, from 470,000. He said: "It is our belief that consumer-based iMac sales in the latter part of May have not shown the increase in momentum we were expecting, especially in the US". He also comments that the iMac range has not been refreshed since October, causing some consumers to delay buying iMacs in the hope Apple will announce iMac upgrades at July's Macworld Expo, New York.

In addition, Lehman Brothers analyst Dan Niles changed his assessment of Apple to 'neutral'. During a recent NBC interview, Niles praised Steve Jobs' "great leadership" of Apple, but said he expected revenues to be a "bit light" this quarter. He agreed that earnings per share on the stock would be fine, and said he "preferred" to hold off till August/September before getting "more aggressive" on the stock.

Apple declined to comment as *Macworld* went to press. **MW**

Business briefs

■ **Oftel, the telecommunications watchdog, has told BT it must allow** other operators to supply unmetered Internet access over its local network, as the conclusion of a dispute between BT and MCI Worldcom. Under this decree, BT must agree to offer wholesale unmetered access to MCI and other operators who request it by no later than June 1, 2000.

■ **Spanish-based Terra Networks is to merge with Lycos in a stock-**swap deal valued at $12.5 billion. The goal is to create an Internet company with a global reach.

■ **Macromedia announced a record 95 per cent growth in revenues** for its fourth quarter. Revenues grew to $89.2m, compared to $45.8m for the same period last year. Profit grew to $9m. Rob Burgess, chairman and CEO, said: "Our results reflect the accelerating strength and momentum of our business."

■ **Media 100 has completed its merger with Digital Origin.** The merger brings Digital Origin's applications into the Media 100 fold, and lets the new company offer a tightly integrated suite of solutions for video, says Media 100

■ **MetaCreations has reported a loss of $3.3 million for the** first quarter of 2000, which ended March 31. The net loss from continuing operations was $4.5 million, compared to net income from continuing operations of $0.9 million in the same quarter last year.

Product News

Stone me!

Cadmium has launched its Extensis Portfolio-based Image browser. The browser covers the majority of its libraries in one Portfolio file, and contains over 100,000 images. The Web-based browser removes the need for customers to search through several different CDs.
Cadmium, www.cadmium.co.uk

Floppy drive gets smart

TEAC has released a USB floppy disc drive with a built-in smart media reader, the FD-05PUS. This solution for digital photographers and MP3 fans combines a 3.5-inch floppy-disc drive and a smart media reader/writer in a single unit. The translucent blue peripheral comes with support for Mac OS 8.6 or better, and costs £99.
Simply Computers, 0870 727 4020

Monitor a joint effort

Mitsubishi has unveiled a new entry-level, mid-range monitor, the Diamond Plus 73. The first fruit of a joint venture with NEC, the new 17-inch monitor is designed around the Mitsubishi Diamondtron NF (Natural Flat) tube. This means a curve has been added to the internal screen surface and aperture-grille, which pre-distorts the image and compensates for the refraction of light passing through the glass.

It also features a newly designed DY (distortion yoke) to decrease top and bottom pincushion distortion.

The monitor is priced at £189, and is aimed at consumers, SoHo and SME users.

Specifications include 0.25mm unified aperture grille, maximum resolution of 1,280-x-1,024 pixels at 65Hz (1,024-x-768 recommended), and a video-clock frequency of 108MHz.

On-screen display controls have 15 different settings, including brightness, contrast, positioning, geometry, purity and convergence.
Mitsubishi, 01707 278 684

SCSI-USB adaptor

Iomega is shipping a £59 SCSI-to-USB adaptor for both 1GB and 2GB Iomega Jaz drives. It allows users to connect Jaz drives to any USB-enabled laptop or computer. The adaptor needs no additional power source.
Iomega, 0353 1807 5133

Search & Rescue

Thomas Riley has launched an updated version of Search & Rescue, the only shareware Mac app that recovers lost data directly from RAM. It searches the computer's memory to detect and salvage residual and unsaved text.
Thomas Riley, www.kagi.com/tjriley

Right-on rubber

Greenpeace has launched a range of £4.95 mouse mats produced from natural rubber taken from sustainable sources in the Amazon Rainforest.
Greenpeace, www.greenpeace.org.uk

InterView is media plus

XLR8 is shipping InterView 2.0 Media Capture software for Mac USB. InterView 2.0 delivers full compatibility with all major video-editing software packages, broader Internet capabilities, including QuickTime streaming and Webcasting, and a new application called XLR8 Theatre. This allows for full-screen viewing from a DVD player, satellite tuner or VCR.

InterView Media Capture software and cabling imports analogue video and audio into USB-equipped Macs. It supports real-time video at resolutions up to 320-x-240 pixels, snapshots at 640-x-480 pixels and PAL and NTSC video formats. InterView 2.0, priced at £94.99, is bundled with Strata VideoShop 4.5 (DV) video-editing software and Strata TuneBuilder, as well as a 30-day trial of Sorenson Broadcaster, the QuickTime 4.0 audio and video broadcasting tool.
XLR8, 01442 255 899
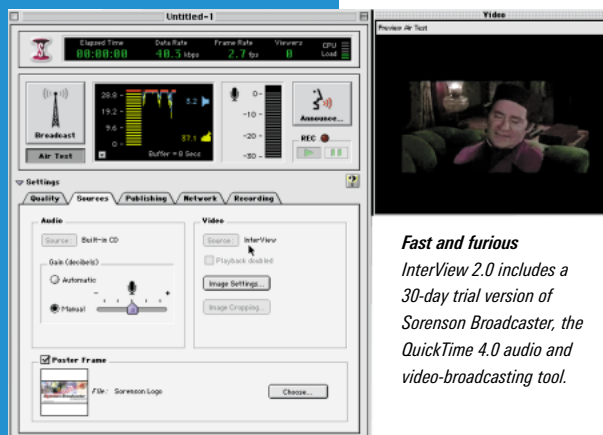
Fast and furious
InterView 2.0 includes a 30-day trial version of Sorenson Broadcaster, the QuickTime 4.0 audio and video-broadcasting tool.

New CD-R copier

LaCie has announced the Dupli-123 CD duplicator. It has a CD-ROM drive and three 8x/20x CD-R drives. The duplicator can record three full CD-Rs in under nine minutes. It costs £899.
LaCie, 0207 872 8000

Hard-drive clean-up

Cleaning Agent is a $15 shareware utility from LFO that cleans hard drives of unwanted files with a single click. It also cleans up caches.
LFO, www.lfo.sk/software/index.htmlent

CDs & Books

Softease triple
Softease has released the following products:
■ Textease Primary is a fully configurable talking word processor for 6-11 year olds. It offers full network capabilities, and costs £49 for a single-user licence. Multi-user licences cost £10 per licence.
■ Textease language packs are now available in French and German. Language packs cost £39 per language for a single-user licence, and additional user licences cost £10 each.
■ Textease spreadsheet is a £39 numeracy-learning program that can also create tables and calculate complex maths equations. The company has also announced Textease Multimedia, its £85 DTP and multimedia-authoring package.
Softease 01335 343 421

New IDG titles
IDG has released two Dreamweaver books: the £36.99 *Dreamweaver 3 Bible* and the £23.99 *Dreamweaver 3 for Dummies*. The Bible provides resources for high-end Web-site design, and includes a CD with trial versions of Dreamweaver 3, Flash 4 and Fireworks 3. The *Dummies* title is full of tips and step-by-step instructions to help beginners create high-end Web sites. IDG has also announced an £18.99 *Internet for Dummies* and £49.99 *Excel 2000 Bible*.
Transworld Publishers 020 8579 2652

Infant learning zone
Sherston Software and Oxford University Press have released a £75 three-CD series called Letters, Sounds and Rhymes. It is designed to provide interactive learning in infant-literacy lessons.
Sherston Software 01666 843 200

Theme-park life

Feral Interactive, which released the award-winning Championship Manager 99/00 for the Mac last November, has now released its Macintosh port of Bullfrog's Theme Park World. A light-hearted sim, Theme Park World puts its players in charge of every aspect of running a theme park, including its design, construction and day-to-day management. The objective is to tempt as many virtual people to the park as possible, keep them amused and take their money.

It is a sequel to the now long-in-the tooth Bullfrog classic, Theme Park, which sold four million copies in its lifetime.

The game involves a park based on one of four different themes: Space Zone, The Lost Kingdom, Wonderland and Halloween. Each has different attractions to choose from, including build-to-order roller coasters. The park must also be managed, financed and staffed properly. The game has a thriving online following, with gamers publishing their parks on the official Theme Park site.

The Mac port will be available in all major European languages. The game requires Mac OS 8.0 and above, a 266MHz processor, 32MB of RAM and 300MB hard-drive space. Available later this month, Feral suggests a VAT-inclusive price of £35.
Feral Interactive, 0207 610 8814

Fill parks
The Mac-port of Bullfrog's Theme Park requires Mac OS 8.0 and at least a 266MHz processor

One for the notebook

Noteworthy release
The LP335 projector supports 16.7 million colours and a resolution of 1,024 -x-768 XGA.

InFocus has released the LP335 digital notebook projector. This delivers 1,000 lumens, XGA resolution using half-life DLP (digital light processing) technology, offering more lamp longevity than CRT projectors, and digital and analogue connectivity. The LP335 ships with DigitalConnect, an InFocus innovation based on the Digital Display Working Group's new Digital Interface standard.

This means users get digital, analogue and USB connectivity via a single connector. InFocus claims its machine offers flawless video, and can switch seamlessly between Internet Web sites and training videos at the touch of a button.

A zoom lens is also featured, as is an onboard control panel, remote control and digital keystone correction, which adjusts the appearance and position of an image – solving the 'Keystone' effect of older overhead projectors. All InFocus projectors come with 24-hour, seven-days-a-week technical support and a two-year warranty. With 16.7 million colours in its palette the projector supports 1,024 -x-768 XGA resolution, with a 400:1 contrast ratio. SVGA, VGA and Mac video formats are also supported. It costs £4,150.
InFocus, 0800 028 6470

USB speakers take sound to the wire

Yamaha has released its new line of USB-based, 220W YST-M45D speakers. These feature 3D-surround sound and a sound-reproduction system that optimizes sound by preventing bass soundwaves "leaking", meaning there's no need for a sub-woofer. Frequency range is 70Hz to 20KHz. Bass, treble and volume controls are housed on one of the speakers, which cost £59.
Yamaha, 01908 366 700.
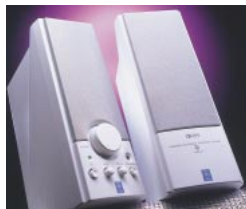
Kodak gives it large

Kodak has launched two top-class printers – the large-format LFP 3062 ink-jet (pictured below) and the thermal Kodak Professional 8670. The LFP 3062 offers an output-width of 157cm and uses six-colour piezo ink-jet technology. The LFP 3062 combines a resolution of up to 1,440dpi with six-colour printing, and aims to produce detailed, photo-realistic results.

Features include 'tiling', which divides the print image into several panels for larger displays, and manual or automatic 'nesting' that optimizes use of the media. The printer – which boasts a copy function – can handle up to 15 different printer queues, individually defined to handle different media. The printer offers 12-bit colour and works with both Macs and Windows PCs.

Other features include BESTColor for Kodak RIP for colour management. Printer calibration is handled by ColorMouse Too! software from Color Savvy Systems.

Kodak's Professional 8670 thermal printer offers a number of new, workflow-improving features and a maximum printable image-size of 8.27-x-12 inches.

A cross-platform device, it comes with a built-in Kodak 10/100MB interface card, and SCSI also comes as standard. The Pro 8670 can handle full or half-page output and offers a universal paper tray to accommodate all paper sizes.

It has an imbedded ColorFlow ICC Colour Connector application for colour calibration and control, and includes a 133MHz processor with 48MB of RAM. Print time is 85 seconds for an 8-x-10-inch image. The LFP 3062 costs £15,995, and the Pro 8670 is £3,695.
Kodak, 0870 606 1423

Poster paints
The large-format Kodak LFP 3062 ink-jet has a resolution of up to 1,440dpi and produces photo-realistic results

Epson's digital-camera move

Epson has introduced the £191 PhotoPC 650, its 1.09 megapixel digital camera that supports print-sizes up to 5-x-7 inches. The 1,152-x-864-pixel camera includes an 8MB CompactFlash card that can store up to 88 photos – these can be previewed in the built-in 1.8-inch colour LCD monitor, or viewed on a larger screen via the built-in video output.

The PhotoPC 650 has a built-in auto focus function, capable of capturing accurate images at distances varying from 15cm. Its built-in flash helps deal with changeable weather and light conditions, and the camera features a 35mm thread for optional lenses and filters.

The camera incorporates an uncompressed mode for photo storage, so all details of the original image can be retained. For greater flexibility, two levels of JPEG compression are also supported – Superfine for a low level of compression and Fine level for a higher levels.

The PhotoPC 650 comes with PictureWorks HotShots software for basic image-editing. Support for both Mac and Windows with serial interfaces, and serial cables for both platforms are supplied.

A 240V AC power adaptor or 240V battery-charger set are also available for £49 each.
Epson, 0800 220 546

Picture perfect
The £191 PhotoPC 650 is a 1.09-megapixel digital camera, which comes with PictureWorks HotShots software for basic image-editing

Compact USB modem
Swann Communications has announced the compact 56K V.90 USB modem. The modem comes with Swann's own WebWorks 2000 software, which provides the drivers and a selection of Internet connectivity tools. The modem costs £99.
Swann, 020 8358 5857

Print-info breakthrough
MacEase is offering WebPrint Plus 3.0, a utility that provides a fast and flexible way to collect, save and print information from many sources, including the Web. It is available as a $24.95 download, and a ten-day demo is on this month's *Macworld* cover CD.
MacEase, www.kagi.com/MacEase

CD-Rs a bright idea
Mitsui Advanced Media has released the Mitsui Color CD-R range of media. Available in the five iMac colours, the discs work in CD-R drives at up to 12x. The CD-Rs are £13.99 for a pack of ten.
Mitsui, 01274 544 837

Double-up on graphics
Imagine Graphics is offering Appian Graphics' £695 Jeronimo 2000 dual-monitor graphics acceleration cards configured for the Power Mac G4. The card enables dual-monitor output from one AGP or PCI slot, and contains two Permedia 3 graphics processors and 32MB of memory.
Imagine Graphics, 01727 844 744

FireWire family
Evergreen Technologies has introduced the Fireline family of FireWire products, including an External Hotdrive – a compact, £280, hot-swappable 20GB portable hard drive for Mac OS 8.6 or greater. It comes with an external DC+12V input power-jack for daisy-chained devices.
Evergreen, 01793 601 300

ISDN gets Leo flair

Hermstedt has boosted its line-up of ISDN products with the release of five new software and hardware offerings. First is Angelo, a 30-channel primary rate (PRI) ISDN card aimed at the printing, pre-press and design industries. It allows users to send and receive from multiple sources (Mac or PC) irrespective of file size or type, and offers multi-channel bundling. This enables the card to support multi-link PPP or Leonardo file transfer solutions. Angelo is a scalable solution – users can start with an 8-channel installation and add more channels according to demand. The card costs £2,500.

Next up is the Leonardo USB, a range of external ISDN adaptors aimed at the professional market. The three models allow fast ISDN communication to digital and analogue terminals using a combination of two or four B-channels and one or four data/fax modems. Prices start at £799.

On the software side, Hermstedt is shipping Grand Central Pro 2.0 for £299, an application that manages ISDN file transfer. It automatically recognizes the file transfer protocol of the incoming call, so remote sites don't need to configure any set up. It can also automatically switch between two and one B-channels, so transfers can be made even if only one channel is free. Other features include delayed transmission, redialling and secure data transfer supporting hot folders. It also includes an FTP server.

Finally, Hermstedt has released E-T-F Job Ticket 1.0. This software transfers job tickets along with documents via ISDN to avoid the risk of mismatched jobs and production errors. It supports all major systems, publishing applications and file formats. The E-T-F reader is free, and the editor ships with Grand Central Pro 2.0 and Hermstedt's professional ISDN cards and adaptors.
Hermstedt, 020 7242 4060

Pro adaptor
Hermstedt's three-model Leonardo USB range of external ISDN adaptors are aimed at the professional market. They allow fast ISDN communication to digital and analogue terminals.

AlphaSmart on the move

A word-processing solution aimed at the education sector has been launched by AlphaSmart. The AlphaSmart 3000 is a mini-keyboard, with the capacity to hold a maximum of 100 pages of single-spaced text, or 200,000 characters, in its eight-file memory. It connects to a Mac or PC – so files can be uploaded for layout or storage, and can also download text from the computer.

The AlphaSmart 3000 also features a built-in spell-checker, which can run Applets and send documents to a printer. The machine has fared very well in the US education marketplace. It is lightweight, sturdy and simple to use, and offers USB, Serial, and infrared connectivity. Its battery has a life of up to 500 hours. The device is compatible with any desktop or laptop computer with an external keyboard or USB port and any ADB or USB-equipped Mac running System 6.0 or later. The AlphaSmart will be available from the end of June, and costs £189. See Reviews, page 62.
TAG Developments, 01474 357 350; Chromasonic, 020 8203 8989

Smart move
The AlphaSmart 3000 can hold a maximum of 100 pages of text – or 200,000 characters.

Umax upgrades warranties across scanner range
Umax dealer, IMC has announced that all Umax Astra scanners will now be supplied with two years warranty as standard. The warranty consists of a 24-hour advance replacement system, so a faulty scanner will be replaced with a functioning one within two hours. IMC has also announced that it intends improving its customer support services across the board, so its technical support Web site has also been revamped, including product segmentation and online forums.
Technical Support Web site, www.support.umax.co.uk; Online Forums, www.support.co.uk/forums.
IMC, 01344 871 329

Canon fires double blast

Canon has released two digital cameras – the credit-card-sized Ixus and the three-megapixel digital SLR, the EOS D30. They are priced at £600 and £2,200 respectively.

The Ixus has a 35-70mm 2x optical zoom lens and a 2.11-megapixel image sensor. Canon claims it is the smallest and lightest digital camera on the market. It features Canon's Ai AF multi-point focus system. This helps pictures remain sharply focused, as the camera calculates the best focus from three places within the shot.

The camera has a high-resolution colour LCD monitor. Up to 46 images are stored on CompactFlash memory cards, with both PAL and USB outputs supplied to transfer these to the computer. The camera offers large (1,600-x-1,200 pixels) and small (640-x-480 pixels) image sizes at both Fine and Super-fine compressions.

Available from mid-August, the three megapixel SLR EOS D30 features a large-area CMOS (Complementary Metal Oxide Semiconductor) sensor, and can accommodate the entire range of Canon EF lenses. Lenses are not included in the £2,200 price. Aimed at the advanced-amateur/business market, the imaging consists of a 3.25-million pixel large-area CMOS sensor, an RGB colour filter, and a newly-designed image processing unit that makes accurate high-resolution colour reproduction possible. At high speed, it's capable of shooting up to eight continuous images at approximately three images per second.

It uses CompactFlash cards capable of storing up to 12 images and comes with a 16MB CompactFlash card as standard. The camera is also compatible with CompactFlash Type II and a number of high-capacity storage options. The battery pack offers up to approximately 540 shots in Large/Fine mode at full charge. Picture size is 22.7-x-15.1mm and there ARE four different recording sizes to choose from. USB and video interfaces are supplied.
Canon, 01737 220 000

Digital double
The EOS D30 (above) – a digital SLR – offers three-point autofocus and a range of shooting modes, while the Ixus (below) is the smallest and lightest digital camera on the market.

Microtek extends its flatbed selection, with 4700

Microtek has introduced the ScanMaker 4700, the latest in its range of desktop flatbed scanners. The 1,200dpi scanner is aimed at the SoHo market, and features 42-bit colour depth, hassle-free USB setup and push-button operation. Extra functions include emailing and copying.

The built-in JPEG compression engine allows screen-resolution images to be scanned and stored more quickly, and gives smaller file sizes for email and the Web. The ScanMaker 4700 comes with ScanWizard 5, Microtek's next-generation scanning software. This has an automatic mode that determines the size of the photo or document, and adjusts colour, brightness and contrast for optimum results. These automatic settings can, however, be overidden by more advanced users. Support for all major file formats such as JPEG, GIF, TIFF, PNG and BMP is included. The £179 scanner also ships with Adobe PhotoDeluxe, Ulead PhotoImpact image-editing software, and Caere's OmniPage LE OCR software.
Johnson's Photopia, 01782 753 300

BT's ADSL service is here at last
– just not for Macintosh users.

David Fanning

BT surf and turf war

'm not in the habit of using this column to take pot shots at colossal corporations. Being so massive means they're far too easy to hit – but BT's announcement that it's finally unleashing ADSL (Advanced Digital Subscriber Line) to the public had me looking to pack enough heat to bring this lumbering dinosaur to its knees.

I've been waiting for ADSL for four years – ever since I first heard of the fantastic broadband Internet access it would bring. Finally, on June 29 it will be here – but not if you've got a Mac. BT, using its God-like method of working in mysterious ways, has said that Macs will "not be supported immediately". Poo.

So close, and yet so far. I'm excluded from this rollout of technology because I use a Mac. It's a long time since I felt like a second-class citizen because of my choice of operating system.

Networking is something the Mac does without thinking, so why is there a problem with ADSL? BT's press department was unable to tell me. I was told "somebody will call". I've heard that somewhere before.

The consumer version of ADSL uses something BT calls an ADSL modem. Yes, the more pedantic reader will be shivering with horror: a modem by its nature must be an analogue to digital device (MODulate DEModulate). The so-called ADSL modem is a purely digital device. It connects to the PC using USB, but it isn't Mac compatible. BT has been testing ADSL for three years, so you'd think somebody would have thought of trying it with a Mac. Er... no. Surely this can't mean Mac drivers have not been written for it. For crying out loud, how hard can that be?

So, there are no drivers for the "modem" – but the business package doesn't need it. Instead, there's a router that connects to the PC via ethernet. Unlike PCs, just about every Mac produced in the last five years comes with ethernet as standard. It would, therefore, have been pretty easy for BT to connect Macs using ethernet.

My only option is to pay for the VAT-bloated business ADSL package – but even then how can I be sure that even this will work? To add to my BT woes, all this comes on top of the already overpriced bills I'm paying for ISDN.

In the US, ADSL has been around for a couple of years, but things don't seem much dandier over there. Initially, convincing Internet service providers (ISPs) and telecom companies that there was another operating system other than Windows was a problem. Even more of a headache, though, is keeping up with demand. The take-up rate has been so huge that many of the telecom companies are unable to provide a proper service. Customers have complained of lines going down, and there are technical-support horror stories aplenty. It seems the companies can't cope with the demand: already, there are 600,000 homes in the US using ADSL, and this is set to top the 1.5-million mark by the end of the year.

The US companies complain that customers expect high-quality, high-bandwidth services, but, because they are unwilling to pay for this, the companies have skimped on support service – and people have got upset.

For those unable to take advantage of the ironically named BTopenworld ADSL service – and that will be many of you – BT has another plan.

It isn't quite as good – or bad – as ADSL, and can cost almost as much. SurfTime is a new package giving unlimited Internet connection at evenings and weekends. Evenings and weekends-only sounds like a limitation to me, but the cost is just £5.99 per month – or £19.99 per month for round-the-clock free Net calls. This sounds good – until you realise that, of the four ISPs you have a choice of using, two are run by BT. Wants to ditch your ISP in favour of BT? Not me, thanks – especially with its desultory Mac support.

Why should we find ourselves at the back of the broadband queue just because we're Macintosh users? This kind of platform-ism is entirely unnecessary – the truth is companies like BT can't be bothered to tailor its services to everybody's needs. Up to 10 per cent of BT's Internet customers could be Macintosh users. Almost no company can afford to snub a tenth of its customer-base – unless it's a giant, like BT. However when BT is forced to open up its local loop –the phone lines from your house to the exchange – it'll have to face stiff competition from other telecom companies. This will happen by next summer, and will enable telecom companies other than BT to offer ADSL, ISDN and telephone services. BT is going to have to smarten-up its act to avoid haemorrhaging customers. BT may not be a monopoly any more, but it still does a good impression of one – or one of thos short-sighted Windows-only banks.
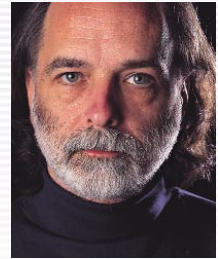
I'm looking forward to the telecom gloves coming off next year – because BT will be forced to behave like any other company that puts its customers before all else. When the loop opens, I know whose corner I won't be fighting in.   **MW**

■ See News, page 33

The government is using the 'Net to spy on us – and it's time to kick-up.

Michael Prochak

Wild, wild Web

If, as Grateful Dead lyricist John Perry Barlow once said, the Internet is like the wild wild West during the Gold Rush, perhaps it's time for a gun-fight at the dot-com Corral. Otherwise, we might start seeing ourselves on www.anted posters, accused of cyber-crimes we didn't even know we were committing.

As most of you probably noticed, Mac and Linux users were immune to the much-vaunted love-bug attack and the various next-generation mutations that have been creeping around since. Mac and Linux users were spared simply because they've no overly sad Windows dependencies. And, while an open Window may look like an invitation to a thief, neither Microsoft nor the general PC-packing public seems to have got the message.

As a matter of fact, right now, there's a 'cookie bug' in Internet Explorer, and Microsoft has even admitted that there's no bug-fix in sight. On top of that, a security fix designed to close a denial-of-service vulnerability discovered in Microsoft's Internet Information Server versions 4 and 5 doesn't work either. Shame, really.

Any high-profile security breach is followed by a media feeding-frenzy and knee-jerk reaction from opportunist third-rate politicians demanding draconian measures under the familiar pretext of protecting the public from "subversive ideas or the violation of national security".

But what really scares these guys is the inherently global, open and anarchic nature of the Internet. Viruses such as the recent "Love Bug" can flash through the Internet in nano-seconds and so-called hackers can blast Web sites into submission from anywhere around the world.

Different laws, customs and economic interests make it difficult to harmonize policies towards something as new and creative as "cybercrime".

As soon as the "crime" goes cross-border, a jungle of national laws waits to slow police down. Even where cases involve similar actions, legal precedents and moral imperatives can be poles apart. Recently, in the US, the Supreme Court ruled that Internet providers are not responsible for libellous remarks made in email or through sites or bulletin boards.

However, here in the UK, a British-court ruling recently put UK Internet companies on the same footing as say, newspaper publishers – and made them liable for defamatory comments made anywhere on their systems. Same global Web... different regional interpretations of a fundamental freedom of speech.

In case you haven't heard, the Home Office has already spent £25m on an email surveillance centre down at MI5. And under its little-heard-of Regulation of Investigatory Powers (RIP) Bill – that's currently slithering through Parliament – all Internet service providers (ISPs) will have to install tracking software that will enable them to read everything – yes, everything – that passes over the Internet. RIP will also allow the government to tap ISPs, emails and even electronic pagers or WAP phones.

Dear old Mr Democracy, Jack Straw has even reversed the usual burden of proof, so in this game, you'll be assumed guilty and all encrypted files on your computer presumed to be incriminating – unless you can prove otherwise. If you've lost or forgotten your password, you're liable to two years in jail. If you make any public complaint about your treatment, you'll get an extra five years as well. (See "Beware Big Browser" at **www.macworld.co.uk**).

Imagine what would happen if your normal post came through your letter-box everyday already opened and read by someone else. Or say, instead of the 1,646 government-authorized phone taps last year, imagine that every time you picked up the phone, someone was listening.

I'd like to think that the general public would be so appalled there would be media outrage and marches in the street. But here we have a situation where precisely that sort of Big-Brother intrusion of privacy is quietly becoming the norm on the Web – and apparently, no one is all that bothered.

Considering the excessive number of column inches devoted to demonizing the last so-called anarchist march, I find myself wondering about our priorities. I mean, which is worse: giving Winston Churchill a turf mohican or passively allowing the Government to intercept and read all of your email?

Currently, the Republic of Ireland is working to outlaw government snooping on the Internet. In the UK, the government is working to make all of us outlaws. If we really do believe in freedom of speech and we don't want our Macs and PCs becoming eye-balls for the security services, perhaps it's time we all asked our MPs "why"? MW

Database integration creator for the Web

Macromedia Dreamweaver UltraDev

Publisher: Macromedia   www.macromedia.com
Distributor: Computers Unlimited   (020 8358 5857)
Pros: Integrated development environment; it works on Macs.
Cons: Very complex to get started; no support for Mac databases, Web-application tools, or Web servers.
Minimum specs: Mac OS 8.6 or later; 36MB free hard-disk space; 36MB RAM.
Price: £399 (excluding VAT)
Star Rating: ★★★★/7.8

Dreamweaver has established itself as the leading Web-authoring tool in the Mac market place. It can add complex functionality to a WYSIWYG layout, using simple inspectors and palettes rather than tedious HTML. This visual approach to Web-page design, combined with Dreamweaver's strong site-management tools, have made it a popular choice with professional designers and lay-users alike.

In cross-platform offices, both Mac and PC users can use the same application and utilize the project-management features of Dreamweaver – strong plus points in it's favour.

Macromedia is seeking to apply the same concept of a visual-authoring environment to the realm of Web-application development with UltraDev. This allows the easy creation of sites with dynamically generated page content and database integration.

This is no mean feat, but Macromedia has taken it one step further by not supporting just one application technology, but three – Microsoft's Active Server Pages (ASP), Sun's Java Server Pages (JSP) and Allaire's Cold Fusion Markup Language (CFML).

