MORE NEWS, MORE REVIEWS

Macworld

www.macworld.co.uk

Playtime
Top games all here

Best screens

Apple vs Bill Gates

Top iMac reviews!

Photoshop masking

iMac

NO CD?
PLEASE CONSULT
YOUR NEWSAGENT

IDG   **JANUARY 1999   £4.99**

news

■ in-depth stories ■ incisiveness ■ exclusive tests

product news

■ what's new and what's hot

reviews

■ Macworld has it covered

iMac reviews special

---

cover feature: every Mac tested

62 Top Mac games

Apple's iMac has revitalized the Mac games market. Macworld chooses 1998's best titles and the top classics still available.
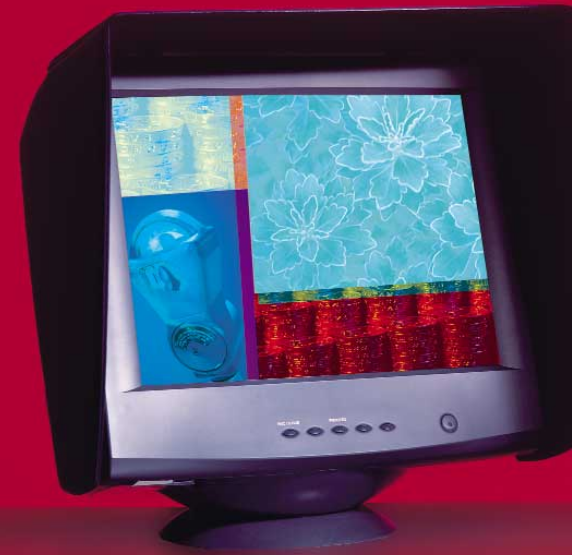
media

This month's cover discs page 11

secrets

opinions

■ we lead, others follow

---

contents January 1999

test centre

75 Pay and display
Mid-sized monitors are coming down in price – we take a look at what's out there.

Competition triple!

win A 4D Desktop V6 package worth £495 each - pg 82

win A Neato CD labelling kit PLUS a copy of TextBridge Pro Mac 8.0 – pg 95

Mateworld

read me first
Simon Jary, editor-in-chief

While this year's Apple Expo was a damp tissue of a show, with no Adobe, Agfa or even Apple – and that's just starting alpha-betically – January's Macworld Expo held in San Francisco is going to be enormous. Roll up, roll up for all the big names, new products, and sneak peeks at tomorrow's technologies.

Almost guaranteed exposure is the next-generation G3 Power Mac, code-named Yosemite. In our December 1998 issue we reported the latest hot rumours on what these 400MHz-plus beasts would contain (FireWire, USB, flashing lights, and iMac-like translucent blue cases). After Macworld Expo, we'll know for sure.

We are also likely to see demonstrations of the next revision of QuickTime – be it version 3.5 or 4.0. Again, our sources indicate great things, including advanced streaming capabilities (see page 24). And, again, all should be revealed in San Francisco.

But the most eagerly anticipated new treat we're praying to see at Macworld Expo is the final piece in Steve Jobs' product jigsaw – the consumer portable Mac.

Apple's laptop iMac is code-named P1, but, reportedly, will eventually be known as the WebMate. Apple, itself a big fan of DIY, joins Black-& Decker and Virgin in naming products 'Mates'. I suppose it's meant to denote things being informal, friendly and a bit handy. Odds are, that's just what we'll encounter at Macworld Expo.

What we know right now is that the translucent WebMate will run a full version of the Mac OS, likely OS 8.6 by the time it ships. And it will closely resemble its predecessor, the Newton OS-based eMate.

Aside from the WebMate, Apple is now rumoured to be producing a successor to its old Newton MessagePad range of handheld computers. Even less is currently known about this super PDA, but *Macworld* agents at the Patent Office report that it'll be called the MacMate and run a sort of Mac OS Lite – pushing it several leagues ahead of any other handheld running either the Palm OS or Windows CE.

I'd love to catch sight of this at Macworld Expo, but I'd have so many fingers crossed that it didn't suck like the Newton, that I'd struggle to pick it up, let alone carry it everywhere with me. An early prototype of the MacMate was spotted at a meeting of the Hong Kong Newton Users Group, and could be the origin of the £349 Mac promised by Oracle CEO and Apple board member Larry Ellison.

Cheaper portable options for Macintosh users are absolutely essential for Apple to really grow its market share. The iMac has shown that there's a potentially giant audience for simple, good-looking computers. And the portable market is one of the hottest for PCs right now.

The only real 'must-have' about the otherwise excellent G3 PowerBooks is "must have a lot of money" – the cheapest 14-inch model costs over £2,000 (including VAT). *Macworld*'s publisher will be taking his to San Francisco, but I'll be packing pen and paper – yes, even editors of Mac magazines don't get the freebies everyone imagines.

Just imagine an inexpensive (maybe as low as £699) portable boasting all the features of the Mac OS, but much lighter for lack of huge hard drive, acres of active-matrix screenage or slab-like batteries. Away from home or the office, I really don't need to edit video in Adobe Premiere or layout vector transparencies in Macromedia FreeHand. I do need to do a lot of word processing (I still call it writing, but what the hell…), keep on top of my email, and have reasonably fast access to the Internet. The WebMate seems to fit the bill (and my wallet) rather well.

The MacMate, like the Newton, I am less sure about. But its infra-red connectivity and Mac interface could feasibly combine nicely with the iMac and Yosemite's IrDA ports and Mezzanine/Perch slots.

Would people be able to do much with a cut-down Mac operating system? Well, Windows users seem to be pretty satisfied with one…

Your Apple Expo blues might be more translucent than you think. 1999 is upon us. Cometh the hour, cometh the Mac. **MW**

Macworld

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

Subscribe

Find out how you can get either Poser 2 or Bryce 2 by MetaCreations **FREE** when you subscribe to *Macworld* – see pages card opposite page 98.

Macworld (UK) is an independent journal not affiliated with Apple Computer Inc. Apple, the Apple logo, Mac, and Macintosh are registered trademarks, of Apple Computer Inc.

MACWORLD SUBSCRIPTIONS: *01858 435 303*
£44.66 UK: 12 issues with 12 CDs, plus free software, see pages 146-147.
• **£52.99 Europe** • **£89.99 Rest of the world. Or 12 issues and CDs and Poser 2 or Bryce 2 for just £44.66 (UK)** • **£88.97 Europe** • **£113.98 Rest of the world Subscriptions are available from Tower Publishing, Tower House, Sovereign Park, Lathkill Street, Market Harborough LE16 9EF**

★ Macworld WINNERS! ★ Macworld WINNERS! ★

Congratulations Macworld readers: Miss C V Tuck of Walthamstow, London; Mrs S Thalkray of Aylmerton, Norwich; Mr M P Bower Isle of Wight; and Dr I M Andrews of Dalry, Ayrshire.

After entering *Macworld's* November 1998 competition, you've just each one an Iomega Jaz 2GB removable drive – N-i-i-i-ce!

Correction: In our December 1998 round-up of projectors, we mistakenly quoted the weight of Epson's EMP-5500 as 9.4kg. In fact, the EMP-5500 weighs a featherlike 4.5kg. We have therefore upped its Star Rating accordingly to a heartily recommended ★★★★/8.0. For more details, contact Epson on 0800 289 622.

ᚎ IDG *WORLD LEADERS IN IT PUBLISHING*

This month, there's an exclusive business package, a variety of quality trial and demo versions of top Mac software – PLUS a full game on the second CD! Vic Lennard wanders through the folders...

SuperOffice FULL Single-User Version 4.0 FREE

SuperOffice is a database-driven "network-ready" business management software designed for daily use in the office. Using the 'shared database', SuperOffice allows you to store information about companies, set up to-do lists and keep track of your meetings.

Macworld is giving away the FULL single-user licence version (normal price £325) that gives you access to all SuperOffice's features. You have to buy more licences to make the most of the shared database features.

See review page 53
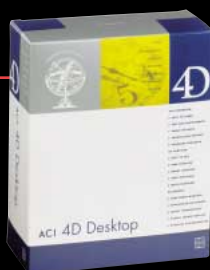
ACI 4th Dimension 6.0.6 limited feature demo

4th Dimension is a graphical relational database designed for both casual users and expert programmers. Combining an intuitive, flexible interface and a industrial-strength programming language, 4th Dimension is an ideal development environment for all types of users and for companies of all sizes. The demo package includes the Macintosh installer, 4D Runtime and 4D ODBC.

WIN A COPY OF 4D DESKTOP VERSION 6! SEE COMPETITION, PAGE 82

Serious Demos

Canvas 6

Deneba Software's Canvas 6 is the newest version of the integrated vector-illustration, image-editing, page-layout, presentation and Web design application. The latest version includes over 300 new features and enhancements and introduces Deneba's revolutionary SpriteLayer technology which makes it easy for everyone - from the graphics enthusiast, to the corporate engineer, to the seasoned designer - to create layering and blending effects such as cutaways, translucency, dissolves, and vignettes.

The demo is fully-functional aside from being save and export-disabled and printing a Canvas banner across each page.
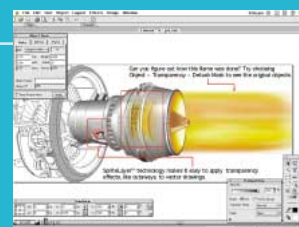
Adobe PageMill 3

Adobe PageMill 3.0 allows you to design, build, post, and manage your Web pages. There's no need to learn HTML or master complex applications – with drag-&-drop simplicity, PageMill integrates seamlessly with your current office and graphics applications. After your site is built, delivery to the Web is easy using the built-in Uploader. And PageMill's integrated site management features enable you to keep your site up-to-date almost automatically, with advanced link management and site-wide search and replace. The trial version will timeout 30 days after installation.
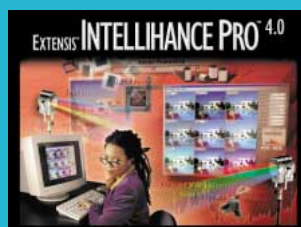
Intellihance 4

Extensis' Intellihance has taken a quantum leap forwards! You can now view up to 25 simultaneous enhancement comparisons and takes Photoshop's Variations to the next level – adjust colour balance, brightness, saturation, sharpness, contrast and cast visually.

The new menu allows you to apply all presets directly from Photoshop and presets can now be saved as either Intelligent or Fine Tune (manual) settings. There are new Dust & Scratch Removal and Paper & Ink Settings plus split image comparisons. The trial version will timeout 30 days after installation.

Mac OS 8.5 Updaters

30MB of updaters and patches to get your apps and utilities running properly under Mac OS 8.5, including:

ALAP XPress XTensions	Office 98
Conflict Catcher 8.0.3	RealPC 1.0.4
Hard Disk Toolkit 2.5.3	Soft Windows 1.0.4
Norton AntiVirus 5.0.3	TechToolPro 2.1.1

New versions of Netscape

This month we've included version 4.08 of Netscape Navigator for both PPC and 680x0 plus the brand-new Communicator 4.5.
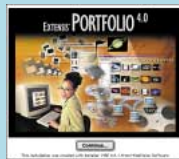
Serious Demos

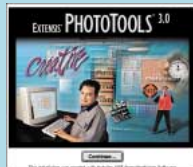The latest demos from Extensis, including:

Preflight Pro 2.1.1

Inspect and correct PDF files, and inspect and collect low and high- resolution OPI images in an OPI server environment.

PhotoTools 3.0.1

The latest version of the effects tool for Adobe Photoshop. Features include real-time previews, interactive controls, multiple undo/redo and background processing.
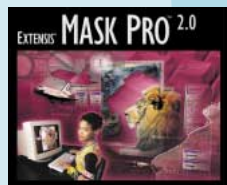
Portfolio 4.0.1

Portfolio 4.01 is a media asset-management solution for organizing volumes of digital media. Allowing you access to a searchable database from the desktop or across the Web.

Mask Pro 2.0.1

Mask Pro 2 lets you mask images in Adobe Photoshop. The upgrade includes Dynamic Colour Matching, one-click tools, Intellibrush and IntelliWand for removing backgrounds and Edgeblender for removing unwanted material from the edge pixels of masks.

Other serious demos:

Collect Pro(tm) 2.1.1
HandWriting Fonts
Charts Pro 1.0.3
OpenScript 1.1.2
PowerMail Demo installer
Symbolic Composer 4.2
Effects Pack #1 Demo
Synchronize!

Games World

Crop Circles

Jewel of Arabia-Dreamer

Four great new demos! If you're into pinball then make a bee-line for Golden Logres – probably the best pinball game ever! Then have a look at the manic side of alien life with Crop Circles. Adventure Creator will start you down the path to creating your own adventure games (check out the Shallow Grave example) while Wheels! is a 3D action game specifically designed for people with disabilities.

There's this month's Top 10 shareware games (including Jewel of Arabia – Dreamers and SpaceDeubza) plus over 20 add-on levels for Duke Nukem and Shadow Warrior.

Also on the CD

APPLE (in the System Utilities folder)
6 updates including:
• AppleShare IP First Aid
• Disk Copy 6.3.2
• Drive Setup 1.6.1
• G3 CD Update 1.0

COMMS & INTERNET
15 applications including:
• Anarchie Pro 3.0
• EIMS 1.3.1
• Mail Agent 1.0

EDUCATION
2 applications including:
• Chime 2.0
• Master Spell

FONTS
• TrueKeys 3.2 plus 4 new fonts

GRAPHICS
6 programs including:
• FeaturerGIF
• Kaleidoscope 2.1.1

• Tracer 1.6

INFO
6 items including:

• 1984 OLM Issue 8
• Apple Wizards - November 1998
• About This Particular Mac 4.11
• My Mac Magazine #43
• Plus 2 items for developers

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

NETWORK
3 programs including:
• GroupWise 5.2.6

MATH & SCIENCE
• Convert 1.2.2 CrystalMaker 3.0.3 demo

SOUND & MUSIC
Six applications including:
• CyberMozart

• PushBtnBach

ANTI-VIRUS
Six items for your data's continuing protection.

UTILITIES
9 categories comprising over 55 useful tools for your Mac including:
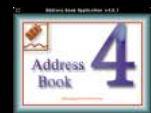
• Address Book 4.0
• CopyPaste 4.2.2
• DOCMaker 4.8.4
• DragThing 2.6
• FileBuddy 4.3.7
•GoMac 1.6
• IPandoCalender 4.0.1
• Play it Cool 3.11
• TexEdit + 2.4

UPDATERS
This month's dedicated updaters folder includes over 30MB of patches to bring many popular applications bang up-to-date, including:
• Adobe Premiere 5.1
• Crescendo 1.2.6
• Internet Gateway 5.0.1
• MacLinkPlus 10.003
• Norton AntiVirus (5.0.2 & 11/98)
• Norton Disk Doctor 4.01
• Speed Doubler 8.1.2
• Virex (to 11/98)

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

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

■ British Mac OS 8.1 updaters
If you have recently purchased a Mac system with Mac OS 8.0 then use these to upgrade to later versions.

■ Acrobat Reader 3.01
Install this version to be able to read many of the on-screen manuals. This also installs Adobe Type Manager 4.0.2.

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

PRIME TARGET

Primed – and on target!

Full commercial game
Dynamic 3D-action with mystery and adventure!

A powerful senator is brutally murdered while working late in her Washington D.C. office. Now it's up to you to find her killers in this 3D action thriller. Who would risk killing a U.S. senator?

To find out, you will fight hordes of deadly killers while assembling a variety of clues. Your search will take you to the centre of the USA's power. In a furious rage of intense 3D shoot-'em-up action, you'll blast your way through the awe-inspiring corridors of the capitol, museums and office buildings of Washington D.C. With the right amount of skill and luck, you might even stop the killers' insidious scheme!

Power Mac-only, Prime Target thrusts you into the most dynamic world ever found in a Mac game. Blood splatters on the wall. Glass shatters in your face. And you can jump, duck, swim, watch movies and much more.

Features

- 2-8 PLAYER NETWORK GAMES
- JUMP AND DUCK
- MOVEABLE SCENERY OBJECTS
- TEXTURE-MAPPED OBJECTS
- BULLET HOLES AND BLOOD STAINS ON WALLS
- DOORS THAT SWING
- NON-LINEAR GAMEPLAY
- RETURN TO PREVIOUS LEVEL
- QUICKTIME VIDEO AND CD-QUALITY MUSIC
- TONS OF NEW WEAPONS
- INVENTORY ITEMS
- SPECIALLY-DESIGNED NETWORK LEVELS

Getting started

Drag the Prime Target folder to your hard disk and start up either Prime Target if you have 8MB of available RAM or more, or Prime Target LM if you have less than 8MB of available RAM. Check the How to install and Read Me First documents for more information. Remember, the CD must be in your drive at all times while playing.

From the main screen, click on Preferences and select Controls from the drop-down menu. Set up the important keyboard commands, exit, and you're ready to work your way through 40 levels of absolute mayhem!

Macworld Game Hall of Fame

Here you'll find 18 of the best-ever games demos plus a couple of game movies.
Read this issue's feature for more information about each game.
The CD Read Me file will help you to get started.

TOMB RAIDER II	REAL POOL
CIVILIZATION II	SHANGHAI: DYNASTY
DIABLO	SHATTERED STEEL
ESCAPE VELOCITY: OVERRIDE	SIMCITY
F/A - 18 KOREA	2000: SPECIAL EDITION
JOURNEYMAN 3	RIVEN
LINKS LS	X-WING
MARATHON BOX SET	YOU DON'T KNOW JACK: HUGE
MYTH: THE FALLEN LORDS	

FAULTY COVER CD-ROM?

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

If your cover disc is broken and you want a replacement CD, please call Emiliegh Borrett on 0171 831 9252 or send an email to: emiliegh_borrett@macworld.co.uk

Macworld CD catalogue
Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 and '98 – almost 90,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (1.1.4) is also included - don't forget to register if you find our library useful.

Trial shatters Apple's truce with Microsoft

The honeymoon seems to be over for Apple and Microsoft. A relationship that blossomed after a new détente between the traditional rivals – announced in August 1997 – has been undone in heated exchanges in the courtroom during the Microsoft antitrust trial.

While the antitrust suit hinges on proving that Microsoft competed unfairly with Netscape in the Web-browser market, the company also stands accused of sabotaging Apple's attempts to make QuickTime a cross-platform multimedia standard. The proceedings have revealed a host of threats, coerced deals and strong-arm tactics, which, no matter the outcome of the trial, certainly signals a change for relations between the two companies.

The US Department of Justice (DOJ) set this part of its case against Microsoft after receiving the written testimony of Apple's vice president of software engineering, Avadis ('Avie') Tevanian, and after cross-examining Netscape CEO Jim Barksdale (see previous issue, page 26).

Tevanian's testimony, released in the form of a 53-page document, included a highly damaging critique of Microsoft. He claimed Microsoft must be subjected to "fundamental structural change" before its dominance significantly curtails innovation in the computer industry. The testimony alleges that Microsoft:
■ used its leverage as a monopoly, rather than technical excellence, to win favour for its products;
■ successfully bullied Apple into making Internet Explorer (IE) the default Mac browser;
■ unsuccessfully tried to get Apple to abandon the playback market for QuickTime;
■ engineered IE 4.0 to not work with QuickTime;
■ convinced Compaq and other companies to favour Microsoft's technology over QuickTime.

"Once Microsoft dominates the market for Internet browsers, it will use that power to extend its control over not only the operating system market, but also other emerging markets that rely on the Internet," Tevanian testified.

As an example of Microsoft's willingness to bully competitors, the Apple executive testified that Microsoft CEO Bill Gates threatened to stop developing applications for the Mac OS unless a $1.2billion patent dispute between the two companies was resolved in Microsoft's favour and unless Netscape Navigator was removed from its status as the Mac's default browser. (Both browsers were loaded on new Macs, but Navigator was the automatic selection.)

The threat struck home with Apple. If programs such as Microsoft Word and Excel – both business staples – were not available to Macintosh users, Apple would be severely crippled.

"Withdrawal of Microsoft's support for its Office for Macintosh program would have a devastating effect on the Mac OS," said Tevanian.

The threat "compelled Apple to resolve the dispute on terms that gave significant advantages to Microsoft's Internet Explorer," he said. In the resulting deal, Apple agreed to make IE the default Mac browser for five years. Apple could bundle other browsers, but not promote any other than IE, according to the testimony.

In return, Microsoft invested $150 million in Apple and entered various technology-sharing agreements. Most important, Microsoft agreed to continue making software for the Mac market.

"If Microsoft had not exercised its monopoly power in the office application market by threatening to stop supporting Office for Mac, Apple would not have resolved the disputes on the terms outlined above," Tevanian testified.
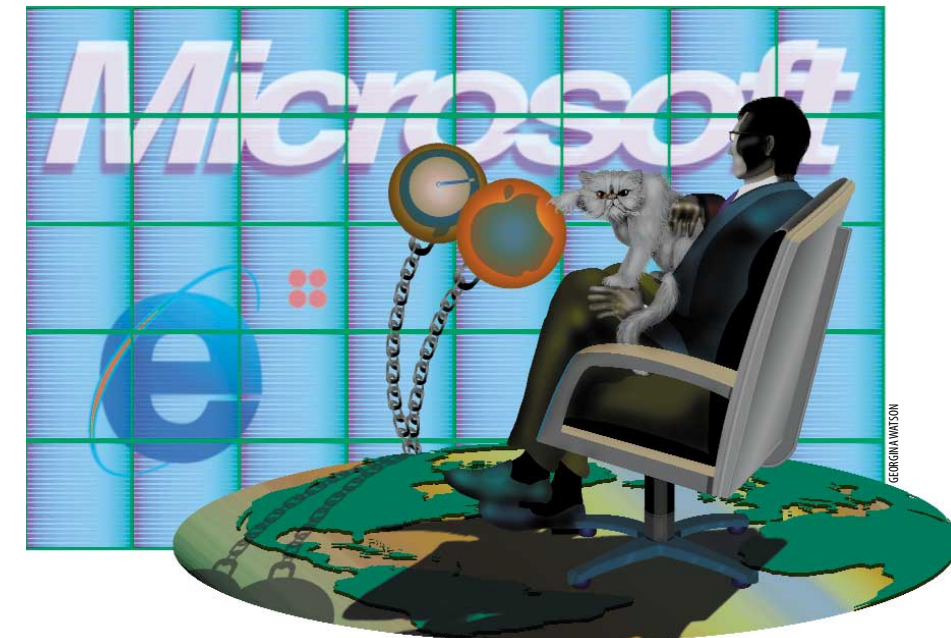
QuickTime 'sabotaged'
In another area, Tevanian said Microsoft sabotaged Apple's QuickTime multimedia technology, which competes with Microsoft's own DirectX, Windows Media Player and NetShow products. Other makers of so-called "streaming media" products, including market leader RealNetworks, made similar complaints before a US congressional panel in the summer. Microsoft has steadfastly denied the allegations.

"Microsoft has written steps into its operating system to ensure that a QuickTime file will not operate reliably on Windows," the Apple executive testified. "Microsoft has also caused misleading error messages to appear that trick the user into believing that QuickTime is part of the problem actually caused by the Windows. Finally, Microsoft has employed threats and exclusionary practices against third parties, compelling them to refuse to deal with QuickTime."