Though very different, these three technologies share a similar approach

– they're all added to HTML Web pages using inline scripting or custom tags. And, it's this aspect that UltraDev aids, especially for the non-programmer. In order to test the ASP, JSP, or CFML page, it needs to be run through a Web server running the relevant server technology, and accessed using a Web browser. This then dynamically generates the content of the page, often as the result of running a database query.

Thus, to do anything useful in UltraDev requires a Web server, an application server and a database – stuff that will generally be run on a Unix or NT platform. There's no documentation or support for any Mac-compatible application servers, or the Web server WebStar, or any Mac database.

But in an office using both Mac's and PCs, it allows the Mac to be a part of the application programming team, and connect to the Web server platform through a browser to test the system.

Avoid like the plague

The key word here is programming, and for many code is something to be avoided at all costs. UltraDev tries to offer as easy a way to do this as possible, replacing hand-cranking scripts with a more intuitive graphical approach using palettes and pull-down menus. What Dreamweaver does for HTML, DHTML and Javascript, UltraDev aims to do for ASP, JSP and ColdFusion. It delivers results without requiring expert knowledge of the underlying language. It's very unlikely that a developer will be flitting between ASP, Cold Fusion or JSP – most will commit to one technology and stick with it. Thus, UltraDev's three-for-the-price-of-one offer seems more out of a sense of completeness than necessity.

You may remember that Macromedia launched a product called Drumbeat

Switch
Once a connection is up and running, you can view the live data from within Dreamweaver, rather than UltraDev.

2000, essentially a hastily re-badged version of Drumbeat that it had acquired from Elemental. UltraDev takes many of the core technologies of Drumbeat, adds CFML support, and then wraps it in the same user interface in Dreamweaver, making it a very powerful tool.

UltraDev's environment is identical to Dreamweaver's, and all the base functionality from Dreamweaver is included in UltraDev. The two most obvious

additions are the Data Bindings and Server Behaviour palettes. These let you establish how UltraDev will connect to the Web server in order to work with live data.

Right away, things start getting complicated for Macintosh users, because only PC data sources are supported, and using JDBC is the only way of connecting the data source to UltraDev. As this is probably going to be different to the method the Web application server will be using, you need to establish a run-time connection type and the JDBC design-time connection type.

Once the data connection has been established, you can develop and test your application. Next define the Recordsets – sets of data returned from a query. The query defines which fields will be returned and the conditional qualifying statements. The basic Recordset definition screen makes it easy to write simple queries, while the advanced view allows you to type in SQL query syntax directly. The Recordset concept is a strong one because queries have to be written only once, even if they're used on a number of pages or templates.

Applying the data drawn from a Recordset to a page involves replacing the text in a page layout with the elements from a Recordset – for instance the title, date and body text from a news story. And it can work the other way around as well, with the elements from a form on the Web page being used to update the contents of the database.

While UltraDev cannot replace knowing how to write VBScripts for ASPs, or CFML tags for ColdFusion, it does put a fantastic amount of programming power into the hands of the non-expert, and opens up the field of dynamic Web publishing. But, for the non-technically minded, getting started with UltraDev is a daunting task. For Macintosh users this is doubly so because of the need to set up the JDBC connection to the Windows datasource. But once up and running, it delivers results quickly.

Macworld's buying advice

There's very little competition to UltraDev. Allaire's ColdFusion Studio, Microsoft's Visual InterDev, and Adobe's Dynamic Link Library add-on for GoLive – which allows ASP code to be created in GoLive – are all single-technology solutions, lack the visual approach of UltraDev, and are PC only. For Macintosh users, UltraDev is the only choice, but it's certainly not a product that everyone will want.
Martin Gittins

Improved Web output for graphics giant

Illustrator 9.0

Publisher: Adobe   (020 8606 4001)   www.adobe.uk
Pros: Improved colour management; SVG and SWF compatibility; new Web tools; PDF editing; improved integration with other Adobe software.
Cons: Not all filters can be used in Style palettes.
Min specs: PowerPC; Mac OS 8.5; 64MB RAM; 105MB hard-disk space; 832-x-642 or greater monitor resolution; PostScript printers require PostScript Level 2.
Price: £269 (excluding VAT); upgrade from version 8, £95 (excluding VAT).
Star Rating: ★★★★★/9.0

Adobe Illustrator is one of the few "industry-standard" applications that actually has some competition. The battle between Illustrator and FreeHand has been raging for years, with a tit-for-tat war of new features. The recently released FreeHand 9 has now been countered by Illustrator 9.0. Unlike most wars, this one is great news – I can think of no other products so regularly updated.

Illustrator 9.0, like Photoshop 5.5, is now geared more towards Web-content creation – in particular SVG (Scalable Vector Graphics) and SWF (Flash Shockwave Format) have been added. It can also optimize files for GIF, JPEG and PNG. This will take another step out of the creation of Web images – previously another program such as Photoshop or Fireworks would have been needed.

It can also save layers as Flash animations in SWF format, something FreeHand 9 recently gained. This is an absolute boon for Web animators, and makes it easier for less experienced users. The SVG format was previously available only to Illustrator 8 users with a special plug-in.

SVG graphics work in much the same way as regular vector graphics. SVG produces complex graphics that take little memory, and are almost infinitely scaleable. For example, an SVG map on a Web site wouldn't take much time to download, but you could zoom right in to the street details without it getting bitty. This is because lines and curves are described mathematically, rather than as blocks of colour. Every time it's magnified, the curve or line is recalculated and remains smooth.

One of the long-awaited features of Illustrator 9.0 is transparency. Fonts, objects or groups of objects, or anything else created in Illustrator, can be made transparent with a simple-to-use slider. This instantly opens up a whole range of possibilities. When used in conjunction with the layers, dazzling graphics can be created, with each element remaining editable. This editability is important, because designs are rarely approved first time around. Keeping the ability to change text while keeping the style, transparency and filter settings means a more efficient workflow.

Once an image is designed for the Web, it can be disappointing to see it as a bitmapped file. The beautiful anti-aliasing that Illustrator uses on screen is not necessarily what the Web version will look like. Adobe has added Pixel Preview, which shows the end result.

Of course, if you're going to output to SWF or SVG, this isn't needed.

The native file format for Illustrator 9.0 has been updated, though files can be saved to previous formats. The file now created is similar to PDF – in fact PDF files can be opened and edited in Illustrator 9.0 with remarkable ease. This has previously been the domain of very specialized PDF applications, many with quite limited functionality. Now you can open a PDF and edit it as if it was a native Illustrator document. In fact Illustrator documents and PDFs are becoming almost identical, because an Illustrator 9.0 document can be opened up in Acrobat, without saving it as a PDF.

One of the best features of Illustrator 9.0 is the way the appearance and style of any object is handled. Styles can now be saved, and then applied to any object, including text. Remembering the way you created a button two hours ago is hard enough; remembering the way you did it a week ago is nigh on impossible. With Illustrator 9.0, there's no need to remember. Just create your button and text, show it to the client, and a week later when more labels are needed, simply open the original document, and edit the text. Better still, drag the button or text to the style palette and the filter settings, colours, stroke and fill are all recorded as a style. Then just type the text and click the style – its that easy.

Even blurred effects don't affect the editability of text. Just click on it and type away, the effects aren't affected. This is particularly good for Web designers, but it works for any type of job. Try editing blurred text in Photoshop, and you'll be disappointed.

The colour management has been improved, and there's the ability to work in CMYK as well as RGB. You can now use the Adobe Colour Engine (ACE), which is a device-independent colour-management technology. Photoshop 6.0 will also use ACE, as will other Adobe software. This makes it easier to keep consistent colour when moving files from Illustrator, to Photoshop, to InDesign. Web safe colours can also be specified.

Macworld's buying advice

Adobe has made a lot of significant improvements with Illustrator 9.0. It's more geared to the needs of Web designers, but there are improvements for other designers. The stage is set for newer Adobe applications to work more closely together with a common file

Time saver
Illustrator's new Styles Palette can apply fonts, colours shapes, and more, with one click of a mouse.

format and colour management. This is going to make life a lot easier for anybody using an Adobe-based workflow, and make keeping customers more difficult for other software publishers.

Some previous versions have had quirks that were probably due to rushing out the software too quickly. Illustrator 9.0 has so far not shown any of these problems, and seems stable. The interface remains similar to Illustrator 8.0, with just a few extra gadgets. Also, there's no changes to the keyboard shortcuts, unless you want to make-up your own. Generally, Illustrator is still the familiar tool users expect, but with lots of extra features.
David Fanning

Web preview
Adobe has added a 72dpi preview mode, so designers can see what their designs will look like when they're published on the Web.

Adobe's late entrant into the vector-animation field needs to be pretty special to bite into the market domination established by Macromedia's Flash. While LiveMotion does contain some welcome features, Adobe's great-white-hope looks unlikely to knock out the champion.

Perhaps comparing Flash and LiveMotion too closely is wrong, as there are as many differences as similarities. LiveMotion owes more in operation and functionality to AfterEffects than Flash, with a completely different approach to the way that objects are treated and animated.

The user interface will be achingly familiar to anyone who has ever used either Adobe Photoshop or Illustrator. It has a similar set of vector-based drawing tools that are used to create the objects and shapes which can then be animated.

However, it lacks the freehand-sketching tools that some Flash users find useful, while most Illustrator or FreeHand users will already have the precise drawing tools they need. Each object can have multiple layers, to allow you to create complex graphics, and also apply effects, much like in Photoshop or ImageStyler. This is certainly simpler to grasp than Flash's shapes, symbols and instances lexicon.

While Flash uses a frame-by-frame approach with elements placed arbitrarily in layers, LiveMotion is timeline-based, and each object is automatically in its own layer. Then, just as in AfterEffects, every conceivable attribute of an object can be changed over time by simply adding keyframes and making the required adjustment either numerically or
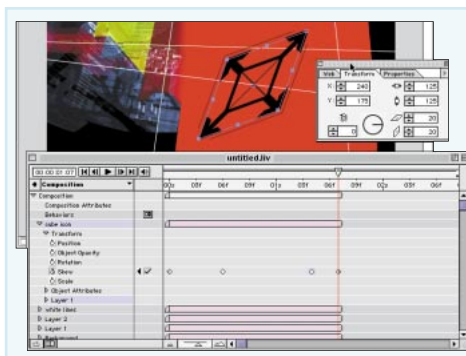
Keep time
The timeline allows precise control over every aspect of an object's position, attributes, colour, opacity and others.

interactively. This makes it a much more precise animation tool than Flash, but this also means that setting up the animation can take much longer. Locking elements and temporarily making them invisible is not as easy as it could be.

Because all effects and animations are applied separately, it's possible to change any aspect of a composition or animation indefinitely, without having to go back to previously saved symbols and repeat steps. This non-destructive approach, and the precise timeline, shows LiveMotion's film-editing pedigree.

Adding interactivity is one area where LiveMotion cannot begin to compete with Flash's advanced ActionScripts. However, adding simple interactivity, such as dynamic button effects, is easy – and for many users, the no-need-to-code approach will be welcome.

But the lack of support for variables, and the more sophisticated object-oriented approach of Flash, limits what can be done in LiveMotion in terms of interactive games and advanced navigation interfaces.

LiveMotion can import a number of vector-based and bitmap file formats, such as Illustrator files or EPSs, although not SWF or raw Flash. Illustrator and Photoshop files are imported with their layers intact, which is a great feature. LiveMotion exports SWF files, as well as animated GIFs and static bitmap files, but has no support for QuickTime export or the much touted SVG format.

As LiveMotion allows you to combine export types in one composition, such as a bit of SWF here, an animated GIF there and a Javascript rollover here, some exported page designs can get rather complex.

Macworld's buying advice
LiveMotion and Flash can live together, and I'm sure many designers will combine the superior animation controls of LiveMotion to create SWF files, which they can then import into Flash to add interactivity. As a 1.0 release, LiveMotion has much to recommend it. Pity we couldn't have had it two years ago…
Martin Gittins

The first upgrade card for iMacs is here, and it's fast. With its 466MHz processor, Newer Technology's iMaxpowr G3 is the fastest iMac configuration yet. If your older iMac is beginning to huff and puff during its daily grind, you may want to consider an upgrade. Unfortunately, it doesn't work in the currently shipping iMacs – specifically the 350MHz blueberry model and the iMac DVs – but it's compatible with earlier models. So if you're not averse to letting someone open up your machine, the iMaxpowr G3 will result in the fastest iMac in town.

Once installed, the iMaxpowr G3 requires no software. Macworld Lab testing showed upgraded iMacs to be faster than original iMacs in every case (see "Rev up your iMac"). And because Apple ROMs are already on the upgrade card, the new processor will work properly in an iMac.

Rev up your iMac
□ Best results in test. Longer bars and higher scores are better.
MacBench scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 for each test.

iMac performance compared:	Processor	Disk	Graphics
Newer Technology iMaxpowr G3/466	1,347	1,647	1,004
Apple iMac 266MHz	808	1,400	954
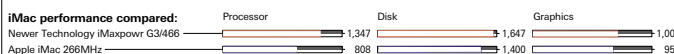
Behind our tests Testing was performed on a system with Mac OS 9, 64MB of RAM, and a 2MB system disk cache, with virtual memory disabled. – Macworld Lab testing supervised by Jeffy K. Milstead

The average iMac user can probably install the iMaxpowr G3. But in the UK, the dealers have decided it's safer to do it themselves. Apparently, we're not as technically adept as the Yanks.

Another reason for this method is that to get the ROMs needed for the upgrade Newer needs the old ROMs from your machine. In the US this is done with a rebate scheme, but in the UK this is all taken care of by the dealer. This means that although you need to have the upgrade professionally done, you don't have the headache of sending ROMs

around the world. So it's actually easier to upgrade in the UK.

Macworld's buying advice
The iMaxpowr G3 upgrades your iMac to a fast 466MHz G3, at a price in line with that of similar G3 upgrades. It will make your iMac faster than the iMac DV Special Edition, although it won't add FireWire or DVD capability. Also, no software means no system clashes. If your need for speed is such that you'll spend £398, then upgrade and prosper.
David Read

Linoscan 1200

Manufacturer: Heidelberg
(01242 285 100)
www.heidelberg-cps.com
Distributor: Direk Tek
(01494 471 100)
Pros: Can batch scan
transparencies and photos at
the same time; simple to use.
Cons: No paper manual.
Min specs: Mac OS 8.5;
32MB of RAM.
Price: £399 (excluding VAT)
Star Rating: ★★★★/7.8

Heidelberg has always produced decent scanners, and the latest addition to its range is no exception. The entry-level Linoscan 1200 is affordable, and comes with a full version of LinoColor Elite – Heidelberg's professional-level scanning software. This is the first time that Heidelberg has offered Elite with its bottom-of-the-range scanner.

The 1200 has a maximum resolution of 1,200-x-2,400dpi and 36-bit colour depth. LinoColor Elite needs 32MB of RAM, plus 60MB of hard-disk space – more if you're scanning at high resolution.

Power source
The scanner is USB, but, unlike some other entry-level scanners, it's not powered through the USB cable.

At £399, Heidleberg's low-end scanner costs over £300 pounds more than Canon's CanoScan or Umax's Astra 1220U. This is because it has way more features, and scan quality is higher. The 1200 is more than enough for basic professional needs. On the other hand, the CanoScan does do a reasonable job, and is USB powered.

Heidelberg claims it will take only 30 minutes to make the first scan. I'm no scanner virgin, but I've never used LinoColor before. Yet, it took me far

less than 30 minutes. A few simple adjustments in the scan preview and I had an accurate and sharp image.

It took a little longer to scan transparencies, but this was my own stupid fault. The transparency adaptor on the lid of the scanner needs to be plugged-in separately – I forgot. I needed to tweak the resolution – the automatic setting wasn't high-enough – but everything else was fine.

Guiding light
The software has loads of helpful features for the novice and professional alike. There are automatic corrections for many kinds of pictures – for instance, Skin will improve flesh tones, and Technic will bring out the glitz in silver.

A definite boon for those doing a lot of scanning is the 1200's batch-scanning features. It can scan both reflectives and transparencies at the same time. Simply scan using the Overview mode, highlight the areas to be scanned, and then click on the reflective or transparency icon for each

picture. It's easy and will save loads of time.

Macworld's buying advice
The Linoscan 1200 is a good scanner, it's got serious – yet easy-to-use – software included, and it has a transparency adaptor as standard. Heidelberg's entry-level scanner is not as cheap as other entry-level scanners. If all you want to do is scan in holiday snaps of the kids, go for one of the sub-£100 scanners. But if you're looking for good image-quality, need to scan trannies, and can spend the extra cash, go for the Linoscan. It's just a shame there's no paper manual included.
Woody Phillips
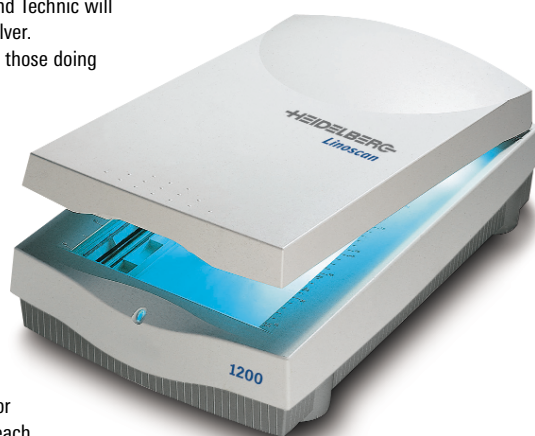
PocketDrive

Manufacturer: LaCie
(020 7872 8000) www.lacie.com
Pros: Small, light and stylish.
Cons: Requires drivers, so
can't be used as a start-up
disk.
Min specs: Mac OS 8.6;
FireWire or USB.
Price: 6GB, £299; 12GB, £399;
18GB, £585.
Star Rating: ★★★★/8.2

FireWire hard-drives have taken a long time getting to market, and are still rare. LaCie's new PocketDrive range may change this. They have taken away many of the compatibility issues involved with FireWire and USB. And storage capacity runs from 6GB up to 18GB – enough for most users.

Compatibility
The interface for the drive is both FireWire and USB. So, whether you're an iMac or a G3/G4 owner, the same drive is compatible – great if you change machines. It's also pocket-size. Pocket-size isn't a legally precise word – after all, pockets come in different sizes. Shirt pockets are out of the question, as are trouser pockets – though maybe combats are up to the job.

In the event you do get the PocketDrive into a pocket, it should be fairly safe there. Its rubber edging should take much of the force out of bumps and knocks – just don't throw yourself down the stairs.

Setting the drive up is a bit of a chore, but all the software you need is supplied. Unfortunately, Macs don't tend to have the software extensions required

for FireWire or USB hard drives. This means if you want to have the PocketDrive to carry work from the office to home, the software must be on both machines. This is not such a big deal, but there isn't the flexibility of SCSI, which didn't require drivers. For a consultant going from machine to machine, the need for drivers is a bit of a drawback.

The extra storage is a boon to cramped hard drives – though how anybody manages to fill the multi-gig drives that even iMacs come with is a mystery to me. I suppose the more room you have, the less likely you are to throw out the rubbish.

One potential drawback is the inability to load a System Folder that you can start from. This is because the drivers required to see the drive must be loaded. If the drivers are on the external PocketDrive, the Mac won't be able to see it. I\t is a Catch 22, and takes away one of the big advantages of an external drive – namely as a

temporary boot disk for disk defragmentation or reformatting.

Macworld's buying advice
If you need to add to your storage capacity, the Pocketdrive is a fairly flexible option. There are cheaper ways to do it, but this way the drive will last through a machine upgrade.

The USB interface means it will work with iMacs, though not as quickly as FireWire-equipped machines. Being able to carry data around will not be on everybody's list of must-have features, but PowerBook users may find it useful. It's a good and reliable way of expanding storage capacity.
David Fanning

I f your hard drive is clogged with MP3s and you keep meaning to catalogue them – don't bother. MP3 Rage will sort them and file them like a librarian on speed. MP3 Rage is a suite of MP3 tools not just for downloading or playing, but for filing and cataloguing MP3 files.

If you're using SoundJam to RIP audio CDs, the filing is quite straightforward. Information on the song, album and genre is recorded in special tags automatically with SoundJam. But if the MP3 files are downloaded from a dodgy source, the track information is usually missing. Rage lets this information be added. This is useful, but only the kind of people that alphabetize their record collection will sit down and fill in every detail.

Once this is done, files can be organized by artist, album, genre or date. Fortunately, this just takes one click of a button, rather than hours of filing. Files can be renamed or the tags changed by drag-&-dropping folders of MP3s onto the relevant tools.

If you really want to get anal about it, Rage can create custom tags, allowing

consistent file-naming conventions. MP3 files can be played in Rave, though the player is basic by normal standards. For instance, files must be opened individually, which makes playing an album a chore.

If you don't have any CDs to play, and aren't bound by strict morals, you can use the Ravester tool. This is basically an adaptation of Napster, the litigation-challenged MP3 search engine. If you're not already familiar with Napster, or its Mac equivalent, Macster, it allows people a simple way to share their music over the Internet. The Napster server puts you in touch with a user who has the music you want. Then just download it directly from the other user. This theoretically puts Napster in the clear legally, though Metallica, Dr Dre and a long list of record companies disagree. At the moment Napster's future is on rather shakier than Mr Stevens.

Macworld's buying advice
If you have a random collection of MP3 files, but don't use them because you can't find them, MP3 Rage is the answer.

In a rage
MP3 Rage can catalogue and download MP3 files – even illegal ones.

It is a neat-freaks dream when it comes to filing systems, though it may take some time to get everything catalogued. The alternative is even more long-winded. For the price, $25 gets you a lot of functionality. It's a really handy tool for anybody that uses a Mac for music playback. It stops short of being a one-stop-shop for all things MP3 though. The player is very basic and there's no facility for RIPing MP3 files from CD originals.
David Fanning

D J's now top the charts with tedious regularity: they are worshiped by ravers around the world and make money that competes with Premier League footballers. It's no wonder that so many people are trying to hitch their wagon on the gravy train that is club DJing. But if you can't afford the price of twin Technics decks and a mixer, there's a cheaper way to hone your DJing skills. Fidelity Media has released MegaSeg, a tool for playing MP3s, DJ-style, with mixes, segues and intros.

Free, all right now
It doesn't have quite the same charm as vinyl, but there is a mountain of music available, some of it even legal. Check out MP3.com and you will see an ocean of music files, some home made, some professionally done. All of them are free. MegaSeg keeps track of songs

and lets you add information, such as intro-time, cue-in time, segue time and BPM (beat per minute). This is essential information for a DJ, especially when trying to keep a beat going during cross-fades. But the control over BPM is not what it would be when mixing with vinyl. The speed of playback can be increased or decreased, but there's no way to change the speed of an individual tune. This means beats can't be matched, even if the BPM of both songs is known. Also, the pitch or speed of the song is shown as a percentage rather than BPM. So being able to set the BPM for each song doesn't actually do anything at playback.

MegaSeg isn't going to impress pro DJs, but there are advantages to using it. House parties are ideal, because a playlist with hours of music can be loaded, or different playlists for different moods. A whole night's entertainment without

needing to make a party tape or change the CD. Whether you could actually have a party without some fool insisting on playing his favourite grunge-garage-jungle-bogle-trip-hop tape, is debatable. Though if you were to insist on MP3-format only, it might deter people interfering.

Given an endless list of tracks to play, MegaSeg will tirelessly segue between songs, without chat or comment. It may not be mixed like LTJ Bukem, or even DLT, but you won't have to do it yourself, and it's better that a compilation tape. If you really want to be the next Grand Wizard Theodore or Spinderella you'll never recreate the sound of vinyl with this app, but perhaps future versions will be better.

Macworld's buying advice
MegaSeg isn't about to replace DJs in most situations, but with some improvements, it could. Adding real cross-fades and automating BPM matching would make it a more attractive proposition. The price of $200 (about £140 is steep for something so basic. I wouldn't be surprised to see some mixing features appear in SoundJam, for example. But it does a reasonable job, as long as you don't expect too much.

If it were my money, I'd hold out for a few more features in a future version. It does what it says, but it's still short of being a real DJ tool. It's missing some essentials.
David Fanning

Disco down
MegaSega keeps track of MP3 files and adds information on the songs. It also acts as a basic mixing deck, so hours' worth of MP3 files can be mixed and played at parties.

T he use of MP3 files is a thorny legal issue. So many illegal MP3s are available that it has become a byword for pirated music. But the legality of listening to MP3 files made from CDs that the user owns is a different matter. It's a legal grey area. As I understand it, so long as the files aren't given away, you're OK.

One company that has been dancing on the fine line of MP3 legality is MP3.com. In fairness, it's done everything possible to promote MP3 as a legal music format. The latest feature of MP3.com is my.mp3.com and Beam-it software, opening a whole new can of legal worms. They let users register legally owned CDs, and then listen to them from any computer with Internet access.

Free and easy
The first step is to open an account, which is free and only requires an email address and a password. The next step is to download the Beam-it software – a control panel to send details of your CDs to MP3.com. Now all you need do is register your CDs.

Put a CD in the drive, and the control panel asks if you want to beam it. It then contacts MP3.com and confirms that you own the CD. It doesn't RIP the audio files and upload them, it simply checks the copy is legal.

Now one of two things happens.
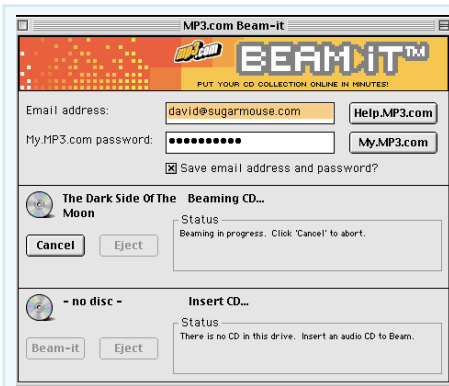
Either access is granted to a pre-RIPed MP3 version of the CD, or, if it isn't available, you can register its unique code – so that when it becomes available, you'll be notified. When registering my eclectic CD collection, around 90 per cent were available. That's pretty impressive.

Once the CDs are registered, they appear in your MP3 account and are available for streaming play anywhere. Playing music at work is no problem. Simply access the account, choose an album or play list, and it will play via an MP3 player. Sadly, *Macworld*'s offices are a music-free zone since the *River Dance* incident in 1997. One draw-back is that, as it's streaming, the bandwidth it uses could affect others' browsing. Unless there's a 256K or better connection at work, IT managers will get a little hot under the collar.

Listening at home is a different matter, because this is where most people's CDs are. Why will most of us want to pay 60p per hour to listen to CDs that have already been paid for? However, when ADSL arrives, with a permanent broadband connection, it might just be easier to play music though a Mac than messing around with inconvenient CD cases.

However, the music industry isn't happy, and MP3.com is currently fighting lawsuits from Universal, Sony, Warner Bros, Arista, BMG, RCA, Capitol, Electra, Interscope, and Sire. In an attempt to appease them, MP3.com has frozen all of its tracks from the major labels. If used properly, my.mp3.com doesn't break any laws, but it does make it a easier to listen to other people's CD collections. But I'm not sure this is easier than making CD-Rs of music.

Macworld's buying advice
It costs nothing. Even if you didn't listen to the music online it does a great job of cataloguing music. So, take advantage of it while you can.
David Fanning

Just beam it
my.mp3.com and Beam-it let you listen to music anywhere there's a computer and a Web connection. Unfortunately, the US record industry is clamping down, so it may not be around for long.

PlayStation emulator

Virtual Game Station

Publisher: Connectix
www.connectix.com
Distributor: Computers Unlimited (0207 358 5857)
Pros: Hundreds more games for Macs.
Cons: For the price of Virtual Game Station, games and a control pad, you could get a PlayStation.
Min specs: PowerMac G3; ATI Rage card.
Price: £35 (including VAT)
Star Rating: ★★★★/7.1

After months of waiting, Virtual Game Station (VGS) – the Sony PlayStation emulator for the Mac – is finally available in the UK. Due to legal trouble in the States, it looked like VGS may never make it over here. But most of Sony's objections have been dismissed – only two remain unresolved.

VGS doesn't support all PlayStation games, though Connectix claims it's compatible with over 200 of them. All the compatible games are listed at www.virtualgamestation.com.

Installation is easy, and the system requirements are small: Mac OS 8 or later, a Power Macintosh G3, 3.5MB of hard disk space and 10MB RAM. But, it only works with the factory-installed ATI Rage cards – if you've installed any other graphics card, you're out of luck.

VGS supports joysticks, game pads and keyboards. However, the game pad in our office doesn't work properly – through no fault of VGS – so I was stuck with the keyboard.

Crash

First game up was Driver. Connectix dosen't claim to support it, but it was pretty impressive. The graphics and game speed were up to scratch, but there was no sound. Also, the save file corrupted – very annoying. And, the program crashed every so often. Still, playing Driver on a Mac wiled away a few hours.

Next up was Resident Evil 2. This is supported, and it worked perfectly, the graphics were smooth and the sound was stunning. And the save option worked.

More impressive was International Superstar Soccer Pro 98 (ISS). Even though Connectix doesn't claim to support it, ISS work almost perfectly – the graphics were a bit blocky, and without a game pad it's very tricky. But all the features were there, and it's always a pleasure to thrash the Hun.

Gran Turismo was pretty impressive as well. The racing was fast and the graphics stunning.

Macworld's buying advice

The problem with VGS is its price – £35. For £100 you can get a PlayStation with a control pad and three games. When you add the price of a control pad and a few games to VGS, it costs more than a PlayStation. If you already own these, VGS is a cheap alternative to use at work – although how this would go down with the boss is questionable. Or, if you're into gadgets it'll let you show off. However, for full compatibility with all PlayStation games there's only one option – a PlayStation.
Woody Phillips

Play time
Virtual Games Station runs hundreds of PlayStation games. You can race with Gran Turismo, go deep undercover in Driver, or beat the Krauts in International Superstar Soccer (eft to right).

Portable word processing

AlphaSmart 3000

Manufacturer: AlphaSmart
www.alphasmart.com
Pros: Sturdy; reliable; light.
Cons: For a little more money, you could pick up a pocket-sized Handspring and fold-out keyboard.
Price: £189 (excluding VAT)
Star Rating: ★★★/7.0

The AlphaSmart 3000 is a lightweight (0.91kg), durable word-processor aimed at the education market.

AlphaSmart connects to the computer via either a serial cable or USB. Infrared (IrDA) wireless connectivity is also supported.

Entry options

The AlphaSmart can hold up to 100 pages of single-spaced text, or 200,000 characters in its eight-file memory. It offers four keyboard options – the default layout is QWERTY. The other options are Dvorak – needing less hand movement – and right and left single-hand layouts. However, there's only a QWERTY keyboard, so unless you know the other layouts, you're stuck.

It offers an easy-to-use spellchecker, a find-file option and password protection. A keyboard timer is included to help assess typing speed

and accuracy. The power comes from three AA batteries which provide around 500 hours of life – so its available for use most of the time and unlikely to conk out mid-project. Also, it's quiet.

Text management is easy – there are eight files, each accessed through a separate button. Text can be typed directly into each file, and copied and pasted between files. Accidentally deleted data is recoverable – though data can be completely deleted if the option-⌘-clear file command is used.

Once you have your text, AlphaSmart lets you upload it for layout or storage – text can be delivered directly to any active word-processing or email application, as long as a document is open to receive data. AlphaSmart can also receive text from the computer.

Connectivity is simple, it took only a few seconds to figure out how to manage this with IrDA, and even less time to get the cable-based connectivity working. The infrared option has a range of one metre – though I managed to get it working at a slightly longer distance, and the cable-based option is a real no-brainer, up and running in seconds.

AlphaSmart can print directly to a parallel or serial printer without needing a computer. A list of compatible printers is available at www.alphasmart.com. The company also lists machines it knows to be incompatible with its device, including Apple's Color StyleWriter 2500, the Epson Color Stylus 500 and Apple's LaserWriter Pro. The print option is invaluable for educators, who can choose whether to get their pupils to print out their assignments for marking, or use the infrared facility to transfer everyone's work to their Mac – or use that infrared facility to transfer assignments to their kids' AlphaSmarts.

Macworld's buying advice

AlphaSmart is stable, reliable, durable and lightweight. It lacks the cachet of a PowerBook, sure – but it needs less insurance cover. It's quiet, so you can tap out notes during meetings, and has a long battery life. For children, it's functional, easy-to-use, and the lack of games means less distractions. I do have reservations about the price though. Competing products are available – a Handspring plus Stowaway keyboard combination offers more functions for only £80 more. However, the AlphaSmart is funky enough for kids.
Jonny Evans

FileMaker's latest offering, FileMaker Pro 5 Unlimited, can publish FileMaker databases for large audiences on the Web. It differs from FileMaker Pro 5 (see Reviews, December 1999) in three ways: it can serve databases to Web users without restriction – FileMaker Pro 5 is limited to ten Web users in any 12-hour period; its Web Server Connector hooks into third-party Web servers; and it costs £799.

Sound underwhelming? It should – especially at that price.

Like FileMaker Pro 5, the Unlimited version offers a feature called Instant Web Publishing, which uses Cascading Style Sheets (CSS) to render screen layouts to CSS-compatible browsers with remarkable visual fidelity. However, it doesn't take many visitors using Instant Web Publishing simultaneously to strain Unlimited's serving capabilities.

Instant Web Publishing can also be CPU intensive, further reducing performance. You can avoid this feature altogether by using add-on middleware products, such as Blue World Communications' Lasso and Pervasive Software's Tango. Or, CDML, FileMaker's built-in proprietary syntax

for integrating database content into ordinary Web pages, can be used. Unfortunately, CDML documentation will be available only with FileMaker Developer 5, a separate product. Without documentation, creating custom-Web pages is essentially off-limits.

Unlimited's performance workaround is Web Server Connector, a Java servlet that hooks into WebStar, AppleShare IP, Mac OS X Server's Apache, Microsoft's IIS, and Netscape Enterprise Server. Web Server Connector allows database publishing with capabilities such as SSL and flexible security options – and it can access multiple copies of FileMaker Pro 5 Unlimited. Using the £799 FileMaker Pro Server 5, Web Server Connector can shuffle requests to databases on a redundant array of inexpensive computers (RAIC). If you constructed a RAIC using three copies of Unlimited, a query would tie up only one copy, leaving the other two available. However, this scenario requires roughly £3,200 in FileMaker software alone.

In tests using WebStar 4.2 and Mac OS X Server 1.0.2, Web Server Connector held up under fire. It distributed queries to available copies of Unlimited when others were tied up, and it coped with the loss of RAIC members due to network problems or software crashes. But, it offers no security options, needs manual-database management, and can't filter incoming queries.

Macworld's buying advice

FileMaker Pro 5 Unlimited has little to recommend it over FileMaker Pro 4.x, which cost £169 and didn't place restrictions on Web publishing. FileMaker now offers scalable Web publishing, but requires customers to pay much more for the privilege.
Geoff Duncan
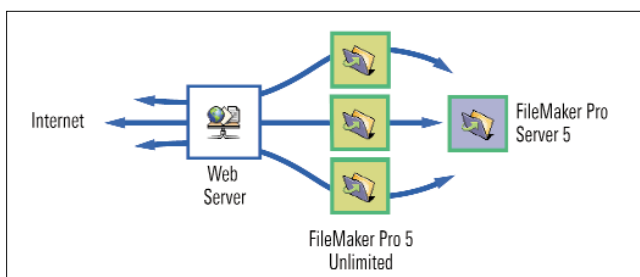
RAICing it in
FileMaker Pro 5 Unlimited can serve databases using a redundant array of inexpensive computers, improving performance over a single copy of FileMaker Pro, but not really inexpensive – each green-bordered box represents about £799 in software costs.

3D-animation software

Cinema 4D XL6

Publisher: Maxon Computer   www.maxon.de
Distributor: HiSoft (01525 718 181)
Pros: Excellent interface; non-linear modelling; Motion Sequencing.
Cons: No independent motion channels; render quality can be bettered at this price; its materials system is looking a bit old.
Minimum specs: PowerPC; Mac OS 7.6.1 or later; 64MB
Price: £1,187 (excluding VAT)
Star Rating: ★★★★/8.8

Real smooth
The animated waves were created using an expression. Expressions create complex linkages between parameters.

C inema 4D XL6 is the latest 3D-animation package from Maxon. This new version of the acclaimed 3D rendering package is much better than the last version, and is not just a simple upgrade.

Behind the un-Mac-like, but well crafted, interface lies a 3D program of unmistakable power and flexibility. This is shown by the new hierarchical modelling "pipeline". The new modelling tools and functions offer a non-linear environment that can create and modify models with greater freedom than before.
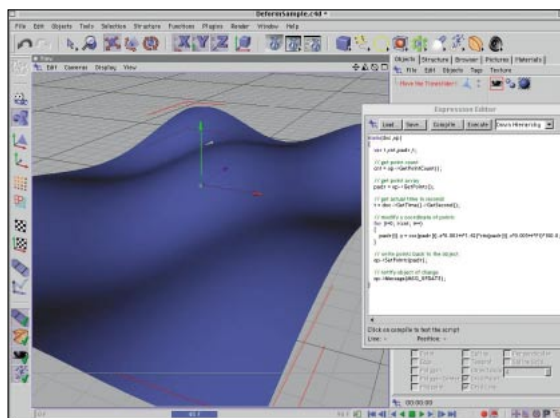
In most 3D programs, a modelling operation is performed as a command on a selected object. To create a tube, for instance, you would select a circular curve then choose an Extrude command from a menu. This may or may not lose the original curve, but you'd almost certainly lose any link between the curve and the extruded surface.

Maxon's approach is to implement the modelling tools as objects rather than commands. To use the same extrude as an example, in XL 6 the circle curve is placed in, or rather grouped in, an Extrude object. The Extrude contains no geometry, and does not display in the 3D view – save for a set of axes – but exists as an icon in the Object Manager window. As soon as the circle is dragged onto the Extrude icon the operation is performed, and the surface then appears. If you edit the shape of the curve the extruded surface also changes.

This linkage is what gives XL its non-

linear modelling functionality. Further modelling can be done on the surface, such as adding a deformer object. You can still edit the circle curve and any changes travel through the hierarchy – the extrusion and the deformation receive the changed information and the resulting object reflects this change.

Double clicking an object accesses its parameters, such as interpolation method for splines, or capping and bevelling options for the Extrude, Lathe, Loft and Sweep objects. Many of these parameters can be animated using a Parameter sequence in the Timeline. You can smoothly animate value fields, such as the rotation of a lathe or the length of an extrusion.

XL6 supports Polygons and NURBS, though the NURBS are non-standard and have no editable control verticies (CV) – the 3D version of a bézier curves. XL also supports subdivision surfaces in the form of HyperNURBS objects. Placing any object into a HyperNURBS object creates a smoothly subdivided surface, using the original object's geometry as a control cage. Though you can use any hierarchical object as the source for a HyperNURBS cage, it's really best to stick with simple polygon objects. The beauty of HyperNURBS is that smooth, high-resolution organic surfaces can be created using simple polygonal cages.

The polygon editing tool-set has been improved, and many of the new tools are directly applicable to HyperNURBS modelling – such as the Knife and Bevel. There's also a very useful Untriangulate tool – superb for converting imported-triangulated meshes into quads.

The tool-set ranges from high-level sculpting tools, such as Magnet tool, to the functions found in the Structure menu and Structure manager itself – you can edit the point and poly data directly.

As mentioned, the interface is not Mac-like. It runs within a main window, at first at least, because it's totally customizable. The main menu bar

commands are also within this window, rather than on the Menu Bar, which wastes space but keeps the interface consistent across platforms. Many of the data-display windows can be grouped into Tabs, which is a useful way of organizing things.

The Timeline has been re-jigged to be much more user friendly. It supports the selection and manipulation of multiple keys and sequences, and also has layers and colour coding so you can organize the display in complex scenes without having to scroll through hundreds of objects. Function curves fine tune keyframe interpolation, but the tangent handles were a bit fiddly to use. I was also surprised to find that independent motion channels still aren't supported. When I spoke to Maxon about this, they said no one had requested it. But says the company, it intends to include this in a future release. It listens to its customers.

What Cinema XL does have, though, is Motion Sequencing. In XL 6 any Rotation, Translation or Scale sequences can be grouped into a single Motion sequence. A single skeleton hierarchy, for example, can have multiple Motion Sequences controlling it. And, these can be blended together to create a composite motion. What's more, these Motion tracks can be applied to different objects at different times – allowing you to animate crowds of characters, all with different combinations of animation, by simply drag-&-dropping Motion sequences on to them. Libraries of animations can also be stored and retrieved allowing you to reuse your animation data.

Macworld's buying advice

There are loads of other features, such as weight mapping for bones and deformers, Symmetry, UV mapping and improved lighting – including Area lights and shadows. If you tend towards character animation there's nothing to compete with XL at the price.
Simon Danaher

Face it
Point level animation (PLA), allows you to animate the points of a model. Combined with selection sets for point and polys, PLA can be a powerful tool for facial animation.

Belkin USB Videobus

Manufacturer: Belkin
(01604 678 300)
www.belkin.com
Pros: Can create professional-looking QuickTime movies from VHS and camcorders.
Cons: Unless your VHS or camcorder has S-video output, you'll need a SCART adaptor and an S-video lead (£8.50 and £7.65; Maplins, 020 7242 8164); no printed manual.
Min specs: Mac OS 8.6 or higher; USB; QuickTime 3.0.
Price: £79.99 (excluding VAT)
Star Rating: ★★★★/7.8

Editing made easy
VideoShop makes editing video intuitive. Footage is captured in the Digitizing window, saved to the bin, dragged to the Project Window and viewed as a movie in the Canvas window.

D igital editing is no longer a black art mastered only by video professionals and a few wised-up amateurs – consumers want in, and companies like Belkin are only too pleased to usher them through.

Apple thrust home-movie editing into the public consciousness by championing its bundled iMovie software in ads for the iMac. Great news for owners of digital-video cameras, but Mac fans with older camcorders were left out in the cold.

On the buses
Belkin has now bridged this gap, with its USB Videobus for the Mac. The Videobus allows camcorders – and VCRs – to be connected to USB Macs. Images are transferred via the Videobus, while audio goes straight from the video to your Mac via a supplied audio cable. Videobus is also powered by the USB connection, so cutting down on nuisance cabling.

The package provides everything needed to create professional-looking QuickTime movies. These can then be posted on Web sites, or emailed to relatives.

The bundled software is impressive. Strata VideoShop 4.5 is iMovie with muscles.

Video footage is first imported via the Videobus and is displayed in real-time in the Digitizing window in which the whole movie – or portions of it – can be captured. These files are then displayed in the Bin, from where they can be dragged onto a timeline window, in which the editing takes place. Post-edited film is viewed in the Canvas window, allowing for frame-by-frame fine-tuning.

Effects aplenty
Like iMovie, clips can be spliced using special Transition effects – but unlike iMovie, VideoShop's Transitions are bountiful and can themselves be edited, to heighten or lessen their effect – a powerful feature.

The software also boasts a pile of filters – including emboss, reverse-play and Wavy – that are especially useful for crafting captivating title sequences. Text can be added for titling, too.

Another higher-end feature is the ability to create movies within movies. Say you're working on an old VHS movie of your sister's wedding. You've captured both your mum crying with joy and your sister exchanging her vows – but not at the same time. VideoShop allows you to create a close-up inset of your mum within the vows footage. The inset can also be made to move

around, using a path editor. One feature of VideoShop that will especially appeal to those looking to create QuickTime movies for the Web is its 3D-effects functionality.

Edited video can be mapped onto a host of 3D objects that come on the software CD. Also supplied are Tween-motion resources, to animate them.

Control can be exercised over sound, because bundled with the Videobus is TuneBuilder Lite – the full version comes with a resources CD containing generic pre-recorded mood music. However, TuneBuilder will work with any audio file – whether its a track from a CD or a voice-over you've recorded.

As with all these packages, time experimenting is time well spent. This, though, is not made any easier by the lack of a printed manual.

Manufacturers now routinely pass the cost of printing manuals onto users. Why should we be expected to use a ton of paper and ink running them out? And what if you have no printer? Flicking from an on-screen Acrobat manual to app dialogue-boxes is psychosis-inducing.

Macworld's buying advice
If you've got a Mac and a camcorder – or a pile of old VHS home movies – then the Videobus will let you join the digital-image revolution.

There's just one snag – unless you have S-video connectivity on your VHS then you'll need a SCART adaptor and an S-Video lead.
Sean Ashcroft

Graphic Converter 3.8.2

Publisher: Lemke Software
www.lemkesoft.com
Pros: Comprehensive converter; useful browser feature; supports Photoshop plug-ins; regularly updates; cheap.
Cons: Difficulty importing EPS files; some features have no undo facility.
Min specs: QuickTIme 4
Price: $30 from Web site
Star Rating: ★★★★★/9.0

T he shareware feature in April's issue of *Macworld* listed a Top 10 of products that included GraphicConverter. From modest beginnings in 1991, as a very basic graphic format converter, it has blossomed into one of the all-time gems of the shareware world. Its functionality allows most users to achieve results that non-creatives use Photoshop for – and at less than five per cent of the price.

Older and wiser
GraphicConverter has grown into a mature product, that now imports over 130 file formats and saves to more than 40. These include the various types of GIF and TIFF, EPS – although importing requires the aid of either EPStoPICT or GhostScript – and JPEG, through to many cross-platform formats and layered Photoshop images. It sports a comprehensive batching facility, and can also be used to create a slideshow from the graphics contents of a folder.

GraphicConverter also handles basic image editing – such as colour depth, brightness, contrast, invert, mirror and rotate. It also features effects like gamma correction, sharpen edges, vectorize and a number of dithering options. And, it can use almost any Photoshop-compatible plug-in.

Version 3.8 corrected a whole slew of bugs and added numerous new formats and a couple of important features: TWAIN import and AppleScript support.

Macworld's buying advice
Contextual menus, Navigation Services, excellent overview and close-up detail windows, Mac OS 9 compatibility – GraphicConverter really is a superb product. It can handle formats no other programs will touch – a real boon for anyone working with graphics, especially those intended for Web use.

Moreover, it is maintained and improved frequently by Thorsten Lemke, the author, and in the six years I've been a registered user I've never had to pay an

upgrade fee. Just count up how much those Photoshop upgrades have cost you – and then pay your registration fee for GraphicConverter after trying the latest version on *Macworld's* main cover CD this month.
Vic Lennard

Razor sharp
Handling more formats than you can shake a stick at, and offering basic editing plus support for Photoshop plug-ins, GraphicConverter is a real shareware powerhouse.

Network hubs – explained, tested and rated

Networking is a bit of a mystery to many people. Fortunately it's easier on Macs than on Windows machines. Much of Mac networking is just a matter of plugging in the cables and turning File Sharing on. The hardware needed to connect machines is also pretty simple. But buying the right hardware is a minefield of unfamiliar terminology – it's enough to scare the most hardy Mac gurus. *Macworld* took a look at some options available for networking.

The first thing is the cabling. All modern Macs have ethernet built in as standard, unlike most PCs. Depending on how new a Mac is, it'll have either 10BaseT or 100BaseT. Most Macs since the original iMac have 100BaseT. 10BaseT has a theoretical speed of 10Mbits per second, 100BaseT is ten times faster. If you have a network running at 10BaseT, you may want to upgrade to a 100BaseT hub to take advantage of the new machines.

A hub is a box with a number of connections – anything from five to 24 – for ethernet cables. The cheapest hubs are sometimes called dumb hubs, because of the inefficient way they distribute data. On a smaller network this won't slow things down noticeably. On a larger network a switch or a managed hub is better at controlling the flow of data.

Where's my pizza
You could think of the network as a block of flats, and the data as a pizza delivery guy. When a pizza (the data) arrives at the block of flats (the hub) the delivery man doesn't know which number ordered the pizza. To find out, he presses all the doorbells at the same time. All the tenants answer, but only when the person that ordered the pizza replies will the pizza get delivered. The next time a pizza is ordered the same routine is followed, because the dumb pizza guy doesn't

remember who lives where. This is how a dumb hub works.

With a switched hub, the pizza guy starts off just as dumb as the other guy. He will ring all the doorbells until the right person answers. The difference is that once a delivery has been made, he remembers who lives at that address. The next time there is a delivery to an address that has already been visited, he rings the right bell and doesn't interrupt the other tenants. This means more pizzas are delivered at the same time, and the pizza guys don't have to wait for each other to ring all the doorbells. This switched hub method is more efficient and will make busy networks faster, but small quiet networks will get a less noticeable improvement. A switched hub is a better way of working, but it'll cost.

Some of the bigger hubs can be managed remotely. Software or Web-accessed management systems show how well the hub is working, and let you know of any problems or faults. However, this adds to the price – it's just overkill for small-office or home networks.

If all you want to do is transfer small files on a home network, then you can pick-up a 10BaseT hub for under £40. Another reason for home networking is games, but they're designed not to need much bandwidth. As long as you aren't trying to back-up a 10GB drive over the network at the same time, 10BaseT is good enough for you.

If you have 100BaseT-capable Macs, a faster hub isn't much more expensive. A 100BaseT hub can cost under £100, but think about the machines on the network. If you have a mixed network, look at a hub with some 100BaseT ports (connections) and some 10BaseT ports. Even if there's only 100BaseT-capable Macs, remember a laser printer may well only have 10BaseT ethernet.

Another option is a dual-speed hub that has 10 and 100BaseT ports. These are ports that can either auto-switch their speeds, or be switched manually.

At the top end of the scale are the rack-mountable hubs. Rack-mountable hubs are designed to be kept on a wall mount or floor-standing cabinet. If you have a network of more than 16 machines, it's worth considering, because when hubs are left in the open people often trip over wires and pull out plugs. A cabinet keeps hubs out of harm's way.

Finally, the connections for all the devices will need cabling. If you already have an ethernet network, you won't need to change cables to upgrade to 100BaseT. If you're rigging up a network for the first time, there are a few options. For bigger jobs, just call in somebody else to do it. There are cabling and networking companies listed in the Yellow Pages – though they can be expensive. Alternatively, most computer shops sell pre-made cables.

The third way
A third way is to make your own cables – it's easy. Electronics retailers, such as Maplins, sell the kit – as do the catalogue companies. But make sure it's for twisted-pair ethernet, otherwise known as CAT5 (Category 5 UTP) Cable, and RJ45 plugs. There is kit with all this included, but some just come with a wire stripper and RJ45 crimper. The crimper squeezes the RJ45 (ethernet plug) to attach them to the cable. It may sound complicated, but it isn't really.

We took a look at a range of hubs and switches from a number of

manufacturers. They ranged from small-and-cheap to big-and-expensive, but all are designed for a different set of needs. At the lower end of the scale we looked at cheap five-port 10BaseT hubs. Avsys has the AvOffice 10H5, and Farallon has the Starlet/5. Neither would win a beauty competition, but they do the job – just plug them in and forget them.

D-Link has a five-port hub that is slightly further up the scale, with auto detecting for 10/100BaseT ports.

Further up the price scale, we looked at an eight-port 10/100 hub from Black Box. It can either set the speed automatically, or each port can be switched to 100BaseT manually.

For networking a medium-sized office, we looked at products from Black Box, Avsys, Farallon and D-Link. Each one has different capabilities, but all have at least 16-ports. The Avsys AvOffice110H16 is a 16-port, dual-speed, stackable hub. It can be set up as either an auto-sensing 10/100BaseT hub, or a forced 100BaseT hub. Forcing 100BaseT makes it easier to get full speed from 10/100BaseT devices.

The Black Box 16-port model has two switched ports to reduce noise over other connected hubs. The Farallon Fast Starlet model was the biggest we looked at, with 24 auto-sensing, dual-speed ports and it's rack-mountable. Farallon offers great
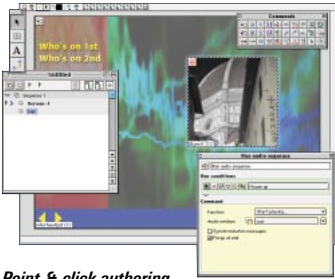
technical support – you can get free networking advice from its Web site (www.farallon.com).

Macworld's buying advice
Choosing a hub depends on your networking needs. If it's a small home

network, any 10BaseT hub will be fine. For bigger networks, you get what you pay for. Farallon supplied the best manuals and online support. Though remember, hubs aren't complicated, so giant manuals aren't usually necessary.
David Fanning

Network hubs – compared

MANUFACTURER	MODEL	STAR RATING	SPEED	PORTS	PRICE	CONTACT	TELEPHONE
Avsys	AvOffice 10H5	★★★★/7.9	10	5	£19	IMC	01344 871 329
Avsys	AvOffice 11H16	★★★★/8.5	10/100	16	£149	IMC	01344 871 329
Black Box	10/100 TX/FX	★★★★/8.6	10/100	16	£295	Black Box	0118 965 5000
Black Box	Fast Ethernet 10/100	★★★★/8.6	10/100	8	£175	Black Box	0118 965 5000
D-Link	DES-1005D	★★★★/8.3	10/100	5	£93	D-Link	020 8235 5432
D-Link	DFE-9080x	★★★★/8.5	10/100	8	£123	D-Link	020 8235 5432
Farallon	Starlet/5	★★★★/7.7	10	5	£35	Farallon	0800 731 8929
Farallon	Fast Starlet Dual Speed 24	★★★★/8.7	10/100	24	£549	Farallon	0800 731 8929

Speed is in BaseT. All prices exclude VAT unless stated.

With seemingly everyone focused on creating content for the Web, it's easy to forget that you sometimes need to deliver media and presentations in a physical, higher-bandwidth form. Abvent's Katabounga 3.0 lets you create and script fully-interactive multimedia presentations for delivery on CD-ROM, in kiosks, or as live presentations. Capable of handling just about any media, Katabounga offers a nice balance of icon-based authoring and more-complex scripting, as well as cross-platform playback. Unfortunately, the package's documentation is so impenetrable it makes it very difficult to learn.

Katabounga presentations comprise a series of screens arranged into scenarios. Screens similar to pages in a Web site or cards in a HyperCard stack, while scenarios are simply a way of organizing screens into a larger structure. The Project window lets you easily create, title, and rearrange screens and scenarios.

Screens can consist of still images, QuickTime movies, QuickTime VR objects, buttons, sprites, or text elements.

You create controls such as buttons, scroll bars, and dials by importing separate graphics for each state of the control. Though Katabounga takes care of changing the control's state, the program won't automatically create any graphics. And since the program provides no drawing tools of its own, you'll need to create your graphics elsewhere. You can, however, enter text or import external text files for display on screen, and you can easily create hypertext links in any block of text, making Katabounga a simple tool for creating complex hypertext systems.

Katabounga combines point-&-click authoring with a full-blown scripting language for specifying how each object will handle particular events. To add functionality to a button or object, you drag the appropriate command handler

from the Commands palette and drop it onto your object; you then configure its behavior using a dialogue box. But although Katabounga's selection of commands is comprehensive, the Commands palette's icons offer no tool tips or labels.

For more-complex interactivity, you can use the program's Bounga scripting language to control media management and navigation, and to manipulate graphics. But although it includes repeat loops and if/then constructs, it lacks more-sophisticated logical structures and suffers from inconsistent syntax.

Finally, Katabounga's manual is among the worst we've seen. Offering no tutorials and horrid organization.

Macworld's Buying Advice
Katabounga 3.0 is a stable, well-conceived, well-implemented package. Though it comes up a little short on content creation and its scripting language isn't as fluid as others, its point-&-click authoring tools and impressive media management make it a good authoring environment. Expect to spend a lot of time experimenting, though – the program's documentation will offer little help.
Ben Long

Point-&-click authoring
Katabounga 3.0's point-and-click command dialogue boxes let you attach behaviours and event handlers to objects on screen.

Media authoring

Katabounga 3.0
Publisher: Abvent
    www.abvent.com
Pros: Good combination of point-&-click authoring and scripting.
Cons: Nearly unusable documentation; lacks some programming structures; scripting syntax a bit clunky.
Min specs: Mac OS 7.6 or later; 32MB RAM; QuickTime 3 or later.
Price: £410 (excluding VAT)
Star Rating: ★★★/6.7

If you work professionally with PDFs, you'll recognize the following scenario. A client wants to send a booklet created in Microsoft PowerPoint, a source that can't be handled. So the file arrives as a PDF, which is then found to have two spot colours. While these could be converted to four-colour process (CMYK), the spot colours can't be output as separations – and the client's printer is geared up to print two colours. Impasse. For PowerPoint you could also read Word, Excel and a host of other programs that are commonly used for producing adverts and company paraphernalia.

Having full control over Acrobat 4's output is very important – the Crackerjack 3.1 plug-in offers this. It provides professional tools that fall

into two categories – preparing the file for output, and the actual output itself. For the former, Crackerjack offers an almost unbeatable set of utilities. For instance, many applications don't allow you to output PDFs with a printer's crop/registration marks and colour bars – Crackerjack can add these.

Far worse, most RGB-based programs – including the three Microsoft ones mentioned above – create black as a combination of red, green and blue, commonly called 'rich' black. This separates into a blend of cyan, magenta, yellow and black – rather than pure black, resulting in poor reproduction of black text. Crackerjack's "convert text to black" feature solves this problem.

The preview window shows a feature's result immediately. Switch portrait to landscape, and the preview switches as well, also showing crop/registration marks, paper size, scaling and mirror/negative print.

Output options are comprehensive and depend on whether this is for a proofer or imagesetter, offering composite colour, or pre-separated output with automatic RGB conversion.

It also supports In-RIP separation, where the RGB conversion can be changed. Take the rich-black problem above. Here you can edit the

GCR (grey component replacement) much as you would within Photoshop. Just set black to maximum to solve the problem throughout the file. UCR (undercolour removal) can be handled in the same way.
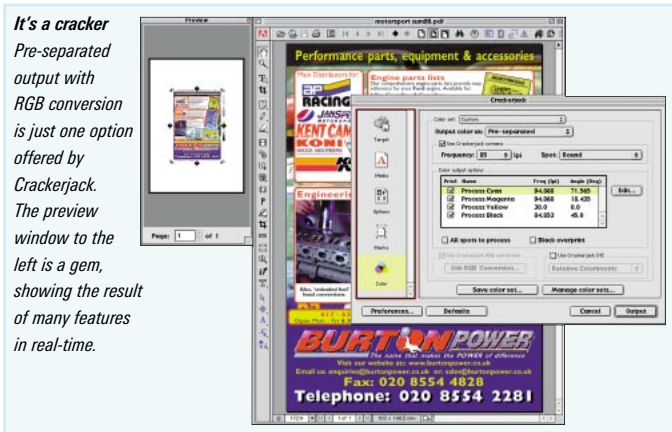
While QuarkXPress and InDesign can both import PDFs for placing, it's often safer to work with an EPS. While Acrobat 4 can save a PDF as a single-file EPS, Crackerjack offers DCS 2.0 single and multiple files. And, as you might expect from a product such as this, you can select suitable screen frequencies for the current printer, and dot shapes can be altered – everything from the common round and diamond, through to more esoteric shapes such as cross and ellipse.