Over a series of meetings from April through October 1997, Microsoft repeatedly pressured Apple to abandon the streaming, or "playback" market, in return offering Apple the much smaller market for software tools used to create multimedia content, he said.

An August 1997 meeting was singled out as a particular example of Microsoft's intentions. The meeting was between Tevanian, with other Apple executives including QuickTime engineer Peter Hoddie, and their Microsoft counterparts. According to Tevanian, Hoddie wanted to make sure he understood what Microsoft was proposing during the meeting, as QuickTime was a popular product, though at that time Apple was not making money off it.

"Are you really asking us to kill playback?" he said. "Do you want us to knife the baby?"

Microsoft's Christopher Phillips, business development manager for Microsoft multimedia APIs and DirectX, replied using Hoddie's words: "Yes, we're talking about knifing the baby."

After Apple declined to abandon the market, Microsoft offered to allow Apple to stay in the playback market in the Macintosh market if it pulled out of the Windows arena. Apple refused.

Tevanian said he was concerned the new

> **'Withdrawing Microsoft Office for the Mac would have a devastating effect on the Mac OS.'**
> – Avie Tevanian, Apple software chief

GEORGINA WATSON

SyQuest runs out of drive

SyQuest, the removable hard-disk manufacturer, has closed its doors. On November 2, the company suspended operations and on November 17, announced it had filed for bankruptcy.

SyQuest, the company that pioneered the removable-storage market, hadn't turned a profit since 1994, in which time it had lost $216.8 million. The company also saw its sales dip from $299.5 million in 1995 to $122.7 million in 1997.

"They were the first kids on the block," said Jim Porter, president of Disk/Trend. "But by financial standards, they were never considered a high-flyer."

During the past year, the company spent more money on promotional activities than was cost effective, Porter said. SyQuest tried to alleviate some of its financial troubles last August by letting go of half of its employees.

"SyQuest had to cut back and didn't cut back far enough," he said. SyQuest's shut-down opens the door for its primary competitor, Iomega. According to Porter however, Iomega has also suffered, spending far too much on elaborate advertising campaigns to push its Zip drives.

Syquest said it has reached an agreement, with an as yet unnamed buyer, to sell a portion of its assets, namely SyQuest's patents and equipment used to manufacture disk drives and storage cartridges. A purchase price was not announced for the deal, which also sees Syquest retain ownership of its factory in Malaysia.

SyQuest had failed to secure a last-minute credit deal before its cash reserves evaporated. Even after issuing $120 million of stock to stay solvent, it fell foul of loan agreements with its existing finance provider, which drastically cut its borrowing powers.

Porter said: "Its business plan was off target and it thought the market was larger than it was.

"It spent too much money trying to develop this market." **MW**
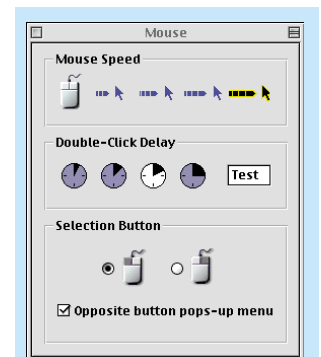
2-button mouse?
Leaked Mac OS X screenshots feature a 2-button mouse control panel (above). Apple sources report that an optional two-button mouse, made of Apple Studio Display plastics, is in the works.

Windows mice already have this capability, but Apple rejected it in favour of one mouse/two clicks when designing the Mac in the infamous 'Button War' debate that raged when mice first appeared. **MW**

Apple-Microsoft trial fury

arrangements with Microsoft would give the company access to the inner workings of the Macintosh operating system "while, at the same time, Microsoft was seeking to exclude Apple's multimedia technology from Windows."

Even an email from Apple CEO Steve Jobs to Gates outlining Apple's objections didn't prevent Microsoft executives from continuing their efforts to pressure Apple out of the playback market. Later, Microsoft proposed that the two multimedia technologies be merged – an offer Jobs rejected.

Tevanian said the actions demonstrate

Microsoft 'even threatened Intel ally'

Apart from this latest chapter in the long-running Apple-Microsoft feud, the antitrust trial has thrown up evidence that Microsoft attacks its friends just as viciously. Bill Gates is accused of threatening his company's close hardware ally, Intel. The software giant allegedly made a "terrifying" threat to dissuade Intel from working on Internet-related and other software programs, according to testimony from Steven McGeady, a vice president at the chip giant.

McGeady, who oversaw Intel's work on development of Internet and Java software, backed up the government's claims that Microsoft used its dominance in the operating system market to stop Intel from working on certain software projects. In court, Gates rejected government claims that Microsoft attempted to press Intel to stick to hardware and stay away from the software trade. He also denied – in a series of simple "No" answers accompanied by long pauses and his characteristic rocking – that his company sought to keep Intel from aiding Microsoft's rivals, Sun and Netscape.

But according to McGeady, not only was Microsoft well aware of Intel's software plans, Gates himself was present at one meeting when those plans were discussed. McGeady saw Gates' reaction to Intel software plans at an August 1995 meeting between Microsoft and Intel. Gates became "enraged" that Intel Architecture Laboratories (IAL) engineers "in his view were competing with Microsoft," McGeady said.

McGeady added that Gates "felt that what we did in software directly competed with Microsoft … and Bill made it very clear that Microsoft would not support our next processor if we did not get alignment on other issues."

"It was clear to us if those processors didn't run Windows they'd be useless," McGeady said. "The threat was both credible and fairly terrifying."

A memo from McGeady, entitled "Sympathy for the devil," said that Gates had told Intel CEO Andy Grove earlier that month to shut down IAL. "Gates didn't want IAL's 750 engineers interfering with his plans for domination of the PC industry," McGeady wrote.

What this all meant, McGeady said in response to questioning, was that "if we kept pissing them (Microsoft) off they were not going to support MMX."

McGeady was also questioned about a meeting with Paul Maritz, Microsoft group vice president of the platforms and applications group, in November 1995, during which Microsoft's plans for the browser market and competing with Netscape were discussed. At the meeting, McGeady said, Maritz said "it was Microsoft's plan to 'cut off Netscape's air supply' – that one phrase sticks out."

McGeady quoted Maritz as saying Microsoft's plan was to "embrace, extend and extinguish … we are going to fight with both arms – OS and applications."

One part of the plan was to extend HTML so it was not compatible with Netscape's support of HTML, McGeady said. **– Elizabeth Wasserman**

Kiss Intel
Intel's plans for the Pentium MMX processors nearly came unstuck because of Microsoft's Internet 'threats'.

Microsoft's willingness to use its muscle, at the expense of innovation and choice.

"If competition is to be restored and fostered in critical markets, fundamental structural change is necessary," Tevanian said. "Such change must address Microsoft's ability to move on many fronts, to exploit its power in one of many markets in order to acquire or consolidate in others. As long as Microsoft can dominate new markets by leveraging its unchallenged control of both the Windows operating system and essential application programs, competition – which has been the engine of innovation and growth in this industry – will be curtailed".

Cross purposes

Microsoft, in cross-examining Tevanian, referred to videotapes of Steve Jobs, technical reports from third parties and called witnesses to discredit Apple and the DOJ's accusations.

In reply to the charge of the 'sabotage' of the QuickTime media player in IE, Microsoft attorney Theodore Edelman asked Tevanian if he had any personal knowledge of a Microsoft strategy to intentionally disable QuickTime in IE 4.0.

Tevanian stated in testimony that Microsoft "created misleading error messages and introduced technical bypasses that deprived QuickTime of the opportunity to process certain types of multimedia files".

After pointing out that incompatibilities existed between QuickTime and earlier versions of IE, Edelman asked "Don't you think the use of the word 'sabotage' is something of an exaggeration?"

"It sounds fine to me," replied Tevanian, adding that the error messages and lack of file-format support bore out his theory.

In his written testimony, Tevanian contrasted Microsoft's Media Player, which he said did not support the streaming of media, with QuickTime, which does. Subsequently, Tevanian tested Microsoft's technology only to discover it supports file streaming, but not "live" streaming.

Suits you, sir

Turning the tables on Tevanian, Edelman next accused Apple of using the threat of the $1.2 billion lawsuit against Microsoft in order to settle lengthy patent negotiations the two companies had waged since September 1993.

Those negotiations eventually resulted in the agreement announced by Jobs a day later at his Macworld Expo keynote speech in Boston.

Tevanian, standing by his written testimony, characterized the negotiations quite differently. He said Apple told Microsoft that its portfolio of patents was worth an estimated $1.2 billion, not that Apple would bring a suit for that amount.

However, Edelman played a videotaped segment to the court of Jobs' keynote address. Jobs said in announcing the deal that it was to resolve multiple patent disputes.

Edelman also accused Apple of trying to use

---

the DOJ's investigation as a threat against Microsoft. He used as evidence a slide series from an Apple meeting in August 1996, entitled "What to do about Microsoft". The presentation included a category called, "Why Microsoft needs us." And under that category were listed the initials DOJ.

Edelman asked Tevanian whether Apple intended to use the DOJ threat as way to obtain concessions from Microsoft.

Tevanian replied, that it had not, but added "If someone is going to start bullying us then we need to consider going to the DOJ".

Outside the courthouse, Justice Department attorney David Boies defended Apple's right to contact the government with allegations of wrongdoing on the part of Microsoft.

"If somebody is robbing your house, you're going to call the cops," he said.

Microsoft's Edelman also attempted to demonstrate that Apple conducts some of the same practices the government is accusing Microsoft of doing. He presented Tevanian with a press release of Mac OS 8.5, touting the software as the world's most Internet-savvy operating system. Edelman pointed out that among the new features of the operating system was Sherlock, designed to let users search their disks, the Internet and networks without using a browser.

"Isn't it true that Apple considers this feature to be built into the OS," Edelman asked.

"No, I consider it to be bundled with the OS," said Tevanian, who went on to say that he considers "built in" to mean software that the OS depends on to work, while something that's "bundled" could be removed easily.

Part of the DOJ's case is that Microsoft bundles IE into Windows and forces manufacturers to take both products. The DOJ is claims this is an illegal "tying" of the browser to a monopoly product.

Edelman attacked Apple's claim that Compaq and other manufacturers had been pressured not to bundle QuickTime 3.0 on their PCs. According to Compaq executive Steven Decker, Apple wanted Compaq to pay a royalty. "We would ship QuickTime if Apple gave it for free," Decker said.

Microsoft posted further denials on its Web site, claiming that programming errors in the software were Apple's fault. Tod Nielsen, general manager of Microsoft's developer relations group says that although it is not Microsoft's responsibility to provide fixes to QuickTime, the company has made a fix available to customers because "we feel they should not pay the price for Apple's programming mistakes, groundless allegations and courtroom antics."

But videotaped testimony from Microsoft chairman Bill Gates appeared to strengthen the argument put forward by the DOJ and Tevanian, that Microsoft used bullying tactics on Apple.

After the August 6 1997 deal, Gates sent an email to subordinates that referred to other advantages arising from the deal, apart from settling the patent dispute.

Loveless marriage finally hits rocks

Microsoft and Apple have long been tied in a marriage of convenience. And things have been stormy since the companies first crossed paths nearly two decades ago. The troubles go back to 1984, when Apple introduced the first popular desktop computer, the Macintosh. Gates was impressed with the machine's user-friendly graphical interface, and he decided to focus on the platform as a vehicle for selling his company's software.

Dazzled by the computer's point-and-click features and easy-to-use commands, Gates and some engineers took to calling the Apple machines "SAND," an acronym for "Steve's amazing new device," according to Jim Carlton's book *Apple: The Inside Story*. At the time, Apple's revenues were more than 10 times that of Microsoft. The company saw Microsoft as a potential ally in its war against IBM, then the other major player in the desktop computer space (now Apple's PowerPC ally).

However, the relationship began to erode as Microsoft started adding graphical features to its own MS-DOS program that looked, to Apple executives at least, suspiciously similar to Apple's own Mac operating system. So similar, in fact, that in 1990 a version of Microsoft Windows prompted Apple to file a lawsuit, alleging that Gates and company stole Apple technology.

By then, Microsoft also had struck a deal with chip maker Intel to push both companies products into the growing market for IBM-compatible machines.

By the mid-1990s, Apple's market share had slipped substantially while Microsoft had become a powerhouse. When it made its $150 million investment to help bail out Apple last year, Microsoft owned more than 90 per cent of the OS market.

The big question now: What will become of this relationship in the wake of the potentially damaging testimony coming from Apple VP Avie Tevanian?

If Microsoft loses, a now resurgent Apple will almost certainly be able to mount a bigger challenge to Microsoft as a viable alternative to the Windows-Intel machines that dominate the market.

On the other hand, no matter how abusive Microsoft has been – or continues to be – Apple will almost surely continue to be co-dependent. The reason: Apple needs Microsoft's Office – the most popular business productivity software out there - to sell more of its own computers.

"Apple understands the tenuous relationship with Microsoft and won't push it too far," said Dataquest analyst James Staten.

But it's not all one-sided. No matter what happens in the trial, Microsoft needs Apple to remain afloat – as evidence that it isn't the only OS maker in the desktop market.
– Lisa Bowman

"Do we have a clear plan on what we want Apple to do to undermine Sun?," Gates wrote.

Another damning email used to attack Gates was one from Ben Waldman, Microsoft's chief Macintosh product engineer.

Prior to the August agreement Waldman, emailed Gates, regarding the discontinuance of Office for the Mac in the light that ir would be a devastating blow to Apple: "The threat to cancel Mac Office 97 is certainly the strongest bargaining point we have, as doing so will do a great deal of harm to Apple immediately."

Under questioning, Gates said he did not recall receiving the email. He was evasive, claiming that he didn't know what was being discussed. That tack isn't unusual – especially in antitrust trials – according to George Cumming, a lawyer at Brobeck, Phleger & Harrison in New York.

When a company is confronted with hurtful internal documents, it may adopt a "crazy middle-management defence," in which underlings are said to do and say things that more responsible top executives would not.

"The idea is to have the person at the top with 'Godfather'-like deniability," said Cumming, a former special trials lawyer at the Justice Department.

The case continues   MW

'Do we have a plan on what we want Apple to do to undermine Sun?'
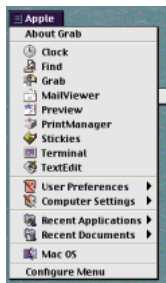
– Bill Gates, Microsoft boss

Theme swan song for Mac OS 8.6

Apple junks customizable interface but Chooser's days are numbered

X-pected soon
Apple has confirmed that Mac OS X Server will ship in 1998. "As Apple has said, Mac OS X Server is on track to ship this year," said Apple spokeswoman Staci Sheppard.

Apple CEO Steve Jobs had previously said that Mac OS X Server (formerly known as Rhapsody and precursor to Mac OS X proper) would be available sometime in the autumn.

Third-party developers say they continued to receive builds of Mac OS X Server through September so they could build versions of their applications to be bundled with Mac OS X Server when it ships.

I n an exclusive one-to-one interview with *Macworld*, Apple's Mac OS product manager, Peter Lowe, has outlined his plans for future versions of the operating system.

Lowe revealed that Mac OS 8.6, due early 1999, would include only "modest" user-experience enhancements. In particular, Apple would not be expanding on Mac OS 8.5's Appearance Themes. Many observers had expected Apple to follow up on the interface visual-appearance feature introduced in OS 8.5 that allows users to customize the Mac's familiar interface. OS 8.5 shipped with nine Themes, including Bubbles and Roswell. But Lowe says Themes has "no big future".

Referring to the cult shareware interface adaptor, Lowe explained: "Kaleidoscope is very very popular with a very few users, but Apple has a responsibility to the majority of its users to keep the interface consistent."

For the same reasons, Apple is not to reintroduce smart scrolls at the top of the scroll bar – an option dropped at the last minute from the official OS 8.5 release. Instead, OS 8.5 shipped with the capability to place both up and down scroll arrows at the bottom of the scroll bar. Lowe said that the OS group considered the option "too cluttered". "The Mac's interface should be easy-to-use but, simultaneously, must not overwhelm new users with too many options," he explained.

"Significant" changes in "key" areas won't take place before Mac OS X is released at the end of 1999. This rules out new input/output architectures and multiprocessing in OS 8.6 and its successor, code-named *Sonata*. The transition to the more modern Mac OS X, would free Apple to be "more aggressive" in its changes.

Lowe said that getting multiprocessing on board the Mac was an important issue, and would "absolutely" be happening in OS X.

One part of the Mac OS that will soon change is the aged Chooser, which Lowe agreed was unintuitive. OS 8.5 saw the introduction of a
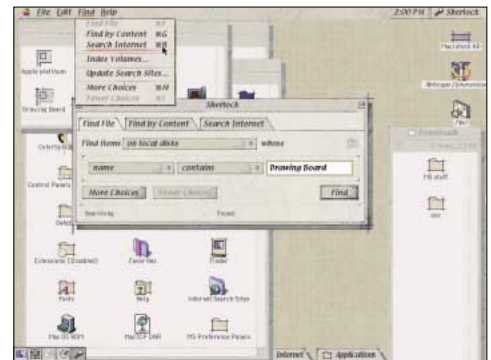
Back to the Drawing Board
Apple Japan's rumoured Architect Theme for the Mac OS 8.5 Appearance Manager has surfaced – under the name "Drawing Board". This theme sports several of the capabilities unused by the themes seeded during 8.5's development, including non-square tabbed folders and application tabs, non-square windows, and variable menubar widths. "It's unlikely to see the light of day," says Mac OS manager, Peter Lowe.

Network Browser feature tackling some of the Chooser's duties in a far friendlier manner. Lowe said that the Chooser's responsibilities would be "knocked down one at a time". Maybe as early as OS 8.6, the Chooser would remain only as a relic, with a printer configuration utility "always there when you need it".

Until OS X all old-time interface elements will survive, even if overtaken by new features. Lowe laughed at *Macworld*'s suggestion that it was high-time to wave goodbye to some of the Scrapbook's longest-serving images – even the badly drawn, pastel party hat. "The teddy bear is safe with me," Lowe boasted. But the long-term aim is to "unify the OS as much as possible". Lowe hinted that the UK-English Wastebasket might eventually take on the more appropriate Trash label.

Apple will continue to strive to make the Mac OS innovative and Internet-capable, Lowe told *Macworld*. But the company won't go as far as Microsoft's Windows 98, in which the operating system is browser-based. "Integrating OS and browser just isn't that useful," he observed.

The consumer portable (code-named *P1*) will ship next spring, bearing a full version of OS 8.6, according to Lowe. He wouldn't comment on any plans for handwriting recognition or speech-activated features.

Lowe also revealed that Apple would be pushing hard in 1999's marketing efforts on the Mac's resistance to the PC millennium bug. Apple has been rigorously testing its claims before making the boasts in public. **MW**
– Simon Jary

Imatec-Apple in legal impasse

I matec has failed to settle with Apple over a $1.1 billion patent infringement suit against the company, and is heading for a courtroom showdown.

Imatec filed the lawsuit in February of this year, claiming that Apple had infringed three US patents relating to the company's ColorSync colour-calibration technology. Imatec has released a copy of a July 27 pre-trial court deposition in which Apple acknowledged that the company had no policy in place, prior to selling a product, for verifying if the product infringed the patents of other companies.

In the statement, Imatec said Apple would be guilty of "willful infringement" if, after knowing of the Imatec patents, it failed to investigate the patents and form a good-faith belief that they were invalid or not infringed. A court hearing is scheduled for next March. **MW**
Imatec, www.imatec.com

Strong showing for digital media

Digital Media World now a byword for content creators

Digital Media World, which took place at London's Wembley Conference Centre in November, is fast becoming a landmark event in the professional content-creation calendar. Running in tandem with the London Effects and Animation Festival (LEAF), the exhibition brought together the cream of the world's video, animation and effects industry. Apple's presence was sorely missed in the gathering, however, especially with so many vendors demonstrating products based on the effects-packed QuickTime 3.0.

Puffin Designs (Bit UK, 01420 83811) was showing an updated version of Commotion, the real-time visual effects package with painting, rotoscoping, motion-tracking and video playback tools. The £1,695 Commotion 1.6 adds a cartoon fill feature for animations, a new Wiggle Brush, a revamped composite window and enhancements to the rotospline tool.

Animators can use the cartoon fill tool in conjunction with Commotion's AutoPaint and motion-tracking tools to fill several drawings or a whole sequence, instead of having to work with one frame at a time.

The redesigned composite window has new transfer modes and can create miniature previews of composites. And the enhanced Rotospline tool can lock a rotospline and resize nodes, making it easier to grab small points on a detailed rotospline. The Wiggle Brush, new in version 1.6, augments the AutoPaint tool set and adds a wiggle effect to recorded paint strokes, giving handwritten text a cartoon-style look.

A super-fast add-on for Commotion was also demonstrated at the show by Integrated Computing Engines (ICE). The £199 ICE'd Motion Tracker for Commotion is based around the BlueICE PCI board, and speeds motion tracking in the software. ICE (CVW, 0181 400 1265) has also released the £599 ICEblast software, a stand-alone special effects editing application for video and film clips that features full-resolution, real-time software playback

Media 100, (01344 411 000) was demonstrating Version 5.0 of its flagship Media 100 product line. The company said Media 100 Version 5.0 provides a host of new features and conforms to the latest broadcast standards including ITU-R BT.601. It also features: 16:9 frame-aspect ratio support for widescreen television; support for QuickTime 3.0 and codec sharing for QuickTime-based applications; anti-aliased fonts and graphics; 150 levels of undo and redo; cross-platform compatibility with Media 100's Finish for Windows NT; support for Apple's navigation services extension; and increased performance and project management enhancements. Version 5.0 of Media 100

models, le, lx, xe, xs and xr, are priced at £4,495, £7,495, £9,995, £11,995 and £14,995 respectively. The company also featured real-time DV integration in the form of DV Option, a £1,995 digital signal I/O device available for Media 100 models le, lx, xe, xs and xr, which connects to IEEE 1394 (FireWire) devices.

Radius is fast catching up with the broadcast DV market with its well-specified EditDV system. The company was showing version 1.5 of the non-linear digital video editor, based on QuickTime and IEEE 1394 and designed specifically for the DV camcorder owner. New features of the £699 package include batch capture, increased rendering speeds, streamlined clip trimming and TimeCode support. Radius (CU, 0181 358 5857) also announced that MotoDV, its DV motion-capture solution, will now ship with the PhotoDV still DV-image plug-in for Photoshop. Radius said MotoDV, which includes a Radius 1394 FireWire card and Adobe Photoshop LE, will remain at its current price of £387.

Computer Audio Warehouse (0181 400 1234) launched a unique bundle intended for musicians and film-makers at the show. The New Orleans solution includes a Power Mac G3 with Digidesign ProTools 24Mix audio recording solution, Adaptec 8495 IEEE 1394 I/O and a Sony Digital Video Camera. The £10,000 solution was used to demonstrate a G3 playing 64 tracks of audio while playing back synchronized broadcast-quality video.   MW
– Michael Burns

QT 3.5 streams ahead

QuickTime set to become cross-platform standard

While its chief technologist spent time in court describing Microsoft's efforts to get it to cede the multimedia playback market to Windows (see page 16), Apple engineers worked on a new version of QuickTime that developers said will soon turn the popular multimedia technology into a cross-platform audio- and video-authoring and playback system unmatched by rivals Microsoft and RealNetworks.