Macworld's buying advice

Now including Pilot, an automation facility that uses "hot" folders, Crackerjack is a seriously powerful set of tools. Repro houses are finding that more and more files are arriving as PDFs – along with a brand new set of problems that come to light only when film has been run, if you're lucky, or after printing – if you're not.

It's pricey, and some of the simpler features could be covered by Quite Software's RGB Gone! and callas software's pdfOutput Pro. But, as an all-round throw-anything-at-me-and-I'll-solve-it-for-you program, it has no equal. Try the demo on this month's CD.
Vic Lennard

It's a cracker
Pre-separated output with RGB conversion is just one option offered by Crackerjack. The preview window to the left is a gem, showing the result of many features in real-time.

ColorSync 3.0.1 fixes the problems of version 3.0 – yellow monitors, disappearing profiles and unopenable CMYK files. However, there are some problems in the update, and they send a mixed message about Apple's colour-management software.

Thus far, users have reported two distinct problems. One is Apple trying to save us from ourselves by making things very simple. The other forces ordinary users to deal with information that's understandable only to developers.

Sadly lacking in ColorSync is any kind of documentation that would assist knowledgeable users.

ColorSync 3 introduced several sweeping changes, one of which was that you could no longer set the Display Profile – formerly known as the System Profile – in the ColorSync Control Panel. Instead, you had to set it in the Monitors Control Panel through the Color tab. This was an improvement over previous versions, but the new feature wasn't well-documented.

In ColorSync 3.0.1, users with two or more monitors connected to the same machine have reported that their monitor

profiles disappear from the list in the Monitors Control Panel. In fact, this is a feature, one that falls into the category of saving us from ourselves. If you choose a profile for Monitor1, it disappears from the list for Monitor2 – the rationale presumably being that if the profile describes Monitor1, it doesn't describe Monitor2. However, when using a third-party calibrator that lets you set Display1 and Display2 – such as ColorVisions' excellent OptiCal – make sure you have the displays configured the same way you do in Monitors, otherwise you'll have trouble finding the profiles.

This is not a huge problem – a one-page Read Me could have addressed it.

The second problem is with the updated Profile FirstAid utility. Users who upgrade to ColorSync 3.0 find they have to use Profile FirstAid to get some of their profiles to appear. This is because ColorSync 3.0 is fussier than previous versions about profiles that don't conform precisely to the ICC specification. Users who upgrade to ColorSync 3.0.1 may think it's prudent to run the new Profile FirstAid as a preventive measure, but if

you do, you'll get a shock. Profile FirstAid 3.0.1 is even fussier than its predecessors about the profile format. If you run the new Profile FirstAid, it will almost certainly say that a distressingly large number of your profiles are bad – including at least one profile, AppleVision 1710-9300, distributed by Apple. The utility instructs you to "review instructions and results", but provides only cryptic error codes. Clicking the Repair button does nothing for most of the profiles flagged as bad.

The other common error we've seen, -39 – which indicates a premature End of File – is more troublesome. This error usually means that the file is shorter than the header says it is, so any software that uses the header size to read the file could get confused. So far, though, we've been able to use profiles without any unexpected results.

Little about Profile FirstAid is user-friendly. If anyone on the ColorSync team is reading, please tell the powers-that-be that Profile FirstAid is more likely to confuse most users than it is to aid them.
Bruce Fraser

Bitstream Typeface Library

Publisher: Bitstream
www.bitstream.com
Distributor: The Type
Marketing Company
(01242 252 095)
Pros: Superb set of classic
and modern typefaces;
high-quality throughout;
good reference book.
Cons: There aren't enough
hours in the day to go
through them all.
Price: £295 (excluding VAT)
Star Rating: ★★★★/8.8

Every professional working with typefaces knows that collecting fonts from contacts and incoming jobs is illegal. Yet we all do it. Well, here's an opportunity to take the legitimate route to owning a full library of almost 1,200 high-quality font weights at less than half the price of a copy of QuarkXPress.

Next to Adobe, Bitstream is probably the best-known name in the typographic business. It's been around for almost 20 years and is responsible for some innovative technologies – including Web-font portability and rendering.

The Bitstream Typeface Library comprises two CDs – Typeshop and Typeshop Pro. Typeshop contains nearly 1,100 font weights, divided into 17 major classes. From modern faces such as Deco or Industrial, to classic Sans Serifs like Humanist and Swiss; from Script faces that include Brush, Chancery and Ribbon through to Clarendon and its sub-groups, Century and News. In effect, you're likely to find almost any classic typeface you've ever heard of – and many more besides.

The CD is completely unlocked and ready to use, with screen and printer fonts logically arranged for quick and easy access.

Typeshop Pro originally appeared in 1995, a year after Typeshop. It includes a number of 'new' faces including Chianti, Incised 901 (Bitstream's version of Antique Olive) and various oddities such as Sonic, Space and Sprocket. It also has a selection of fonts in QuickDraw GX format – pretty well useless now – and what are termed Bitstream Typographer Sets, five faces with a variety of extra character presentations, such as swashes or small caps.

What's in a name? Not very much. For instance, many fonts go under the name Swiss or Century, but this neither ensures a specific shape to a face nor any particular quality.

The Bitstream library, on the other hand, is a quality affair. Many faces are created by Bitstream's own designers and others licensed from a number of reputable sources, including ITC (the International Typeface Corporation).

Bitstream Chianti Bold Italic
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

HUXLEY VERTICAL
ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890

ITC Caslon 224 Medium
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz1234567890

Around 50 from the latter are on the main CD, including Caslon 224, Kabel and Tiffany.

Macworld's buying advice
How often have you looked through your typeface library, loaded up a particular font and then found that the weight you actually need is the one whose screen or printer font is missing? Or suffered as your Mac continually crashes due to a corrupted screen font suitcase? Buy the Bitstream Typeface Library and such problems are a thing of the past.

This is a reliable collection, and, at 25p per font weight, it's good value.
Vic Lennard

Cumulus 5

Publisher: Canto
www.canto.com
Distributor: Portland PMS
(020 7987 2009)
Pros: Simple to use;
extensive options.
Cons: HTML exports
can look odd.
Min specs:
Mac OS 7.1.2; PowerPC;
20MB hard-disk space;
6MB RAM.
Price: Single user, £99
(excluding VAT); Server and
Client options from £2,470
(excluding VAT)
Star Rating: ★★★★/8.2

MW CD

Cumulus 5 is massive, and I don't mean the system requirements – considering what it can do they're pretty modest. No, I mean the number of features it has.

It can do just about anything you'd want a media cataloguer to do. It can store images, audio, video, layouts and PDF files – and show thumbnails of them all. The search options can be fully customized, as can field names, views, categories and file hierarchies. And, it can output HTML documents. It all sounds daunting, but it's not.

Little and large
For a program of its ability, its system requirements are small; see fact box left. It also needs a CD-ROM drive and a 640-x-480 monitor.

Creating a new catalogue in Cumulus is a doddle – just hit ⌘-N and drag-&-drop all the required files onto the window. The next stage, creating categories, is not as easy. But, with a bit of playing around – and some help from the clear and simple tutorial – it doesn't take too long to master.

With Cumulus, it's best to plan ahead. Creating and deleting categories is easy – but it can be a nightmare if you can't decide how to sort records. However, there is even a way around this. When pictures are imported, the file hierarchy from the hard drive is also imported – as long as this is clear, you'll never need to create any categories.

Once the categories have been set,
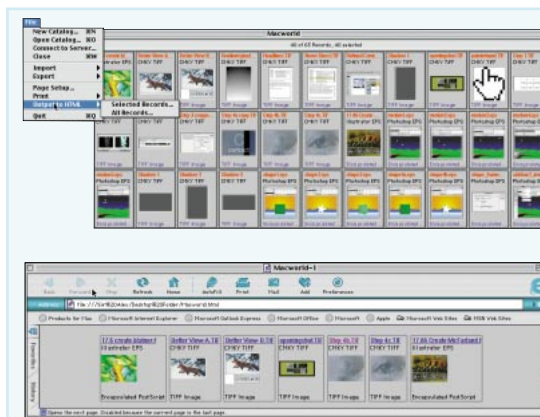
Around the world
Cumulus 5's Output to HTML feature can look odd, but it allows pictures to be sent anywhere in seconds via email.

the information stored in Custom Fields – where data such as notes is stored – can be changed. Adding new fields is a simple matter of clicking on Customize in the Edit menu and deciding whereabouts on the resulting list you want the new field to appear.

The Output to HTML feature couldn't be simpler either. Just select the category, or even all the records, and go to the drop-down menu.

A total of 64 files took little over a minute to output. However, the resulting page did look odd, but all the information was there.

There's also a QuarkXPress Contact Sheet option, that creates a new XPress document and exports all the pictures and text to it. Unfortunately, at the time of writing, this was incompatible

with XPress 4.1 – although Canto said there'd be a fix by the time you read this.

Macworld's buying advice
Cumulus is so big, there's stuff I haven't got room to discuss here. It's cross-platform for a start, although there's no support for Linux yet. Also, the catalogues it creates are fairly small – my 64-item example weighed-in at only 2.5MB. Cumulus can even store 3D files. The buggyness of the HTML export was a slight problem. It also has to compete with programs such as Extensis Portfolio and eRocket's FotoStation. If you're using one of these applications, it's not worth switching. If you're new to media-asset management, take a look at Cumulus on our main cover CD.
Woody Phillips

Updated office suite

AppleWorks 6.0.3

Publisher: Apple (0800 783 4846) www.apple.com/uk
Pros: Aqua user-interface; new presentation module; table tool.
Cons: Badly designed button bar; presentation module has serious restrictions;
no printed manual; no translators; no upgrade facility from AppleWorks 5;
reliance on Web downloads.
Min spec: PowerPC; Mac OS 8.1
Price: £65 (including VAT)
Star Rating: ★★★/5.2

It might appear as if AppleWorks 6.0.3 is an upgrade to AppleWorks 5, but that's not quite true – the latter was just a name change for ClarisWorks 5. In effect, this is the first major upgrade to Apple's integrated suite of SoHo programs since 1997.

The Mac OS has changed a lot in the last three years, and AppleWorks 6.0.3 supports many of the latest key technologies – including the dialogue box Navigation Services, contextual menus and AppleScript.

Perhaps the biggest change is its preparation for Mac OS X – it's a Carbon-based application, and has Aqua's look and feel. The only casualty is the antiquated communications module. This has been replaced by a nifty presentation creator that can be used to create basic on-screen multimedia presentations, or printouts for overhead projectors.

There's also a new table tool, something ClarisWorks should have had from year dot. You can create tables and use them within almost any module, which is a lot better than creating spreadsheet frames as in the past.

In terms of AppleScript, most modules are scriptable. And, AppleWorks finally has some decent clip-art and the ability to download templates and clippings from Apple's Web site.

However, the presentation module, is a let down. For a start, presentations are limited to 640-x-480 pixels, a serious restriction for some uses – for instance high-resolution projectors. Additionally, you can't use buttons or control QuickTime movies, import or export PowerPoint files, or even save in QuickTime format for playback outside of AppleWorks – a shame. Even though it sports an intuitive interface, it barely gives PowerPoint a run for its money.

Problem

Talking of import and export, the biggest problem is just that – generally, you can't. Claris' XTND System, which previously provided a host of translators, has been binned and not replaced. All you get are AppleWorks' own file formats and a limited choice of graphic ones. Admittedly, the Claris technology is old and incompatible with Mac OS X. But, Apple should have replaced it with an alternative – such as MacLinkPlus – or at least offered a discount.

Without some decent translators, you can't open common files such as those from Microsoft Word. And it can't even save a graphic in GIF format – this most Internet-savvy of applications refuses to save a graphic in one of the two standard Web formats. Fortunately, Apple added an RTF (Rich Text Format) translator in the version 6.0.3 update, which offers some hope for word processor file-translation.

Why did Apple decide to make the buttons in the button bar so big? There are more customization options than before, but the buttons are so big that a full set of a module's useful tools can't be accessed without using the scroll bars. Not only that, but you can't see whether a button is on or off as you could with version 5. The point of a button bar is to access tools at the click of a button, saving the hassle of a repetitive movement – such as accessing menu items, or scrolling a button bar. The only saving grace is that some common items are now in the contextual menu, but that doesn't make up for being unable to see such information at a glance.

Another example of a lack of foresight is its positioning of the drawing tools. The basic drawing tools have been moved out of the left-hand toolbar. And, even worse, the fill and line tools have been split between two palettes in the floating Accent menu. Many users will find this a real bind. Also, the Sort Paragraphs, a useful new feature, has no undo facility.

Macworld's buying advice

Had this review been written a few weeks ago, there would have been numerous comments about crashes, freezes, terminally slow dialogue boxes and general in-use mayhem. Apple's release of the 6.0.3 updater with CarbonLib 6.0.4 has made the product far more stable and, at least, useable. It's difficult to see who would want AppleWorks. That it comes installed as standard on all new iMacs – and many of these are being purchased by new users – suggests that it's aimed at novices. But there's no printed manual. The two flimsy documents covering installation and getting started, along with the online help system are insufficient for beginners. While the user interface is generally good, there are quite a few powerful features hidden beneath the surface that are never going to be found without a decent guide. Looks like *AppleWorks 6 for Dummies* could be a bestseller.

Also, there's no on-disk examples, tutorials and templates. Not everyone wants to download MBs of data, especially in the UK where there's no free local phone calls.

I doubt experienced users will like it either. Anyone who has spent years getting used to the quirks of ClarisWorks is going to find this awkward. The lack of translators is a real pain. Anyone needing to move files between different applications will have to invest in MacLinkPlus, as there's no upgrade available from the previous version.

Apple has some work to do before AppleWorks receives the kind of accolades showered on ClarisWorks. It may be cheaper than Microsoft Office, but price isn't everything. Features are.
Vic Lennard

AppleWorks
The new-look toolbar and button bars, an Accent palette and a decent selection of clip-art gives AppleWorks 6 a fresh new appearance. It also supports AppleScript for repetitive tasks. Unfortunately, it doesn't support Microsoft Word files, leaving it out of step with most businesses' needs. And, there are no tutorials or templates on the disc.
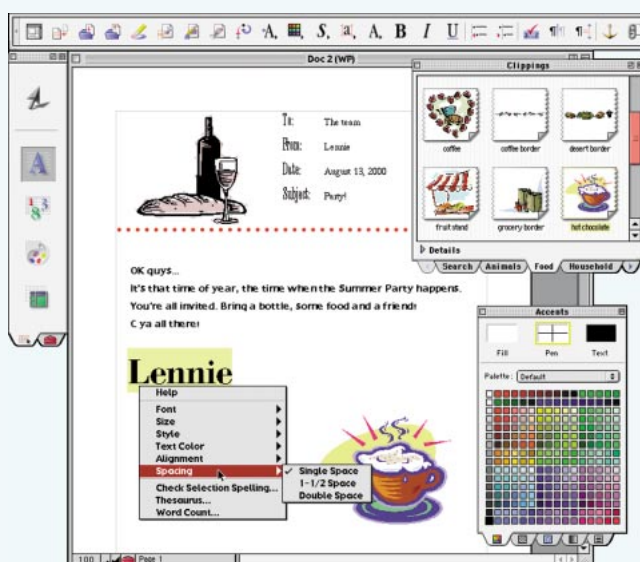
Flat out

With some homework, you could get a flat-panel bargain.

By David Fanning

PHOTOGRAPHY: MIKE LAYE
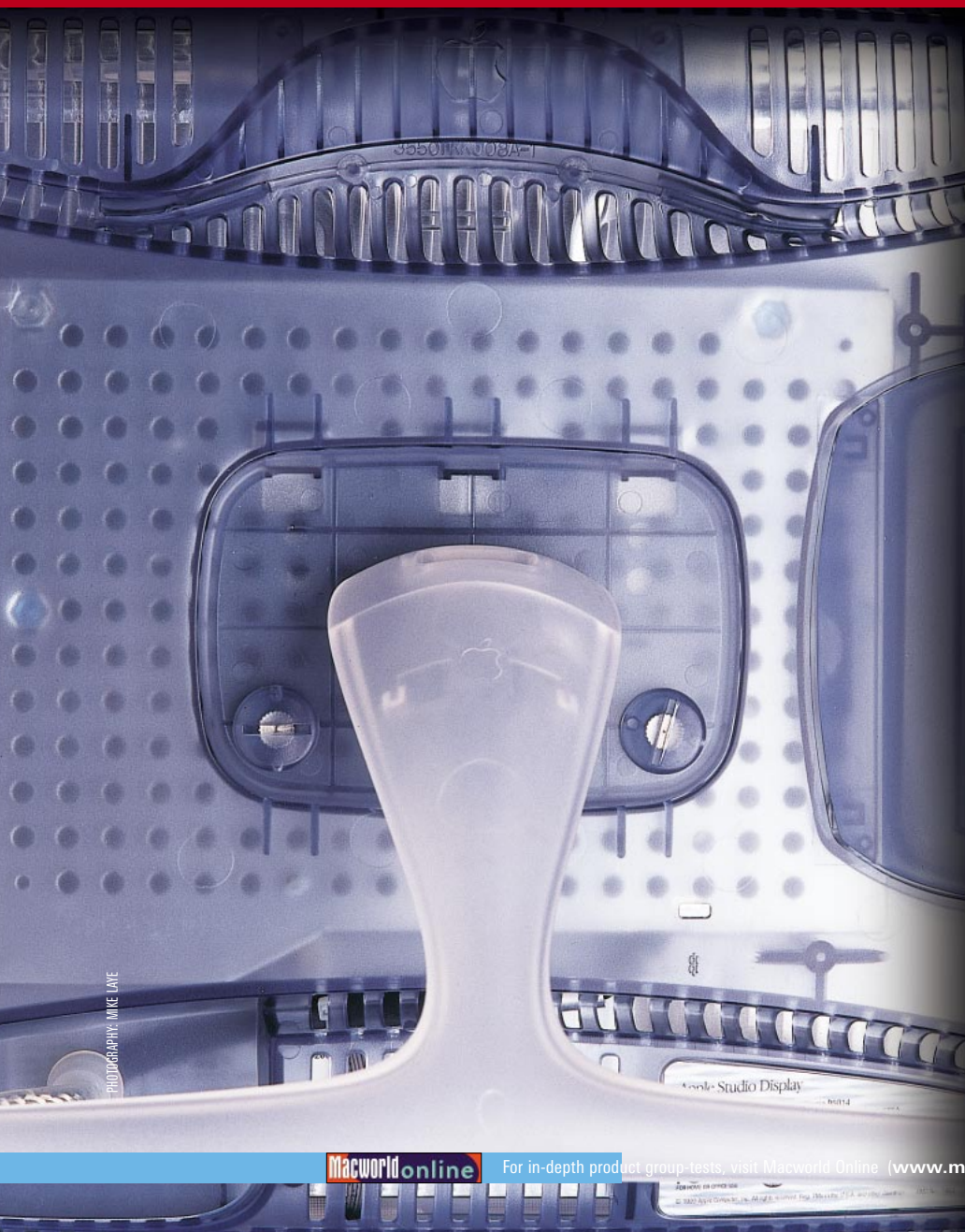
An office bulging with big monitors can make for a cramped – and hot – environment. Now imagine that same office graced with slimline flat-panel screens: nice and cool with plenty of desk space. Sleek screens make for smart offices, so why doesn't everybody have them? Price is the main reason, but there are others.

The cheapest screen in our tests is the Hansol B15AF – for £599, substantially more than its cathode ray tube (CRT) equivalent. This, combined with colour performance and screen size, puts off many potential flat-panel buyers.

And then there's the colour issue, which troubles many graphics professionals. Although the higher-end flat-panels are used for graphics jobs, there is a viewing-angle issue with the less expensive ones: if viewed from the side or above, the image can change colour or even disappear completely. This isn't much good for impressing clients, or achieving consistent colour. Fortunately, most of the monitors tested coped with this problem much better than their earlier counterparts. The models that stood out on this front were the SGI and the smaller Sony screen, both of which can be viewed from even extreme angles without a problem. On top of all this is the fact that, although an 18-inch LCD screen may have the same viewable area as a 20-inch monitor, the price of around £2,000 is far greater.

But something that causes people to shun LCD screens unnecessarily is their
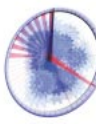
Hansol B15AF

At just £599, the B15AF was the least expensive flat-panel monitor tested. It's definitely affordable, and, although it may not have many features, it looks pleasant enough and does its job well. There was an artefact on the bottom right of our screen – maybe a couple of dead pixels – but this didn't interrupt an otherwise good picture. However, if it was my £599, I'd probably be a bit miffed at this.

Macworld's buying advice Cheap and cheerful, but beware of screen quality. Check for dead pixels before buying.

Company:	Hansol
Model:	B15AF
Price:	£599
Screen size:	15 inches
Resolution:	1,024-x-768
Distributor	Hansol
Tel no:	01252 360 400

Star Rating ★★★/6.4

Iiyama TXA3833JT

The Iiyama is a full-featured screen, with extras such as USB and speakers built into its base. It's plain but attractive. Setting up was no problem – there was no need for tweaking to get a noise-free image. The screen can be pivoted to become a portrait monitor, though the software was unwilling to work without an upgrade. This was easily achieved once we found the Web site for Portrait Displays (**www.portrait.com**).

Macworld's buying advice The portrait-mode feature may be of questionable usefulness, but it's a function that joins the host of others that make this a value-for-money model.

Company:	Iiyama
Model:	TXA3833JT
Price:	£835
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Iiyama (UK)
Tel no:	01438 745 482

Star Rating ★★★/6.5

Iiyama TSA4634JT

Like its 15-inch sibling the 18-inch Iiyama is a swivel screen, allowing landscape or portrait viewing. I've never found a good reason for viewing in portrait mode, but it's there if you want it. The stand is also on a swivel base, so you can view from any angle you like.

The setup is straightforward, but the auto-setup function failed miserably. Thankfully, you needn't use this "feature" to set it up.

Macworld's buying advice For the price, I would expect auto set-up to work. Otherwise, this is a fine monitor.

Company:	Iiyama
Model:	TSA4634JT
Price:	£2099
Screen size:	18 inches
Resolution:	1,280-x-1,024 pixels
Distributor	Iiyama (UK)
Tel no:	01438 745 482

Star Rating ★★★★/7.5

LG SW570LS

This is a no-frills yet attractive screen. Its controls are hidden under the bottom edge of the screen, which adds to its looks but makes them a tad difficult to use. The viewing angle is good for a monitor of this price – colours remain true even if viewed from an acute angle. It also includes Colorific, the colour-calibration software. This means it can be used for graphics, though not for high-end colour work.

Macworld's buying advice For £680, this monitor gives good quality. However, there are few frills or added features to make it stand out from the crowd.

Company:	LG Electronics
Model:	SW570LS
Price:	£680
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	LG Electronics
Tel no:	0870 607 5544

Star Rating ★★★★/7.5

Sharp LL-T155A

This is a simple and straightforward display. The auto set-up works like a charm, and this is all you'll ever need to do to it. There are no other features. All the 15-inch displays are rather plain, but the designers of this model have set out to be minimalist. The controls are on the base, which keeps the screen tidy, and adds to the designer look.

Macworld's buying advice At £750, this model is at the top end of the 15-inch price range. If you want a plain-looking screen, this is one of the prettier ones. If you want features, look elsewhere.

Company:	Sharp
Model:	LL-T155A
Price:	£750
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Sharp
Tel no:	0800 262 958

Star Rating ★★★★/7.4

Sharp LL-T180A

The first thing we noticed about this screen was the way cables are neatly hidden. It manages this by having its cabling plugged into awkward-to-reach sockets. Thankfully, this is a one-off task. This model has auto-setup, which works well, but can be improved with manual tweaking. The resulting picture is good, though our model had some dead pixels. The styling may be too stark for some tastes.

Macworld's buying advice For £1,900, you'd be forgiven for expecting a few more extra features but it's good value.

Company:	Sharp
Model:	LL-T180A
Price:	£1,900
Screen size:	18 inches
Resolution:	1,280-x-1,024 pixels
Distributor	Sharp
Tel no:	0800 262 958

Star Rating ★★★★/7.7

Mitsubishi LXA 580W

This monitor is more expensive than some of the other 15-inch screens, and it has few features. However, in its defence, it works straight out of the box. It has auto setup and auto adjust, so no fiddling is necessary. It instantly offered crisp colour and sharp text. The design is a dull, but at £750, it's still a budget screen.

Macworld's buying advice You get the security of a big-name brand with this model, and an assurance of quality. For these reasons, opt for the mid-range Mitsubishi, rather than a lower-end models.

Company:	Mitsubishi
Model:	LXA 580W
Price:	£749
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Mitsubishi
Tel no:	01707 278 684

Star Rating ★★★★/7.8

Samsung 570P

Unlike many of the 15-inch models tested, this one is stacked with features. It has two speakers – tiny, but they performed very well. There are separate controls for the speakers that allow bass, treble and volume to be adjusted. There's also a built-in microphone in the base. Image is adjusted by a nifty translucent control panel, activated by buttons at the bottom of the screen. A single button reaches the auto adjust.

Macworld's buying advice This is a plain-looking but fully featured monitor. It may be at the top-end of the scale for 15-inch prices, but for all the extras, it's worth it.

Company:	Samsung
Model:	570P
Price:	£759
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Samsung
Tel no:	0800 521 652

Star Rating ★★★★/8.2

reproduction. Text is rendered poorly only if the screen is set-up incorrectly. The problem arises when the phase setting is out of sync. This can go unnoticed and degrades text subtly by blurring it, creating a halo effect. It's easy to correct, and many screens have an automatic button for phase and clock settings. If not, it's simple to run a test. See the "Phase one" boxout. On a couple of the monitors – the 18-inch Sony CPD-L11A and the Sharp LL-T180A – the automatic Phase settings failed to work.

Buying an LCD monitor

LCD screens are expensive because of high manufacturing costs. This is due to the high proportion of dud screens discovered by the manufacturers' quality-control tests. One reason for this is the so-called "dead-pixel" problem. A dead pixel is one that's

If you want to be sure your LCD screen is correctly set-up, here's a test to run.

First, create an image that'll be particularly difficult for the screen to display. The ideal one is a grid of black pixels and white pixels in a chequered pattern. The easiest way to create this is to create a Photoshop file that matches the resolution of your LCD screen – probably 1,024-x-768 pixels.

Then zoom in to the maximum magnification (1,600 per cent) and create a square of four pixels made up of two whites and two blacks on a diagonal. Select this image and go to Define Pattern, in the Edit menu. Now select the entire image and fill it with the chequer pattern.

When viewed at 100 per cent this will drive your LCD screen crazy. You're likely to see a noisy grey interference pattern with tearing and flickering. You may also see this pattern appear in a number of vertical bars. Don't panic, this is a problem with the phase – or timing – of your screen. From the monitor's menu, you'll be able to tweak the settings to make this interference disappear. Use the phase adjustment to rid the image of the interference and text should appear pin-sharp with no halo effect.
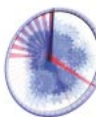
Maxdata Belinea 10 15 30

At just £613, this is one of the cheapest flat-panel monitors around. Unsurprisingly, it's bland-looking, but its quality of image matches anything that other models in this category can offer. It shares the same controls found in the rest of the Belinea CRT range – simple, once you find the selection wheel hidden under the front. It comes on a stand with a swivel base, which makes it easy to handle.

Macworld's buying advice If space-saving is your aim, then this spartan-but-effective model is an ideal choice.

Company:	Maxdata
Model:	Belinea 10 15 30
Price:	£613
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Maxdata
Tel no:	01344 788 910

Star Rating ★★★★/7.2

Maxdata Belinea 10 18 10

The big brother of the 10 15 30, this model sports an 18-inch screen. Curiously, in this model, Maxdata has moved the controls to the side, unlike the rest of its Belinea range. The phase and pixel clock settings are set automatically. An 18-inch screen gives a luxurious expanse of desktop space, and the images are crisp and clear. It also has a hub and speakers built-in.

Macworld's buying advice A price tag of £1,852 may not sound cheap – but for this size of screen it represents good value.

Company:	Maxdata
Model:	Belinea 10 18 10
Price:	£1,852
Screen size:	18 inches
Resolution:	1,280-x-1,024 pixels
Distributor	Maxdata
Tel no:	01344 788 910

Star Rating ★★★★/7.6

Sony CPD-L181A

Sony's 18-inch screen is very impressive – except for one thing: its phase and pitch adjustment is not what it should be. No matter how hard we tried, we failed to get it to eliminate the tearing effect. It should have been a simple matter – after all, Sony has put an auto-adjust button on the front for the purpose. Unfortunately, this did a worse job than we managed manually. It's dual video inputs are scant consolation for this.

Macworld's buying advice This could be a great monitor, but its failures made it something of a dud in our tests.

Company:	Sony
Model:	CPD-L181A
Price:	£2,095
Screen size:	18 inches
Resolution:	1,280-x-1,024 inches
Distributor	Sony
Tel no:	0990 424 424

Star Rating ★★★/6.1

ViewSonic VP151

The chunky base of the VP151 houses a pair of stereo speakers. They may not replace a dedicated speaker system, but they're an improvement on the single built-in Mac speaker. The screen also swivels to portrait mode, if that's important to you. Image quality is excellent but at this price, you'd expect it to be. At £1,179, it's almost twice the price of the other 15-inch models.