The new version adds the live file-streaming technology without which QuickTime has been prevented from becoming the de facto format for playback on the Web, said sources close to Apple.

While it built some file streaming into QuickTime 3.0, released in March, Apple's FastStart streaming technology was a fast file-download technology and not a solution for live streaming, said Apple spokesman Russell Brady. QuickTime developers who have wanted to broadcast their content live on the Web turned to proprietary streaming media file formats from Microsoft and RealNetworks.

That may change with the new QuickTime 3.5 software, which, sources said, is based on an industry-standard streaming media protocol, the Real-Time Streaming Protocol (RTSP). This allows QuickTime content to continue to be streamed from standard Web servers rather than from the type of proprietary streaming media servers that Microsoft and RealNetworks bank on.

Live streaming revelation

Apple declined to comment on release plans but said it is no secret that the company has been working on adding live streaming capability as part of its plan to turn the QuickTime file format into a universal media format.

"With the ability to do live file streaming, QuickTime becomes a unique architecture because it can be used for both creating and delivering multimedia content," Brady said.

QuickTime Streaming (QTS) extensions will be closely integrated with QuickTime itself, sources said, allowing data in any QT file format to be transmitted across the Web. Users will be able to view content in any QuickTime-aware application without using a special player, and they will be able to watch both unicast (one viewer per stream) and multicast (multiple viewers per stream) content from a client application. Special "hint tracks" will hold instructions for how best to transmit network packets, sources said.

"What's really cool is that you can put a streaming window anywhere, like inside a

document," said a source familiar with the technology. "Anywhere a QuickTime movie can exist, streaming video can exist."

Several third-party QuickTime Streaming servers are reportedly in development for Mac OS, Windows and Unix. To create QuickTime files that stream efficiently, third-party authoring applications would add the hint tracks by calling an Apple movie export component. Apple is reportedly encouraging developers to create new codecs and optimized streaming modules.

Apple first revealed its plans for streaming media in 1996, when it joined Progressive Networks (now RealNetworks) and Netscape in proposing a real-time multimedia protocol to the Internet Engineering Task Force (IETF). Apple demonstrated QuickTime Streaming at its Worldwide Developers Conference in May.

"If you [want] documented, open, IETF-standard, non-proprietary protocols, then QTS is the only choice you have," a source said.

The company reportedly plans to demonstrate QuickTime Streaming in January at Macworld Expo in San Francisco. Apple said streaming media is definitely part of a future version of QuickTime, but it declined to comment further.

Among QuickTime's major advantages is the maturity of QT development tools and the fact that its APIs are completely documented, leading to its widespread adoption among cross-platform content developers. QuickTime is used by more than 2,500 developers and is the basis for 80 per cent of the Web's multimedia content.

The QuickTime file format was also chosen as the starting point for MPEG-4, the ISO's proposed common digital media format for handling the storage and distribution of broadcast-quality audio and video, as well as for streaming media over the Web.

In return, Microsoft has proposed the Advanced Streaming Format and expects some elements of ASF to be included in MPEG-4.

– Kelly Ryer and Connie Guglielmo

---

iMac revs up

Apple has announced that iMacs will now ship with the faster ATI RAGE Pro chipset and the maximum 6MB of video RAM (The iMac originally shipped with only 2MB of SGRAM). The combination, Apple said, would deliver better 3D game graphics. The increase in SGRAM will also allow iMacs to display millions of colours at 1,024-x-768 pixels, the monitor's maximum resolution.

"There's a very noticeable increase in game performance," said Phil Schiller, Apple vice president of worldwide product marketing. "If you were playing Quake, you'd see increased frame rate, and in games like Unreal you'll see some nice new graphics." Schiller added that the change was not aimed at addressing any shortcoming in the iMac's gaming capabilities but simply to spruce up its performance for the Christmas selling season.

Apple also announced a few changes to the software bundled with the iMac. All iMacs now ship with Mac OS 8.5, Adobe PageMill 3.0, and EdView Internet Safety Kit, a parental Web-access control utility. The revised software will also include a link built in to Disney's Blast!, a Web site designed especially for children. iMacs will no longer ship with MDK, an action game available with the first-generation systems.

Apple, 0870 600 6010

New models lift for low-key Expo

New products, stars boost subdued double-event

This year's Apple Expo/Total Design and Technology show, which took place in November, was notable for the difference in atmosphere compared to previous years. The general consensus among exhibitors was that the absence of major players like Apple, Quark and Adobe (see *Macworld*, November, page 16) meant the show was a somewhat subdued event.

The bondi-blue wall to separate the two shows, which was proposed when Apple was still a major draw, turned into a thin beige affair, patrolled by uniformed stewards. It was designed to "protect" the Total Design and Technology exhibitors from the students and casual visitors categorized as attendees of Apple Expo by organizer Emap.

However, despite the disappointments and the diminished size of the event, there were still some new products and celebrity appearances to cheer the punters up.

Kai Krause, the chief design officer for MetaCreations, demonstrated Kai's Power Tools 5 for the first time in the UK. His latest version is shipping for £129, with upgrades available for £69 (Computers Unlimited, 0181 358 5857).

The new version features new tools such as FraxFlame, which creates an image made up of millions of fiery filaments, FraxPlorer, a real-time fractal pattern generator and FiberOptix, which creates furry text, green shag carpet, silly string or creeping vines.

Another famous guest at the show was author Douglas Adams, who dropped in to talk about the long-awaited Mac version of his game Starship Titanic. Since its launch on the PC platform in April this year, Mac gamers have questioned why Adams, an Apple Master and Mac enthusiast, didn't launch the Mac version at the same time. He explained that it was originally intended to be developed for both platforms, but the developer (London-based Digital Village)

encountered problems with the authoring system, mTropolis. It was decided that in order to stay within time and budget, the company would concentrate on delivering the PC version first.

The £35 Starship Titanic (Zablac, 01626 332233) uses SpookiTalk, a specially-created language engine that allows players to converse with central characters. More than 16 hours of pre-recorded dialogue were required, and photo-realistic graphics and interiors add to the Titanic experience.

Microtek (Computers Unlimited, 0181 358 5857) announced the Phantom 336cx USB scanner for the iMac (below). The £65.95 desktop scanner offers a maximum interpolated resolution of 9,600-x-9,600 dpi and an optical resolution of 300-x-600 dpi. The company also marked its entry into the A3 scanner market with two models – the ScanMaker 9600XL and 6400XL (above). The 9600XL costs £1,999 and has an optical resolution of 600-x-1200 dpi, while the £799 6400XL has a resolution of 400-x-800 dpi.

Among the offerings at the Digital Toolbox (0181 961 6622) stand was PhotoSpray, a set of Photoshop plug-ins from Human Software. The sprays include plants, flowers, bushes, rocks and jelly babies, and can be sprayed onto RGB images or layers. PhotoSpray, which usually costs £79, is available as a limited offer for £55.

Dutch company Techno-Design showcased various Quark Xtensions at the Alta Technology stand (0171 622 6606), including the new £299 Speller XTension, which has a dictionary of 800,000 items.

Hewlett-Packard (0990 474747) showed off the £11,890 DesignJet 3500CP. The 54-inch wide printer has a resolution of 600 dpi, Adobe PostScript Level 3, and ethernet and LocalTalk interfaces.

– Louise Banbury

Kai's PowerTools 5.0 photoshop filters
FraxFlame (top)
FraxPlorer (middle and bottom)

Konoko set to tackle Lara Croft

Step aside Lara Croft, Bungie has you in its sights. The maker of Marathon and Myth is planning the launch of Oni, a third-person action game centred around Konoko – "an elite cop and one-woman SWAT team".

Bungie says that Oni, earmarked for a 1999 release, features seamless unification of martial arts and gunplay into what it calls "full contact action".

Bungie's Doug Zartman explains: "When your gun runs out of ammo, drop it and take out your opponents with flying kicks and neck-snapping throws. Action fans will not be disappointed." The 3D game features artwork from specialists in anime – stylized Japanese animation – and technologies, such as Radiosity, for natural lighting, and interpolated animation, for smooth continuous movement. Bungie, **www.bungie.com**

For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk), updated five times a week

For the information as it happens visit Macworld Online Daily News (www.macworld.co.uk), updated five times a week

Go Director 7

SNEAK PEEK: Director 7

A mere six months after releasing the 6.5 upgrade – essentially some Xtras folded into the main 6.0 package – Macromedia releases Director 7, with numerous changes to its interface, functionality and usability.

The most obvious new feature is the Library palette – listing commonly used Behaviors, ready to be dropped onto the score for instant interactivity. Libraries make it easy for users to build up a collection of regular routines.

Also prominent is a new media type, Vector Shape. This allows you to create elements using a simple set of vector tools, in the same way that the Paint window is a simplified bitmap editor. This complements the existing capability to import Flash movies. Vector shapes can be controlled through Lingo, allowing smooth graphics at any size.

Reportedly the result of five years' work, a new engine offers faster playback and smaller file sizes. This appears to be a major improvement – 6.X projectors add a minimum overhead of over 2MB, but a D7 projector can be as small as 450K (and less if some of the Xtras are removed), making floppy-disk-based presentations a possibility again.

Macromedia clearly sees the Internet as the dominant medium for distributing multimedia content made with Director. Movies are set to stream by default, and there are several enhancements to make the creation of streaming movies easier, including a dedicated behaviour library, and using Lingo, the ability to get more information on the status of loading media. New Shockwave features enable the creation of multi-user environments over the network, for example multi-player games and chat rooms.
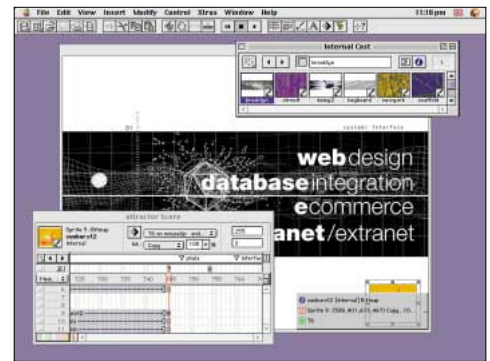
Most of the new lingo commands available relate to these new Web commands, but changes to the scripting window are also promised. Colour-coded Lingo is useful, while a pull-down list of Lingo categories makes it easier to pick the right handler for the operation.

There are numerous additions and alterations to assist in the production of Web-oriented movies, including a Web-safe palette option, the ability to preview in a Web browser, animated GIF support, the capability to import HTML, and a number of improvements to NetLingo, including XML and the secure https protocol. If that wasn't enough, the Help pages are now Web-based, and come with a Java-based search.

Some of the most requested features have been addressed, especially relating to text handling and fonts. Now you can make regular, anti-aliased text editable, and embed any fonts used so that any text will always appear exactly as you want it. However, in this beta none of the anti-aliasing features work, unless you import the font as a media type – a less-than-ideal process, that failed to work with spaces in the fonts we tried.

Another feature that many users will find invaluable is the ability to import Photoshop files, with Alpha-channel effects, so enabling smooth, anti-aliased overlaying of elements, and transparency effects.

This is a feature only previously available with the Alphamania Xtra, and is essential if you want animated or moveable sprites to appear smoothly on a background.

Colours within a movie can now be specified using RGB values rather than just the index-colour palette. Director now works happily in 16-bit colour on all platforms and features a number of colour pickers to choose from.

According to Macromedia, sprite manipulation has been made more powerful by the ability to skew and rotate on the stage, without having to first create multiple cast members – however this is another feature missing from the beta.

While the sprite-tweening dialogue box has options to tween the skew and rotation of a sprite, there is currently no way of setting these properties either on the stage or with the Sprite Inspector.

Though the beta is very stable, it's worrying that at this late stage certain documented key features are missing entirely. The Vector-shape elements seem curiously underused, and there are still aspects of the text handling that could be improved – for instance, anti-aliased fields, kerning and tracking.

The biggest problem with Director 7 is still the inevitable learning curve, made only slightly less steep by the Behaviour library. But these are minor points, and while not a revolutionary new version, this is a solid new release with major steps taken in the creation of projects for the Internet. **MW**

– Martin Gittins
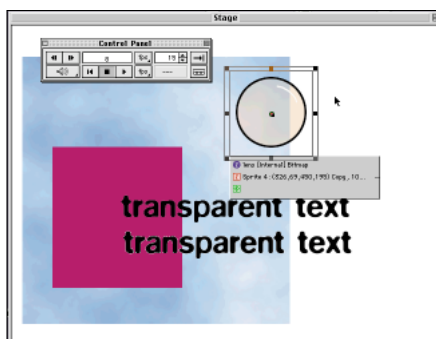
Transparently better
The new ability to import Photoshop PSD files means that transparency effects can be applied, as in this circular lens, as well as neat anti-aliasing – compare the top graphic imported from Photoshop file with the lower graphic, imported as a standard PCT.

Sprite idea
Sprite tweening can now theoretically include skew and rotate properties.

news

iMac sales need shot-in-the-arm

iMac-mania is on the wane, says DON CRABB

Apple hits back at iMac doubters

Apple vice president of product marketing Phil Schiller said analysts like Don Crabb are merely speculating.

"That's their theory and opinion, and they are welcome to it," Schiller said referring to reports of a slackening of interest for the Mac among the buying public. "But we've got our own theory and our own opinion, and we think the iMac is doing great and will have a great Christmas season."

Schiller said Apple is just now completing its world-wide rollout of the iMac.

He added: "Key markets that move slowly – business and education – are beginning to express interest in Apple's most economical Mac.

"Those new markets, along with additional retail outlets and new incentives from Apple – including a reinvigorated consumer loan program – should give the iMac more than enough staying power to continue setting sales records."

Some of that enthusiasm was fuelled by Apple's announcement that it would spend $100 million on iMac marketing and advertising through the end of the year. Apple, however, has consistently refused to release sales figures.

"We're going to be doing a lot of marketing between now and the end of the year," Schiller said. "We're doing everything we can to ensure this will be a great success."

To date, the iMac has been one of the most successful new consumer computers to hit the market in a long time. Selling hundreds of thousands of units in a few weeks is big news, even in today's oversold high-tech markets. There are signs, however, that the public's enchantment with the soul of the new machine is waning.

Consider that US retail chain CompUSA reports that, for the first time since the iMac went on sale in August, it has "no backlog of orders." Consider that scores of local Apple resellers now report that they can get "all the iMacs" they want. Consider that Apple is finally pushing its revitalized Apple Loan program. And consider that Apple now has a special £29.95-per-month deal for those who want to buy an iMac.

Not that I am complaining about any of these developments, you understand. Apple should have a ton of iMacs in the channel (you can't sell what your dealers don't have). Apple should have an easy-to-get loan program. And Apple should have a special iMac purchase program in time for Christmas.

It's just that its timing also coincides with reports from retailers that the initial burst of iMac sales flurry has substantially eroded over the past three weeks. And that is troubling, if for no other reason than the fact that Apple has "bet the farm" on the iMac – both to re-establish its consumer-market presence and to generate cash flow and market share.

Having said all that, however, I am more than pleased with the new £29.95-per-month iMac buyers special. This financing program, which is available from participating Apple retailers and from the online Apple Store, features "instant in-store credit approval, no payments for 120 days and one of the lowest interest rates available to consumers anywhere."

As Steve Jobs noted, "For the price of three pizzas a month, you can own an iMac. The world's coolest consumer computer has just become the most affordable."

Just don't try to get it with extra cheese, sausage, or a floppy drive. (Sorry, I couldn't resist.)

This new program promises to push iMacs back to their late-summer selling frenzy. According to one Apple dealer, "we got more than 100 calls within an hour after Apple announced the new program, all wanting to order iMacs over the phone". Impressive numbers indeed.

Showing that the New Apple "gets it", this new iMac buyers program will be flogged by an intensive new advertising campaign on TV, radio, print and billboards, as well as in-store displays."

In addition, Apple is juicing-up what you get when you buy an iMac (See page 24).

This is smart stuff. In classic fashion, Apple is paying attention to its customers and what they want and what else is available in the marketplace. While I still worry about the dip reported in iMac sales, I also am pretty juiced to see Apple work like a company that both cares and is far from clueless.

That Think Different thing seems to be working, again.

– Don Crabb

MW

Date to remember for calendar king

The 1999 Adobe calendar competition attracted 500 entries from photographers, designers and artists, all vying for the chance to grace the walls of advertising agencies and creative professionals.

The twelve winning images were picked by a panel made up of four judges drawn from the creative industry. The competition results were announced last month in London.

The overall winner was Paul Windridge, whose "cactus cow" – the image for January (left) – won him a trip on Concorde to New York.

Windridge created the image using Adobe Photoshop on a Power Mac.
Adobe, 0181 606 4001

Video tech makes   the Final Cut

Apple finally betas Macromedia's challenger to Adobe Premiere

After years of development, Apple's Final Cut video-editing and video-effects package is now in beta testing, sources close to the company report. But what the company plans to do with it is still anyone's guess.

Originally developed by Macromedia, Final Cut was intended to be a high-end, all-in-one video editing, compositing and effects package for Mac OS and Windows NT. The original designer of Adobe Premiere, Randy Ubillos, authored it and an early version was previewed at the National Association of Broadcasters (NAB) show in 1996. However, its release was repeatedly delayed until Apple acquired it in May.

At the time, industry insiders expected Apple to kill the application, thinking the company was interested only in Final Cut's engineers, who moved to Apple. However, sources said a beta version of the software, called Apple Final Cut Pro and last revised in late September, throws this analysis into doubt. "Everyone thought Final Cut was dead, but here it is in beta," one source said. "Whatever the reason, the upshot is no one knows what they're going to do with it."

The Final Cut beta appears to be a pared-down version of the software shown at this year's NAB (see *Macworld*, June 1998, Page 20). Sources said that feature for feature, it looks very similar to Premiere. "It's Premiere 5 with a different name," one source said.

Sources report that the Final Cut beta has a standard timeline interface, with floating tool palettes and editing windows. It supports all the major film and video formats, including the wide-screen digital TV aspect ratio, as well as timecodes, FireWire and deck controls. The beta has comprehensive controls for logging and capturing clips, can input and export edit-decision lists and has 99 levels of undo, sources said.

The beta reportedly makes good use of QuickTime's built-in effects architecture. Sources praised the software's extensive, keyframable controls for effects and transitions. The beta supports After Effects plug-ins and features a scripting component for mixing and matching custom effects. Its audio controls and filters, as well as its support for the Digital Video (DV) format, exceed that of Premiere, sources said. Unlike Premiere, however, Final Cut does not feature three-point editing, according to sources, and it appears to lack the capability to preview effects before they are rendered.

Sources said the beta includes a new QuickTime AC extension that appears to be specially designed for Final Cut, as well as a multiprocessing API library. Sources noted that Apple is being very secretive about the software and its own plans. Described as a "Steve Jobs skunkworks" project, Final Cut will be one of Apple's few stand-alone applications.

Under Macromedia, Final Cut appeared to be targeting Avid's MCXpress, sources said. In its present form, it would compete head on with Premiere, as well as with packages from Media 100, Radius, Pinnacle Systems and Discreet Logic.

"Apple has a tacit agreement not to compete with third-party vendors," one source said. "This is in direct competition with Adobe. They're going to be stepping on some toes."

Macromedia had originally priced Final Cut wildly between £599 and £1,999 and there's nothing to stop Apple bundling it with high-end desktop machines. Apple is also expected shortly to release new desktop systems with built-in FireWire support; Final Cut could serve as a showcase for FireWire and QuickTime.

One source said, "While we're all saying, 'What is Apple thinking,' they probably have a strategy no one else is smart enough to figure out."

Apple declined to comment. **MW**

ANDY BAKER
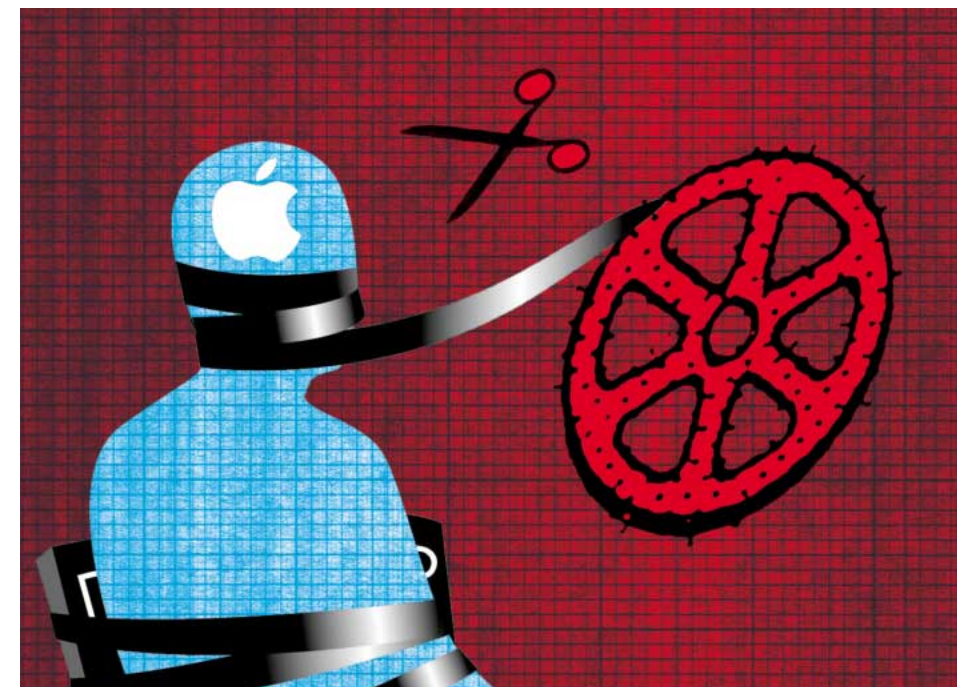
Mac MIDI pleased to bits at AES

The Audio Engineering Society' bi-annual, full-blown AES trade show provides a forum for discussion and presentation of new concepts and current developments – such as DVD and FireWire – in audio-recording technology. ROB DANIEL noses around the exhibits in Los Angeles, feeling pleased about the Mac's high profile in the recording industry.

As one of the 400 exhibitors at the show, Steinberg (Arbiter Pro Audio, 0181 202 1199), vendor of the Cubase VST audio/MIDI sequencing software, had every reason to feel smug as its ASIO driver system (for audio interface cards) and its VST (Virtual Studio Technology) real-time plug-in architecture has now evolved into a Mac standard.

Emagic (Sound Technology, 01462 480 000) announced that its sequencing flagship Logic Audio Platinum (already VST savvy) would support ASIO in version 3.6, which should be available now. Emagic was also showing the Unitor8, a cross-platform MIDI interface and synchronizer that features pro-video VITC support. The Unitor8 has eight MIDI ports, providing a total of 128 MIDI channels. While this is nothing unusual, the fact that you can daisy-chain up to eight units per serial port (1,024 MIDI channels each) certainly is. Most MIDI interfaces of this type can network only four devices.

Also climbing on the ASIO bandwagon, Opcode (SCV, 0171 923 1892) unveiled Vision DSP 4.1, its audio/MIDI sequencer featuring ASIO drivers and VST plug-ins.

According to Opcode's vice-president Keith Borman, the company has spent over a million dollars in developing USB MIDI support for the Macintosh. Consequently, MIDI on models such as the iMac will be delivered via OMS (Open Music System), a MIDI routing environment that already has a widespread presence in music software and is embedded into QuickTime. Opcode is confident that, as the undisputed leader in Macintosh USB MIDI and audio development, its software will be the first to fully integrate Macs with USB hardware. Consequently, all non-Opcode software applications will need to subscribe to OMS to perform on USB Macs.

Also on the Opcode stand was the DATport. This USB device enables audio to be ferried to and from a computer using S/PDIF, the
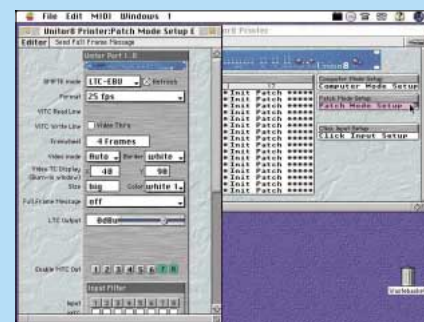
In control
Unitor8 enjoys on-screen control of all its parameters.

consumer digital-audio format. Currently, Opcode await Apple's release of USB revision 1.1 so that the DATport and USB MIDI devices can be used with the iMac.

Digidesign (01753 653 322), an early pioneer of Mac digital audio software and hardware, was showing off its new Pro Tools 24| MIX system. This multitrack digital-audio recording set-up has at its heart the Mix24 PCI card that now delivers three times more processing power in one card than previous

Sound manager
Vision DSP provides a four-band EQ for all tracks, using just the Sound Manager.

Pro Tools systems did in their lumbering rack units. As a consequence Digidesign's real-time plug-in system (TDM) has a new generation of effects optimized for the Mix24. As it's name implies, the Mix 24 is 24-bit – but as it's effectively a digital signal processor, it needs to be combined with additional audio interfaces such as Digidesign's 888|24 or an Apogee AD-8000 to realize its full potential (i.e. get sound in and out of it).

Offering superior resolution, 24-bit recording is fast becoming the new audio standard and was very much in evidence at the show. Supported by DVD, it's set to oust the 16-bit standard for audio CDs.

Waiting in the wings and on show was Yamaha's DSP Factory DS2416 (Yamaha-Kemble, 01908 366 700). This is a half-length PCI card, based on its range of digital mixers. The Mac drivers should be available by the time you read this, enabling Mac audio/MIDI sequencers to rely less on the processing power of the computer for mixing tasks.

Factory records
The DSP Factory has stereo analogue and digital interfacing, but the heart of the system is its built-in 24-channel digital mixer. Sixteen of those channels can link up directly to audio tracks on a sequencer. Each channel has a four band EQ, dynamics effects (compressor, noise gate etc), delay (echo) effects and independent sends to the two separate digital-effects processors.

The DSP Factory works along similar lines to the professionally interfaced Lexicon Studio, which was also on show on a Mac running with ASIO drivers. Ultimately, this new generation of audio interface cards may well revive the fortunes of older 603e and 604e Macs in the music world. These PCI-based interfaces more or less turn the computer into a glorified LCD and hard-disk controller. As a result, you too might"'think different" when it comes to making music on a Mac. **MW**
Audio Engineering Society, 01628 663 725
www.aes.org

Dream ticket

SNEAK PEEK: Macromedia Dreamweaver 2

Macromedia has announced version 2 of its professional Web-editing software, Dreamweaver. Some of the many new features include site-wide file and page design management using templates and fast, intelligent site-wide search-&-replace. XML support has been broadened, as well adding integration with a wide range of third-party products. Dreamweaver is aimed at designers new to Web design, as well as experienced webmasters and developers

Dreamweaver creates a clearly laid out map of your site that is also interactive. Helping to navigate your site structure, the site map can be used to re-organize pages and links quickly and easily. Users can drag-&-point from file to file to add links and check frame set structures.

The search-&-replace facility has also been beefed up to include site-wide text and HTML tag-checking using regular expressions. The feature is also now HTML-aware, allowing you to change content and HTML source code separately. With this, you can check the validity of the HTML code in your pages and in imported HTML files.

As well as Dreamweaver's support for third-party databases and CSS (Cascading Style Sheets), it now provides you with a template system designed for use with your chosen server-side database application. Macromedia provides a library of Dream Templates, speeding up the process of site creation and site-wide redesigns. You can also define non-editable areas in templates allowing others to update sections without affecting the overall design.

Layers can be quickly converted to tables and vice versa for compatibility with earlier version 3 browsers. You can use the libraries feature to set frequently repeated content like headers and footers in a single file for fast updating. JavaScript items can also be stored in libraries and Dreamweaver 2 comes with a collection of pre-coded JavaScript effects. Rollover buttons can be instantly created, requiring no JavaScript coding, by simply defining paths to relevant image files.

Another new feature is the Tracing Image option. It allows you to embed a transparent image of your required design in the background of your layout page. You can work over an original layout design using it as a guide to create table-based designs. Although only a limited selection of More formats will be supported either in the final shipping version or in a later update.

The flexibility of the enhanced table-editing features is unsurpassed. You can choose to sort your tables
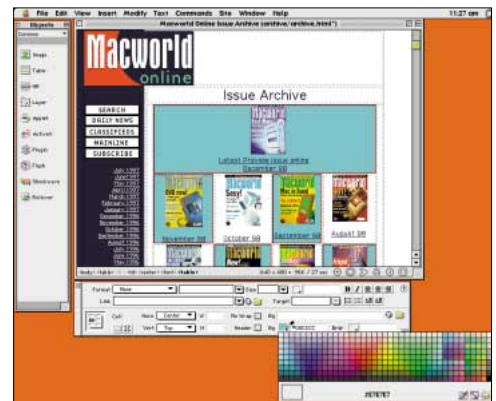
Table manners
Flexible multiple cell selection and formatting, plus an Excel-like sorting feature.

alphabetically, numerically or column by column. It can even cope with tables that contain row spans and column spans. Content in multiple cells, rows or columns on your page can be changed with one action. A selection of pre-defined and browser-safe table formats is provided. It would be handy to be able to copy and paste ready-made data tables from other applications into a Dreamweaver table format.

Dream sequence

The time-consuming problem of checking the true look of your dynamically published pages is overcome with the added ability to view a rendering of database content in layout mode.

Macromedia has added Roundtrip XML, XML parser and a custom tag database to its HTML coding flexibility. You can now import XML into templates and edit the source code and visual mode simultaneously. It also allows you to drag-&-drop JavaScript objects, Shockwave and Flash, audio and video elements and preview them playing in editing mode.

Ecommerce products, ICat, Cold Fusion and Tango objects are included in the CD package as well as the HP Open Pix Image Igniter to create zoomable Web graphics. Macromedia has also added a eyedropper for matching Web-page colours to graphics.

Bare Bones' HTML editor BBEdit 5.0 also ships with the full commercial package, and an excellent collection of help pages, viewable in your browser, is provided too.

Dreamweaver 2 is a storming upgrade, streamlining many tedious and time-consuming Web design processes. **MW**
– Gillian Robertson

Site returns
Define your site and use the interactive drag-&-drop map to take control of site structure and links.

G3Z ZIF cards give Power Macs a lift

XLR8 has announced a new range of G3Z ZIF (zero insertion force) advanced upgrade cards for G3 Macs.

The MACh Speed G3Z family of processor upgrade cards includes three speeds: 333MHz, 366MHz and 400MHz, priced at £799, £949 and £1,139 respectively. The standard 1MB backside L2 cache on the respective cards runs at ratios of 5:2, 2:1 and 3:1.

The company claims that the cards can almost double computer speed and raise the performance of existing G3 Power Mac to higher levels than any new G3 Mac model.

Like all XLR8's upgrade products, the new G3Z incorporates Multiple Variable Processing (MVP) technology, which means that bus, CPU and cache speeds can be adjusted. As a result, the processors will run faster, with the 400MHz running closer to 420MHz, the company claims.

The upgrade cards are installed into the zero-insertion force socket on the G3 motherboard. XLR8 claims this process takes just a few minutes.

MACh Speed
One of the MACh Speed G3Z upgrade cards.

The cards are compatible with the Apple Power Mac G3, Minitower, tower and desktop models. The upgrade cards ship with two utility programs, the XLR8 Processor Info Utility, which allows interactive feedback of card settings, and MACh Speed G3 Control software, which controls the backside cache.

ProMedia, 01923 266 400

Printer hits full bleed

Mitsubishi has unveiled the CP800DW digital colour printer, which offers full-bleed, 178-x-127mm dye-sub printing on roll media.

The CP800DW produces photo-like full-bleed images with full control on picture size, including an edge-to-edge printing option.

The printer has a palette capability of 16.7 million colours and 256 gradations of yellow, cyan and magenta. The three-colour ink roll also delivers a UV protective transparent layer.

As well as its SCSI-2 interface, the £2,200 CP800DW has an optional interface that allows "direct printing" from a digital camera.

Two paper sizes, S and L, are available for the printer. S-size paper images are full-bleed up to 127-x-102mm. L-sized full-bleed images, meanwhile, are 127-x-178mm.

The resolutions are 1,040-x-1,280dpi and 1,768-x-1,280dpi respectively on S- and L-size paper.

Mitsubishi, 0115 979 1777

True blue
One of two new USB hubs from Entrega.

USB quartet joins iMac revolution

Entrega has announced a family of USB device solutions, comprising two external hubs, a USB-to-parallel printer converter and a USB PCI upgrade kit. Entrega's iMac-coloured external USB hubs provide either four or seven USB ports and cost £52 and £84 respectively. The company is also offering a range of cables, which conform to USB physical layer specifications, with lengths varying from 0.5 metres to 5 metres.

The P36 is a £33 USB-to-parallel printer converter that transforms one of the iMac's USB ports into a 36-pin Centronix parallel port for PC printers. The £45 PC1-4U USB is an add-in card with a PCI-to-USB converter and four USB ports.

Entrega, 0118 951 9549

External drive goes USB
SanDisk has introduced a USB version of the ImageMate CompactFlash reader/writer external drive. The ImageMate will allow iMac owners to download images from CompactFlash digital film cards. The £53 ImageMate is an external, mouse-like device and the images on a 10MB CompactFlash card can be transferred to the desktop in around 20 seconds. SanDisk CompactFlash cards sizes range from 4MB to 48MB.
Peak Development, 01489 796 979

Verity makes CR-R debut
Verity Systems has introduced its first CD-R duplicator, the VS6000, for £6,996. The duplicator can reproduce 100 CD-Rs unattended, and can be programmed to duplicate in single disc or batches. The duplicator has a spindle to collect reject media. It has a 4GB hard drive, autoformat recognition, byte-to-byte verification and simulation testing.
Verity Systems, 01252 317 000

Sanyo thinks small
Sanyo has launched the market's smallest, lightest and brightest portable projector. The £4,995 PLCSU15 weighs 3.9kg and measures 8.5-x-4.3-x-12.4 inches. It features 600 ANSI lumens, has a PCMCIA slot, and a SmartMedia adaptor for showing digital-camera images. It also has a 120W lamp, powered zoom and focus, and a throw-distance of between 5.3 feet and 64 feet.
Sanyo, 01923 246 363

Microtek scans market
Microtek has introduced the ScanMaker X6, a 36-bit flatbed colour scanner costing £149. The ScanMaker X6 has an optical resolution of 600-x-1,200dpi. It is bundled with ScanWizard, Microtek's driver software, and has a descreening feature for removing moire patterns. It also ships with Caere OmniPage, and MicroFrontier's ColorIt!
Computers Unlimited, 0181 358 5857
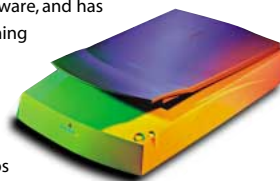
Photoshop CMYK guide
Professional Photoshop 5, by Dan Margulis, priced at £38.95, is a guide to working with CMYK colour using the latest version of Adobe Photoshop. The book addresses the needs of both professionals and novices.
John Wiley & Sons, 01243 779 777

A whale-told tale
Ransom's Whale of a Tale is a set of three educational CDs covering maths, science and language. Characters like Penny the Puffin, Sophia the Lobster and Old Tom the Turtle are on hand to make learning fun through games, exercises and trivia. It is available in two £25 sets. Set one is for children aged four to seven years, and set two is aimed at 7-to-11 year-olds.
Ransom, 01491 613 711

CD-R pitfalls bible
Given the rise in popularity and falling costs of CD-R machines, the Recordable CD Bible by Mark Chambers, priced at £36.95, should prove popular. It explains how to avoid the pitfalls and problems that can ruin recordings.
IDG Books, 0181 231 6732

Building on success
Princeton Architectural Press has released *Animate Form*, a book and CD of recent experimental architectural projects developed by Greg Lynn. Priced at £28, Animate Form documents the design processes through 3D renderings, animation sequences and hundreds of colour images.
Biblios, 01403 710 971

PhotoDisc's new titles
Digital stock images specialist PhotoDisc has added Studio Geometry 2 and Seasonal Backgrounds to its Backgrounds library. Extending the Volume range are Medicine Today and World Landmarks and Travel. Background CDs cost £139 and Volume CDs £229.
Photodisc, 0845 302 1212

Xerox trio in debut

Large print
The P12 black-&-white printer from Xerox.

Xerox has extended its DocuPrint printer range to include the black-&-white P12, and the C20 colour ink-jet printer.

The £499 P12 offers 600-x-600dpi resolution and features an expanded paper capacity for printing on a wide variety of media.

The standard paper input holds up to 330 sheets, while an optional feeder with cassette increases the paper-handling capacity to 830 sheets.

Other features include enhanced print formatting, bi-directional status monitor and voice prompts to alert users to errors.

The C20 has high-level PostScript emulations and an option for Xerox' WorkSet network connectivity. The printer is offered in two configurations. One, the C20, can be upgraded to be networkable and costs £629.

The network-ready NC20 costs £949 and includes Xerox's external ethernet adaptor, a second 100-sheet paper tray and an extra 16MB to the C20's 8MB.

Both configurations print 8ppm in black-&-white and 4ppm in colour, and have a resolution of 600-x-600dpi.
Xerox, 0800 454 197

USB release all ADS up

ADS Technologies has announced three new USB products – a hub, a port for desktops and a port for G3 PowerBooks.

The hub has one Up port to connect to the Mac and four Down ports to attach four extra devices. It adheres to tiered star topology, allowing six tiers and 127 devices to be connected. The hub automatically detects the speeds of devices and supports 12Mbps and 1.5Mbps. It works with the iMac and costs £45.

The USB port for desktops costs £37. An internal PCI card, the port will connect up to 127 USB-based peripherals. The notebook port, costing £49, is a PC card providing two USB ports

Hub capped
The new USB hub.

and supporting all USB-compliant devices.
Partners in Europe, 0181 938 4671

Quite Imposing package in position

Quite Software has announced the UK availability of its imposition package, Quite Imposing. The software imposes PDF files within Adobe Acrobat Exchange.

Quite Imposing will impose any PDF file, or PDF files combined from a variety of sources.

Two versions are available – Quite Imposing, which retails at £199 and Quite Imposing Plus, which costs £399. Both versions feature an easy booklet maker, which can produce a foldable booklet from any PDF file. Other features allows users to trim and shift pages, shuffle pages for imposition, shuffle even and odd pages and create sample documents.

Quite Imposing Plus can add numbers to pages, cover page items with masking tape, or add a page from a PDF file over any other page at any scale.

It also has additional features, such as Step and Repeat, Define bleeds, and Manual Imposition.
Alta Technology, 0171 622 6606

Intellihance Pro 4 is image-conscious

Intellihance Pro 4.0, a major update of the image-enhancement tool from Extensis, is shipping now for £129.

Intellihance Pro is a plug-in for Adobe Photoshop, Macromedia ImageReady and Corel Photo-Paint, and is used for comparing, adjusting, selecting, colour correcting and enhancing images.

Intellihance Pro 4.0 analyzes each image and determines the optimal setting for enhancing and colour correction. Users can batch-process files of images, using Photoshop Actions.

Its PowerVariations feature allows images to be split and repeated across user-defined preview windows. Up to 25 image and colour variations can be previewed simultaneously. Test strips of the comparisons can also be printed.

Intellihance Pro presents dozens of imaging options in a single dialogue, including contrast, brightness and automatic cast removal. A variety of image-enhancement presets are available but users can create up to 50 of their own image-adjustment presets.

Presets can also be applied directly from
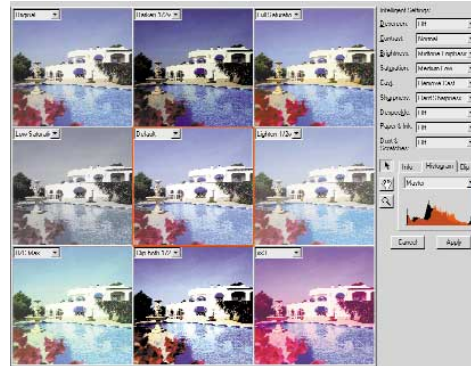
Multi-tasking
Intellihance gives images a shot in the arm.

Photoshop, using the Extensis menu. Other new features include a Clipped Pixel Display, showing which pixels are too bright, too dark, or too saturated; a feature for removing dust and scratches without blurring or destroying detail; and the new Paper and Ink settings, which adjust images for output to device types.
Computers Unlimited, 0181 358 5857

Graphics tablet is a real pen pal

Wacom has announced the £75 PenPartner graphics tablet. It ships with a choice of two software bundles – the first is MetaCreations' Kai's Photo Soap SE and ArtDabbler SE, the second is Disney's Magic Artist.

The PenPartner features an intuitive control panel, allowing users to select one of five levels of pressure-sensitivity. The double click area can also be adjusted to up to 20 pixels, instead of the user having to click on the same pixel twice.

The UltraPen provides 256 levels of pressure and has a programmable side switch that can be set to simulate the mouse button or keyboard keys.
Computers Unlimited, 0181 358 5857

Write on
The Wacom PenPartner graphics tablet software bundle.

Light on
The NEC MT1035 is a power-friendly portable.

Light lightweights

A new range of lightweight LCD projectors from NEC, the MultiSync MT830, MT1030 and MT1035, are the most power-economic yet, according to the company.

Using a new 150W short-arc, high-pressure lamp, the projectors cost £3,900, £4,500 and £8,103 respectively. The MT830 has a resolution of 800-x-600 pixels and a brightness of 1,000 ANSI lumens, while the MT1030 has 900 ANSI lumens and the MT1035 has 1,300 ANSI lumens. Both the MT1030 and the MT1035 offer a resolution of 1,024-x-768 pixels. The new MT range also has remote control, featuring a laser pointer and a 360-degree infra-red system.
NEC, 0181 993 8111

PhotoVista 1.0
Live Picture's PhotoVista 1.0 has dropped in price to £25, from £40. The software allows Web designers to add 360-degree panoramic images to Web sites. Features include automatic warping, aligning and blending, and support for popular cameras. It can cope with standard image formats, so that popular image-editing programs can be used to add special effects.
Principal Distribution, 01756 704 4000

QMS printer ranges
QMS is offering lower prices on its colour printer range. The Magicolor2 colour laser printer standard model, with a resolution of 600-x-600dpi is down from £1,795 to £1,195. The Magicolor2 CX model, with a resolution of 2,400-x-600dpi, is now £1,795, a saving of £1,000. Two QMS ColorScript full-bleed dye-sub printers have also been reduced, by £1,000. The 310 A4 model is now £2,495, while the ColorScript 330 A3 model is £4,495.
QMS, 01784 442 255

Fast Starlet switch
Farallon's Fast Starlet Switch 10/100 has been reduced to £485 from £969. It has eight auto-negotiating 10/100 Mbps switched ports. Farallon has also cut the price of its Fast Starlet Switch 10/100 16+2 – which is for use with 10BaseT ethernet networks – from £625 to £590.
Principal Distribution, 01756 704 4000

Kodak digital camera
Kodak has announced price cuts on its digital-camera range. As well as slashing £100 off the DC210 Plus, the DC220 and the DC260, Kodak is offering a free £60 card-reader with the DC260. Both the DC220 and the DC260 are USB-compatible and ship with an iMac driver.
Kodak, 01442 845 122

product
news

Laser blast from Hewlett-Packard

Hewlett-Packard is rolling out two new laser printers – the Colour LaserJet 8500 and the 4500.

The LaserJet 4500 delivers 2,400dpi with speeds of four pages per minute (ppm) colour and 16ppm monochrome. It features automatic colour calibration, ensuring the consistency of its colour output. The LaserJet 4500 is available in three configurations. The basic 4500 costs £2,130 and ships with 32MB of RAM, 150-sheet multi-purpose tray and 250-sheet paper tray. The 4500N costs £2,500 and includes 64MB of RAM, and a 10/100 base TX JetDirect 600N internal print server.

The £3,230 4500DN printer, also with 64MB RAM, has an additional 500-sheet paper tray, automatic duplexer and the HP JetDirect 600N print server.

The LaserJet 8500 has speeds of 6ppm colour and 24ppm monochrome, with the same print quality as the 4500.

In addition, it has automatic duplexing, advanced compression technology, and Format-Once and RIP-Once technology.

Like the 4500, the 8500 comes in three configurations. The basic model has 32MB of RAM, 100-sheet multi-purpose paper tray, a 500-sheet A4 paper tray and one for A4 or A3, and ships for £5,150. The 8500N includes an EIO, 10/100base TX JetDirect 600N internal printer server and 2GB hard disk for £5,900.

The 8500DN has an additional 2,000-sheet input tray and costs £6,990.
HP, 0990 474 747

Bone-up on new BBEdit

Bare Bones Software has released version 5.0 of BBEdit, the text- and HTML-editing tool.

The upgrade features a completely redesigned suite of HTML mark-up tools, new additions to the core-editing capabilities, and refinements of the existing feature set.

Among the new tools are the context-sensitive Tag Maker, and its companion, the Edit Tag command. These tools speed up the creation and editing of HTML documents by providing valid mark-up options. The new HTML mark-up tools are supported by an underlying SGML parser, which means improved HTML syntax checking.

BBEdit 5.0 has a new Set Menu Keys command, for configuring keyboard equivalents for standard BBEdit menu items. Users can choose how OSA scripts are organized, and a new floating window means scripts can be invoked more easily.

The glossary has been enhanced and the multi-file searching feature improved, allowing users to filter files by Finder label before searching. BBEdit 5.0 costs £86.50.
Full Moon Software, 01628 660 242

Xenofex 1.0 can get under your skin

Alien Skin's Xenofex 1.0 is a collection of special-effects filters for use with graphics packages that support the Adobe Photoshop plug-in specification.

The £99 Xenofex includes 16 filters, such as Distress – a distortion filter for creating ageing and crumbling – and Flag, for realistic 3D rendering of rippling surfaces (see picture, left).