Macworld's buying advice This would have to be one hell of a monitor to demand this price. It isn't.

Company:	Viewsonic
Model:	VP151
Price:	£1,179
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Viewsonic
Tel no:	0800 833 648

Star Rating ★★★/5.9

ViewSonic VP181 View Panel

If saving on space is your reason for buying a flat-panel then count this 18-inch model out. It's huge – not saving much space over a CRT alternative. However, it does have speakers, USB, a swivel function and dual inputs. It also has S-video input for playing video, making it ideal for editing video – or as an alternative to an LCD projector for meeting rooms.

Macworld's buying advice For £2,605 you get a heavyweight player for video or presentations. For an extra £200, you could buy a Cinema Display.

Company:	Viewsonic
Model:	VP181
Price:	£2,605
Screen size:	18 inches
Resolution:	1,280-x-1,024 pixels
Distributor	Viewsonic
Tel no:	0800 833 648

Star Rating ★★★/6.8

Apple Studio Display

In the last couple of years, the Studio Display has become a design classic. There always seems to be one on TV these days, on everything from *Film 2000* to *Who wants to be a Millionaire?* This is unsurprising because the Studio Display is an Apple design that PC people can use (as on *So Graham Norton*). Apple has updated it by adding the G4 colour scheme, but it still sports top features, such as video input and full software control. Unfortunately, you need a USB-equipped Mac to take advantage of the Studio Display because it uses USB to control its functions. The package, especially with a G4 Power Mac, is a very attractive set-up. Whether making your reception look hi-tech, or for use as part of a video-editing suite, it's a great machine.

Macworld's buying advice If you have a G4 you'll struggle to find a better stablemate – although the SGI screen is the next-best match. The £889 price-tag will be too steep for many potential buyers – but it's still cheaper than the Sony SDM-N50.

Company:	Apple
Model:	Studio Display
Price:	£889
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Apple
Tel no:	0800 783 4846

Star Rating ★★★★/8.9

Sony SDM-N50

Some screens are designed to save desk space, some are designed for high-powered graphics and others just look cool. Not only does the SDM-N50 satisfy the first two, but it's also one of the coolest-looking LCDs around.

Other 15-inch LCD screens dwarf it; the reason, is that flat-panel displays are not necessarily thin – just flat. This one, though, looks like an outsized After Eight mint.

It has some unusual features too, such as a sensor to check ambient-light levels and another for checking if there is a user present. This means that, when you step away from the screen, it switches into power-saving mode.

We didn't manage to see this working – perhaps it saw us coming. The ambient-light sensor adjusts screen brightness to an optimum level – though again, this is difficult to quantify. It also uses a digital interface, but you need to plug in an analogue monitor connection to the "Media Engine", which is a analogue-to digital converter.

You have the opportunity to add an additional input, and switch between the two. It also has an audio-input for the two small speakers in the base of the screen. Even though they are small, they sound remarkably good.

Macworld's buying advice It's price of £1,099 makes it expensive for a 15-inch LCD – but it has plenty of extra features and looks stunning. It's the ultimate space-saver.

Company:	Sony
Model:	SDM-N50
Price:	£1,099
Screen size:	15 inches
Resolution:	1,024-x-768 pixels
Distributor	Sony
Tel no:	0990 424 424

Star Rating ★★★★/8.8

permanently on or off. It's hard to spot on a busy background, but if you're looking at a pure-white or a pure-black background, it's easy to see the offending pixels.

A screen with a dead pixel isn't the end of the world, as most of the time you won't notice it. But beware: a rule of thumb with manufacturers is that up to three – or in some cases, five – dead pixels are regarded as acceptable, as long as they aren't closer than 1cm together. The manufacturers claim that, if they were to set the dead-pixel cut-off point any lower, production costs would be even higher, and that this would be passed onto customers. Maybe, but that doesn't mean you have to be the sucker left with five dead pixels on a £2,000 screen. Here's how to make sure you're not.

First of all, avoid mail-ordering your screen; opt for a dealer with a showroom, and insist you have a demo of the actual screen you plan to walk out with. The dealer will probably kick-up, but so what? When the screen is plugged in, put up a black screen, followed by a white screen. Each time, look carefully for a pixel that's a different colour from the rest. If everything is clear, hand over your cash. If not – ask to see another. If you buy a screen with one or two dead pixels, it's unlikely you'll get a refund, so if buying from a mail-order company, ask for its policy on dead pixels

Silicon Graphics 1600

This screen is one of the few truly digital LCD panels. It comes bundled with the fantastic Formac Proformance III video card, which has a digital output. This means you get crisp text and great colour without the hassle of tuning the timing and phase controls. At 1,600-x-1,024 pixels, resolution is much higher than other screens too, making it ideal for graphics apps that demand a lot of screen-desktop space. The wide-screen format is the ultimate luxury.

Many lower-end displays maintain colour and picture accuracy only if you look straight at the screen. The SGI, though, can be viewed from any angle with no degradation of colour.

Macworld's buying advice
This screen is ideal for desktop video, 3D modelling, or for use with Adobe Photoshop or QuarkXPress. One drawback is that you can't use a hardware colour-calibrator on LCD screens – so high-end colour matching is out of the question. However, even without hardware calibration, colour is very good here.

For the money, you won't find a better flat-panel display. The Formac card-bundle makes it even more compelling. If you can afford the price, buy it.

Company:	Silicon Graphics
Model:	1600
Price:	£2,075
Screen size:	17.5 inches
Resolution:	1,600-x-1,024 pixels
Distributor	Formac
Tel no:	020 8533 4040

Star Rating ★★★★★/9.1

before buying, and, if possible, get this in writing.

Which model is right for you is likely to depend on budget. If you're looking for a sub-£1,000 screen, you'll be able to land a pretty good 15-inch model. Even the low-end £599 Hansol scores well, even if our test model did have too many dead pixels.

Paying attention to detail will also help you get the most for your money. Some models have extra features, such as the Samsung 570P's built-in speakers or the Viewsonic VP181's video input. Others make a greater play of high-tech looks. If you have enough cash, you can have both with the 15-inch Sony SDM-N50. Another such screen is the superstar of flat panels, Apple's Studio Display. This has lots of features and great looks, and is a couple of hundred pounds cheaper than the Sony.

Macworld's buying advice
Make sure you don't get lumbered with dead pixels. If you shop carefully and don't mind a plain-looking model, you can get away with spending as little as £600. By spending a little more, you'll get something high-tech looking and of better quality. If you have the cash, the SGI/Formac bundle is unbeatable in terms of image quality and style. If your have a big budget, you may want to hunt down the elusive Apple Cinema Display – but be prepared for a long wait. MW

Apple Cinema dismay
Some time ago Apple announced a fantastic new flat-panel display – the Cinema Display. It featured a 22-inch display encased in a transparent plastic. It also came with a heart-stopping price-tag of £2,799. Originally, customers were also required to buy a top-of-the-line Power Mac G4. That's no longer the case. Another problem was that these wonderful screens were in dire short supply. Unfortunately, they still are.

Just before Christmas the Cinema Display was pulled from the Apple Store, due to lack of stock. It has since reappeared, but on the Apple Store Web site, Apple quotes a "ten-day build-time" for all orders for the past month.

We've only seen these screens at trade shows, and are yet to test one because Apple UK doesn't even have a review model. *Macworld* in the US assures us that they do exist. It is, without doubt, one of the most impressive screens ever. However, if you can't buy one, its quality is immaterial. If you're in possession of this Holy Grail of flat-panel displays, email me at davidf@macworld.co.uk. Until then, I remain sceptical that Apple has shipped any in the UK.

A cut above

Get the most out of Apple's Airport Wireless Technology. By Christopher Breen

A pple has pulled another fast one. How else can you describe the company's ability to successfully market an otherworldly grey pod, a thin silver card, and the promise of communicating through thin air – without stressing the word networking? Rather than frightening Macintosh users by mentioning brain-numbing terms such as TCP/IP and DHCP, Apple is spinning dreams of an unplugged world. In this utopia, iBook users effortlessly join communities of other mobile Macs by simply opening the lids of their colourful cordless companions. How? With Apple's new wireless technology, AirPort.

The good news is, Apple's aspirations are not far-fetched. As of now, all new Macs are AirPort-ready – all you need to get started is a £67 AirPort card and possibly a £203 AirPort Base Station. (Apple, 0800 738 4846). If you don't have a new Mac, see the sidebar, "AirPort alternatives".

Today you can walk into a classroom, flip open an iBook, and – without benefit of wires – send a message telling your best friend to meet you after school. You can run a cable from your PowerBook's audio-out port into your home stereo and stream MP3 files from the computer upstairs. You can connect all your ancient Macs to a single AirPort Base Station via an ethernet hub and share a single Internet connection. Be aware, however, that you'll see a drop in data-transfer speed. See the speedchart "Slower than wires".

All these things are possible with AirPort, but they require more effort and know-how than you might think. Managing many of these feats requires digging down into a few control panels and mucking about with arcane settings. That's where *Macworld* comes in.

Whether you're new to wireless networking or a seasoned professional, the following AirPort tips are sure to make your unplugged experience a more pleasant and productive one.

Getting set up
In a perfect world, all you'd need to do is spend the cash for an AirPort-ready Mac, an AirPort card, and an AirPort Base Station, and your network would be ready to fly. But AirPort is more than just hardware. Like any network – wireless or not – it requires a bit of tweaking. These configuration tips will help get your AirPort network off the ground.

Upgrade your software Apple has now released version 1.1 of the AirPort software. If you want the best AirPort has to offer, you must install this free update on your Mac (go to http://asu.info.apple.com/swupdates.nsf/artnum/n11570 to download the newest version).

This update fixes a slew of bugs – for one, it lets a "sleeping" Mac easily log back onto an AirPort network.

Version 1.1 also provides new capabilities, including active roaming – a feature for grouping multiple AirPort Base Stations into a huge wireless network. It's now easier to reset the Base Station's password. Just press the reset button for a second to reset the Base Station, as well as network passwords and the unit's IP address.

Configure your AirPort from any Mac In its first iteration, the AirPort software allowed you to configure an AirPort Base Station only from an AirPort-bearing Mac, such as an iBook. Thanks to the 1.1 update, this is no longer the case. The AirPort Admin Utility – included with the AirPort 1.1 update – lets you configure an AirPort Base Station from a Mac that's not equipped with an AirPort card.

You'll find the AirPort Admin Utility in the Base Station Extras folder of the AirPort folder that's created when you launch the AirPort 1.1 image file. Drag the AirPort Admin Utility folder to your hard drive and read through the Installation Instructions document – you need to take some not-so-obvious steps to use this utility on a non-AirPort Mac.

If you aren't using a third-party wireless card to communicate with the Base Station, you'll need a Mac with an ethernet port and either an ethernet crossover cable or an ethernet hub and two standard ethernet cables.

Join an existing network You can, of course, attach an AirPort Base Station to an existing ethernet network by connecting an ethernet cable from a single Mac or ethernet hub to the Base Station.

But how do you configure the Macs on the ethernet network to communicate with the Base Station? Open the TCP/IP control panel on the Mac attached to the ethernet network. Press ⌘-K to open the Configurations window, and then click on the Duplicate button to copy the existing configuration.

Name the duplicate; click on Make Active; and in the resulting window, choose ethernet Built-In in the Connect Via pull-down menu and Using DHCP Server in the Configure menu.

Close this window and click on Save when prompted. You've now configured that particular Mac to access the

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Airport alternatives

SkyLine 11Mb
Manufacturer:
Farallon www.farallon.com
0800 731 8929
Pros: Now cheaper than the original 2Mbit card.
Cons: Still not as cheap as the Orinoco.
Min spec: PowerBook 190, 1400, 2400, 3400, and G3; Type II PC card slot; Mac OS 7.5.5.
Price: £149 (excluding VAT)
Star Rating: ★★★★/8.0

Orinoco PC Card Silver
Manufacturer:
Lucent www.lucent.com
Distributor:
Westcom, 01753 797 800
Pros: Fast and cheap.
Cons: It's not easy to eject the card.
Min spec: PowerBook 190, 1400, 2400, 3400, and G3; Type II PC card slot; Mac OS 7.5.5.
Price: £112 (excluding VAT)
Star Rating: ★★★★/8.1

With the release of the latest PowerBooks, Apple offers wireless networking technology in all its new computers. While this is unquestionably giddy news for those who have recently purchased – or are planning to purchase – a new Mac, it tends to create a gap between the AirPort-ready haves and the have-nots. Integrating the AirPort Base Station into any ethernet network is easy, so owners of deskbound Macs need not worry, but what about those with earlier PowerBook models?

Thanks to PC Cards that support the IEEE 802.11 standard – the wireless standard AirPort uses – owners of the PowerBook 190, 1400, 2400, 3400, or 5300 or any PowerBook G3 model can connect to AirPort-equipped Macs – wirelessly. PowerBook users currently have a couple of choices in PC Cards, including Farallon's SkyLine Wireless PC Card and Lucent Technologies' Orinoco PC Card Silver.

Until recently, Farallon was offering a 2Mbit version of its SkyLine card for £239, but the company is now also offering a 11Mbit version for just £149. Compared with the Orinoco Silver card – priced at £112 – the SkyLine is only a little more expensive, and there are other differences.

The SkyLine works only if you've turned the AirPort Base Station's encryption option off. Lucent's Orinoco cards require that you turn off encryption under the AirPort 1.0 software, but this is unnecessary with the AirPort 1.1 software. Also, configuring the SkyLine card to work with a Mac can be confusing.

For the SkyLine card to co-exist with AirPort, you must first double-click on the card's icon on your desktop. In the resulting dialogue box, select Infrastructure in the Network Mode pull-down menu and also Translation-Apple/Lucent in the Address Mode pull-down menu. If you have a single access point – an AirPort Base Station, for example – enter an asterisk (*) in the SSID field. Farallon will offer the 11Mbit card at a reduced price to those who have already purchased the old 2Mbit SkyLine card. You can find out exactly what the deal is by emailing ukinfo@farallon.com.

Orinoco quirks Neither is the Orinoco card without its vagaries. Unless you want your Orinoco card to reside permanently in your PowerBook, you should be aware that you can't eject the card by simply dragging its icon to the Trash. In order to remove the card, you must select a different networking protocol in the AppleTalk and TCP/IP control panels – changing these from AirPort to ethernet, for example. With these control panels changed, you can drag the card's icon to the Trash, and the card will pop out as it should. The SkyLine card we tested ejects without requiring changes to control-panel settings.

Macworld's buying advice
The Orinoco PC Card Silver is a fine solution for users with older PowerBooks who want to take advantage of AirPort. Farallon's new 11Mbit version of the Skyline is equally able to communicate with the AirPort, but avoid the older 2Mbit version.

Wireless wonder
The recently announced Skyline 11Mb wireless-networking card is being offered at a reduced price by Farallon to owners of the 2Mbit version.

AirPort network and to use the Base Station's modem.

Let your fingers do the typing The AirPort Setup Assistant, the utility that helps you configure your remote network and dial-in settings, grabs settings from the Remote Access and TCP/IP control panels – if you've previously configured them.

However, these aren't the only settings you might want the Assistant to pay attention to. If you've configured the DialAssist control panel so that a 9 precedes any number dialled out from your Mac, the AirPort Setup Assistant won't transfer that setting to the AirPort Base Station for you.

Instead, you must manually add this prefix setting to the numbers your AirPort Base Station dials.
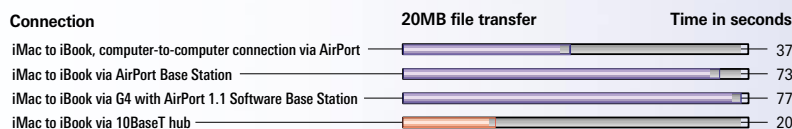
Avoiding idiosyncrasies
Ever notice that your AirPort connection disappears when you place your iBook on top of a running microwave? Are you getting connection errors whenever you try to log onto the Internet from your AirPort network? There's a reason: AirPort's still a bit quirky.

AirPort and AOL AirPort's instructions clearly state that AirPort dial-up connections will not work with America Online (AOL uses a special connection method that isn't compatible with AirPort). However, many people forget that you can log onto AOL via TCP/IP if you have another Internet connection. If your AirPort-equipped Mac can get

Slower than wires

Sadly, there's a price to pay for freedom: AirPort speeds are still far below those of traditional ethernet networking via cables. But when you're working without wires, how you use your AirPort determines how much more slowly those Web pages download. Our tests reveal that you'll get the best wireless performance if you stick to computer-to-computer transfers with AirPort. Using a Base Station will slow you down, although there's not much difference in speed between AirPort 1.1 Software Base Station and the spaceshiplike AirPort Base Station.

▬ **Best results in test. Shorter bars and lower times are better.**

Connection	20MB file transfer	Time in seconds
iMac to iBook, computer-to-computer connection via AirPort		37
iMac to iBook via AirPort Base Station		73
iMac to iBook via G4 with AirPort 1.1 Software Base Station		77
iMac to iBook via 10BaseT hub		20

Behind our tests We transferred a 20MB Adobe Photoshop file via AirPort using an iMac DV Special Edition, an iBook, and a Power Macintosh G4/400 running AirPort 1.1 Software Base Station. Encryption was turned off for our Base Station tests. Systems ran Mac OS 9 with file sharing over TCP/IP enabled.

to the Internet via another ISP, you have access to AOL as well. To configure AOL 4.0 for a TCP/IP connection, click on the Setup button in AOL's opening screen and then select the last option – Set Up AOL To Sign On From A New Location – and click on the Next button. Name the location in the next window – TCP Connect, for example – and click on Next. In the Add Connections window, select the Add A TCP Connection option and click on Next to add TCP access. When you dial up your ISP, you'll be able to log onto AOL as well.

Try, try again It takes the AirPort Base Station longer than a regular modem to complete a dial-up call – longer than some applications might care to wait. More often than not, when you initiate a Web connection from your email client or Web browser, you'll eventually receive an error message stating that a connection could not be completed. This occurs because the Base Station fails to complete the call in the time that application allots.

When you see this error, acknowledge it by clicking on OK or closing the error-message window, and try your request again. In all likelihood, the Base Station has logged on in the meantime and the application will work as expected.

Get disconnected Unlike a standard modem, the AirPort Base Station (or AirPort Software Base Station) can't automatically log on to the Internet and then log off when it completes a task. Instead, you must either manually disconnect the Base Station by clicking on the Disconnect button in the Status portion of the AirPort application or wait for the Base Station to disconnect after a period of Internet inactivity.

If you'd prefer for your Base Station to not be connected to the Net, twiddling its virtual thumbs, decrease the amount of time it spends online by shortening the idle-time interval. To do so, launch the AirPort Admin Utility, click on the Internet tab, and choose a shorter time – two minutes, for example – in the Disconnect If Idle pull-down menu.

Stay up-to-date Security-conscious Mac users routinely change their ISP log-on password. When you change passwords, you undoubtedly update your email client and perhaps the password setting in the Internet control panel. But if you use an AirPort Base Station, don't forget that you must also update the password stored inside it.

To update the Base Station password, launch the AirPort Admin Utility and select the Base Station you wish to update. Next, click on Configure, then on the Internet tab, and then on the Change Password button. Enter and confirm your new password. Finally, click on the Update button at the bottom of the Configure AirPort Base Station window, and wait while the Base Station updates and resets.

Don't crash any airplanes Apple tells us it's inadvisable to operate an AirPort card while inside an airplane – doing so can interfere with the avionics of the aircraft. This would be a bad thing. For all our sakes, if your iBook has an AirPort card installed, please switch off the card before you fly.

Run interference When AirPort-equipped Macs and AirPort Base Stations are in close proximity, very little can interfere with the signal between them. However, once they are a room or two apart, certain appliances can degrade or completely impede performance. These electronic doodads include refrigerators, microwave ovens, and – because AirPort uses similar frequencies – 2.4GHz cordless phones. If you notice a dramatic decrease in signal strength with an appliance nearby, consider moving your Mac or Base Station – it may take only a couple of feet for the signal to improve.

Fun for the whole family

AirPort is not only great for classrooms and small offices, but also a handy – and possibly entertaining – tool around the house.

Rig up a remote jukebox Tunes never sound as good on small computer speakers as on your home stereo speakers. Wouldn't it be great if you could play your MP3 files on your home stereo without storing those files on your iBook's low-capacity hard drive? With AirPort, another Mac attached to your AirPort network, an MP3 encoder and player, your home stereo, and one cable, you can. Here's how. Encode and store a few audio CDs as MP3 files on the Mac that will act as your MP3 server, and save the playlist. On the iBook, use the Chooser or Network Browser to mount the hard drive where these encoded files reside, and then copy the playlist (not the encoded files) to the iBook's hard drive.

You'll need an audio Y cable that carries a Walkman-style stereo miniplug on one end and two mono RCA plugs on the other. Attach the miniplug to the iBook's audio-out port and the RCA plugs to the auxiliary input on your home stereo's amplifier. Launch a copy of an MP3 player – for example, Casady & Greene's SoundJam MP (£30; **www.casadyg.com**) – on the iBook, and open the playlist you copied from the other Mac. Click on the play button and listen in amazement as the MP3 files contained on the server beam to your iBook and begin playing through your home stereo.

Send a wireless message Want to make a wireless date with that special someone in your trigonometry class? For this trick to work, you must configure the remote Mac so that your Mac's hard drive appears on its desktop.

Open the File Sharing control panel on your Mac, click on the Activity Monitor tab, and option–double-click on any name that appears in the Connected Users field. In the window that subsequently appears, type a message – comprising as many as 199 characters – to that user. When you're ready to send, click on OK – your message will appear on the remote Mac.

The last word

Now that you have these tips and techniques under your belt, freedom from wires is in sight. To further increase your AirPort knowledge, check your Mac's Help menu for additional materials. You and your Macs are ready for the airwaves. MW
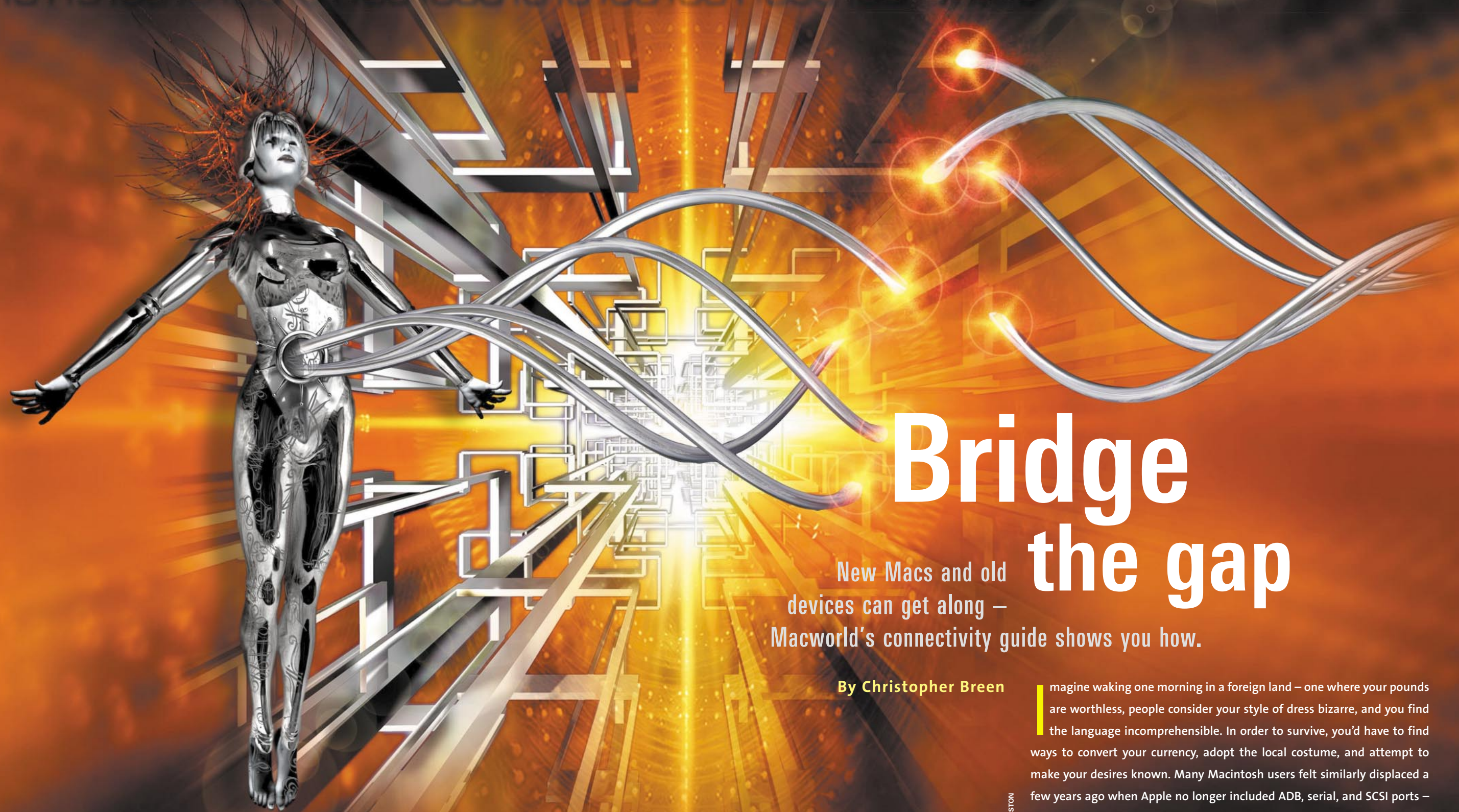
Bridge the gap

New Macs and old
devices can get along –
Macworld's connectivity guide shows you how.

By Christopher Breen

magine waking one morning in a foreign land – one where your pounds are worthless, people consider your style of dress bizarre, and you find the language incomprehensible. In order to survive, you'd have to find ways to convert your currency, adopt the local costume, and attempt to make your desires known. Many Macintosh users felt similarly displaced a few years ago when Apple no longer included ADB, serial, and SCSI ports – the traditional means of communicating between a computer and peripherals such as printers, scanners, and keyboards – on Macs. Instead, Apple adopted USB for serial and input devices, because USB was more universally accepted, and adopted the FireWire bus for storage and video because FireWire was speedier.

ILLUSTRATION: OLIVER BURSTON

This was hardly good news if you'd paid good money for older equipment that would still work – if only you could plug it in – or if you had an old Mac that was incompatible with a tempting array of new equipment.

Though Apple drew a line in the connectivity sand, other companies have crossed that line for you. Macworld Lab requisitioned scads of devices that help you hook up old devices to new Macs or vice versa, including USB adaptors, PCI cards, and PC Cards. SCSI cards provide another answer. FireWire connectivity opens a new can of worms, so we leave it for another time. We put all the devices through the wringer, evaluating their compatibility with an array of peripherals and determining their effects on general performance. For the results of our tests, see "Communication facilitation." With the aid of that table and the tips we provide, your mishmash of Macs and machinery should co-exist peacefully – and productively.

Back to basics

For many Macintosh users, a computer is a tool, not a strange world to explore. But familiarizing yourself with the back of the box will help you bridge the gap between old and new. If you already have a firm grasp on connectivity technology, you can go directly to the next section. The rest of us might benefit from a brief introduction. See the sidebar "Port authority" for photos and descriptions of the connector types. If your desktop Mac doesn't have the kinds of port you need, you have two ways to add them: an adaptor or a PCI card. An adaptor is commonly a cable with one type of connector (say, ADB) on one end and a port for another type (say, USB) on the other. A PCI card goes in the computer's PCI slot; adding a PCI card with ports is like adding another set of eyes or ears to your machine. Mac portables rely mostly on PC Card slots for the addition of new ports.

Buying a new Mac is exciting but some of that sparkle fades when you introduce it to your older equipment and find that they don't all speak the same lingo. The iMac, iBook, PowerBook G3 with FireWire, and Power Macintosh G4 all lack ADB and serial ports and include USB. The blue-&-white Power Macintosh G3 doesn't have serial ports but does include USB and ADB ports. All of these newer Macs can communicate with older serial or ADB equipment with the translating help of adaptors.

Hooking-up serial devices

So your more au courant Mac lacks serial ports, but you don't want to lay out the cash for new printers, modems, or digital cameras. You have several options, the easiest of which is a USB-to-serial adaptor. All you have to do is connect the adaptor's USB end to your Mac's USB port and the serial end to the peripheral's serial port. We recommend Keyspan's £39 USB Twin Serial Adaptor. This adaptor, unlike Belkin's £43 USB Serial Adaptor for Macintosh or Momentum US's £79 uConnect, allows you to use both serial ports at the same time – helpful if you want to connect a printer and an external modem simultaneously. The Keyspan adaptor also supports all StyleWriters, while the other two accommodate only a few. However, Palm enthusiasts should note that only the Belkin and Momentum adaptors carry connectors that fit PDA cradles. A two-port adaptor that needs its own powered USB port for connecting to serial devices is Inside Out's Edgeport 4, which costs a hefty £325 but gives you four ports.

PCI Power   You can add serial ports to the blue-&-white Power Mac G3 and the Power Mac G4 without a USB adaptor – an attractive alternative if you have better things to occupy your USB ports. To accomplish this miracle, turn to your PCI slots. Placing PCI cards in the slots takes a little more effort than plugging in an adaptor, but none of the cards we tested posed any problems.

We looked at four PCI cards that carry multiple serial ports. MegaWolf offers a series of cards that carry two and four serial ports – priced at £200 and £255. There is also an eight-port version that can be shipped by special arrangement with Hinto Instruments (01373 451 927). Keyspan also markets the £159 SX Pro Serial Card, which contains four serial ports. All four cards work as advertised and have easy-to-use software. Which you choose will depend on your budget, but prices fluctuate. You may find dramatically lower prices online or at your local Mac supplier.

Modem no more   As long as you don't need an internal modem, you can also add a serial port to a blue-&-white G3 or a G4 without sacrificing one of its scarce PCI slots. Griffin Technology's £49 gPort is a small device that plugs into the Mac's internal modem slot, replacing the modem with a single serial port. GeeThree's £59 Stealth Serial Port is a similar product.

Talk with the locals   The gPort and Stealth Serial Port both let you connect to printers with LocalTalk, an old communication protocol. (Newer printers use ethernet instead). But if you need to hook up a new Mac to a LocalTalk printer or network and don't want to mess with the internal modem slot, look to Farallon Communications' £93 iPrint Adaptor LT. This device carries an ethernet port

Communication facilitation

Company	Product	Mouse Rating	List Price	Contact	Type of adaptor	Comments
Hook up new Macs to serial printers, modems, digital cameras and other devices						
Asanté Technologies	AsantéTalk	★★★/6.5	£92	Computers Unlimited, 020 8358 5857	LocalTalk	Connects to LocalTalk via ethernet port.
Belkin	USB Serial Adaptor for Macintosh	★★★/6.6	£43	Belkin, 01604 678 300	USB-to-serial	Can only use one port at a time; did not work with ColorWriter 2400 printer.
CompuCable	Mini-Geo	★★★/6.2	$70	www.compucable.com	USB-to-serial	Two-port serial-to-USB adaptor; needs its own powered USB port.
Farallon Communications	iPrint Adaptor LT	★★★★/7.3	£93	Softline, 01372 726 333	LocalTalk	Provides all cables necessary for connecting printers and Macs.
	iPrint Adaptor SL	★★★★/7.2	£93	Softline, 01372 726 333	StyleWriter Serial	Connects serial-only StyleWriters I, II, 1200, 1500, 2200, 2400, and 2500.
GeeThree	Stealth Serial Port	★★★★/7.4	£59	Channel Dynamics, 0870 6070 540	Serial for blue-and-white G3	Adds a serial port via the modem slot.
Griffin Technology	gPort	★★★★/7.5	£49	Alta Technology, 020 7622 6606	Serial for blue-and-white G3 or for G4	Adds a serial port via the modem slot; easy-to-use software.
	iPort	★★★/6.8	£49	Alta Technology, 020 7622 6606	Serial for Rev. A and B iMac	Adds a serial port and monitor-out port to Rev. A and B iMacs via the mezzanine slot.
Inside Out	Edgeport 4	★★/4.7	£325	Interquad, 01753 536 464	USB-to-serial	Four-port serial-to-USB adaptor; needs its own powered USB port.
Keyspan	SX Pro Serial Card	★★★★/7.6	£159	AM Micro, 01392 426 473	PCI-to-serial	Four-port serial card for PCI Mac; easy-to-use software.
	USB Twin Serial Adaptor	★★★★/7.9	£69	AM Micro, 01392 426 473	USB-to-serial	Two-port serial-to-USB adaptor; easy-to-use software.
MegaWolf	Remus/2	★★★/5.5	£200	Hinto Instruments, 01373 451 927	PCI-to-serial	Two-port serial card for PCI Mac; easy-to-use software.
	Romulus/4	★★★/5.5	£255	Hinto Instruments, 01373 451 927	PCI-to-serial	Four-port serial card for PCI Mac; easy-to-use software.
	Rufus/8	★★★/5.5	Call	Hinto Instruments, 01373 451 927	PCI-to-serial	Eight-port serial card for PCI Mac; easy-to-use software.
Momentum US	uConnect	★★★/6.0	£79	Channel Dynamics, 0870 6070 540	USB-to-serial	Can only use one port at a time; did not work with ColorWriter 2400 printer.
Hook up new macs to ADB input devices						
CompuCable	Mini-ADB	★★★/5.4	$33	www.compucable.com	USB-to-ADB	Comes with two ADB ports, but can use only one at a time. Works without drivers; supports soft power-on via keyboard; drivers needed for dongle functionality.
Griffin Technology	iMate	★★★★/7.6	£39	Alta Technology, 020 7622 6606	USB-to-ADB	Connects ADB devices via USB; built-in activity LED. Works without drivers; supports soft power-on via keyboard; drivers needed for certain functionality, such as dongles.
Hook up new Macs to SCSI scanners, printers, and storage devices						
Belkin	F5U015-TPW	★★★/6.7	£68	Belkin, 01604 678 300	USB-to-SCSI	Includes a separate power terminator for connecting SCSI devices via USB; OS 9-ready.
Microtech	USB-SCSI-DB50	★★★/5.8	£49	Microtech, 0208 795 1177	USB-to-SCSI	Built-in HD50 connector for connecting Ultra Narrow SCSI devices; OS 9-ready.
Second Wave	SCUSBee	★★★★/7.2	£69	AM Micro, 01392 426 473	USB-to-SCSI	Slow file copying; now works with CD burners.
Xircom	PortGear SCSI DB-25 Adaptor	★★★★/7.9	£53	Xircom, 00800 7070 6060	USB-to-SCSI	Power termination built in; updated USB drivers needed for OS 9.
Hook up new Macs to several types of peripherals simultaneously						
CompuCable	GDock	★★★/6.4	$219	www.compucable.com	multipurpose hub for blue-and-white G3 or for G4	Four-port USB hub, two serial ports, parallel port, and slot for connecting an internal ATAPI device such as a Zip, magneto-optical, or SuperDisk drive.
	iDock2	★★★/6.0	$259	www.compucable.com	multipurpose hub for Rev. A and B iMac	Four-port USB hub, two serial ports, ADB port, and a floppy-disk drive.
Hook up old desktop to USB devices						
ADS Technologies	USB Port for Desktops	★★★/6.9	£40	Lexar Media Europe, 01483 797 200	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.1 drivers and link to upload.
Ariston Technologies	iConnect Series 002	★★★/6.4	$39	www.ariston.com	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.3.5 drivers.
Belkin	Busport for Mac	★★★/6.4	£29	Belkin, 01604 678 300	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.1f2 G41 drivers.
Global Paragon	PCI to USB	★★★/6.0	Call	www.alchemytech.com	PCI	Two-port USB card for PCI Mac; no included drivers; no mention of Mac in manual or box.
Inside Out	PCI to USB	★★/4.6	Call	Interquad, 01753 536 464	PCI	One-port USB hub.
Keyspan	USB Card	★★★/6.2	£39	AM Micro, 01392 426 473	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.1 drivers.
MacAlly	PCI to USB	★★★/5.7	£29	Mac Accessory Centre, 0191 296 1500	PCI	Two-port USB card for PCI Mac; no included drivers.
Macsense	PCI USB Adaptor	★★★/5.4	$49	www.macsense.com	PCI	Two-port USB card for PCI Mac; no included drivers.
SIIG	USB DualPort PCI-M	★★★/6.6	£34	iVell, 01206 878 726	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.1f2 G49 drivers.
Xircom	PortGear 2-port USB Upgrade Kit	★★★/6.6	£27	Xircom, 00800 7070 6060	PCI	Two-port USB card for PCI Mac.
XLR8	DualPort USB PCI	★★★/6.6	£34	XLR8, 01442 255 899	PCI	Two-port USB card for PCI Mac; includes Apple USB 1.1 drivers.
Hook up old powerbooks to USB devices						
ADS Technologies	USB Port for Notebooks	★★★/5.6	£61	Lexar Media Europe, 01483 797 200	PCMCIA	Two-port USB card draws power from PowerBook ADB port; no included drivers.
Ariston Technologies	Cardbus iConnect Series 004	★★★/5.2	$99	www.ariston.com	Cardbus	Two-port USB card draws power from PowerBook ADB port; includes Apple USB 1.2 drivers, which don't work with PC Cards.
Belkin	USB Busport Mobile	★★★/6.7	£59	Belkin, 01604 678 300	PCMCIA	Two-port USB card draws power from PC Card socket; no included drivers.
Global Paragon	PCMCIA USB Adaptor	★★★/6.5	$99	www.alchemytech.com	PCMCIA	Two-port USB card draws power from PC Card socket; no included drivers; no mention of Mac in manual or box.
Macally	Cardbus USB	★★★/6.7	£59	Mac Accessory Centre, 0191 296 1500	Cardbus	Two-port USB card draws power from PC Card socket; no included drivers.

Editors' Choice appears in red. All prices exclude VAT.

that connects to the Mac (or an ethernet hub) and a serial port for linking to LocalTalk. Farallon also makes a version of this device, the £93 iPrint Adaptor SL, that provides an ethernet-to-serial connection for StyleWriter printers. For more on connecting printers, see the sidebar "Share and share alike."

Tricky business If you've got a Rev. A or B iMac (the original Bondi blue models) and a sense of adventure, you can add a serial port with Griffin Technology's £49 iPort. This card fits in a hidden mezzanine slot (which was discontinued in the later models), so you'll have to unscrew the iMac's case to insert the iPort. It adds a single serial port that works with most printers and MIDI devices. The iPort supplies a video-out port as well, and it supports a greater variety of screen resolutions than these iMacs can otherwise offer.

ADB input devices and new Macs
New computer technology is often better than old. The round mouse included with modern desktop Macs is a distinct exception to this rule. If you prefer your trusty old ADB input device, check out Griffin Technology's £39 iMate. The iMate has two usable ADB ports, which is useful.

Hooking-up SCSI devices
There are a few ways to connect new Macs to older SCSI devices, which include external hard drives, scanners, printers, and Zip and Jaz drives. If your Mac has PCI slots and you need speed, consider installing an internal SCSI card.

The easier route to SCSI connectivity is a USB adaptor, but because USB is much slower than SCSI – topping out at a data-transfer rate of 1.5 MBps, versus the 5-MBps transfer rate you get on most older Macs – SCSI peripherals may seem far less zippy with USB adaptors. Just beware: if you fail to purchase the right USB-to-SCSI adaptor, zippiness will be the least of your problems. The £53 Xircom PortGear SCSI DB-25 Adaptor was the most reliable in our lab tests.

Driver dilemma Our tests revealed that not all USB-to-SCSI adaptors are created equal. To begin with, most had problems with the USB drivers that shipped in OS 8.6 and OS 9. Apple is updating those UK drivers, and when we used the North-American updaters, the adaptors worked far more reliably. Hopefully, the International-English drivers will be out by the time you read this; check Apple's Web site, at **http://asu.info.apple.com/**.

Apple won't commit to a date when International-English versions of its USB drivers will ship. AM Micro (UK distributor of Keyspan and Second Wave) tells us that it has installed the North-American USB updates, and has experienced "no problems". Apple, however, warns against this, covering itself by saying that it "can't guarantee there won't be system degradation".

Potential problems Second Wave's £69 SCUSBee won't automatically mount or recognize some external disks. You have to reinitialize with Apple's Drive Setup or mount with

Apple's efforts to drag computing – and its users – into the 21st Century has left many of us feeling like lost souls in an alien world. But thanks to these many adaptors, converters, and cards, the foreign can start to feel more familiar.

Don't let the ship leave the dock without you. This handy key is your guide to new and old communication methods on the Mac.

Serial (mini-DIN 8)

Serial DB9

ADB (Apple Desktop Bus) ports connect low-speed input devices, such as keyboards and mice. ADB appears on older Macs, as well as on the blue-&-white Power Macintosh G3.

Ethernet ports connect Macs to networks. Ethernet is a LAN protocol that replaced LocalTalk on newer Macs. It supports data-transfer rates as fast as 10Mbps. An ethernet variation, 100BaseT (or Fast ethernet), handles data-transfer rates as fast as 100Mbps.

FireWire is Apple's name for the IEEE 1394 bus standard. This relatively recent, speedy standard can handle data-transfer rates as high as 400Mbps. FireWire peripherals are not as widespread as USB devices.

Serial ports connect printers, modems, and digital cameras. Serial ports have 8, 9, or 25 pins and appear only on older Macs. The eight-pin variety shown here is also known as mini-DIN.

LocalTalk ports connect LocalTalk printers at a poky 235Kbps. The term also describes the LAN (local area network) protocol from Apple. Newer Macs don't have these ports, relying instead on ethernet.

USB (Type A)

USB (Type B)

SCSI-2

SCSI-1

USB (Universal Serial Bus) ports replace ADB and serial ports on newer Macs. USB is hot-swappable and can connect your Mac to everything from input devices to printers to digital cameras. Although not as fast as FireWire, USB's data-transfer rate of 12Mbps still beats ADB and serial. There are two types of USB connectors: the rectangular Type A connectors, which you'll find on modern Macs, and Type B connectors, which appear on USB-compatible devices such as printers, scanners, hubs, and MIDI interfaces.

SCSI (small computer system interface) ports connect hard drives, scanners, and printers. SCSI is one of the faster data-transmission methods (up to 80MBps) and appears only on older Macs. There are many types of SCSI, including SCSI-1, with a 25-pin connector, and SCSI-2, which has a 50-pin connector. Both SCSI-1 and SCSI-2 support multiple peripherals. SCSI-1 and SCSI-2 both handle data rates as fast as 4MBps. Because of the diversity of the SCSI world, make sure you identify your device's SCSI type before selecting an adaptor.

PCMCIA (Personal Computer Memory Card International Association) slots are found on portable computers. Devices that fit in these slots are called PC Cards. There are three types of PC Cards: Type I, Type II, and Type III. CardBus is a variation on the PCMCIA standard that supports a 32-bit bus (wider than the PCMCIA original of 6 bits), and bus mastering and operation speeds up to 33 MHz.

SCSIProbe – while not difficult, this is certainly inconvenient. Also, the Belkin F5U015-TPW and Microtech USB-SCSI-DB50 adaptors require an active terminator – an add-on device that echoes the SCSI signal back to the source – for attached Zip drives to work. Belkin includes an active terminator; Microtech does not.

Initially, all of these adaptors failed to work with our SCSI scanners and printers because of driver incompatibilities. Our old SCSI scanners and printers rely on Classic SCSI Manager, while the adaptors we tested require the newer SCSI Manager 4.3.

However, Agfa, Umax, Epson and Microtech have now updated their drivers (available from their Web sites). Check with the adaptor distributor before buying.

If your scanner or printer supports only Classic SCSI Manager, an internal SCSI card will serve you better – for now, anyway. Keep your eyes open for adaptors supposedly in the works that support Classic SCSI Manager.

Hooking-up everything

If you've been using a Mac for a number of years, you may have accumulated a rich assortment of peripherals – a collection so vast that one or two adaptors won't connect them all to your new Mac. CompuCable provides two answers: one for iMacs, the other for blue-and-white G3s and Power Mac G4s.

The hub with a twist CompuCable's iMac offering, the $259 iDock2, is a swivel-base affair that carries a four-port USB hub, two serial ports, an ADB port, and a floppy-disk drive. The iDock2 lacks a SCSI connection, and it doesn't provide a way to bring video out of your iMac, but it supplies all the other ports you need for older equipment. Both can be ordered on the company's Web site. See the table for details.

A tight fit CompuCable's $219 GDock fits neatly atop a blue-&-white G3 or a Power Mac G4 and boasts a four-port USB hub, two serial ports, a parallel port – useful if you have a parallel PC printer – and a slot for mounting an internal ATAPI device such as a Zip, magneto-optical, or SuperDisk drive. It's handy, but some Power Mac G4 owners will mourn the lack of an ADB port.

Can I keep my old Mac?

Maybe your old Mac works just fine, or maybe you can't afford a new model. Whatever your situation, you never think you'll have to connect to new USB devices. But eventually your old ADB keyboard, mouse, or joystick will shuffle off this mortal coil. Or perhaps your serial or SCSI scanner or printer just doesn't cut it anymore. USB cards let your Mac talk to the new kids on the block.

Hooking up old desktops to everything USB Adding USB to an older desktop Mac requires a free PCI slot. To see whether your Mac has a PCI slot, go to **www.newertech.com** and download the Guru 2.8 application.

Drive that PCI card We evaluated 11 PCI cards that carry USB ports. Most but not all of these cards ship with USB drivers – necessary for your Mac to recognize USB devices. Some cards didn't perform properly because they shipped with outdated drivers. Installing the current USB drivers corrected these problems. As we go to press, the USB Card Support 1.3.5 drivers are most current. Go to **http://asu.info.apple.com/swupdates.nsf/artnum/ n11543** to find then. ADS Technologies' USB Port for Desktops got our vote because of the ease with which you can download new drivers for it.

Odd cards out Most of these cards are nearly identical, so you can choose one based on price. The exceptions: Inside Out's $99 PCI-to-USB card carried one port rather than the other cards' two. There are also PCI cards that combine USB and FireWire connectivity. In addition to two USB ports, you'll find two FireWire ports on the £129 Orange Micro (**www.orangemicro.com**; AM Micro) Orangelink FireWire/USB PCI Board and three FireWire ports on the £144 Ratoc PCIFU1P card (Compu b, 0800 018 6625)

PCI performance hit With all of these cards, once we installed the USB Card Support drivers, we noticed a decrease in performance. Overall processor speed dropped between five and ten per cent. However, by the time you read this article, Apple will most likely have released new drivers that fix the problem.

Future looks rosy In the near future, you should see USB adaptors that not only carry more than two USB ports but also provide a separate bus for each port – meaning you can run up to 127 USB devices on each port, rather than sharing the 127 among various ports, as you must do when using the above crop of cards.

Adding a new Mac to your home or office can be a lot of fun, but figuring out how to parcel out your existing peripherals isn't. Should you move the printer to the new system? Buy a monitor for the newcomer? Use an old display and end up with a monitorless Mac? Thankfully, you can share some peripherals among a group of Macs.

Share a printer

Take printers, for example. You may want to share a printer among several computers by connecting it to an ethernet network. Unless older printers (which usually communicate using LocalTalk) bear an ethernet connector, placing one of them on an ethernet network is impossible without some kind of adaptor. That's where ethernet-to-LocalTalk adaptors such as Farallon's £93 iPrint Adaptor LT or Asanté's £92 AsantéTalk come in.

Making the connection is simple. Just string a standard Cat 5 (category 5) ethernet cable from an ethernet hub to one of these adaptors and run ethernet cables from both your new and your old Mac to the hub. With ethernet selected in the AppleTalk control panel, both Macs recognize the printer. If you're using the printer with just a single Mac, run an ethernet crossover cable between the Mac and adaptor and forgo the hub.

Cat 5 ethernet cables cost less than £6, and you can set up small hubs for just under £30. Cables and hubs are available from your local computer-supply store.

Share a vision

If you have multiple Macs and are using one for tasks that don't often require visual displays (for example, running a server or burning CDs), you may want to share a monitor between machines. A monitor switchbox and a couple of VGA monitor cables will do the job. Just connect the monitor's hardwired cable to the monitor-out port on the switchbox, and the two VGA monitor cables from the switchbox's two input ports to the video-out ports on both Macs. To switch the monitor from one Mac's video output to the other, simply toggle the A/B switch.

You can buy no-name switchboxes that control peripherals for two Macs from most computer-supply stores for less than £15. When you really need to share the wealth, consider CompuCable's (**www.compucable.com**) $120 Power Reach Lite KVM controller, which lets you share one monitor, keyboard, or mouse between up to four Macs.

Hooking-up old PowerBooks to USB

You can add USB to your PowerBook via the PC Card slots on the side of your portable pal. None of the USB cards we evaluated shipped with the current USB Card Support drivers; you'll have to download them from **http:// asu.info.apple.com**.

Power Source ADS's £41 USB Port for Notebooks – require that the card draws power from the PowerBook's ADB port. Although it provide a pass-through ADB connector, a cable dangling from the ADB port to the card is hardly elegant. The other cards pull power from the PC Card socket and are comparable in price and performance.

Any one of the following should do the job: the £59 Cardbus USB, from Macally; the £69 USB Busport Mobile, from Belkin; and the $99 PCMCIA USB Adaptor, from Global Paragon.

The last word

Apple's efforts to drag computing – and its users – into the 21st century has left many of us feeling like lost souls in an alien world. But thanks to these many adaptors, converters, and cards, the foreign can start to feel more familiar. Now that you know the lay of the land, you too can walk the road between the old and the new Mac worlds.

Contributing Editor Christopher Breen is a co-author of *My iMac* (IDG Books Worldwide, 1999).

Racking-up your bodycount in networked games is down to tatics

Contributing Editor **CHRISTOPHER BREEN** writes *Macworld*'s 'The game room' feature every month. He is the co-author of *My iMac* (IDG Books Worldwide, 1999).

SWATing the enemy

Recently, it dawned on me that I cling to beliefs some might consider peculiar. However, I'm not here to discuss my convictions that one should avoid eating any vegetable resembling a brain and that a brown paper towel, when placed in your mouth, immediately sucks all the moisture from your body, leaving you a withered, crumpled husk.

Rather, I want to talk about my long-held belief that in games – both virtual and real – force inevitably triumphs over finesse. Seeing this notion spelled out in stark print makes it appear all the more fatheaded, but follow along with me for a second. Does it or does it not seem plausible that, if you hurl a bowling ball down an alley at 120 mph, rather than 12 mph, and strike a couple of pins, more pins will likely fall, thanks to collateral damage inflicted by the ricocheting objects your ball struck? Likewise, if you shoot a cue ball out of a cannon and biff the 15 coloured balls on a pool table – presuming, of course, that the balls don't shatter, slaughtering anyone standing within a hectare of the table – wouldn't you suspect the odds would be greater that, with all that movement, more balls would eventually drop into the pockets?

I hold this principle to be self-evident. Yet when I've attempted to apply it to other areas of gaming, it falls flat. Take my recent online forays into Quake III Arena and Unreal Tournament, for example.

I hurl myself into these contests, gather the gnarliest weapons and most robust armour on the map, and send a message to my enemies that I'm the baddest mo-fo (monster of force) in the land. But before I take a step, some joker with a single health point and a peashooter scatters my giblets from one end of the game to the other. Having suffered this kind of humiliation a dozen times or more – and from players who excuse themselves at 6pm because they have to meet the rest of the local Cub Scouts at Billy's house to work on getting their Comportment badges – I started to rethink my strategy.

After trying a few new techniques – and actually paying attention to what was going on around me – I discovered that although brawn and catlike reflexes aren't entirely wasted in these games, those who use their brains inevitably win the day. Allow me to share some of what I've learned along the way.

Taking control

Playing these games isn't like driving an automobile. With a car, you have to conform to the vehicle's controls – right foot for the accelerator, left foot for the clutch, right hand to shift and steer, and left hand to hold the cell phone that puts you and the drivers around you in mortal danger.

Although games such as Quake III and Unreal Tournament come with a default set of keyboard assignments, there's not a reason on earth you should stick with them. Nor should you be at a disadvantage because some of your online opponents use the multibutton mouse that came with their PC while you're stuck with the one-button, round rodent flung into the box with your iMac DV.

Start by procuring a mouse with more than one button. You'll naturally want to assign the firing command to the left mouse button (unless you're left-handed), but how you configure the right mouse button depends on personal taste. Some adventurous players use this as the forward-movement button in conjunction with keyboard keys Z, for strafing left; X, for backward movement; and C, for strafing right. These same players keep the spacebar as the jump-command key; use either the option or control key for Unreal Tournament's Alternate Fire command; and assign the A, S, D, and F keys to particular weapons (Quake's rocket launcher, shotgun, plasma gun, and rail gun, for example).

Others maintain the default setting for the movement keys (W, A, S, and D) and use the right mouse button for jumping, Unreal's Alternate Fire, or – for those who love sniping – zooming. Modern mice often boast a scroll wheel that some players use to cycle through weapons. I'm not keen on cycling weapons – I prefer to get the weapon I want when I want it with a key command – but if you aren't using the wheel for anything else, this is a reasonable
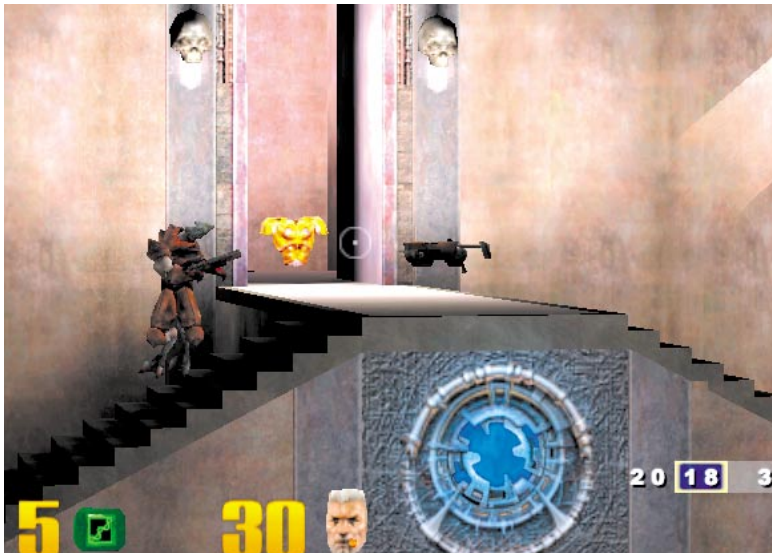
Dangerous intersection
The railgun and armour found at this intersection in Quake III Arena will likely attract plenty of targets. With your own railgun and a protected hiding place, you can quickly rack up frags.

Bird's-eye blasting
From this lofty perch, you can control large areas of the game, as well as rain fire upon a crowded intersection.

assignment. Once you've found a keyboard and mouse configuration that feels right to you, practice, practice, practice against the bots. Before going up against human opponents, you should be comfortable running backward, dodging sideways, leaping about like a hyperactive baboon in a trampoline factory, rocket jumping (setting off a rocket at your feet to gain serious altitude as you jump), and producing exactly the weapon you want in an instant.

Know the lay of the land
Both Quake III and Unreal Tournament provide you with a single-player mode not only so you can practice against bots, but also so you can scope out the games' many maps. In Unreal Tournament, before the game starts, take the time to fly through the map and learn where all the weapons, armour, and power-ups lie. In

Quake III, choose Skirmish mode and configure the match so there are no enemies to get in the way of your explorations.

Prevent defence
One of the secrets to Deathmatch success is knowing where the goods are and making sure you have 'em and other players don't. If you can manage to take a particular weapon, power-up, or piece of armour temporarily out of the game – and out of another player's hands – by cleaving it to your bosom, do so. If your health is maxed out, do yourself the tiniest bit of harm by facing a wall and setting off a weapon that damages you, then grab the health power-up. This is easier in Quake III, where the plasma gun causes only two points of damage.

Unreal Tournament's weapons either do no damage or sap half your health if you're right up against the wall, so before trying this trick, take two or three steps backward.

This preventive strategy may do little for your power or health, but it could seriously undermine a player who possesses only a puny weapon or is in desperate need of some righteous healing. Learn how often the most powerful items spawn and try to be nearby when they do.

Listen up   Keep your ears open. Both Quake III and Unreal Tournament provide aural clues to the location of your enemies. If you hear a series of armour shards being gobbled up and you know those shards live right around the corner, you can place your enemy and plan accordingly. And listen for players respawning – these born-agains lack worthwhile weapons and make easy pickings.

Be unpredictable   There's nothing more natural than running around the right side of a pillar and emerging on the left. Unfortunately, this is so natural that other players will expect you to do just that, and will plant a rocket in exactly the spot where your next steps will take you. To avoid becoming another notch in someone's BFG, do the unexpected – double back instead of going around that pillar, vary the directions you dodge and turn, and sprinkle a few leaps into your movement. And to be a better hunter, look for patterns in other players' movements.

Quick Tips
These tips require little explanation but can be very helpful:

■ Maintain the high ground. Raining death from above is more effective than attacking from below.
■ Rocket jump (or impact-hammer jump) from bounce and accelerator pads and elevators to gain more height. This can surprise someone waiting for you at the other end of a pad.
■ Target spots where other players are likely to appear – for example, the nexus of two hallways, an opening to a courtyard, the location of a particularly juicy power-up or weapon, or a spot where players land after using a bounce pad.
■ Try to predict where your opponent will be. Few weapons fire instantly, so you need to guess where your enemy will be a few seconds after you shoot.

And there you have it – all the tips, tricks, and techniques you'll ever need to stay on your feet and reduce your opponents to their component parts. Happy fragging! If I don't see you online, I'll see you at the pool hall. I'll be the guy with the howitzer. **MW**

Why Mac versions of hot new games are worth the wait

I've recently taken the time to re-adjust my thinking on a subject that's near and dear to the hearts of Mac gamers – simultaneous release. I freely admit that I was among those who championed the cause of bringing Mac games to store shelves the same day their PC counterparts arrived, but after watching in dumb disbelief as a major player in the gaming market issued Mac gamers a flying triple kick to the snoot – I've changed my tune.

Mac-specific (or even Mac-first) game titles have almost vanished from the market. The days when a game like Myst would appear first on the Mac are over. The Big Boys can make just too darned much money on Windows to have much incentive for writing Mac-specific games. We depend on publishers to port PC games to the Mac.