The Television filter adds a range of TV- and video-like distortions, and natural phenomena can be created with Lightning, Electrify, Constellation, Stain and Cloud.

Xenofex is fully scriptable with Photoshop's Actions feature.
Digital Toolbox, 0181 961 6622

David Fanning

G4 processors are set to raise eyebrows in the hard-to-impress world of technology.

G-force tooling up

So here we are, approaching the end of the decade, the end of the century – hey, it's the end of the millennium. Five years ago, if somebody had told you that there would soon be processors powering Macs at 100MHz, it would have seemed like amazing news. Now, processors are in the pipeline that will power your Mac at 1,000MHz. These days, such news is likely to be greeted with a nonchalant shrug. Maybe we're getting technology fatigue – just as people become numb to the carnage of war. Just what can technology offer to make us take a second glance? Well, here are a few things that just might set your pulse racing.

The new G4 processor is just around the corner; it's likely to debut at the San Francisco Macworld Expo and be launched in late February. Eventually, it'll be inside the long-anticipated Pro range of Macs and in the top secret and super-funky El Capitan case. Initially, the G4 processor will be a lower specification than anticipated, with only a 32-bit architecture. But before long, the G4 series will include a 64-bit processor with as many as 50 million transistors on board. This may mean nothing to you but, comparison with earlier PowerPC processors puts it into perspective.

The original PowerPC 601 processor maximum speed was 120MHz and it had a total of 3 million transistors. Now consider that the G4 will start at speeds of around 400MHz, quickly reaching speeds of 600MHz and beyond.

That's fast.

There is more to designing a processor than simply cramming a ton of transistors on to tiny chip of silicon. But, of course, it is a good start. The way a processor handles information is also crucial. One thing that will make a huge difference is the new AltiVec technology from Motorola. This new addition to the PowerPC processor is similar in function to the FPU was in 680x0 processors. It adds to the already-fast G4 processor, a small area where 128-bit calculations can be processed. This means that every clock cycle that passes – and there are 400,000 per second at least – it can do 16 calculations. This will add all manner of new abilities to the processor, speeding everything from networking to graphics and audio processing. Any integer-heavy application can be improved by up to ten-fold compared with an equivalent processor without AltiVec.

The trick of AltiVec is the ability to do many things simultaneously, something Macs are notoriously bad at. The super-fast processing of AltiVec doesn't hold up the general day-to-day processing of the main part of the G4 chip. It's like you have a top-notch processor to do your bidding – while in its spare time it can do things like speech or video processing at ten time the rate. So, your next processor could be running at 600MHz but doing stuff in the background at ten times normal speed. That's almost exiting ... isn't it? When this becomes reality before the year-end, the boffins designing processors are not just going to retire. There are more treats ahead.

One is Project 2K – the generation after next. I guess they could have called it G5, but opted for a millennium theme. I'm assuming that the good people of the design group hit on the name before some wiseguy named a bug after the millennium. Anyhow, as the name suggests this project is supposed to come to fruition by the end of 1999. Its goal is to produce a 1,000MHz PowerPC processor before 2000.

It's a while since I spoke to anybody connected with the project, but the last I heard was that it was actually ahead of schedule. As far as I can tell, the original design didn't include the AltiVec technology, but that may have been because it didn't exist at the time.

How, you may ask, are they able to acheive such wonders? It all stems from the ability to produce absurdly thin wires, if something a fraction of a micron across can be dubbed a wire. Both Motorola and IBM announced new techniques this year for building chips using copper. Copper's excellent conducting qualities mean you can use thinner strands to carry a signal. The first PowerPC processors used wires as small as 0.50 microns, and the current crop of G3 processors have reached 0.25 microns. The G4 chips will shave that down to 0.18 microns and, before the end of 1999, this will be down to an incredible 0.10 microns.

By this time, the fruits of Project 2K will be carrying almost a billion transistors. The processor will also need much less power, as a thin wire is more efficient and needs less energy, and therefore will generate less heat.

By comparison, the cream of Intel's crop – the Pentium II Xeon – is the size of a duty free slab of chocolate and generates as much heat as a 40W light bulb.

Now that *is* amazing. MW
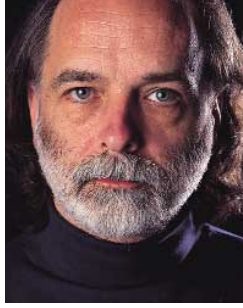
Michael Prochak

Apple's claims to be millennium bug-proof
shouldn't lead us to rest on our laurels.

Millennium doom

Counting Crows got it wrong. OK, they may have been right about the long December, but from where I sit, there's no credible reason to believe that this year will be better than the last. And don't think all those dysfunctional New Year's resolutions you made are going to change anything.

Apple may be back in profit and Microsoft may have lost its case to Sun, but that's just part of the evil cosmic joke. The clock, digital or otherwise, is still ticking and immunity is no longer an option. The frost is on the pumpkin and from now on, turning over a new leaf will be just another anodyne placebo against the revealed abundance of bugs and rot underneath.

When my son was growing up, he used to watch a cartoon called Visionaries.

The story-line was essentially about a highly advanced technical society where one day, for no apparent reason, all technology simply died. Everything stopped...nothing worked and no one knew how to fix it. To sort out the ensuing chaos, the powers that be decided to revert to magic. You can get away with that sort of thing in cartoons. However, in the world of solids already plagued by global warming, natural disasters and a wired global economy teetering on the brink of financial crisis, magic may not be a viable option. And if the digital music our world dances to were to stop, we could find ourselves sitting in the dark tapping our feet to the strange rhythms in our heads.

In just under a year, the millennium bug will kick in. That's a fact. What we don't know is just how much of our existence will be affected by it, nor do we know how much of the problem we will have actually managed to solve.

As Macintosh users, we have a certain right to feel smug about the whole Y2K problem. Our machines already know the difference between the years 2000 and 1900. We chose wisely when the rest of the world ran blindly down the blundering Windows cul de sac and we can all sit back and laugh hysterically when they all smash head on into a cartoon-like brick wall. Or can we?

When the millennium bug strikes, any piece of technology that relies on dates will probably crash. This means systems in banks, lifts, air traffic control, life-support systems, power stations, satellites, alarms, and even fax machines could stop working or at least malfunction. And the domino effect that ripples out from these failures could effect all of us. In today's inter-connected economy, every business and service is linked to every other business and service in some way or another. You may be a supplier or you will have suppliers. You may be a customer or you will have customers. And it is through this supply chain that business and the economy will be most seriously affected by the millennium bug. If your business depends on key components sourced from other companies, what happens if their systems go down and they can't deliver? Your company is affected even if you use Macs or even if you've effectively sorted your own Y2K problem. Any supply disruption could have wide-ranging consequences, including the very survival of your business. Pundits now say that a whole cocktail of influences will combine to boost economic growth this year but contribute to a massive slowdown in 2000. The computer software industry – which has experienced exponential growth over the past few years – is predicted to suffer a massive collapse. And the UK's largest bank now predicts that the chance of a hard-core millennium recession is around 70 per cent.

If you want to really scare yourself, check out some of the Y2K web sites. One of my favourites is **www.garynorth.com/y2k/results_.cfm/Domino_Effect**. Some of the stuff on there makes you want to get a place in the country, lay in a hoard of tinned food and water and sit in a rocking chair on your front porch with a 12-bore and spit. Or, you could continue to buy and use Macs and do whatever you can to ensure that your business or organization has done everything possible to ensure that everything around you is at least doing something about the millennium bug as well. If you're not sure where to start, contact the government's Action 2000 programme for a survival pack. But Mac or no Mac, don't be complacent. This is the flapping butterfly wing creating the hurricane that will affect all of us in some way or another.

In Milan Kundera's *The Unbearable Lightness of Being*, he remarks that the story of his life is exemplified not "Es muss sein" (it must be so) but rather "Es konnte auch anders sein" (it could just as well be otherwise). With the Y2K problem, we need to think along similar lines. No one knows for sure that all technology will stop at midnight 2000. But then again, no one knows that it won't. In the mean time...does anyone know anything about magic? **MW**

Desktop critic

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

People power

The *Wall Street Journal* told us. *Fortune* told us. And Lord knows, *Time* magazine told us: Apple "has no future." These publications' ability to draw negative conclusions from any news, no matter how positive, often bordered on the Monty Pythonesque. You get the idea that if Apple won a 90 per cent market share, bought out Microsoft, and hired Bill Gates to mop the bathrooms, *Business Week* would write: "Apple has all but ignored the possibility of alien invasion – an event that would cut deeply into profit margins."

Once the media seized upon the Death of Apple as their favourite slow-news-day whipping boy, a cycle of anti-Mac feeling took hold. One company after another announced Mac phaseouts. We heard about banks, telecom services, and even Web pages withdrawing Mac support.

Those announcements made further headlines. But the Apple-obsessed media are missing a story that's ten times juicier: that many of the much-hyped US Mac phaseouts never happened. We're talking about corporations, universities, and government departments completely reversing themselves, admitting bad judgement, and eating enough crow to make Thanksgiving look like a snack.

What brings about these amazing policy reversals? It's the oldest and most reassuring story in the book: the people spoke. Every phaseout triggers a tidal wave of resistance. Every Mac-bashing official gets a sharp, overwhelming lesson in the consequences of taking away choice.

You've probably already heard how Intuit's Quicken for the Mac was cancelled, and then uncancelled in the face of pressure from the public (and Steve Jobs) and how the Disney Blast Web site was incompatible with Macs until Mac customers pounded down the door. But those cases are only the tip of the iceberg.

Wells Fargo In July 1998, Wells Fargo Bank wrote to its customers: "Online banking through Quicken for Macintosh will be discontinued, since only a small number of our customers use this service."

Or maybe not. Within five days, 700 customers wrote to complain. Mac fan Tom Chiara's polite, no-nonsense letter was among them: "Many of us would rather switch banks than use Windows to access our account," he wrote.

Wells Fargo was big enough to admit its mistake. "We goofed," said the form letter Chiara received only 11 days later. "The service will not be discontinued as previously announced." Put one way, Wells Fargo's original decision wasn't surprising; only 1 per cent of its online customers use Macs. But 1 per cent is 7,000 Wells Fargo customers; for a bank, that's quite a chunk of change.

Yale University In June 1997, Yale wrote to every incoming freshman: "You are strongly encouraged to select a Windows PC. Owing to uncertainties about availability of software … the University cannot guarantee support for Macintoshes beyond June 2000."

This edict came from a tech director named Dan Updegrove, who apparently had visions of Intel equipment grants dancing in his head (see The Desktop Critic, March 1998). But the reaction was overwhelming: outraged alumni, students, faculty, and Yale grad schools rushed to denounce the policy – one that made absolutely no sense in an environment where ethernet and Web connections are all that matters. The university took matters out of Updegrove's hands. "This year," says Yale spokesperson Tom Conroy, "Yale made no recommendation to incoming students regarding what brand of computer to buy," leaving students to make their own choices.

Johnson Space Center In 1996, John Garman, chief information officer of NASA's Johnson Space Center, announced that the Center would be going all Windows.

The ensuing controversy raged for two years on the Web, via email, and in the nation's newspapers. This one stung; after all, NASA is government, with tax dollars at work.

But you don't just tell the nation's leading scientists that you're taking away their favourite tools. Today, Garman is long gone, and NASA is buying more Macs. "There is no plan to standardize on one platform," says Don Andreotta, NASA's deputy CIO for operations.

That's good news to people like Joe Williams, rendezvous guidance and procedures officer. "I was worried when the Wintel standard was established," he says. "But I'm still using Macs in everyday activities, [including] support of shuttle flights. I'm the guy sitting in the front-centrer row of Mission Control, the one with the PowerBook 5300cs."

BellSouth ADSL Service In May 1998, BellSouth announced the availability of ADSL (for Internet connections up to 100 times faster than modems) in 30 cities – for Windows only. Mac fan Nathan Tennies helped to inspire BellSouth's reversal with a sly tactic: he pointed out to the local paper's technology columnist that his own, rival firm (Road Runner cable modems) was Mac friendly. The pressure was on. When members of the Raleigh user group swamped BellSouth with calls, this story fell into its usual pattern: BellSouth admitted that the response from Macintosh users had been enormous, way out of proportion to the supposed market-share numbers. In July, BellSouth and Apple published a joint press release. "By working directly with Apple," BellSouth said, "we are bringing the Mac version of FastAccess ADSL service to market."

I'm aware that the Mac isn't always victorious. But thanks to the polite but unbending pressure from those of us who know a superior machine when we see one, the Mac is unmistakably retaking lost ground all over the world. I thought you'd want to know about these quiet, but significant, Macintosh victories. Because one thing's for sure: you won't read about 'em in *Business Week*. **MW**

Natural-art leader targets Web authors

Painter 5.5 Web Edition

Publisher: MetaCreations
www.metacreations.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Image slicing, JavaScript rollover and image-map tools now handle the core Web-graphics tasks; excellent Web-oriented brush effects.
Cons: Program's complexity is a barrier for new users; all of the new features are afterthoughts rather than part of Painter's superstructure.
Price: £299; £49 upgrade from Painter 5, £79 upgrade from Painter 4). All prices ex VAT.
Star Rating: ★★★★/7.0

Here we go again: another long-established art application has rebadged itself as a Web-graphics solution, and the usual question is on our mind. Has it genuinely metamorphosed into a new Web-oriented tool, or have the publishers simply been spooked into jumping onto the Web bandwagon without making any real innovations?

With Painter 5.5 Web Edition, the answer falls between the two: yes, there are innovations that make the program genuinely Web-aware; but they've been sprinkled around the application instead of built into its heart, taking on the role of garnish rather than core ingredients.

Five steps towards the Web

In terms of the number of new features, there's not much difference between Painter 5 and 5.5. The additions break down into just five areas.

The Image Slicer is a new plug-in Painter 'floater' that helps you to segment a large image into its constituent areas, so that each area can be displayed in its own HTML table cell using the most appropriate JPEG or GIF settings. Not only does this bypass the need to use a single JPEG or GIF setting for the entire image, but it also allows you to define specific areas of the image where 'rollover' effects can take place. In these segments, the Web browser will be forced to display a different image

when the user's mouse-pointer hovers over a button and (in some browsers) when the button is clicked. Painter's Image Slicer handles the generation of all the relevant JavaScript – you simply draw all of the rollover areas in the appropriate two or three states, drag the Image Slicer guides into place, and then leave the plug-in to do the rest – but it makes a poor job of selecting appropriate export formats for each segmented image: you're left to guess the most appropriate JPEG or GIF setting, with no previews to guide you.

The second new feature is the Image Map, which lets you set any Floater object as a definition for an HTML image map area, so that irregularly-shaped link areas can be built into your Web interface. Each floater can have its 'clickable region' option selectively turned on or off, and it can also have an associated URL. When the image is later saved as a GIF or JPEG image, you're given the option of exporting the server-side or client-side image map. Painter then

generates an appropriate chunk of HTML along with map data.

The Dynamic Text feature is useful for more than Web interfaces; in fact it's the first time that Painter has had a 'proper' text editor, supplementing the rather hope-less letter-by-letter system in version 5.0. The Dynamic Editor lets you adjust all font settings for a text block on the fly, and you can re-edit the text at any time.

Part four of the Web Edition toolset is the Content Library, containing ready-to-use Web interface elements – arrows, buttons, background patterns, and so on – in GIF and TIFF formats.

Finally, the program now features several calligraphic and 'Web-safe' brushes which use flatter colouring that will compress more efficiently in GIF and JPEG formats. This is the only true innovation in the program, giving interface designers a tool with which they can build fast-downloading Web pages without sacrificing a natural-media feel.

Above: The slice of life
The four buttons at the top of this Painter 5.5 dialogue are used to select the slice-lines in an image. Each segmented thus created can be set to have certain JavaScript rollover effects and can also be exported with tailored GIF or JPEG settings – although Painter doesn't give any useful previews to help you choose these settings.

Left: Proper text for Painter
Painter 5.5's Dynamic Text feature lets you adjust a wide variety of text settings, and all text is re-editable at any time. Although the small text area in the dialogue box doesn't show the settings, the text in the Painter image is updated live as you adjust settings in the dialogue.

Macworld's buying advice

Painter may be the best art program on the Mac, but that does not automatically make it a good buy for creating Web graphics. The program suffers from a major problem: it now has so many features, most of which have been awkwardly bolted on during its long history, that it is very difficult to

get to grips with even the simplest operations without having to deal with idiosyncratic and, frankly, baffling controls on the way.

Veteran Painter users will definitely appreciate the handful of new features in version 5.5, but there's hardly anything here that will sell the program into new

markets. If you're looking for a fast, straightforward and intelligent solution for creating Web-site interfaces, this isn't it. But if you're already a dab-hand with Painter then 5.5 is definitely worth the upgrade fee – if only for the Dynamic Text plug-in alone.
Ian Winter

Fast and simple-to-use Web graphics tool

ImageStyler 1.0

Publisher: Adobe (0131 458 6842)
www.adobe.com
Pros: Familiar interface; Web-specific; automated JavaScript rollover creation; batch HTML processing.
Cons: Lacks free-hand drawing options; no animated GIF utilities included.
Price: £85 ex VAT
Star Rating: ★★★★/7.8

Adobe's new product, ImageStyler 1.0, is specifically designed for the creation and management of Web-based graphics. This is the second Web-orientated graphics tool Adobe has produced this year. The earlier ImageReady concentrates on the optimization of images and animations, while ImageStyler offers quick access to collections of pre-designed textures, shapes and effects.

ImageStyler has five core features with which you can create good-looking interactive Web graphics. These are the ability to apply multiple layers of instantly editable effects; create JavaScript rollover effects; automatically-generate HTML; export Web-optimized images, layout and image maps, and the fast updating of site-wide graphics using ImageStyler's unique batch-creation feature.

Suitable for beginners

Compared with Macromedia Fireworks, the main competitor in the professional Web graphics arena, ImageStyler is aimed more towards the beginner and small business end of the market. ImageStyler doesn't have as many features as Fireworks, but Adobe's other Web-graphics product ImageReady fills those gaps. Also ImageStyler's interface
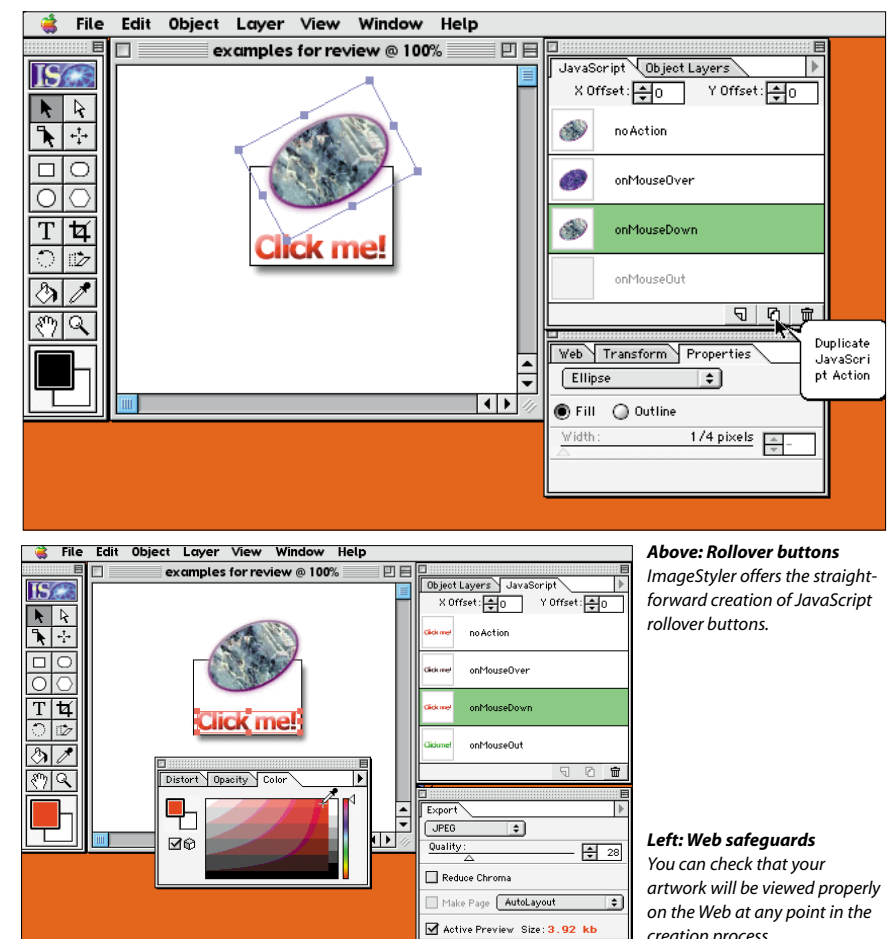
Above: Rollover buttons
ImageStyler offers the straight-forward creation of JavaScript rollover buttons.

Left: Web safeguards
You can check that your artwork will be viewed properly on the Web at any point in the creation process.

is so similar to Photoshop that it makes learning how to use the tool more intuitive for designers. Also your work area concentrates specifically on the creation on Web images such as JPEGS and GIFS.

To create a simple graphic in ImageStyler, you select the shape, image or text and drag or type onto the re-sizeable canvas. You can apply 3D embossing effects, drop shadows, freely scale and transform your object and add layer upon layer. At any point you can change your mind and

increase a gradient fill or opacity setting. An Active Preview option lets you keep track of file sizes and on-screen image quality that updates instantly as you work. As with Fireworks, you can preview exactly how your images will appear in a browser before committing them to export.

ImageStyler comes with hundreds of brilliant ready-to-use effects and patterns, such as embossing, bevelling, gradients, and water droplet-style backgrounds, as well as

shapes such as arrows, curves and lightening strikes. The built-in tools include ellipses and rounded-end rectangles for buttons and navigation bars. You can also create your own effects and store them for future use in ImageStyler. All you have to do is select the style and click apply, if you don't like it just undo it or delete that layer.

Text can be entered and manipulated to specify font, style, alignment, size and tracking. Although lacking freehand drawing tools, ImageStyler can handle imported images from digital cameras, CD scanners and can drag-&-drop between Adobe Illustrator, Photoshop and ImageReady. As they're object-based anyway it's no problem to edit any layer of text at any time. A Web-safe colour palette makes sure your designs will look good despite monitor, browser or platform differences.

Rollovers
Writing JavaScript code by hand can be a time-consuming job, usually done by an experienced programmer. ImageStyler will produce the JavaScript source code necessary to let you swap images around when the mouse rolls over them or clicks on the object. It also automatically creates HTML code into tables to position your image neatly in your browser. All you do is select the object you want to work with, click on the layer icon on the palette to create a copy, then manipulate the new layer in any

way you like. This layer is the image seen when your mouse runs over the image in a browser. Add text, a glow or invert your original image. The possibilities are endless. You can then add another layer so your image will return to its initial state, or show something else entirely. You can hyperlink on the 'mouse down', or 'onclick', state to another Web page.