As you're undoubtedly aware, these ported games rarely come from the original publisher – Electronic Arts, GT Interactive, Interplay, or Eidos – but rather are distributed by third-party publishers such as MacSoft, Aspyr Media, and Graphic Simulations. These Mac publishers cut a deal with the publishers of the original game – providing them with some advance money and a percentage of sales at the back end – in exchange for the PC code. Additionally, they reserve the right to distribute the game and take the lion's share of the profits. Out of these profits the Mac publisher must pay the porting house – a company such as Westlake Interactive that turns PC code into something playable on the Mac – as well as pungle up the dough for duplication, packaging, advertising, and distribution. If the Mac publisher is smart, it also pays for professional beta testing to ensure that the game runs smoothly.

These deals benefit both parties. The original publisher takes practically no risk and earns some extra dough on a game it had no intention of porting in-house. If the game sells well, the Mac publisher makes a fair chunk of change.

The downside for Mac gamers is the necessary gap between a game's first release on the PC and its availability in Mac-compatible form. After all, you need time to convert the code, test the game, press the discs, yadda, yadda, and especially yadda.

The numbers game

These third-party publishing deals work in large part because Mac games don't sell in numbers high enough to tempt the original publishers to produce Mac versions in-house. Though 30,000 units sold is respectable for a Mac game, it's chicken feed to these people.

However, thanks to the sale of over 2 million iMacs, game publishers are taking a second look at producing their own Mac ports. Who wouldn't be mesmerized by an installed base of a couple million users with machines powerful enough to run most modern games? Selling a game to just 10 per cent of these users equals over 200,000 units sold – a creditable number on any platform. Of course, Apple is encouraging these publishers for the reasons you'd expect – happier Mac gamers, and a well-rounded platform that appeals to potential computer buyers.

Let's suppose the big publishing houses decided to jump into the Mac market with both feet. What would happen? In all likelihood, this would drive Mac publishers such as MacSoft and Aspyr out of business. Likewise, porting houses such as Westlake Interactive would be raided or run into the ground. Fine. After all, what do we care? We're getting our Mac games at the same time PC users are, and that's what's important – right? Wrong, because gambling that these big publishing houses will stay in the Mac market is a sucker's bet. Allow me to illustrate my point with a fable.

Sierra's sad story   Once upon a time there was a company named Sierra Online. This company dipped its toe into and out of the Mac market every leap year or so. All too often, when Sierra deigned to dip its digit into our pool, the company produced distinctively dreadful ports of its PC games. To no one's surprise – except, apparently, Sierra's – Mac gamers stayed away in droves, and Sierra abandoned the Mac in a huff.

Missing in action   *Unless Sierra relents, the only place you'll see these once-slated-for-Mac games – Half-Life (left) and Pharaoh – will be on a friend's PC.*

Shortly after the release of the iMac, Sierra returned to the Mac platform with a wonderful, critically acclaimed game called Caesar III. Regrettably, the game sold in disappointing numbers – around 12,000 units. With these numbers in mind, Sierra took a long second look at the upcoming Mac version of Half-Life – a terrific 3D shooter that Logicware was porting – and although the port was on schedule and Logicware had met its assigned goals, Sierra pulled the plug. Two months later Sierra announced the cancellation of yet another title slated for the Mac – Pharaoh, a Caesar III-like game.

And you want to trust a company like this to provide you with the next generation of Mac games? I think not.

The moral   While this story lacks a happy ending (at least so far), just imagine how dismal it would be if a similar scenario played out at Activision, Eidos, Electronic Arts, GT Interactive, id, Interplay, and LucasArts. This could very well occur without the safety net of third-party publishing houses that assume the risk of producing Mac versions of the latest hot computer games. We're talking classic double whammy – no PC publishers willing to produce Mac games and no third-party Mac publishers to take up the slack.

Look, I'm as attracted to the idea of simultaneous release as the next rabid Mac gamer is, but I believe we have to be careful what we wish for. Otherwise our dream of parity with PC players could rapidly turn into a nightmare. **CB**   **MW**

Time XTension

Use XTensions to add functionality to QuarkXPress. By David Blatner

Every user of QuarkXPress should own, and put to work, at least one XTension beyond those that come with the program. I haven't got a particular one in mind – it's up to you to choose from the more than 350 commercial, freeware, and shareware XTensions available. But, if you're not using any, you're losing time.

XTensions add functionality to QuarkXPress. Some are free and do relatively simple tasks – such as Markzware's BoldSpot XT (**www.markzware.com**), which makes spot colours' names appear in boldface in the Colours palette. Others, for a small cost, perform tasks almost any XPress user will find valuable. The Redefine Style Sheet XTension, from Xpedient ($50 after 25 free uses, download from **www.xpedient.com**), updates style sheets by changing formatting on the page instead of in a dialogue box.

Then there are the expensive XTensions that cost hundreds, or thousands of pounds. These ultra-powerful tools, such as AutoPage, from KyTek (**www.kytek.com**; £945 ex VAT, XChange UK, 020 7588 5588), are for vertical markets, such as book or newspaper publishing and have capabilities that Quark couldn't possibly include in the base program – and that only a select group of people will ever need.

Package deals

One of the easiest ways to get hold of XTensions is to buy a tool kit – either QX-Tools, from Extensis (**www.extensis.com**; £100 ex VAT; Computers Unlimited, 020 8358 5857), or XPert Tools Volume 1 or Volume 2, from a lowly apprentice production (**www.alap.com**; £69 ex VAT; XChange UK). These packages bundle some of the most commonly requested features, such as a Layers palette, better document-navigation tools, and precision-scaling of grouped objects.

Which package should you buy? While both provide similar tools, each offers distinct features. For instance, QX-Tools includes QX-VectorEdit, which imports EPS and PDF files as editable QuarkXPress objects. Need to import a Microsoft Excel chart into XPress? Write it to disk as a PostScript file and open it
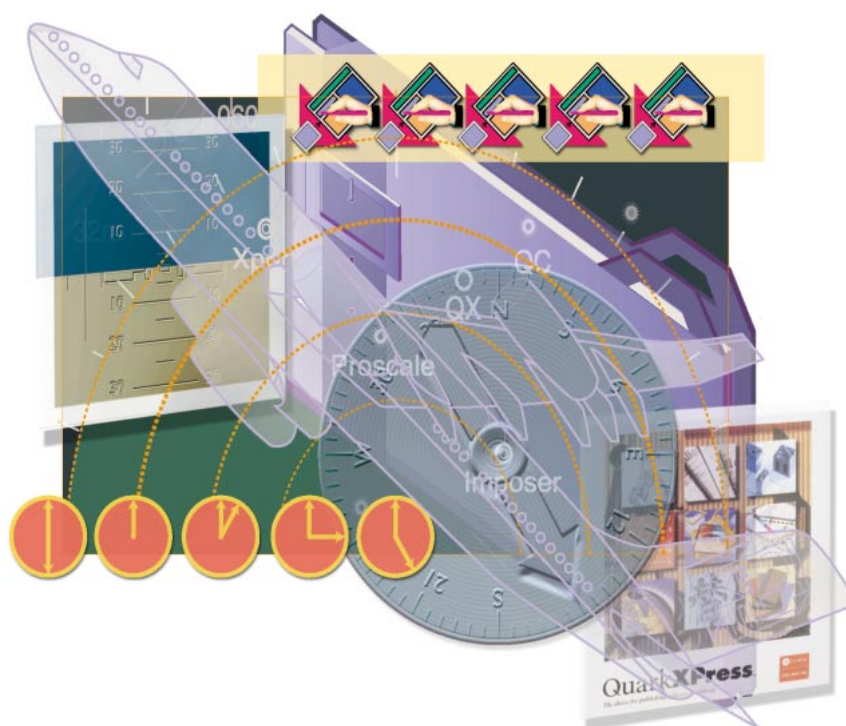
with this XTension – the chart's colours and strokes can be edited in XPress. XPert Tools Volume 2, on the other hand, includes XPert TextLink, which links and unlinks text boxes in ways that would otherwise be impossible. Comparison-shop to find out which package contains the tools you need most.
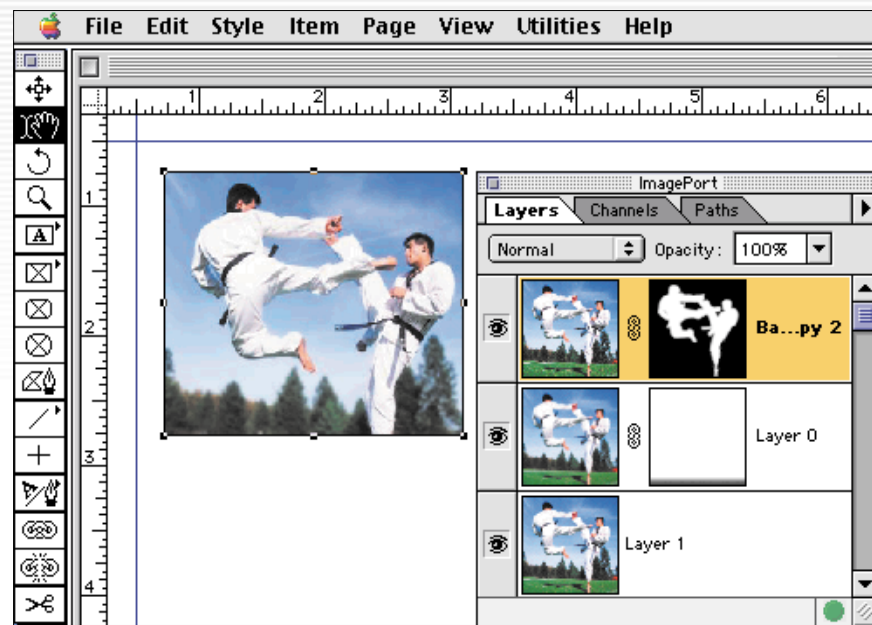
Pre-preflight

We should all use Gluon's QC 4 (**www.gluon.com**; £129 ex VAT, XChange UK) to prepare documents – even before preflight. QC – which stands for "quality control" – checks a QuarkXPress document against a user-defined list of quality concerns.

QC can search for common problems, such as incorrectly applied colours, accidental horizontal scaling or tracking, empty boxes, RGB images – instead of CMYK – and even

Time XTension continued

Refined control
ImagePort's palette bears a remarkable resemblance to Adobe Photoshop, and like Photoshop, ImagePort can turn layers and channels on and off. But, ImagePort also controls clipping paths and run-arounds in Xpress, and even merges spot-colour channels.

and also bundles ProScale with several other XTensions in the ProPack (£169 ex VAT, XChange UK). If you only occasionally scale objects, this tool may outstrip your needs, but any busy production department will want a copy of ProScale on hand.

So many XTensions, so little time to explore them all – here are a few more worth a look.

Imposer 2.0 from lowly apprentice is a good XTension for imposition – printer spreads, for instance. Printers, will want one of the powerful £1,250-plus programs that do this, but for designers and small shops, at only £135 ex VAT (XChange UK), Imposer pays for itself quickly.

Quark has announced that XPress 5 will include a basic table editor, but if you need one now – or if you create complex tables – try one of the table-making XTensions from Tableworks (**www.tableworks.com**). Both Tableworks Plus (£179 ex VAT; XChange UK) and Table2000 (£169 ex VAT) are great tools.

Everyone has to build a drop-shadow in XPress sooner or later. If you only have to do one or two, Photoshop is the answer. If it's a common job, then check out ShadowCaster, from lowly apprentice (£79 ex VAT, XChange UK), or QX-Effects, from Extensis. Both offer good tools, though each uses slightly different methods to create shadows.

Em Software's Xdata (**www.emsoftware.com**; £249 ex VAT; XChange UK) is the tool for publishing database and spreadsheet data. If you're formatting this kind of data manually, slap yourself and go look for this XTension.

Granted, if you're paid by the hour, expanding QuarkXPress's feature set with these XTensions might just make you too efficient – of course, the boss need never know. But anyone who depends on maximizing productivity would be foolish not to take advantage of these tools, which are easy to get hold of (see "Where to find XTensions") and are mostly easy to use as well. Best of all, most XTensions come from smaller companies that can offer better personal service, customization, and bug-fixes than larger companies can. So go ahead – XTend yourself.

David Blatner is the author of *The QuarkXPress 4 Book* **(Peachpit Press, 1998) and co-author of** *Real World Photoshop 5* **(Peachpit Press, 1999).**

boxes a few points off their alignment. But, QC goes beyond that, searching for problems such as too much ink coverage, rules that are the wrong thickness, and lots more. QC can even fix these problems. And, when the document is ready to be sent to a repro house, QC collects your documents, fonts, and graphics into neatly organized folders and re-links pictures to their new locations. The decision to buy this XTension is a no-brainer.

Importing native Adobe Photoshop files into QuarkXPress isn't a new trick, but ImagePort, from lowly apprentice (£79 ex VAT; XChange UK), does it so elegantly you may not remember whether you're working in Photoshop or XPress. ImagePort can read most layered Photoshop files, and can hide or show each layer as needed.

Similarly, ImagePort's Channels palette manipulates the various channels in a document. This is invaluable when using spot-colour channels, as channels can be merged, their colours changed, or even turned off. If your workflow would benefit from the ability to get Photoshop files directly into XPress, this XTension is perfect.

Easy scaling
While both XTension bundles I mentioned earlier have scaling tools in them, nothing compares to Gluon's ProScale 5 (£89 ex VAT; XChange UK). Want to scale a multi-page document from letter size to A4 or tabloid size? ProScale does it easily. Need to scale all a pages horizontal lines by 10 per cent? Or fit all its text boxes into a four-pica column? With ProScale, it's no problem.

ProScale is the most powerful scaling tool out there, but it's more expensive than the alternatives. Gluon offers competitive upgrades to owners of other vendors' scaling XTensions,

See Macworld's cover CD for a demo of QuarkXPress 4.1

Where to find XTensions
So where do you find these tools? Most developers offer information about their XTensions on the Web, and some even sell directly from their sites. But, the easiest way to get information about almost all XTensions is from XChange UK (**www.xchangeuk.com**, 020 7588 5588). You can also download demos of XTensions and find many freeware and shareware XTensions at **www.xpressobar.com**.

New XTensions in QuarkXPress 4.1 and 4.1.1

QuarkXPress 4.1 (£1,095 ex VAT; or free for an upgrade from XPress 4.0 to 4.1; 01483 445 566, **www.quark.com**) is primarily a bug-fix upgrade, but it comes with a number of new XTensions. Some of these might be used only occasionally – like Super Step And Repeat, which rotates, scales, and tints an object as it's duplicated – others, however, are more useful. The update to 4.1.1 fixes a bug that made XPress slow under OS 8.6 and 9; it also refines German hyphenation, and comes with a JPEG Import XTension.

Here are some of my favourites XTensions.

HTML filters QuarkXPress now exports text stories in HTML format. You still need a separate XTension, like BeyondPress, from Extensis (£200; Computers Unlimited), to convert pictures and page geometry, but this free tool is great when trying to get a story into Macromedia Dreamweaver or Adobe GoLive. Even better, HTML files can be imported into an XPress box.

PDF filters The PDF Import and Export XTensions should finally silence complaints that QuarkXPress doesn't support Adobe Acrobat PDF files, but there's a caveat. While this tool makes it easy to export PDF files – although Acrobat Distiller is still needed – the PDF Import filter can't yet read files from Acrobat 4 or Adobe InDesign. Quark has already promised an update to address this shortcoming.

QuarkLink The QuarkLink XTension uses the Internet to shorten the distance between you and Quark corporate headquarters. A new Headlines palette can display daily or weekly news from Macworld Online – and a weekly QuarkXPress tip from yours truly. Sending email to customer service or technical support is only a menu item away, as is a direct link to Quark's online knowledge base.

Enhance Preview XT-SE One of the most important XTensions included with version 4.1 is Enhance Preview XT-SE, which improves the display of TIFF and JPEG images. This "special edition" of a commercial product from Koyosha Graphics works on one image at a time, so consider buying the full version, Enhance Preview XT (£69 ex VAT; www.koyosha.com; XChange UK).

An added bonus The XPress 4.1 upgrade disk – shipped free to all registered users of version 4 – contains a number of free XTensions from third-party developers. For instance, Badia FullMeasure lengthens the Measurements palette so more paragraph formatting can be quickly controlled. David's Place 1.5 puts a Place command in the File menu so there's no need to draw a box before text or graphics are imported. It can also drag-&-drop images and text into XPress from a desktop. FontWizard can embed fonts into EPS documents.

All of these XTensions perform tasks I wish QuarkXPress could do by itself. Until that day comes, though, rely on XTensions to pull off these tricks. **MW**

A better view
XT-SE can dramatically improve the screen previews of TIFF and JPEG images in QuarkXPress, though the free version works on only one image at a time. That's plenty for adjusting clipping paths or positioning type or lines over an image, which has always been difficult in XPress.
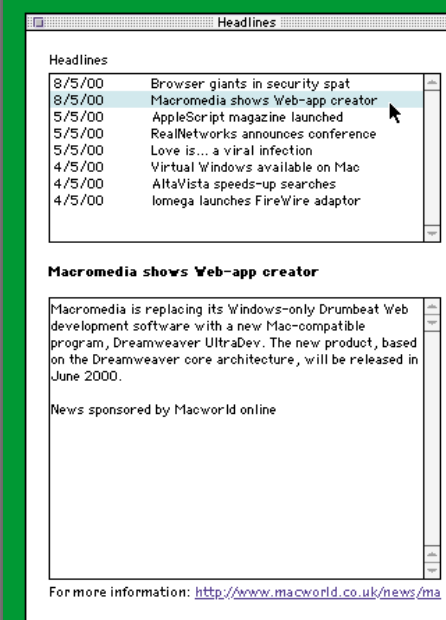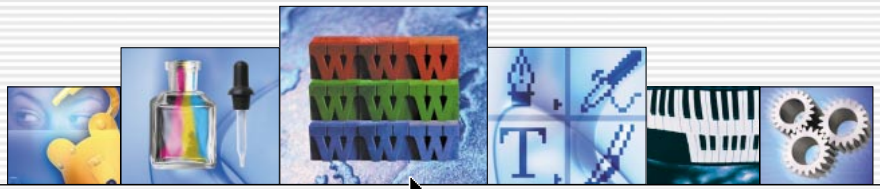

News direct
With QuarkLink and an Internet connection, you can view the Headlines palette, which offers daily tips and news headlines from Macworld Online – this is partially customizable. So now you can get the latest and best Mac news straight from QuarkXPress – click on the link to www.macworld.co.uk for the headline's full story

Tween-age kicks

Take Web sites to the next level by adding animation. **By Dave McFarland**

After the initial buzz of creating your first Web site wore off, you realized that the picture of a cat on the sofa didn't make a very compelling presentation. After trying the conventional tricks for spicing up a Web page – background images, coloured text, and of course, animated GIFs – you may be ready to give visitors a more engaging experience.

To really bring a Web site to life, nothing beats motion – such as graphics flying across the screen, scrolling text, and images fading in and out.

Though animating an otherwise lifeless Web page may seem daunting, Macromedia's Flash 4 can make the job easier, with tools that do the most tedious and time-consuming parts automatically.

Macromedia built Flash with the Web in mind – it generates small file sizes that perform well in almost all browsers. The Flash format – designated SWF – offers several advantages over other animated-graphics file formats. For starters, Flash is vector-based. Unlike bitmapped images such as GIFs and JPEGs – that must store information for every single pixel of a graphic – vectors use a mathematical formula to describe the shape, colour, and position of an image. This takes up much less room – and, smaller file sizes mean even complex animations will download quickly.

Flash files require that visitors to a site have the free Flash Player installed before they can view a Flash movie. But once they have it, you can rest assured that everyone is seeing the same thing. Unlike other Web animation tools, such as Dynamic HTML – which don't work with early browsers, and can act inconsistently in later browsers – movies created in Flash look and behave the same in every browser and platform that supports the plug-in.

In the early days of animation, illustrators had to draw tens of thousands of frames by hand to produce a feature-length animated movie – an excruciatingly tedious process. Senior artists didn't bother with this grunt work. They drew only the crucial frames needed to portray the action – for instance, a picture of

an archer before he draws his bow and a picture after he has pulled the arrow back. Junior illustrators drew all the intermediate frames needed to simulate the motion. This process became known as tweening.

Thankfully, an army of junior animators is no longer needed to take care of the tiresome drawing details. Flash has its own set of tweening tools that make creating animations for the Web a cinch. Although animations can be drawn frame-by-frame in Flash, not only is it time-consuming and monotonous, but it also significantly increases the file size of your final animation. This is because Flash must store much more information. With tweening, you need to define only a beginning frame and an ending frame for an animation, and Flash creates all the frames in between.

Flash offers two kinds of tweening – motion tweening and shape tweening. As its name suggests, motion tweening animates an object's movement – a baseball thrown across
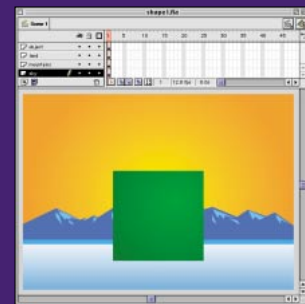
JOHN RITTER

Image alchemy

You might not have the power to turn a lump of coal into the Solid Gold Dancers, but with its handy shape-tweening tools, Flash 4 does. However, there are limitations – shape tweening doesn't work with every type of image. Flash's shape tweening supports only vector shapes, such as objects drawn with Flash's drawing tools, or other vector-based illustration programs.

In this project, I used Flash's shape-tweening tools to transform a square into a star. I started with the opening image of a square against a distant mountain range. To control the elements independently, I placed each piece – sky, ground, and square – on a separate layer (represented by a horizontal bar in the timeline). The final version of this Flash movie is available on Macworld's Web site at www.macworld.co.uk/create/.

1 First, decide how long to make the movie, by adding frames to the timeline. Let's say you want a fast animation, lasting only a second or so. Since the Flash file is set to run at 12 frames per second – the default setting – the movie will require at least 12 frames. To add them, click on the timeline at frame 12 of the top layer and drag downward until you've selected frame 12 in all the layers. From the Insert menu, select Frame. This inserts frames from the beginning of the movie to the specified point.

2 Clicking on any of the newly inserted frames shows a duplicate of the original image. To change this image, a keyframe must be added. Keyframes – indicated by a black dot in the timeline – are the only kind of frame that can be altered – Flash controls the other frames. To add a keyframe to the end of the movie, click on frame 12 of the square layer and select Blank Keyframe from the Insert menu.
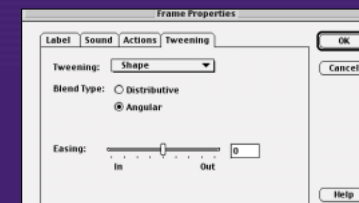
A blank keyframe removes the image that previously appeared on the layer – in this case, the square. If a change requires altering the original image – such as giving a monster a second head – you may not want to start with a blank keyframe. In that case, choose Keyframe from the Insert menu, and you'll have an editable copy of the previous image.

But since this project calls for an entirely new drawing – the star – a blank keyframe is the best choice. Then, just use the pencil tool to draw a simple star in the blank keyframe, and you've got the two shapes in place and ready for tweening.
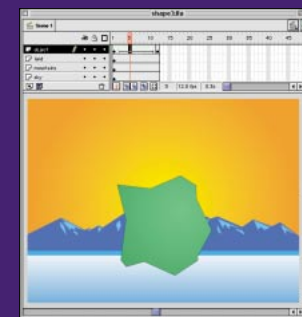
3 To begin the metamorphosis, open the Frame Properties dialogue box by double-clicking on the first frame of the square's layer. Select the Tweening tab, and choose Shape from the pull-down menu to turn on shape tweening. Below this menu is the Blend Type option. This setting adjusts how Flash draws angles, corners, and lines in the tweened intermediate frames. If you're tweening shapes that have smooth curves, the Distributive option will preserve the curves of objects.

Since this project involves tweening two shapes with sharp angles and no curves, you should choose the Angular option, as it preserves corners and straight lines in intermediate frames. The Easing slider adjusts the speed of the animation's beginning and end – if you want the tween to begin slowly and end at a faster pace, set the slider to In. For the reverse effect, move the slider toward Out.

4 The tweened layer in the timeline now displays a solid line between the two keyframes, and it's green, indicating that the shape-tween is active. The animation can be played to test how successful the tween was –

just press the return key. Individual frames can also be selected in the timeline to compare each step of the transformation. Unfortunately, this shows that the transformation is not very smooth – the square looks like a crumpled piece of paper as it turns into the star.

5 You can help Flash maintain a smooth transition by using shape hints. A shape hint tells Flash how to transform one shape into another, by mapping individual points on the starting shape to points on the ending shape.

With the square in the first keyframe selected, open the Modify menu and select Add Shape Hint from the Transform menu. A red circle, containing the letter A, appears in the centre of the square. Flash labels hints alphabetically. Move the hint to the upper left corner of the square. When the first hint is in place, return to the last keyframe and move the corresponding red-circle hint to the top left point of the star. The red circle turns green, indicating that the shape hint is complete. Repeat this process for the other three corners of the square. Shape hints work best placed in counter-clockwise order, with the first hint beginning in the top left corner of the shape. After you've placed four hints on the square and the star, the animation tweens much more gracefully.

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the screen, for example. But motion tweening does much more than that. It can change other attributes of a drawing, including size, rotation, skew, colour, and opacity – even when the object doesn't move. For instance, motion tweening can be used to make a white cat gradually turn black. For an introduction to motion tweening, see the sidebar "On the move" (page 114).

Shape tweening, on the other hand, animates the transformation of one object into another – a cat that morphs into a pumpkin, for example. But shape tweening can also incorporate motion. When transforming a cat at the bottom left of the screen into a pumpkin at the top right, use the shape-tweening tool. For more on shape tweening, see t"Image alchemy" (above). To keep these two types of tweens straight, just focus on your primary goal. If changes need to be animated in one drawing, use motion tweening. If one drawing is to be changed into another, use shape tweening.

Before creating online animations, you have to be familiar with Flash's terminology and tools. The main work area is called the stage.

Flash's drawing tools create graphics and text on the stage, or graphics can be imported from other vector-based programs – such as Macromedia FreeHand and Adobe Illustrator. Bitmapped-image files, such as PICTs and JPEGs, can also be imported into a Flash movie, but this sacrifices the small file sizes of Flash's native vector-based drawings.

Above the stage is the timeline, which displays the layers and frames of the Flash movie. Layers appear on the left side of the timeline and – like layers in programs such as Adobe Photoshop and FreeHand – they organize your images. In Flash, it's especially important to keep objects on separate layers so they can be moved independently in the animation. Frames are what make a movie – a single frame is just one image, but a series of frames is the sequence of images that make an animation. The timeline lays out frames horizontally from left to right. When a frame is clicked on in the timeline, the stage at a particular moment in the movie is shown.

Flash can control how many frames per second (fps) a movie plays. The higher the fps rate, the smoother the animation. By default,

Flash sets the frame rate for its movies to 12fps – a good setting for the Web, that balances smooth animation with reliable playback.

Unlocking keyframes While frames make up your movie, images can only be adjusted in a special kind of frame – the keyframe. Keyframes can control any kind of change in an animation, including an object's movement, shape, size, and colour. A simple animation, such as a ball rolling across the floor, might require only two keyframes – one for the beginning and one for the end. But, to make the ball bounce back and forth across the screen while changing colours might require a dozen or more keyframes controlling changes in direction, speed, and shade.

Size-slimming symbols Flash is able to maintain its fast downloads, despite complex motion tweenings, with the use of symbols – single objects, such as text or drawings, used multiple times in the same movie. Symbols don't add to the file size. When motion-tweening an object, Flash converts the image into a symbol and places it in the movie's library – a convenient storage space for repeated elements. When Flash needs to

use the graphic again, it inserts an instance of the symbol.

Adding an instance to a movie doesn't change the movie's file size, because you're not adding the actual information for the drawing – all the lines, curves, and colours that make it up – you're just adding a pointer to that information. For example, by turning a 2K bitmapped image of a star into a symbol, I could place a thousand instances of that star onto the dark night-time background of my movie without increasing the file size.

Tweening is the backbone of Macromedia Flash's animation power. Once the basics have been mastered, complex animations that infuse life into a flat Web site can be developed quickly. Try combining changes in a drawing's size, rotation, colour, and transparency in one tween. Or, tween drawings on separate layers to animate many elements on the screen simultaneously. Tweening is as easy as letting Flash join the dots. **MW**

Dave McFarland is a partner in SkyMind Development, a Web development company.
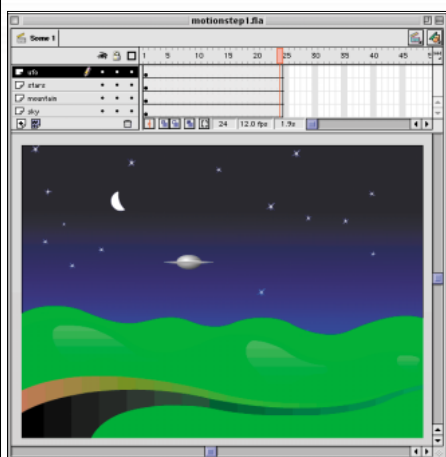
On the move

Animation can be monotonous work. Fortunately, Flash 4's motion-tweening abilities will do most of the work for you. With motion tweening, it's easy to animate changes in an object's position on the screen, and its rotation, size, and even colour and opacity. You need to define only the starting and ending points of your animation, then Flash will fill in the rest for you – saving hours of work.

In the following example, I wanted a spaceship to zoom into the scene, turning and shrinking as it flies off into the distance. As with the shape-tweening project (see "Image alchemy" page 110), I started by placing all of the illustration's elements – hills, sky, stars, and UFO – in their own layers for independent animation. The final version of this Flash movie is available on Macworld's Web site at **www.macworld.co.uk /create/**.