Live objects
ImageStyler keeps everything editable or 'live' until the final export or saving as a GIF, JPEG or PNG file. A designer can create graphic templates for frequently changing artwork such as advertising banners or headlines. When an image is replaced within an already styled piece of work, the new image automatically adopts the edits and styles applied to the original. An added bonus is the use of aliases in a piece of work. You can group particular graphics together using aliases then when a change is made to one, the rest are automatically updated. Adobe has also made Actions object-based, so you can alter your graphic after you've applied the JavaScript to it.

Image maps are also simple to create because ImageStyler treats its integrated image-map creation as object based. The same advantage of freely editing the graphics after the URLs are embedded also applies.

A clever feature, found only in ImageStyler, is the ability to replace header

tags on your site with images. This means you can quickly make site-wide alterations. You can create a template for each tag you want to replace, then set ImageStyler to batch apply the templates. Once you've batch-replaced the text you can change sets of buttons and banners created in ImageStyler.

This function is useful in many ways. For example, if you have advertising banners on different pages throughout your Web site you can set ImageStyler to export a new banner to refresh on each and every page that the advert appears. Anyone struggling with administering banner advertising across multiple pages on a site will be forever grateful for this feature.

Macworld's buying advice
It's seems strange that Adobe hasn't combined the features from ImageStyler and ImageReady into one big product like Macromedia's Fireworks. It may be that Adobe wants to cover all ends of the market, from Web novices with ImageStyler to the more professional designer with ImageReady.

Overall, ImageStyler is great fun to experiment with. It's easy to create snazzy Web graphics even if you're new to the Web, although it does help to have some knowledge of issues unique in Web design compared to print media.
Gillian Robertson

PhotoTools 3.0.1
Publisher: Extensis
www.extensis.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Configurable menus for Photoshop; good effects, especially texture, button and shadow creation.
Cons: Lengthy preview processing on complex effects.
Price: £99 ex VAT; upgrade price £49 ex VAT.
Star Rating: ★★★★/7.4

PhotoTools 3.0 is a suite of sophisticated filters and mini-applications that operate within Adobe Photoshop. There are enhanced versions of old favourites such as bevels, buttons, drop shadows and glows, plus two newcomers: PhotoTexture, one of the easiest seamless texture creators I've used, and PhotoGroove, a customizable bevel creator.

PhotoTools also comes with Extensis' new PhotoAnimator, a sophisticated stand-alone animated GIF creator that's also bundled with BeyondPress 4.0.

Probably just as important are the series of dockable menu bars or floating palettes called PhotoBars, with icon buttons for

instant access to commands, menu items and files or folders. You can customize each bar/palette by adding or removing pre-defined buttons, or creating your own. The SmartBars floating palette automatically adds commonly chosen menus to the main SmartBar menu.

Extensis uses a consistent user interface for all PhotoTools effects, plus its separate Intellihance and Mask Pro applications. Each effect opens up a new window, with a standardized large preview area, zoom, pan and navigation controls, plus specialized control buttons and sliders for the particular operation.

PhotoTools 3.0 is evidently doing some

Multiple buttons
The PhotoButtons menu lets you set up single or multiple buttons within a selection area.

A fully-functional, 30-day trial version of PhotoTools 3.0.1 is available on this month's cover CD.

heavyweight processing, for the preview refresh was slower than expected on my 120MHz 604 Mac, although the subsequent application to the main image was fairly fast.

Photoshop layers
The new version has improved awareness of Photoshop layers, and can optionally preview an effect in one layer while displaying all the other layers.

PhotoTextures creates sophisticated tiled (repeated) textures, which where appropriate are completely seamless. You can work with imported JPEG images, freehand painting or pre-defined repeating shapes, and apply one or more distortion

PhotoTexture
A powerful, full featured, yet very easy-to-use tool.

effects (such as wave, twirl, skew), and alter sharpness, contrast and density until you've achieve the desired effect. Textures

can be previewed, saved, edited and merged.

Fairly standard PhotoBevel (raised) and PhotoEmboss (depressed) effects put a 3D bevelled effect around selections. PhotoGroove is a useful new variation that lets you create your own bevel profiles via a cross-section drawing menu.

PhotoButton is a powerful variation on the bevel tool that can automatically create from one to 64 raised buttons in one of 15 shapes to fill a selected area. Version 3.0 lets you edit shapes with new anchor points. The 'background' outside buttons can be filled with a solid colour. Imported JPEG files can be used as button textures, and bump maps can be created from alpha channels.

PhotoGlow runs a glow around (or optionally fills) a selection with control over intensity, size, colour and so on.

PhotoCastShadow is more sophisticated than Photoshop 5.0's drop shadow effect. It can optionally angle the shadow to 'cast' it behind the object. You can drag-distort the shadow's bounding box to simulate true perspective, while 'perspective blur' simulates 3D depth. Multiple interacting shadows can be created, with different angles, colours and intensities.

Macworld's buying advice
PhotoTools 3.0 shows that there's still life for third-party plug-ins despite the recordable Action scripts of Photoshop 5.0.
Simon Eccles

Norton Utilities for Mac 4.0
Publisher: Symantec (0171 616 5600)
www.symantec.com
Pros: Updated for HFS+; improved Speed Disk performance; PowerPC native.
Cons: Performance problems; interface has significant rough spots; 680x0 Macs no longer supported.
Price: £99 ex VAT; upgrade £42 ex VAT.
Star Rating: ★★/4.5

Face lift
Norton Disk Doctor 4.0's main window is more colourful than its predecessor's but less easy to use.

Symantec's Norton Utilities for Macintosh (NUM) is the staple tool kit for data search and rescue from deleted files or crashed disks. But version 4.0 is a late arrival. It's the first incarnation of NUM to support HFS+ (known as the Mac OS Extended Format) disks, yet it was released nearly a year after Mac OS 8.1 debuted HFS+. Despite its long gestation period, NUM 4.0 shows clear signs of being hurried out the door.

While the NUM 4.0 collection provides several features, from crash protection to quicker file finding, the package's core consists of Norton Disk Doctor (NDD) and its ability to diagnose and repair disk problems.

NDD 4.0 sports a new look compared with version 3.5, but the shiny new facade eliminates several familiar shortcuts that were in previous versions. For example, you can no longer type a volume's name from the list of mounted volumes to select it, nor can you press the return or enter key to begin examining the disk. These may seem like trivial gripes, but anyone familiar with older versions of the software will find this a roadblock to performing frequent drive checkups.

NDD 4.0 does have a notable usability improvement: for minor problems you can tell the program which files to fix and

which ones to leave alone. In the past, fixing such errors was an all-or-nothing proposition. However, NDD 4.0 didn't go far enough with the enhancements. The application can't scan multiple volumes and deal with all the errors at the end. Instead, you're confronted with individual volumes' errors immediately after each one is scanned.

When it comes to diagnosis and repair, Norton Disk Doctor 4.0 seems to have shipped prematurely. Shortly after its initial release, user complaints surfaced about NDD's reporting errors on disks formatted with many non-Apple drivers, and the fixes resulted in inaccessible disks. NDD 4.0 also had problems fixing a directory error that Norton Anti-Virus (NAV) 5.0 can introduce when running under Mac OS 8.1. Symantec has released an update, NDD 4.01, that fixes the NAV error, as well as reporting errors on disks formatted with FWB's Hard Disk ToolKit 2.5.X. However, it does not address reporting errors on media formatted with other non-Apple drivers.

Symantec should also be faulted for not including the NAV 5.02 patch, which fixes the bug that causes the directory error. The patch doesn't fix the error, but it will prevent NAV from causing directory errors in the future. Sure, you can download the NAV

patch from Symantec's Web site, but including the patch on the NUM CD would have been a simple matter.

Ounces of prevention
Another revamped part of NUM 4.0 is the multifunction FileSaver extension, which tracks erased files for easier recovery, saves critical disk information at regular intervals, and periodically scans drives for damage. In addition, FileSaver 4.0 also introduces an excellent feature: the ability to scan disks quickly after an improper shutdown or crash.

Unfortunately, FileSaver 4.0 has its problems, too. For starters, performance seriously lags when deleting files. While it's understandable that FileSaver has to do some bookkeeping when deleting files, users may find themselves waiting while their Wastebasket empties, or while programs, like Netscape Navigator, remove cache files.

In addition, FileSaver's user interface isn't as configurable as it should be. It's impossible to enable the disk-directory-update feature without also enabling delete tracking. In many cases – for example, on servers – this all-or-nothing choice is undesirable. FileSaver also updates its directory information with every reboot and shutdown. Restart updates are unnecessary

in most cases, but there is no way to restrict the updating to shutdowns only.

A question of speed

NDD may be the core of Norton Utilities, but the package's jewel is Speed Disk 4.0, which improves disk performance by defragmenting files and rearranging data. The updated version now handles HFS+ disks and is somewhat quicker than Speed Disk 3.5. It also remains configurable for

those with a technical bent. Unfortunately, it has slight imperfections: its default settings cause it to scan an entire disk for problems before optimizing. You can also choose write verification, which is more efficient and guarantees that data is written back exactly the way it was before, but we think this should be the default.

One feature missing from Speed Disk is the ability to optimize the directory in addition to all the files; the only comparable

process is to back up, reinitialize, and restore a volume, which is far too time-consuming.

Macworld's buying advice

NUM 4.0 suffers from two problems: it was released before it was ready, and many of its user-interface changes were for the worse. While the latter is annoying, it isn't nearly as grave as the loss of confidence caused by teething problems in such a crucial product. **Stephan Somogyi**

Agfa ePhoto 1680

Manufacturer: Agfa (0181 231 4154)
www.agfa.co.uk
Pros: Advanced settings; four resolutions; comes with 4MB memory card; can be expanded.
Cons: Learning curve is a little steep; self-timer needs reset every time; image process times seem long.
Price: £599 ex VAT
Star Rating: ★★★★/8.7

The ePhoto 1680 is Agfa's latest entry into the megapixel digital camera market, boasting an impressive battery of effects and features.

The camera is a two-part model, which at first I found a bit awkward to use. A meaty auto focus zoom lens and four-mode (automatic, fill-in, red-eye and off) flash forms one part. The lens has a focal length of 38-114mm and a 3x zoom, with a macro distance of 10cm in wide mode. It can swivel through 280 degrees, independent of the camera body, which features an LCD screen. This is of the usual preview/playback type, all of which seem to suffer excessively from fingerprints, but the ePhoto 1680 has the added bonus of a low light preview feature to aid setting up shots in poor light conditions.

Take control

To the right of the screen are the zoom buttons. Logically enough these control zooming the lens in and out, but also can be used to step through images when in playback mode. The Info button, to the left of the LCD screen, provides information about the images and batteries.

The body also features a hidden slot for memory cards (revealed when the lens swivels up) and serial, video out and power connectors. With the shutter button and power on/play/record switch also present on the body, Agfa has done a good job of cramming everything on to such a small area.

In common with most current digital cameras, the ePhoto 1680 offers several resolutions options – in this case four. The top resolution of 1,600-x-1,200 pixels puts

the 1680 comfortably in the running for photo-quality awards. Pictures taken at this resolution are sharp, with good colour reproduction. Unfortunately, at this resolution the 4MB memory card supplied with the camera can hold only six images. Extra cards are available however, as well as a PCMCIA card adaptor and a FlashPath floppy disk adaptor for easy cable-free download.

The next resolution setting down, 1,280-x-960, allows 12 images at what Agfa refers to as 'CCD' quality to be compressed onto the card. In practice, this is adequate for well-lit subjects, but images lack detail – ruling out excessive enlarging. The third resolution offered by the camera is the standard 640-x-480 pixels, useful really only for posting images on the Web. At this resolution, 48 images can be stored on the supplied card.

A fourth setting offers a monochrome 'text' mode, optimized for saving a maximum of 12 text-based documents. This is better than it sounds, as we found during testing. It provides high-quality, black-&-white images at 1,280-x-960 pixels with a good contrast range – ideal for those moody, artistic shots that won't require post processing in an image editor.

The camera has a good range of exposure settings, from $1/2$ to $1/500$ of a second, which can be adjusted through the EasyPilot button. Situated on the side of the camera, it provides a whole host of advanced settings menus. The same button can be turned to scroll through and

navigate the menus displayed on the LCD screen.

The advanced settings menus are the true strengths of this camera. Almost everything can be customized, from focal distance and aperture size to flash strength and white balance. This lifts the ePhoto 1680 above many of its competitors, and brings it closer to a traditional professional SLR than any digital camera I have yet seen. Preferences for these advanced settings can be saved (apart for the self-timer, which needs reset with every use), which is handy when the batteries run out.

Third-party cables

Agfa has provided a battery charger, with four rechargeable NICADs in the pack, as well as four normal batteries to get you up and running while the NICADs charge up for the first time. There's no power cable however, which is a drag, but a third-party cable works fine, as can third-party lens filters and extra lenses – all of which add to the traditional feel of this camera.

The software bundle is another hidden bonus. The standard image-editing program, in this case Agfa's own PhotoWise, is very well specified, with a Quick Fix function, JPEG Enhancer utility and TWAIN import, as well as the usual cropping, rotation and album tools. Also included in the package is LivePicture's PhotoVista VR and LivePix SE software, as well as a serial cable and quick-start guide and manual.

Macworld's buying advice

The Agfa ePhoto 1680 is a versatile and well-equipped camera, with a good quality lens and fair range of resolutions. One drawback is the time it takes the camera to process and compress images – only about seven seconds, but it can seem like an age. Also at first glance, the camera with its multitude of features seems quite daunting to use, but once you've read the well-written manual, your troubles should be minimal.
Michael Burns

Super Office 4.0

Publisher: SuperOffice (01895 820 280)
www.superoffice.com
Pros: Strongly featured information manager; contacts, diary and to-do lists; easy links to standard apps including Microsoft Office.
Cons: Poorly executed in places; Windows-oriented documentation; clumsy import features; lack of customization.
Price: £325 ex VAT; prices for multi-user licences are available on request.
A full single-user version is available on this month's cover disc.
Star Rating: ★★★/5.7

The software industry has long been engaged in the quest for The Killer App, the next hot category of software, after word processing, spreadsheet, database, communications and so on. A decade ago, the favourite candidate was the PIM – the personal information manager. And although several strong products emerged, the PIM never really achieved widespread acceptance.

SuperOffice attempts to take the PIM concept to a higher level, and the company has coined the phrase 'Business Information Manager', or BIM, for its eponymous product, the PIM configured for corporate activities.

Within SuperOffice 4.0, you find many of the same features as in the PIM: diary, contacts manager, to-do lists, together with hotlinks to standard business applications such as Microsoft Word and Excel, and the Web browser of your choice.

But SuperOffice goes further and tightly focuses these applications and activities on corporate customers. Everything within the program centres on other companies. When you set up a new contact, or diary appointment, SuperOffice insists on linking those activities to another company. The result is a product that is well-designed for the corporate environment but much less useful for smaller organizations or the self-employed. The latter might prefer an information organizer that could be applied to all areas of life and not just sales and customer management activities.

As you'd expect, SuperOffice is fully networkable, and the base product includes both server- and a single client-side application. It is also fully cross-platform, with a Windows version available, and supports most networking systems. The Mac version is limited to EtherTalk – presumably LocalTalk is deemed too slow.

The base product includes its own internal database for holding all information, but you can configure things to use any ODBC-compliant database such as SQL or Sybase, and the company is also working towards links with other systems such as Lotus Notes.
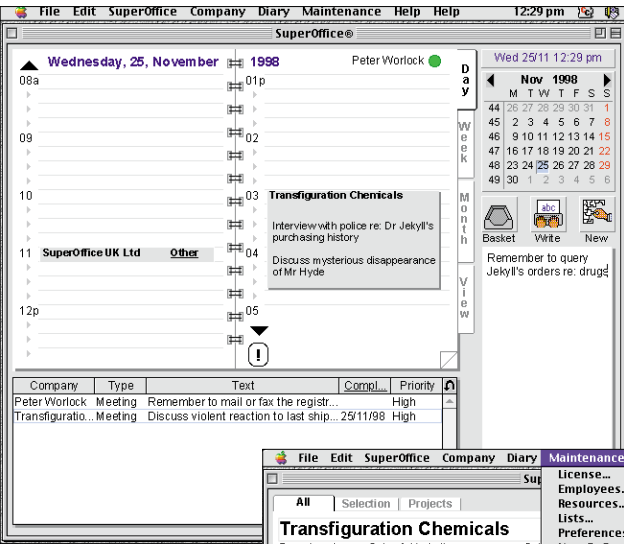
Within the company-oriented limitations noted above, SuperOffice works well enough. The calendar, contact-management, and to-do functions are comprehensive. It's also easy to discover client histories such as contact calls, inbound and outbound letters, sales histories and so on.

Rather than providing rudimentary word processing and other functions within SuperOffice itself, the program lets you use your main applications such as Word, and goes further in providing tools for creating your own templates for letters, faxes, etc.

Unfortunately, SuperOffice (at least in the Mac version) is marked by some major flaws. Installation is from a CD that purports to be multilingual, yet even after selecting UK English, the installation dialogue boxes produced buttons and alerts in German.

A key feature for a product like SuperOffice should be seamless importing of database information from your existing system, yet the import process is needlessly complex. You can't, for example, simply import any native database files: all imports must be in delimited text files. Even worse, the documentation talks exclusively about Windows- or DOS-delimited files.

In fact, the PC-orientation of the documentation is one of the major irritations with SuperOffice: although the separate installation manual discusses the Mac in enough detail, the general user guide is almost exclusively PC-based. The list of dozens of keyboard shortcuts, for example, only gives CTRL-key commands – which do nothing on the Mac where ALT-key combinations are the rule.

There are other numerous annoyances, too. Many of the SuperOffice screens are modal – you must complete a task or close them before accessing other parts of the program, but there's no visual indication. Clicking on buttons and other parts of the screen is simply ignored.

A more serious limitation is the lack of printed output from the calendar. The paperless office may be a worthwhile goal, but many of us still rely on paper-based diaries and time-managers. Yet I could find no way of printing a diary, let alone printing in standard paper formats like filoFax.

In general, the facilities for creating custom reports and displays is extremely crude and overly complex compared to a native Mac product like Now-Up-to-Date and Now Contact.

Macworld's buying advice

SuperOffice is almost unique on the Macintosh. For corporate contact- and time-management your only real alternatives are custom-developed applications in an environment like ACI's 4th Dimension.

It is, like 4th Dimension, that rarest of beasts: a European product taking on the world. Originally a Norwegian company, SuperOffice has succeeded in establishing offices around the world, including the US, and recently announced a major co-operative deal with Sharp in Japan. So, it would be nice to give it a hearty recommendation.

Unfortunately, that isn't possible: too often its Windows heritage betrays it and the Mac version is flawed in too many respects. I'd guess that many of the limitations are missing, or less pronounced, in the Windows version, and for large businesses with mixed platforms the ability to manage and administer the system from Windows may overcome those limitations.

But for a Mac-only organization, SuperOffice demands a lot of compromises.
Peter Worlock

CorelDraw 8

Publisher: Corel (0800 581 028)
www.corel.com
Pros: Improved user interface; AppleScript aware; support for ColorSync; comprehensive PostScript print menu; Web options; great bundled software.
Cons: Some type format bugs; slow print preview.
Price: £395 ex VAT; upgrade price £299 ex VAT
Star Rating: ★★★★/7.5

Interactive transparency tool
Version 8's transparency controls even apply to imported bitmaps. Here the interactive tool (the linked squares) is setting up the shading of the main image into the brown background.

The immense popularity of CorelDraw on the Windows platform wasn't reflected in the take-up of the first Macintosh version, introduced in 1996, possibly because it came so late, but also because its PostScript printing wasn't reliable enough for professional design and publishing use.

With CorelDraw 8, Corel is trying hard to win over the professional market. The user interface is much more Mac-like than before, while retaining interchangeability with Windows files. There's an option to switch the menus to resemble Illustrator or FreeHand if you prefer.

As ever, CorelDraw 8 is a full-function vector drawing program, based on bézier drawing tools for creating outline objects and filling or stroking them with colour. Version 8 sees new tools for creating extrusions, bevels, and envelope distortions. On top of this are all the latest bells and whistles for editing outlines, incorporating bitmaps, working with independent layers, and exporting either Web graphics or complete HTML pages, as well as professional pre-press capable print files. The full-history multiple Undos still work after saves. A wide range of import/export file formats are supported, including Illustrator 7, which makes a good stab at preserving CorelDraw transparency.

The buggy, little shovelware accessory programs from the outgoing version 6.0

Photoshop rival
Photo-Paint 8 is a full-feature retouching tool with multiple layers. Special effects can be applied locally by brush – here a motion blur is applied to the door mirror.

suite have been dumped and replaced by a smaller number of decent bundled programs with direct relevance to graphics professionals. Most impressive is the new Mac version of the formerly Windows-only Corel Photo-Paint 8, a competent paint/retouching program that's also available separately. Also bundled is CorelTrace 8, a bitmap-to-vector converter that works well, and Font Reserve 1.02, a font manager utility. There's also Cumulus Desktop 4.0, the base version of Canto's excellent media management database program.

Third-party plug-ins for Photo-Paint include Digimarc copyright watermarking, AutoF/X Photo/Graphic Edges, Xaos Paint Alchemy and Cytopia PhotoLab.

Both Draw and Photo-Paint are AppleScript-aware, with a starter library of scripts for effects and templates. You can also record a list of actions and save them as a new script that can be applied individually, or to a batch of files.

Clip art
As usual with Corel products there's a lot of clip art: 1,200 EPS bitmap drawings and symbols, 100 photographs, a bunch of Animated GIFs, Web backgrounds, floating bitmap objects and tiling textures. There are also 1,600 TrueType and PostScript fonts.

All this takes up space: a basic installation of Draw, Photo-Paint, Trace and support files takes up 164MB. Draw needs a minimum of 15MB RAM (with virtual memory enabled), and 64MB is recommended. The package is for Power Macs only, with Mac OS

7.6.1 or later. Photo-Paint 8 and CorelTrace need a minimum of 10MB free each, and preferably a lot more.

New look
The revised user interface makes CorelDraw 8 rather easier for experienced Macintosh users to pick up. It doesn't always conform to common keyboard shortcuts, but these can be customized to suit your preferences.

CorelDraw uses 'lens' menus that are similar to those in FreeHand 8. They let you set up special overlay effects on selected objects including transparency, fisheye lens, various blends, plus greyscale, 'heatmap' and inversion. Some of these work best over photographs.

Lens transparency applies uniformly to the whole object, but there's an interactive transparency tool too, which lets you drag an axis for a blend from opacity to transparency. Similar interactive tools are available for paintbucket fill colours, blends and drop shadows.

Some bitmap-editing features are included, such as converting to greyscale, duotone or other colour models, plus filter effects such as pixellate, swirl, page curl, motion blur. For advanced editing though, you'd use Photo-Paint 8.

Text tools include a decent multi-column layout facility, with a full typographical menu. However, I couldn't persuade the leading (inter-line spacing) to work with any font, and text formatting in general seemed a little buggy – the only signs I found of Corel's once notorious unreliability.

Helping to boost CorelDraw 8's credibility in the print market, its PostScript printing has been completely revised with help from Adobe, and is designed to create DSC-compliant 'clean PostScript' output. OPI 1.0 and 2.0 image substitution is

supported. A zooming print preview window shows the effect of your separations, printers' marks and trapping before output.