1 To send the UFO flying into action, you have to add some frames to the movie. To produce a two-second animation at 12fps, 24 frames are needed. (See step 1 in "Animation alchemy" for instructions on adding frames.) Once the frames have been inserted, you can play the movie by pressing the return key. But since all 24 frames currently show the same image, nothing happens.

2 To move the UFO across the stage, you first need to indicate where the motion starts. In the timeline, select the first frame of the UFO layer and choose Create Motion Tween from the Insert menu. In the timeline, all the frames on that layer turn blue, and a dashed line appears. The blue indicates that those frames are part of a motion tween, and the dashed line means the tween is still incomplete –only the starting position of the UFO is defined.
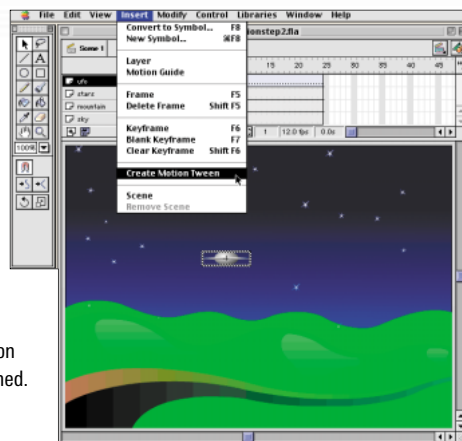

3 Next, define where the animation should end. To make the animation span the entire two-second movie, you must insert a keyframe in the final frame. (For more on keyframes, see step 2 in "Animation alchemy.") Click on frame 24 of the UFO layer and select Keyframe from the Insert menu. On the timeline, a solid dot appears in the frame, indicating that it's a keyframe. You'll also notice that the dashed line turns solid with an arrow at the end, telling you that the motion tween is complete.

At this point, if you preview the movie, you'll find that the UFO hasn't actually gone anywhere. To make it take flight, you have to alter the UFO's position in the second keyframe. Simply grab the UFO in the last frame and drag it to the new position. Flash redraws all of the in-between frames. Now when you play the movie, the UFO streaks diagonally across the screen.
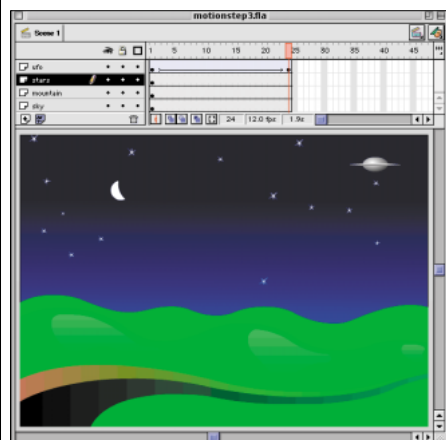
4 Although the UFO now moves in the right direction, the animation still looks very flat. To spice things up, you can make the UFO seem to zoom past the viewer and recede into the distance. In a motion tween, you're not limited to moving an object across the screen. You can tween size, rotation, and colour as well.

For this effect, you need to open the first frame in the UFO layer. The UFO graphic is automatically selected on the stage. First drag the UFO to the lower left edge of the movie, just outside the stage. Increase the UFO's size by selecting the Scale Modifier tool from the drawing tool bar. Eight square handles appear around the UFO's selection box – moving any of the four corner points resizes the UFO proportionally. To make the UFO rotate slightly as it travels across the night sky, select the Rotate Modifier tool. Drag one of the eight round handles that appear around the selection, and then rotate the UFO to about a 45-degree angle. You can continue fine-tuning the animation by adjusting the UFO's flight pattern, size, and speed. Simply insert new keyframes at any point in the animation to signal a change.
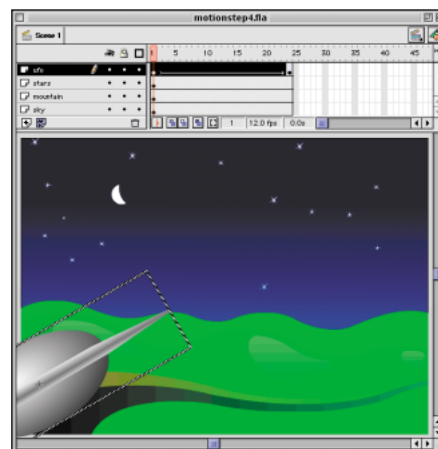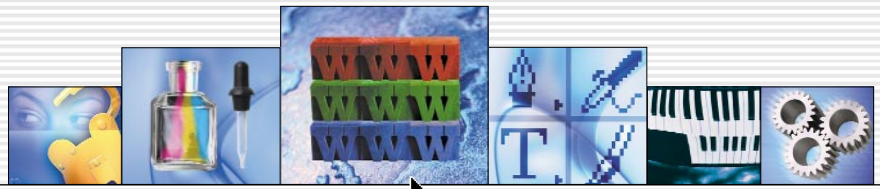
Animation in a Flash

Add Flash and substance to Web animations. By Frith Breitzer

One problem with Macromedia Flash animations, is they're often all flash and little substance. With such power – animation, video, still images, and sound – under your control in one program, it's tempting to add so much to your Web design that it ends up obscuring the message. Artist Hillman Curtis, former art director at Macromedia, does just the opposite. His goal is to communicate simply, using motion graphics.

He begins each piece by working with his clients to divine the project's emotional focus, which he then tries to present to his audience in a resonant way that reinforces his client's brand. Often, he employs simple themes represented by minimal design elements. Although he uses video and animation effects, Curtis is careful not to let meaningless eye candy intrude on his message.

Stay true

"You have an emotional epicentre," he says of his work. "You can't convolute it. You can have things that add to it, but I want the audience to focus on one message."

He applied that idea when he created this navigation scheme for his own Web site (**www.hillmancurtis.com**). He chose images, such as film-leader effects (see Step 2), that convey the idea of motion. Because this was for a global audience, he used the familiar symbol of an opening eye to encourage visitors to look inside.

He created this piece when, as he puts it, "it was still a 28.8-Kbps modem world". Even now, he keeps his files small so they'll download quickly over slow-modem connections.

Curtis used Macromedia FreeHand for his preliminary layout. In Adobe Premiere, he edited his movie clips, which he then exported as a series of sequential bitmaps. After editing the bitmaps in Photoshop, he used Flash to create buttons with interactive rollover effects.
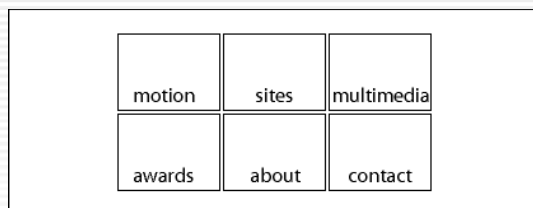
Curtis used three 350MHz Mac G3s with 256MB of RAM, along with two Dell Precision 610 workstations and a Sony GX9 laptop with FireWire. He captured images with a Sony TRV9 DV camera. **MW**
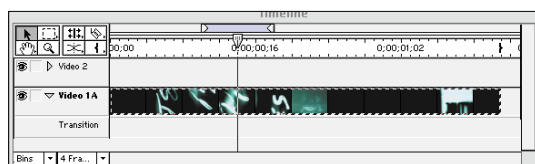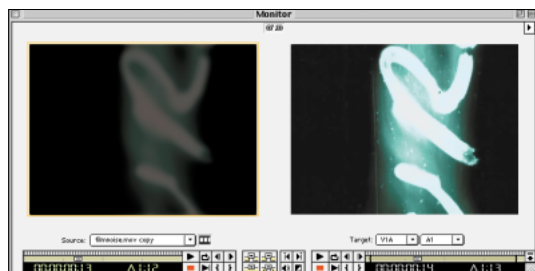
DAVID ANGEL

How it's done

1 Curtis began with a preliminary layout in FreeHand, which gave him precise control over text alignment. He imported the file, which had the same dimensions he wanted in his final document, directly into Flash.


2 In Premiere, Curtis edited clips of old film-leader effects and his own video of a blinking eye. For projects such as this, that he's aiming at a wide audience, he sets the frame rate to 12 frames per second (fps) or slower. He then tests the results on a slow computer, with a 28.8-Kbps modem.
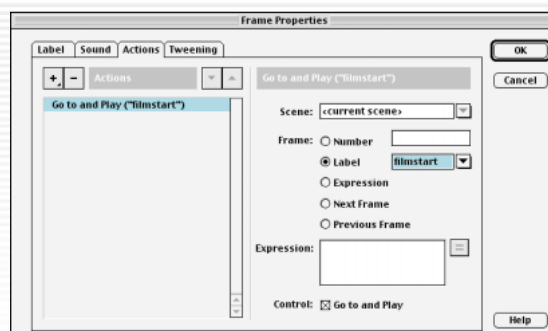
3 Curtis exported the two resulting videos as series of sequential bitmaps, cleaned them up in Photoshop, and then imported them into Flash as movie clips. He used Flash's Edit Multiple Frames feature to align the bitmaps, and then created layers for labels and actions. To create a looping effect, he used the Go To And Play action – shown here – to tell Flash to return to the beginning of a movie clip once it reached the end. Because the movies are made up of short, repeating sections, they will load faster on users' machines.
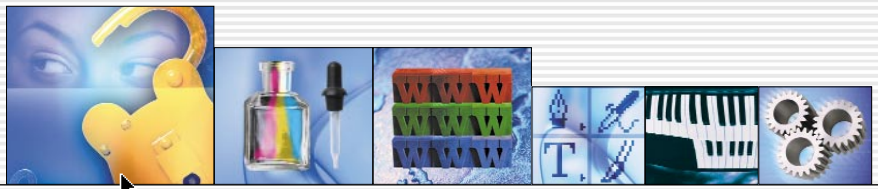

4 Finally he defined the Up, Over, Down, and Hit states of the Flash buttons, so that after the buttons load in a user's browser, the film-leader clips will play. When a user mouses over a button, Curtis's video of the blinking eye will appear. To make each button act as a link to new page, Curtis added On Release mouse events. Curtis placed the text in the button layer so that the name of each section would be visible at all times.
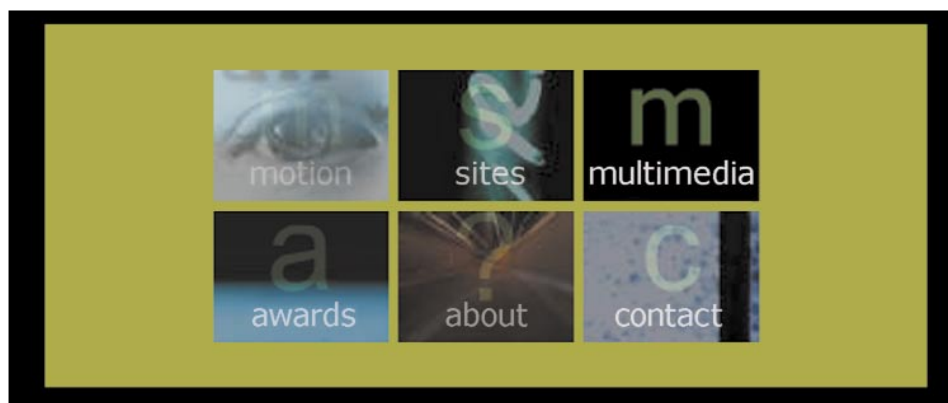
Eye-opening communication
The navigation scheme Curtis designed for his Web site reflects the site's purpose – promoting the use of motion graphics to communicate ideas. Each of these buttons contains a video clip that plays continuously. When a user mouses over a button, a clip of an opening eye plays.

My name is...

Get the most out of Mac OS 9's Multiple User features. By Joseph Schorr

The Macintosh has always been a computer with a personality – but ever since the arrival of Mac OS 9, it's had 39 more. Personalities, that is. With OS 9's Multiple Users feature, as many as 40 different user accounts can be set up on a Mac. Though the various users share one machine, they have their own access rights and can – to a degree – customize a system with their own preferences and style (see the sidebar "Multiple User mysteries"). Here's a quick overview of the Multiple Users feature and power-user tips.

The basics

As the owner of a Mac, you can configure it for each user through the Multiple Users control panel. Each user that's designated can be assigned one of three working environments. The Panels environment – primarily geared toward children – is a simple, button-driven interface similar to Apple's At Ease. Only the items designated by the owner appear in the Panels windows. Limited users can see all the items visible in the Finder, but can open and use only those to which they have been given access. The Normal user environment provides full Mac access, but it hides the contents of document folders owned by other user accounts.

Expert tips

It's easy to get started with Multiple Users, but here are some tips that will help you use this control panel like a pro.

There's no need to shut down or restart to switch between user accounts – just use the Logout command in the Finder's Special menu (⌘-Q). This is also the easiest way to tell if Multiple User mode is enabled – just check to see if there's a Logout command in the Finder's Special menu.

Creating a custom welcome message for a Mac used to require either a ResEdit hack, or the creation of a custom start-up screen. With Multiple User mode, your message can now be created, that will appear on the welcome screen that prompts users to log-on. This short message – about 60 characters – can be more than a greeting. Use this space

Facelift
To turn just part of a picture into a custom icon, drag a square-shaped selection from an image opened in SimpleText, into the User Picture box in the Multiple Users control panel.

to include instructions for logging on, or to provide a couple of password hints (see the screenshot "Need a hint?").

Profile

The easiest way to find out who is logged on to a Mac is to launch the Apple System Profiler from the Apple menu. Near the top of the System Profile report, the version of Multiple Users software that's running is shown, along with the current environment and the name of the user who is logged in.

You can have users log-in by speaking a password, but only if the Allow Alternate Password option in the Multiple Users control

Login | CD/DVD-ROM Access | Other

Welcome Message:

Password hint: Your father's
favorite soup

Log-in Settings:

☑ Allow Alternate Password Voice Verification ▼
☑ Users may speak their names

☐ If the user is idle for ____ minutes: ○ Log out user
                               ○ Lock the screen

[Cancel] [Save]

Need a hint?

Customized welcome messages can be created for the Multiple Users Login screen. In the Multiple Users control panel, click on the Options button to add a message, which can include password hints or other instructions.

panel is activated – click on the Options button to find it. Once the alternate-passwords feature is turned on, you'll have to open the Alternate Password panel when editing each user's profile and have each user record a password voiceprint. Voiceprint recognition can be pretty flaky, though. As a rule, longer voiceprints – five or more words – tend to work better than shorter ones. (For tips on Voiceprint, see "Voice-protect your Mac," Secrets, June 2000.)

Adding a mug shot

You may already know that Multiple Users can assign a different picture icon to each user account on a Mac. These icons appear in the Login window, next to each account name. Custom icons can also be added for each user – the face of the user or some other favourite image – but there are a few tricks to doing this easily, and making the icons look good.

A picture can be drag-&-dropped into the User Picture box to install a custom picture from the Finder, as long as it's the right type of file – a picture-clipping file or an image from the Scrapbook.

To turn just part of an image into a custom user picture, open the image in SimpleText, make a selection by dragging across a portion of the image, and then drag only the selection directly into the User Picture box in the Multiple Users window (see "Facelift").

JPEG or GIF images can be drag-&-dropped from a Web browser. Make sure the pictures maintain the same aspect ratio – 48-x-48 pixels – as the User Picture icons. In other words, make sure they're square, not rectangular.

Don't worry if the selected picture is a little too big – the Mac automatically scales down larger pictures. But non-square images will end up with clipped edges or ugly white space on the sides. And, make sure that the pictures are at least 48-x-48 pixels – smaller pictures will automatically be scaled up in size, resulting in fuzzy or distorted images.

The no-touch zone

If the users of your Mac ever have to make changes in network configuration, you may not want to use the Multiple Users feature. The control panels that handle network settings are inaccessible to anyone other than the owner. The off-limits items include the Multiple Users, AppleTalk, TCP/IP, Remote Access, and File Sharing control panels.

This is because Apple assumes that even though multiple users may be on one Mac, they'll all need to access the same network, use the same TCP/IP protocol, dial the same ISP, and so on. Obviously, this isn't necessarily true. Even if a user has Normal privileges – essentially giving that user full access to the files on that machine – and that user has the right to manage other accounts (an option in the Setup Details section of the control panel), that person still cannot manage these network-access features. For that, the owner is required.

If you want to be able to switch settings, such as network configurations and dial-up numbers, without having to manually make changes in control panel after control panel, there is a way to do it – forget about Multiple Users, and use the Location Manager, which can save groups of these settings.   **MW**

Joseph Schorr is a co-author of *Macworld Mac Secrets*, **(IDG Books Worldwide, 1998).**

Multiple User mysteries

With Mac OS 9's Multiple Users feature, much of the appearance and behaviour of the whole Mac OS can be tailored to the preferences of each user. The catch is that some Finder prefere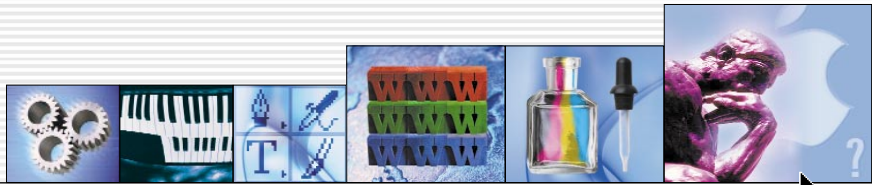nces, such as spring-loaded folders, can be varied from user to user, whereas others – the colours of Labels, for example – are global settings that all users must share. Here's a quick guide to which features you can tailor to each user and which have to be shared by all – like it or not.

Global features (shared by all users)

Label names and colours	TCP/IP
Location of icons on desktop and in folders	Remote Access
Scrapbook	File Sharing
AppleTalk	Control Strip configuration

Customizable features (can be used to each user)

Spring-loaded folders	Stickies
Grid spacing	Favorites
Simple Finder option	Control Strip visibility
View options	Start-up and shutdown items
Appearance control-panel features	Launcher items
Sound levels	

• Print Web pages • Remove unwanted ads • Archive email

Q&A/tips

Handy Mac tips and readers' questions answered. **By Lon Poole**

Quick online printing

TIP Some Web pages take ages to print from Netscape Communicator 4.7 and earlier. And they may not print at all if you surf to another page before the dialogue box that reports the progress of printing or print spooling has appeared. Gabriel Dorado found a way to print much more quickly. Immediately after clicking the Print button in the Print dialogue box, take Netscape offline, by clicking the small-plug icon in the lower left corner of the browser window. On some Web sites, Netscape may display an alert complaining about being offline, but just click OK and ignore it. After printing or print spooling finishes, click the plug icon to go back online.

Archiving email

Q How I can save email messages from Microsoft Outlook Express 5.0 before deleting them from folders such as Sent and Read.
Sergio Avendano

A The Macintosh E-mail Resource Page (**www.macemail.com/archive/pages/ archive_oe.shtml**) offers several utilities and AppleScripts that archive email from Outlook Express and other programs. For example, Outlook Email Archive ($10 shareware by Stefano Cappello) saves each archived message as a text file in its own folder, and organizes message folders by time and date. You can index and search the archived messages, using Sherlock, and read them one at a time, using SimpleText.

This approach to archiving is simple and works well if you're dealing with a relatively small number of messages. If you archive hundreds or thousands of messages, however, you'll find that under Mac OS 9 and earlier, files and folders make an inefficient database system, even with Sherlock's assistance.

Another solution, the free eMessage Keeper, by John Carlsen, archives messages from Outlook Express, Claris Emailer, and Eudora to an elaborate HyperCard stack. Once you are comfortable with the crowded interface, you can browse, search, and sort

Hiding ads in Sherlock 2

TIP The workarounds I've tried for hiding banner ads in Sherlock don't work with Mac OS 9's Sherlock 2. So here's what I recommend. Expand the size of the Sherlock 2 window to be so tall that the ad pane is off the bottom of the screen. You can do this because Sherlock 2 is one of the applications that lets you slide its window under the menu bar. Then, enlarge the window by dragging its lower right corner down, and finally slide the window down. If you size the window just right, Sherlock 2 uses the entire screen height, but the ads are hidden below the bottom of the screen.
Patrick McClure

You can make this manoeuver quickly and precisely with the AppleScript applet shown right.

Banish the banners

These AppleScript commands enlarge the Sherlock 2 window sufficiently to move the bottom pane, which displays banner ads during
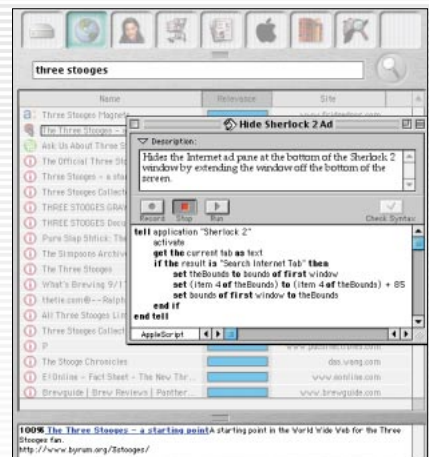
an Internet search, out of view. Enter these commands in a Script Editor window, and when you save them, set the Format option to Classic Applet and turn on the Never Show Startup Screen option. Put the saved applet in the Apple menu, or another handy place.

archived messages efficiently. At the time of writing, this program didn't handle empty folders gracefully. You can also archive messages from Outlook Express or Claris Emailer to a free FileMaker Pro database, Emailer Archive, created by Dan Crevier and David Cortright. You do this with a free set of AppleScripts, Emailer Archive 3.1b2 Scripts, by Dan Crevier. However, this version of the scripts was designed for Outlook Express 4, and does not archive some of the information that's available in Outlook Express 5.0, such as the date and time received.

None of these solutions keeps track of all the information your email program stores for each message. They all record the subject, date, from, to, and content, and some report the status — such as read or untouched — message history, and flag. None of them records the message colour you can assign in Outlook Express. The HyperCard stack and

Compress email files • Smoother PageMaker diagnostics

FileMaker Pro solutions keep track of each message's folder, but not the folder's place in the hierarchy of folders you can set up in the email program. In fact, if you have two or more folders with the same name, but at different locations in your email program, they'll be archived together.

Compacting email files

Q The file in which Outlook Express 5 stores all my messages is huge – over 50MB – probably because I once imported all my messages from another email program and then deleted many unwanted messages. Since new messages are added to this file daily, I end up backing up the entire file repeatedly, which is a waste of space and time. Is there any way to reclaim the unused space in this file? Eudora and Communicator both have this capability.
M Morgan

A You can compact the mail and database files to reclaim space that was occupied by deleted mail. To do this, quit Outlook Express and then hold down the option key while opening it again. A dialogue box asks whether you'd like to compact the database. If you click No, another dialogue box asks whether you'd like to do a complex rebuild of the database. Click Yes, and a progress indicator tracks the process. This process renames your original database and message files by appending .old to their names, and you can put them in the Trash when you're satisfied that the compacted files work OK. People who still use Claris Emailer 2.x can follow the same procedure.

Speak to the deaf

Q Is there any Mac software that will let me talk via a modem with a Telecommunications Device for the Deaf (TDD)?
Jim Bradley

A You may be able to connect by accounting for the differences between your modem and the TDD. TDDs, also known as TTYs (Teletypewriters), send and receive text by using a code known as Baudot, whereas your communications software and modem send and receive text by using a different code, ASCII. Some newer TDDs are able to use ASCII, but they

communicate at a speed of 300bps, which is slower than some of today's modems can handle. If your aunt's TDD can use ASCII, you can try using a communications program set to 300bps, eight bits data, no parity, and one stop bit. In an AppleWorks 5 communications document, for example, you'd adjust the settings in the dialogue box that appears when you choose Settings-Communication.

If these settings don't work, you can experiment with different parity and stop-bit settings. It would probably be more efficient in the long run – and a lot easier – to use to email, instant messages, and chat.

PageMaker's diagnostic recognition

TIP After placing and updating some independent graphics in a 12-page Adobe PageMaker 6.5 document, I found that any attempt to print the document or use the Links command resulted in a "Bad record index" error message. Eventually I learned that this type of error can often be fixed by a diagnostic recomposition, which checks for and repairs some inconsistencies in internal document structure. Before starting this procedure, make sure your computer's sound is turned on, so you can hear the number of beeps that indicate the procedure's results. Now make a copy of the document, open it, and click the pointer tool in the toolbox to make sure nothing on the page is selected. Begin the dynamic recomposition by holding down the shift and option keys while choosing Type-Hyphenation. When the routines are finished, your computer will beep. One beep means that PageMaker found no repairs to make, two beeps mean that PageMaker successfully repaired the problems it found, and three beeps mean that PageMaker could not repair the problems it found or ran out of memory before completing its diagnostics.
Gary A. Horton

During diagnostic recomposition, PageMaker fixes minor errors in style sheets, stories, the index, and links and then recomputes line breaks throughout the file. For details, see article 311417 in Adobe's Support Database (*www.adobe.com/support/tech docs/42f2.htm*). For minor problems that can occur during diagnostic recomposition in PageMaker 6.0, but not 6.0.1 and later, see article 314579 (*www.adobe.com/support/techdocs/8e2e.htm*).

Hubless solution

If you've invested in an extra home computer, but don't want to spend extra money on an ethernet hub, here is a cheaper way around the problem. Simply buy an ethernet crossover cable from your local computer shop. This reverses the wires, which makes it possible to connect from one machine to another directly, without a hub.

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). His most recent book is *Mac OS 9: The Missing Manual* (Pogue Press, 2000).

Space hoggers

The first Mac, as those of you older than 21 may recall, had a nine-inch screen. The standard screen-size has crept upward over the decades, but even today, the most common Mac screen-size is only 15 inches. Considering all the palettes, button bars, and control panels today's software requires, that's not a lot of real estate.

For years, Apple has led the industry in clever ways to conserve screen acreage. To pack hundreds of options in very little space, Apple excelled at designing interface elements that work like drawers – you click on something to pull open a much broader menu of choices, which closes up when you're done. So many Mac OS elements work this way: pop-up windows, contextual menus, flippy folder triangles, topic buttons on the Launcher, the Apple menu, and the Control Strip (which is like drawers within a drawer). Good screen-saving ideas come from other software companies, too. Adobe has helped make collapsible, dockable palettes a standard feature in graphics software. Microsoft Word 5 popularized icon bars on the Mac. And years ago, the creators of FileMaker were apparently the first to notice that a computer screen is wider than it is tall – and that therefore the best place to put administrative junk like tool palettes is at the side of the screen, where they don't eat up your document space.

Unfortunately, Apple's software designers now threaten to undo all of their predecessors' good work. As I noted last month, the prototype of Mac OS X lacks most of the OS's "drawer" features. Then there's AppleWorks 6, whose list of shortcomings has been well documented online (at **macintouch.com**, for example): it's slow, comes with no user manual,

and can't import or export Word files. But for my money, its biggest flaw is the way it hogs real estate. Can anyone explain, for example, why the AppleWorks toolbox icons had to bloat from 55 pixels wide (in AppleWorks 5) to 80? The toolbox palette alone now guzzles ten per cent of an iMac's screen width – or 16 per cent at 640-x-480 pixels – and shoves your document into a smaller part of the screen.

There's a customizable button bar, too; in AppleWorks 5 it was successful because it respected screen space. For example, you could drag it to any edge of your screen or rip it off into a palette you could park anywhere. In AppleWorks 6, however, all of those features are gone. Instead, you get one rigid, jumbo button bar you can't resize or reshape as a palette to make better use of your screen.
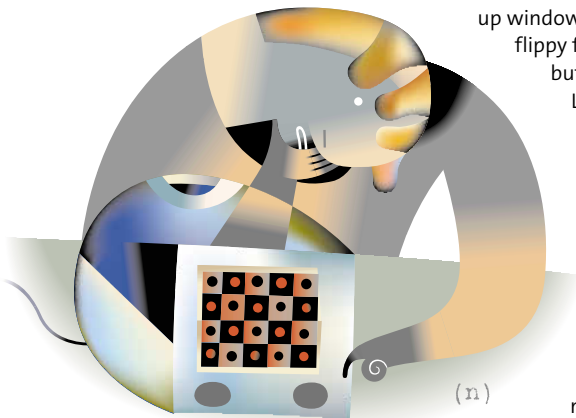
Furthermore, Apple is doing a lot of icon-enlargement surgery these days, whether in Mac OS X or AppleWorks 6. Fewer of these super-size icons fit the AppleWorks 6 button bar. So how does AppleWorks 6 handle the overflow? It adds scroll bars to the button bar. Scroll bars?! The entire purpose of a button bar is to keep commonly used functions on the screen at all times! If a button bar hides some of its commands, how is it any improvement over a menu? A button bar you have to scroll is like a car you have to pull on a trailer.

Now, I get angry letters from readers whenever I say something nice about Microsoft. But lately Microsoft has been bending over backward to respect and conserve screen space. Witness Internet Explorer 5: with a single keystroke, you can hide all the bars – button, status, Favorites, and otherwise. And Microsoft says the next versions of Word and Excel for the Mac will each open with only one tool bar.

It's funny how a company's mood and fortunes affect its determination to do things right: the higher Apple flies, the less it seems to care about how much trouble its software design causes us. Meanwhile, as Microsoft flails in court, it hunkers down, conducts user studies, and becomes paranoid about pleasing us. Then again, maybe Apple's carelessness about screen space has nothing to do with its moods and fortunes.

Maybe it boils down to a much simpler fact: it's Apple that stands to profit from the sale of bigger monitors. **MW**

JEFF NEUMANN

(n)

Macworld online