ColorSync colour management is supported, with a decent set of ICC 2.0 profiles provided – profiles embedded by Photoshop 5.0 can also be detected. Separation options include CMYK, custom colours, Pantone Spot colours and Hexachrome six-colour process.

A Prepare-for-Service-Bureau collection routine is included, with an on-screen Wizard guide, and an 85-page book that provides a useful introduction to print processes and working with service bureaus.

Web graphics and HTML page output is also supported, with a well-designed step-by-step Wizard. JPEG compression ratios can be previewed in advance. Layouts can be output as tables, layers (Netscape only), or Cascading Style Sheets. Any object can be a hyperlink, allowing easy image-map creation. HTML form objects can be added from a menu list. Java applets and embedded files can be added. A conflict analyzer reports on problems such as incompatible text, object intersections and other snags.

Photo-Paint 8 deserves a review to itself. It's a very good, fully-specified retoucher with all the usual brush and cloning tools, plus a respectable range of 2D and 3D transformation effects, layers, masking, channel working, and the same colour and printing controls as CorelDraw 8.

It's at least as good as MicroGrafx Picture Publisher 8 and even gives Photoshop 5.0 a run for its money. The only minor drawback is that large file opening is noticeably slower than Photoshop.

Macworld's buying advice
The CorelDraw 8 package is a big improvement on its predecessor, and bears out Corel's claims for it to be a professional tool. The layout, Web and pre-press features, scripting, bundled Photo-Paint and fonts combine to make it a very attractive starting package for anyone who needs to take graphics seriously. **Simon Eccles**

Vision DSP 4.1

Publisher: Opcode Systems
Distributor: SCV (0171 923 1892)
Pros: Robust – almost never known to crash; packed with high-end features; great price.
Cons: Lacks a built-in sample editor – although BIAS Peak SE editing software is included as a separate application.
Price: £299 inc VAT
Star Rating: ★★★★/8.7

Above: Check the pulse
Vision DSP's new Pulse Edit Window lets you display and edit all drum tracks within a sequence.

The distinction between MIDI sequencers and their 'big brothers', the MIDI-plus-audio sequencers, is disappearing fast: the latest versions of the most popular MIDI sequencers now feature audio recording, editing and effects processing. So, for example, instead of Cubase we now have Cubase Virtual Studio Technology (VST). Opcode appears to be travelling the same route with the release of version 4.1 of its popular Vision sequencer, now renamed Vision DSP.

Vision's big brother, Studio Vision Pro, costs £649 including VAT and is currently at version 4.xx but will be upgraded to 4.1 shortly. Previously, the main distinction between these two packages was that Vision was confined to MIDI sequencing while Studio Vision Pro combined these MIDI features with a range of audio recording, editing and processing options.

Muddying the waters
Now things are not so clear. Vision DSP has all the features of Studio Vision Pro – apart from support for Digidesign's TDM systems and two particularly neat processing options – audio-to-MIDI and MIDI-to-audio.

The first of these options lets you convert a monophonic audio recording of a single voice or instrument playing single notes into a MIDI representation, which you can easily assign to play on a synthesized or sampled instrument to double or harmonize

Left: MIDI Arpeggiator
The new easy-to-use MIDI Arpeggiator locks to grooves and sequence tempo.

with the original audio. The MIDI-to-audio feature lets you do the reverse – change a monophonic audio recording of a single voice or instrument to match a MIDI recording. Both of these powerful features are unique to Studio Vision Pro.

So what's TDM? Well, the more expensive Pro Tools systems from Digidesign feature TDM time-division multiplexing as a method of transferring channels of audio between multiple cards in the system. These TDM cards support the use of the latest, sexiest signal processing plug-ins – which are almost always released for TDM systems first and often are not available on other platforms. So, if you want the two editing features and TDM support you need to buy Studio Vision Pro. Otherwise, Vision DSP will do just fine.

Vision DSP lets you record original music or remix songs using perhaps the best graphical editor of any MIDI sequencer – along with the new Pulse Edit drum groove window. The audio features such as

Time Stretch, Pitch Shift and Adjust Audio Tempo are incredibly powerful. To record audio onto your hard disk you can use either your Power Mac's onboard audio or any Steinberg ASIO compatible audio card such as the Lucid PCI 24, Korg 1212 and Sonorus STUDI/O.

Plug-ins
Other features include a MIDI arpeggiator for techno effects, QuickTime video support, Automated Mixing, four bands of EQ on every channel with a graphic EQ curve display, and 16 flexible buses to accommodate more complex mix sessions. You can use Steinberg VST or Adobe Premiere compatible plug-in audio effects, and three free VST plug-ins and a couple of free Premiere plug-ins from Arboretum software are included to get you started.

Opcode also provides 11 of its own VST 'fusion Effects' plug-ins including reverb, chorus, flange, delay, compressor, phaser

and so forth. Also included is Opcode's OMS and Galaxy software that lets you catalogue and access any patch for any MIDI instrument in your studio.

Give it some oomph

So how was it in action? Well, running Vision DSP on my Power Mac 9500 with a Crescendo G3 300MHz processor upgrade

fitted and using an Atto SCSI card with a fast Quantum 9GB hard drive allowed me to play more than 24 tracks of audio with no problem. Before I upgraded, I could play only about 16 tracks before the processor and disk drive started to struggle.

Otherwise, it was just like using Opcode's Studio Vision Pro – at less than half the price!

Macworld's buying advice

Vision DSP is much easier to use than Cubase VST or Logic Audio – with a neater user-interface, clearly laid-out menus and extremely-attractive price. Professional users, however, will probably still need Studio Vision Pro for its TDM support and audio-to-MIDI features.
Mike Collins

Three useful masking utilities

EdgeWizard

Publisher: Chroma Graphics
www.chromagraphics.com
Distributor: Softline (0181 401 1234)
Pros: Strong edge-refining tools; inexpensive.
Cons: No built-in selection features.
Price: £110 ex VAT
Star Rating: ★★★/6.9

Extensis Mask Pro 2.0

Publisher: Extensis
www.extensis.com
Distributor: Computers Unlimited (0181 358 5857)
Pros: Broad range of masking tools.
Cons: Creating complex masks takes time.
Price: £215 ex VAT. *A fully-functional, 30-day trial version is available on this month's cover disc.*
Star Rating: ★★★★/7.5

Ultimatte KnockOut

Publisher: Ultimatte
www.ultimatte.com
Distributor: Polar Graphics (0181 868 2479)
Pros: Simplifies creation of difficult masks.
Cons: Memory-hungry; lacks manual refinement tools; requires hardware lock.
Price: £280 ex VAT
Star Rating: ★★★★/7.2

Hair today
Ultimatte KnockOut lets you create complex masks by selecting inner and outer boundaries.

C reating masks can be one of the most difficult parts of altering an image. Fortunately, several programs can help. Two, Extensis Mask Pro 2.0 and Chroma Graphics' EdgeWizard, are Adobe Photoshop plug-ins. The third, Ultimatte KnockOut, is a standalone program that works with Photoshop files.

Each program uses a different approach to masking. Mask Pro 2.0 is a general-purpose masking utility, offering a variety of intelligent brushes and tools that let you paint masks into an image. KnockOut shines at creating difficult masks that involve wisps of hair, complex shadows, and translucent elements. EdgeWizard lacks its own masking tools, but it lets you refine the edge of an existing selection created in Photoshop or another program (including Chroma Graphics' MagicMask plug-in).

Of the three, Mask Pro offers the widest

range of masking tools. Similar to Photoshop's QuickMask feature, it lets you select colours to keep and drop using two special eyedroppers. When you paint with Mask Pro's brushes, the plug-in analyzes the colours beneath your brush, compares them with your selected colours, and applies an appropriate level of transparency to the mask.

A new IntelliBrush tool automatically selects Keep and Drop colours by averaging the pixels beneath the brush. This makes it easier to create complicated masks; without it you would have to make many manual colour selections.

Mask Pro can automatically knock out image layer backgrounds, and its pen tool can now automatically detect edges and set control points accordingly. A new, separate EdgeBlender plug-in blends semi-transparent pixels with background pixels to reduce halos.

Magic KnockOuts

Mask Pro is powerful, but it still can take a lot of time to mask wisps of hair or translucent objects. That's where KnockOut comes in. You create a mask in KnockOut by using four lasso tools to trace outlines along the boundaries of the area you want to select. The first traces inside the area to be masked; the second, around the outside (see 'Hair today'). Two similar tools let you create inner and outer boundaries for any shadows you want to mask.

KnockOut's Process Image feature then generates a mask, which you can refine using the Syringe or Edge Feather tools. Syringe tools let you inject colour into pixels that are being rendered transparent; the Edge Feather tool lets you define edges

in areas where there's little difference between the foreground and background.

KnockOut's results are impressive, but the program cannot soften mask edges, and it lacks tools for manually refining the mask. It's also a memory hog – you need at least five times as much RAM as the maximum image size – and it uses a dongle.

Refining edges

EdgeWizard's edge-refining tools can automatically eliminate halos and transparency problems. After you create a mask, the plug-in provides a preview of your image and the selection. You can then modify the mask edge in three ways: QuickEdge applies a two- or three-pixel blur, producing a result similar to feathering. Gaussian Edge applies a Gaussian blur, creating even blends in images that have simple backgrounds. Variable Color Edge, for use with complex selections, analyzes colours along the edge to determine the best way to blend with the background. All three effects can be brushed in or applied globally.

Macworld's buying advice

None of these programs is a comprehensive solution, but all three are great complements to the masking tools in Photoshop. Mask Pro is a good one-stop masking tool; it offers an impressive range of features. KnockOut is missing a few functions and costs more than Mask Pro, but it lets you create difficult masks with a minimum amount of work. EdgeWizard lacks built-in selection tools but does a great job of improving mask edges, especially those composited against complex, multicoloured backgrounds.
Ben Long

New ink-jet is not all business

Epson Stylus Color 740

Manufacturer: Epson (0800 289 622)
www.epson.com
Pros: High-quality output; built-in serial and USB ports; easy-to-use software.
Cons: Slow.
Price: £209 ex VAT.
Star Rating: ★★★★/8.9

Epson's new four-colour ink-jet printer, the Stylus Color 740, may be its most versatile. Aimed at the small-office/home-office market, the Stylus Color 740 offers impressive photo-realistic output, making it a great low-cost alternative to colour-laser and dye-sublimation printers. But this printer is not all business: its ease of use, reasonable price, and USB interface make it an ideal choice for iMac users. It also features a serial interface for use with other Macs.

Not new, but improved

Like the popular Stylus Color 600 and 800 ink-jet printers, the Stylus Color 740 uses Epson's proprietary MicroPiezo printing technology. Unlike ink-jets that use thermal-printing technology, Epson's ink-jets use electrical impulses rather than heat to force ink through print nozzles onto a page. This process minimizes splatter, thus creating cleaner, more consistent dots. With the Stylus Color 740, Epson has modified the MicroPiezo print head to produce smaller and variable-sized dots, resulting in better photo quality and finer detail.

Documents printed with the Stylus Color 740's default settings showed good colour reproduction except for minor oversaturation. This was evident in our Photoshop prints, where we noticed some loss of shadow detail. However, when we experimented with the software settings and printed on high-quality photo paper, photographic images were truly exceptional, with realistic flesh tones and smooth colour transitions. The printer also did a good job when printing text on high-grade glossy paper, but type was a bit fuzzy on plain paper.

QuarkXPress and Adobe Illustrator documents printed from the Stylus Color 740 and its six-colour counterpart, the Stylus Photo 700 (£190 ex VAT), looked almost identical. While the 700 edged out the 740 in colour accuracy, the 740 excelled in sharpness and detail rendering.

Epson's software driver for the Stylus Color 740 offers three colour-management options: ColorSync, PhotoEnhance3 (recommended for digital camera prints), and user-defined custom settings. These options are more than adequate for imaging novices. However, professionals may be disappointed with the lack of a PostScript option.

During testing, we found that using Epson's standard ColorSync profile yielded the best results. The driver interface is easily navigable and lends itself to experimentation, so creating the best possible print is not difficult. Also included is a user-friendly maintenance and diagnostic wizard that makes cleaning and adjusting the 740's print heads a cinch.

Speed and cost

Though ink-jet printers have improved in speed, they still don't compare to colour lasers (about four to six pages per minute), and the Stylus Color 740 is no exception. At the highest resolution of 1,440dpi, Photoshop prints averaged nearly 10 minutes per page, and our QuarkXPress document averaged 7.5 minutes per page. Printing a full-page Word 98 document averaged almost 7 minutes.

For everyday use, the Stylus Color 740's faster 720dpi setting may be more than adequate, but if you need your documents to look their best, be prepared to wait for them.

The 740 uses two ink cartridges, one black and one colour (cyan, magenta, and yellow). Inks are formulated for quick-drying and smudge-free prints. Cartridges cost £17.50 each and will give you about 300 prints, unless you plan to print lots of high-resolution documents, which use more ink.

For the highest-quality prints, it's a good idea to invest in Epson's ink-jet paper, which ranges from 6 pence per page for thin coated paper to 32 pence per page for glossy photo stock.

Making the connection

Setting up the 740 is simple: just pop in two ink cartridges, connect the printer to your serial or USB port, and install the drivers. No networking options are available, but you can connect up to three computers – a Mac, an iMac, and a PC – simultaneously to the 740's serial, USB, and parallel ports, respectively. The driver handles just one print job at a time, but it's still a neat feature.

The Stylus Color 740's built-in USB port is a first for ink-jets. This is a great option for iMac users, since compatible printers are scarce, and most that do support USB use a somewhat costly parallel-to-USB adaptor cable.

Although some iMac users experienced compatibility problems with early versions of USB drivers from Epson and Apple, the 740 worked trouble-free during our testing, with no crashes in the applications we used. It's a good idea to download and install the latest USB drivers for the Stylus Color 740 and iMac from Epson's and Apple's respective Web sites.

Macworld's buying advice

Business professionals who want high-quality colour prints without spending thousands of pounds will find the Stylus Color 740 to be a great solution – if they don't mind sacrificing some speed. Home users will appreciate the Stylus Color 740's sharp output as well as its easy-to-use software.
Gil Loyola

SUZANNE ROADY

Golden Logres

Publisher: LittleWing
www.littlewing.com.jp
Distributor: Software and PDF manual available from Web site.
Pros: Fabulous graphics; immersive gameplay; good manual.
Cons: Poor quality sound in places.
Price: approx £20. *Demo and PDF manual on this month's cover disc.*
Star Rating: ★★★★★/9.0

LittleWing has been at the forefront of Mac pinball games since 1991, being responsible for Tristan, Eight Ball Deluxe, Crystal Caliburn and Loony Labyrinth. The third of these, Crystal Caliburn (1993), was the pick of the bunch – a graphically impressive, complex game based on the Knights of the Round Table. Recent years have seen Sierra's 3D Ultra Pinball series take centre stage in this genre although these tend to have more of a video game feel. Now LittleWing is back with another heraldic masterpiece.

While Golden Logres' background story

Sheer class
With first-class graphics and an absorbing scenario, Golden Logres will have you coming back for 'just one more try' time and time again.

is non-essential for gameplay, it makes for good reading. With the kingdom in ruins, King Arthur lying at Avalon and Merlin under confinement, Sir Bedivere is the only remaining knight. Through the course of the game, you have to complete ten missions, spanning three different pinball tables, to revive the remaining knights and reconstruct the kingdom.

Complete Sir Bedivere's mission and then set about reviving and giving accolades to one knight at a time by making nine drop targets fall (three each for Bravery, Fortune and Loyalty) either by hitting them or dropping all three in a bank by using various ramps. The latter is crucial: aim at the targets individually and you are guaranteed to lose balls down the gap between the

flippers! Dropping the ball down the Accolade hole at Stonehenge then starts you on your mission.

Once the first three missions have been completed, the next three knights have to be revived and "accoladed" before moving on to their missions – and the second table, Land's End. Success here and it's back to Camelot for the final six knights and then on to the final table, Fisher King. A full game will take over an hour but there are various ways to get extra balls – essential for completion.

Macworld's buying advice
The 60-second demo on the cover CD does little justice to Golden Logres. There has been some serious investigation into the characteristics of pinball table rubber bands resulting in a feel that will convince you that you're playing on a real table, not a computer. Flippers trap the ball authentically and offer near-perfect response and the tables are graphically superb, from the glass ramps through to the local reflections on the chrome ball. Add three-way tilt and multi-flipper design and you have the best pinball game ever seen on the Mac.

Priced at around £20, you can have the keycode for the full game by email tomorrow. We've even included the PDF manual on the cover CD to save you the download! Definitely one to have.
Vic Lennard

Mars Rising

Publisher: Ambrosia Software
www.ambrosiasw.com
Pros: Fast action; great graphics; finger-twitching fun.
Cons: Occasionally difficult to see what you're shooting.
Price: $20 downloadable from Web site.
Star Rating: ★★★★/7.5

Perhaps Ambrosia Software should consider a name change – something along the lines of Children of Galaga or Old Skool Software. No other company has got so much mileage out of renovating mid-1980s arcade hits. Mars Rising is the latest installment in the series, and while it riffs on a familiar theme, the entertaining shoot-'em-up proves that sometimes it ain't the song; it's the way you sing it.

Mars Rising needs a back story about as much as a Steven Seagal movie needs a plot. But for all you arcade rats moonlighting as method actors, here's an explanation for the game's mayhem: Martian rebels (or patriots) have attacked and destroyed nearly all Terran military forces on Mars and in Martian airspace. You must counterattack,

Pay attention
If the Martian Defence Forces catch you napping, they'll eat you alive.

using the advanced Terran Vac-Fighter to destroy the Martian Defence Forces on the ground and in the air.

With your conscience soothed (or with dreams of conquest stoked), you are dropped into the cockpit of a fighter-bomber winging over a two-dimensional landscape that scrolls at a constant rate from the top to the bottom of the screen. Your mission: as you fly, gun down incoming aerial enemies and drop bombs on ground targets. Completely destroying a squadron of airborne baddies nets you either a star (which converts to points at the end of the level) or a power-up. Power-ups enhance your ship's capabilities in many ways, including increasing your shield capacity and increasing the number

of bombs or bullets you fire per salvo. It's possible to fly for a while without this assistance, but power-ups are essential to surviving later levels.

Brightly coloured and vaguely cartoonish, Mars Rising's graphics could have been lifted from a stand-up arcade machine. The busy, constantly changing landscape and tendency for enemy forces to explode messily make it difficult to identify live threats and incoming fire, but that's the price you pay for the game's fast and furious pace. Ambrosia backs the carnage with thumping techno soundtracks and plenty of sound effects to help you sort out the action.

Play Mars Rising solo or with a friend, in which case you compete for points and power-ups. Two-player action must take place on a single machine, as Mars Rising has no provision for network play. You can control your vehicle with the keyboard or mouse, but if you plan to spend much time with Mars Rising, find a good joystick or game pad (see Reviews, December 1998).

Macworld's buying advice
Mars Rising is good, old-fashioned, finger-cramping, put-your-brain-on-hold fun. Playing Mars Rising is like being back in the arcade – except you've still got your money when you're done. **Cameron Crotty**

Game on

The Macintosh tackles entertainment head on. **By Cameron Crotty**

Our obsession with the latest fads at the expense of golden oldies has got on the nerves of the Macworld Game Hall of Fame's executive committee. "I love new games as much as the next person," opined a Hall curator as she gestured at the iMac running Tomb Raider II over in the corner. "But if we ignore the classics, what's the point of having a Hall of Fame?"

So this year when the editors of *Macworld* came knocking at the Hall's front door, we decided to do more than simply induct seven worthy new games into the Hall. Instead, we compiled a list of 21 great Mac games, both new inductees and all-time classics. Because regardless of whether it was released this year or five years ago, a classic is still a classic.

GRAHAME MURDOCH

Tomb Raider II
★★★★/9.2

It's easy to get lost in Tomb Raider II's hype. We've been well inundated by the stories about how its star, the well-endowed, computer-generated Ms Lara Croft, is either the death knell of the feminist movement or a strong female role model in the male-dominated world of games – or maybe both. What's lost in this storm of publicity and debate is that Tomb Raider is simply a great game.

In Tomb Raider – a huge seller for Windows and the Sony PlayStation, and now finally available for the Mac – you guide Lara Croft through an Indiana Jones–esque three-dimensional world of temples and caverns in search of priceless artifacts. The interface is similar to that of a first-person shooter game such as Unreal, Doom, or Marathon, but your perspective is actually slightly above and behind Lara herself, staring at her polygonal posterior. Lara's adventures involve a lot of gunplay, but exploration and problem solving are the real keys. You find hidden places to explore by swimming, climbing, and jumping, not to mention avoiding diabolical traps such as giant rolling boulders and pits of spikes. The graphics are impressive, especially if you've got a 3D–accelerator card installed, and the images in the Mac version are clearly superior to those in the Sony PlayStation version.

Tomb Raider II is the first of the Tomb Raider games to come to the Mac, and it's a definite improvement over the original game. In addition to walking and running, Lara gets to ride a motorcycle and a powerboat, and she fights villains that are much wilier and harder to kill than those in the original Tomb Raider. And there's more Tomb Raider on the way – Aspyr Media will release Tomb Raider Gold, featuring the original Tomb Raider with four additional levels in early 1999.

But back to our original dilemma: does Lara Croft belong in the pantheon of women heroes right alongside Wonder Woman and Buffy the Vampire Slayer, or is she just a pumped-up Spice Girl? The cooler heads at the Game Hall of Fame will leave that up to you. We're just happy that Macintosh users finally have a chance to play this great action-adventure game.
Why it's cool: Impressive graphics and game play lead to hours of arcade-style action.
Who it's for: Women tired of male-character–only adventure games and men secure enough to admit that Indiana Jones has met his match.
From: Aspyr Media; Softline, 01372 726 333, www.aspyr.com; £44.99.

Myth: The Fallen Lords
★★★★/8.4

Real-time strategy games cater to the armchair general, but some people prefer the life of an armchair lieutenant. For them, there's Myth: The Fallen Lords, a war game of staggering realism that focuses on individual soldiers fighting individual, mano a mano battles.

Want to live with the hellish uncertainty of the battlefield – to be concerned with the advantages (and dangers) of terrain, the threat of ambushes, and the limitations of an army on patrol? If so, then Myth is your game.

Like an officer in the field, you're given troops to command, and the objectives you're required to accomplish. After that, you're out on your own. Myth teaches the importance of reconnaissance, flanking manoeuvres, and seizing the high ground – and does it all with a hellishly real 3D interface that puts you smack in the middle of the battlefield.

Although Myth was the highlight of last year's holiday season, it arrived too late to meet the Hall's strict eligibility requirements for 1997. But we heartily give it the nod this time around as we anxiously await this winter's sequel, Myth II: Soulblighter (see the sidebar "Next Year's Hall Hopefuls").
Why it's cool: Amazing 3D landscapes and challenging, realistic battle strategy.
Who it's for: Bravehearts-in-training who want complete control over their soldiers.
From: Bungie Software; Softline, 01372 726 333, www .bungie.com; £44.99.

Shanghai: Dynasty
★★★★/7.8

War games and adventures come and go, but a well-designed puzzle game, seasoned with just a touch of random chance, can hold one's attention for years.

Classic Shanghai adds spatial manipulation and strategy to the simple pattern-matching of traditional solitaire. Tiles are randomly piled in a five-layered pyramid, and the object is to remove them by pairing them off. You need a bit of luck to clear the board, but it's your wits that make the difference in Shanghai. Once you've learned the basic game, the challenge of solving a puzzle where you can see almost all of the pieces is nearly irresistible.

For Shanghai: Dynasty, Activision has added four other top games. There's a special child's version of Shanghai as well as three multiplayer games, including Mah-Jongg. Sadly, the company has not included network play with the Macintosh version this time.
Why it's cool: Beautiful graphics and lots of options, plus a classic puzzle that can't be improved on.
Who it's for: Those who prefer quieter pursuits to gunning and running.
From: Activision; MacGold, 01723 582 100, www.activision.com; £23.95.
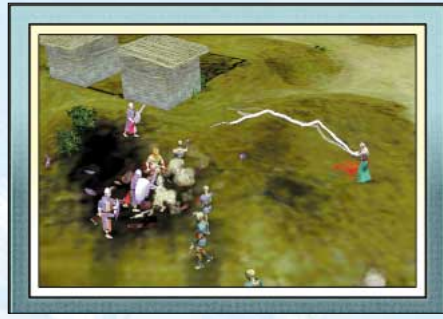
Myst
★★★★/8.5
Riven
★★★★/8.0

The Game Hall of Fame receives many visitors, generally avid gamers and history buffs. But occasionally, a passer-by will poke a curious nose into the Hall's virtual lobby and inquire about the nature of the establishment. Is it truly devoted completely to Macintosh games, and is there a section for someone who likes the idea of computer games but isn't interested in all that shooting, shouting, and general hullabaloo?

That's when our doorman smiles warmly and ushers the visitor into the newly completed Rand and Robyn Miller Atrium, to view the Miller brothers' two masterworks: Myst and Riven. Less like computer games than like wonderfully illustrated novels, both Myst and Riven transport you to a world where deciphering where you are –

and why you're there – is all part of the fun. While both games lead you toward a final goal, the true point of Myst and Riven is to explore the gorgeously rendered worlds and the characters that live in them. We heartily recommend both Myst and Riven to gamers and nongamers alike.
Why it's cool: A stunning combination of story line, graphics, and sound pulls you into an amazing fictional world.
Who it's for: People who enjoy beautiful graphics, brain-teasing puzzles, and games that don't induce too much stress.
From: Red Orb Entertainment; Softline, 01372 726 333, www.redorb.com; Myst, £24.99; Riven, £19.99.

SimCity 2000 Special Edition
★★★★/8.2

The Tamagotchi craze seems to have come and gone, thankfully, but we've all still got that urge to nurture a living thing without the attendant mess. In SimCity 2000, your city itself is a living, breathing organism with intricacies that put the Tamagotchi to shame.

From the initial groundbreaking through labour strikes, earthquakes, political upheaval, and traffic jams, SimCity 2000 puts you in the hot seat as mayor, city council, and (ha ha!) dictator-for-life all rolled into one. Your job is simple: keep your citizens happy. You can build the perfect Smallville, USA, or strive for a metropolis to rival even New York. Yes, SimCity 2000 takes the vision of the original SimCity and adds significant complexity.

Sure, SimCity 2000's been around for years – and now it's available only from the Web. But it still keeps us coming back for more. Don't be surprised if you find yourself leaving your Mac on at night and waking up early just to see how your city grew.
Why it's cool: Endless possibilities make it truly addictive.
Who it's for: Mayoral hopefuls – and would-be Godzillas.
From: Maxis; www.simcity.com; £25.

Civilization II
★★★★/8.8

People don't use the term global conquest anymore unless referring to Microsoft. But if you do, Civilization II provides the scope you need.

Civilization is one of the few turn-based strategy games (in which each participant – human or computer – takes turns) that we recommend. But in this case, you'll be thankful for the extra time to contemplate your moves. Civilization II is immense, offering you the chance to build an entire civilization up from almost nothing. You begin with some settlers and fertile land, and start to build cities. If you're truly skilful, you can "win" or certainly triumph at Civilization II without even firing a shot. But after

thousands of years of pacifying your citizens and bluffing aggressive competing civilizations, you'll still feel as if you've been through a war. And the Gold edition allows network gaming.
Why it's cool: Complexity that will keep even the hardest-core strategy gamers engrossed.
Who it's for: Closet Napoleons who like the idea of taking over the whole world.
From: MacSoft; Softline, 01372 726 333; www.wizworks.com/macsoft/; £39.99.

Marathon Trilogy Box Set
★★★★/8.8

Maybe it's the fluid, alien artwork. Perhaps it's the planet-hopping, psychological thriller of a story line or the high-explosive fun of network death matches. Whatever it is, in today's go-go, true–3D world of first-person gunplay, the Marathon games collected in this omnibus edition remain a great value. Enamoured as the Hall's staff is with the latest and greatest, Marathon has retained a firm place in our roster of regular network-based multiplayer grudge matches.

The sheer scope of this huge Marathon box set staggers the most voracious gamer's imagination. Inside, Bungie has packed the three complete adventures that make up the Marathon Trilogy, as well as the original pre-Marathon adventure Pathways into Darkness, and level and environment editors that open Marathon's doors to anyone with a creative itch. This is a gift that smiles on those without the latest Mac hardware. You can play the Marathon games on a modestly equipped Power Mac 7100 without feeling as if you're watching a slide show.
Why it's cool: Great network multiplayer games and an endless assortment of levels. And it's four games in one bumper pack.
Who it's for: Offices that need to blow off steam; gamers with slower Power Macs.
From: Bungie Software; Softline, 01372 726 333; www.bungie.com; £39.99.

Unreal
★★★★/7.8

The curators at the Game Hall of Fame have grown a little tired of stalking through corridors, weapon bobbing, firing at beasties of questionable origin for little more purpose than to watch them explode. Run, shoot … yawn.

At least, that's what we thought before we launched Unreal. Mind you, this is one of several games this year that absolutely require 3D–acceleration hardware. That said, Unreal took our breath away with fluid moves and scary monsters.

We don't induct new games into the Hall if they're simply eye candy. Unreal leaves room for atmosphere, exploration, and plot. Instead of facing hordes of easy-to-kill monsters, you're up against enemies that are smaller in number but incredibly ferocious and devious, and the story line stays strong throughout the game.

Why it's cool: Brains are as important in this game as brawn.
Who it's for: Gamers with 3D-acceleration hardware who want strategy with their action.
From: MacSoft; www.wizworks.com/macsoft/; Softline, 01372 726 333; £39.99.

Escape Velocity: Override
★★★★/8.5

Escape Velocity: Override is a ringing triumph of top sci-fi action-adventure. The game puts you in a spaceship cockpit as a daring, swash-buckling, Han Solo type. You start with a lousy shuttlecraft, some seed money, an enormous galaxy to explore – and nearly unlimited freedom to explore as you like, trying to make money and improve your ship and your social standing. Sure, you can be an honourable merchant or cozy up to one of the powerful interstellar governments. But you can also chuck it all and play evil space pirate.

Escape Velocity: Override is also a little-guy-makes-good story: Ambrosia Software builds world-class games for the Mac – and only the Mac. From Maelstrom, a cheeky Asteroids-for-the-nineties, to the addictive adrenaline rush of PegLeg, Ambrosia's games have continued to set a standard of quality for games on any platform. Your friends with PCs don't know what they're missing.

Escape Velocity: Override is less a game that you play from beginning to end than it is something you play with. And like its parent company, it's simply the best at what it does – on any platform.
Why it's cool: A near-perfect blend of action, strategy, space exploration, and pure adventure.
Who it's for: Wannabe Han Solos – and Boba Fetts.
From: Ambrosia Software; 001 716 325 1910, www.ambrosiasw.com; via download, $25; with Ambrosia CD-ROM, $30.

Actua Soccer
★★★★/7.0
CLASSIC GAME

Despite Leicester City and George Graham, football has never been more exciting than it is now, post Euro 96 and that World Cup thing last summer. The influx of superstar foreigners has transformed the Premier leagues north and south of the border. Kids are playing in the streets again. Jumpers for goal posts. Marvellous. But Mac gamers had to wait years for a compatible computer challenge, and Actua Soccer lived up most of our expectations.

You get a realistic commentary from TV's Barry Davies, a choice of 40 international teams, cup and league play, and some interesting formation options – 4-0-6 anyone?

The many rich rules of the beautiful game are strictly adhered to (including pass backs and goal difference), there are amusing practice options and a rather laughable ratings system.

PlayStation offerings are leagues ahead by now, but Gremlin Interactive has scored a popular game that's still a bestseller two years after its release to UK Mac game players. And it's only £20 – less than the cheap (uncovered) seats at Chelsea. Now how about a footabll-manager game for the Mac – please…
Why it's cool: Effective realism, and it's the only option on weekdays.
Who it's for: Football fans who spend more time on their Macs than in the stands. Can we play it every week?
From: Gremlin Interactive; 01142 799 020, www.gremlin.com; £19.95.

Tie Fighter   X-Wing
★★★★/8.6   ★★★★/7.8
CLASSIC GAME

More than one assistant curator at the Game Hall of Fame is a closet *Star Wars* fanatic. Yet even those less devoted to the ways of the Force appreciate LucasArts' masterly space-combat games, Tie Fighter and X-Wing.

These games aren't really light simulators – nothing even remotely related to the true laws of physics exists in this galaxy far, far away – so the result is World War II–style, check-six dogfighting. But it's a thoroughly enjoyable fantasy.

The only thing missing from these games is the ability to fly head-to-head against a friend.

Sadly, Lucas-Arts' hot-&-cold relationship with Macintosh gamers is now running cold. So while PC users can blast their friends out of the sky while playing X-Wing vs. Tie Fighter over a network, Macintosh users have to go it solo.
Why it's cool: You get to fly a hot spaceship and pretend you're Luke Skywalker (or that you're shooting at him) – what could be cooler?
Who it's for: Joystick-equipped flying aces who can bull's-eye womp rats at 50 meters.
From: LucasArts Entertainment; Softline, 01372 726 333; www.lucasarts.com; Tie Fighter, £27.95; X-Wing, £21.95.

Diablo
★★★★/8.4

Role-playing games can be a lot of fun, but usually require keen attention to the numeric detail reserved for top accountants. If you haven't memorized exactly what that helmet will do to your hero's armour class, or how using a long-sword will affect his chances to hit a particular creature, you've already sealed your doom.

Diablo, on the other hand, retains all the stuff essential to a good fantasy role-playing game but builds it into an interface that lets you concentrate on the adventure at hand. Furthermore, the game casts off the usual turn-based structure in favour of exciting, real-time play.

The game's painstakingly animated characters are also enchanting. Even if you don't generally like fantasy games, you'll be enthralled.
Why it's cool: Attractive graphics and usable interface get you into the game's fantasy world.
Who it's for: Anyone who's wished Dungeons and Dragons had more adventure and less dice rolling.
From: Blizzard Entertainment; Softline, 01372 726 333; www.blizzard.com; £29.99.

F/A-18 Korea
★★★★/8.8
CLASSIC GAME

Even the most dedicated Mac gamer can sometimes glance enviously over at the Windows world, awash as it is in a veritable sea of games. But when it comes to flight simulators, Mac gamers have no need to be envious. Graphic Simulations' F/A-18 Korea is one of the best, period.

From the first day that F/A-18 Hornet hit the streets, it offered a spectacularly realistic flying experience, and each subsequent release has easily managed to further improve on that first rush of realism. With a 3D-accelerator card in place, F/A-18 Hornet is so realistic that you'll stare in disbelief … until you get smoked by a surface-to-air missile, of course. Lesson learned: don't ever take your hands off the control stick!

The flight-simulator category is a hotly contested one at the Hall. Parsoft's excellent A-10 Attack: Cuba (Camelot, 0171 383 2727; www.parsoft.com; £35) runs a close second to F/A-18 Hornet.

If you prefer to spend time moving mud on ground attacks, A-10 Attack puts you in the driver's seat of the rough, tough Warthog. But whichever you prefer, take comfort: the Mac excels when it comes to flight simulators.
Why it's cool: Stunning graphics and impressive air combat will make you believe your life's actually in danger.
Who it's for: Amateur fliers for whom aviation means nothing without a little dogfighting.
From: Graphic Simulations; Softline, 01372 726 333; www.graphsim.com; £39.99.

Starcraft
★★★★/8.0

One faction in the games hall's brain trust squawks that for every truly original game on release, there's are dozens of sequels and imitations.

But repetition can often breed improvement.

There's no better evidence than Starcraft. Just as with its predecessor, Warcraft, you build up your resources and send legions of troops into battle – but this isn't just a rehash of Warcraft with better graphics. Starcraft's three warring races (human, the buglike zerg, and the mechanical protoss) aren't mirrors of one another – their capabilities are radically different. Each species requires different strategies for victory.

If you're already a fan of real-time strategy, Starcraft doesn't disappoint; if you haven't yet succumbed to the heady thrill of ordering troops into battle – against a computer or against real-life opponents in a rousing network game – here lies a highly entertaining tour of duty.
Why it's cool: More-complex characters put a challenging spin on a classic warfare game.
Who it's for: Strategy-minded warriors.
From: Blizzard Entertainment; Softline, 01372 726 333; www.blizzard.com; £39.99.

Links LS
★★★★/8.0
CLASSIC GAME

We at the Game Hall of Fame rarely have time for a round of golf, what with the critical life-or-death decisions we make on a daily basis. So when we need a break, we retreat to the sweet serenity of Links LS.

Links LS's gorgeous graphics make us feel as if we're teeing off into a postcard. The ingenious controls are simple enough to be comprehended in a couple of holes, yet nearly impossible to master even after hours of practice. For the latest version, Access Software digitized Arnold Palmer; you can use his form as your alter ego or play against him as one of four other characters. (Other golfers and

Next year's Hall of Fame hopefuls

Yes, 1998 was a great year for Macintosh games, and it seems that in 1999 the hits will just keep on coming. If you couldn't get enough of Civilization II, then you'll look forward to Microsoft's Age of Empires, due in early 1999. Build your civilization up from the early days in mud huts and conquer the world with your military, enslave it with economic superiority, or dazzle it with your technological advances. A game about total conquest from the folks at Microsoft? We're shocked!

Even as Bungie Software accepts this year's trophy for Myth: The Fallen Lords, the company is hard at work on a sequel, Myth II: Soulblighter, which should arrive just in time for the holidays. Myth II promises more tactical combat action and features more detailed maps, indoor combat, map-creation tools, and (thankfully) a simplified interface. In 1999, Bungie plans on staking out some new ground with Oni, a third-person game that fuses martial-arts fighting with gunplay.

Fans of A-10 Attack know that when it comes to flight simulators, Parsoft means business. Fighter Squadron: The Screamin' Demons over Europe simulates air combat over Europe during World War II. Players can fly a number of American, British, and German planes, from Mustangs to Messerschmitts.

Parsoft will release the Windows PC version (to be published by Activision) near the end of 1998 and follow up with a Mac version.

Multiple Hall of Fame inductee Blizzard Entertainment has promised follow-up releases to both Diablo and Starcraft. Diablo II and the Starcraft: Brood War expansion pack are also both expected in 1999.

A Soul-blighter warrior (left) and dwarf (above)

A screamin' demon in flight.

courses are available as add-on packs.)

Our favourite part about Links, though, is the way it mirrors the actual game of golf. Both games require a patient, contemplative approach. Use too much force, and the next sound you'll hear is a ball crashing through the treetops. At least with Links LS, you don't have to go hunt for it.

Why it's cool: Eye-popping realism, from the graphics to the frustration of a flubbed putt.

Who it's for: Duffers upset that their local course doesn't let them play after dark.

From: Access; MacGold, 01723 582 100; **www.accesssoftware.com**; £41.95.
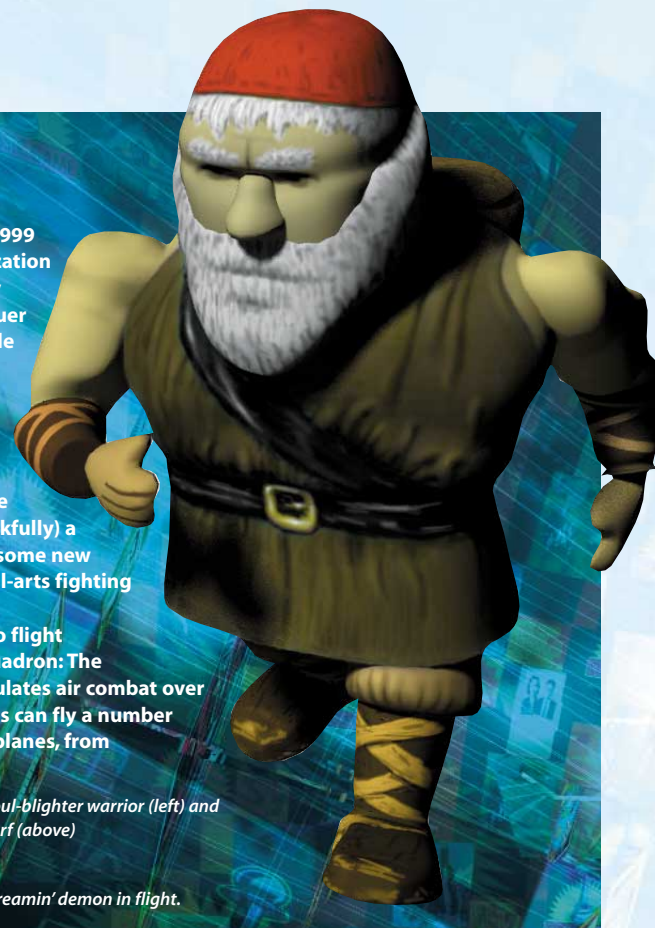
The X-Files Game
★★★★/8.4

Imagine yourself running alongside agents Fox Mulder and Dana Scully, caught in the web of creepy conspiracies that make *The X-Files* a smash TV hit. The X-Files Game, from Fox Interactive, puts you right into a never-before-seen X-Files adventure as Craig Willmore, an FBI agent.

What's impressive about this game is its incredible use of QuickTime video. The video's high-quality production seems to match that of the show itself – the dimly lit world on your computer screen is consistent with the show's dark and eerie ambience. And most of the show's main players make appearances as well, including agents Mulder and Scully; their boss, Skinner; the wackily enigmatic Lone Gunmen; and the evilly enigmatic Cigarette Smoking Man.

The result is probably the most authentic movie – or television – spin-off game I've ever played.

What's not impressive is the game play itself. Too many times I wanted to fast-forward past tedious sections and get back to the action. X-Files fans will wish this were less of an adventure game and more of an interactive movie. Still, the attention to detail makes The X-Files Game an intriguing gift for the X-phile on your holiday gift list.

Why it's cool: Superb connection to TV original.
Who it's for: X-philes and wannabe feds.
From: Fox Interactive, **www.foxinteractive.com**; $55.

■ *All games prices published here are inclsuive of VAT.*

There's more!

iMac makes a play for gamers

When Apple announced the low-cost iMac, the Game Hall of Fame executive committee threw a party. Why? In the eyes of the Hall, a consumer Mac is a gaming Mac. And now that we've had a chance to spend some quality time with an iMac, we know that's the truth.

The iMac has everything the average Mac gamer needs. It's fast: The iMac's 233MHz chip is the lowest on the PowerPC 750 totem pole, but all the G3 chips are much faster than the older PowerPC CPU's. Even better, the iMac comes with 3D– acceleration hardware built in. It isn't cutting-edge, but for most of the games shipping through the next year, it'll be fine.

Apple also packed plenty of fringe benefits. There's adequate RAM, a big hard drive, and a fast CD-ROM. The 15-inch display is sharp and bright, and the speakers kick out good sound. There's built-in ethernet for network play over a LAN, and a fast-as-it-gets 56Kbps modem for connecting to the Internet. The Universal Serial Bus, or USB, is also a boon. Joystick and other game-input-device companies can now make a Mac version simply by writing a software driver.

The hard-core gamers will howl for faster processors and zippier 3D hardware, but you'd be hard-pressed to buy a significantly more capable system for even twice the iMac's cost. Take it from the Game Hall of Fame – the iMac rocks.

Network gaming

Gaming has always been a social affair. From Og, Gak, and Urd, who rolled boulders at carefully arranged mastodon bones by the local tar pit, to Lord Fanfiral and Lady Margraine, engaged in a trying evening of whist, gamers have gathered in groups. Isn't it odd, then, that until recently, computer gaming was largely a single-person pastime?

Thank heavens those lonely days are gone. Now you can eschew drab, computer-controlled opponents and instead challenge unpredictable, flesh-and-blood adversaries.

But how to go about it? Although most network games are relatively easy to configure, there are a few tricks that will help you on your way to gaming glory. We can't guarantee that you'll become the Monarch of Myth or the Queen of Quake, but we can help you take the first vital step: getting into the game. Since you can't play computer games without a computer, let's begin there. Most contemporary computer games simply require some variety of Power Mac, although first-generation systems, such as the 6100, 7100, and 8100, balk at processor-intensive games such as Bungie Software's Myth and MacSoft's Quake.

In order to get the most out of Internet and head-to-head games played over phone lines, outfit your system with the fastest modem possible. For inter-office gaming, on the other hand, chances are you'll be using the existing ethernet network and won't need to add any more networking equipment to your Mac.

Finally, you should have a pair of external speakers or a set of headphones and, if the game merits it, a joystick – buy one with enough buttons to get the job done (see *Macworld*'s reviews of k and gamepads, December 1998).

Once you have the right gear, there are several ways you can get in on the action, writes Christopher Breen.

Head-to head

The simplest network connection pits you head-to-head against a single opponent. Head-to-head games are played over a two-way connection, via either a serial or modem-to-modem link.

Although using a serial connection is the least-expensive way to play network games, it requires that the two computers be in close proximity. To make the connection on two Macs, just plug a serial cable (sometimes known as an ImageWriter or StyleWriter cable) into the printer or modem port on each Mac. Turn on AppleTalk for both machines, and the physical connection is complete. Once you're in the game, you'll need to establish a serial link via Apple's Communications Toolbox. In the Connection Settings dialogue box, choose Serial Tool as the connection method, select the port the Mac is connected to (Printer or Modem), and set the baud rate to 57600. The baud rate for both Macs must match.

You can also play head-to-head via modem with most modern networked games. Games that support modem play also employ the Communications Toolbox. When you select Modem under a game's networking options, the Connection Settings dialogue box appears. In this dialogue box, you select the variety of modem you're using from the Modem pull-down menu; the baud rate of your modem; and the port your modem is connected to.

Most modern network games that support modem play allow you to choose whether you'll initiate or receive a call. Initiators enter their opponent's phone number in the Dial Phone Number field and click on OK to make the connection. If you're the receiver, enter your modem settings and click on OK, and your modem will wait for an
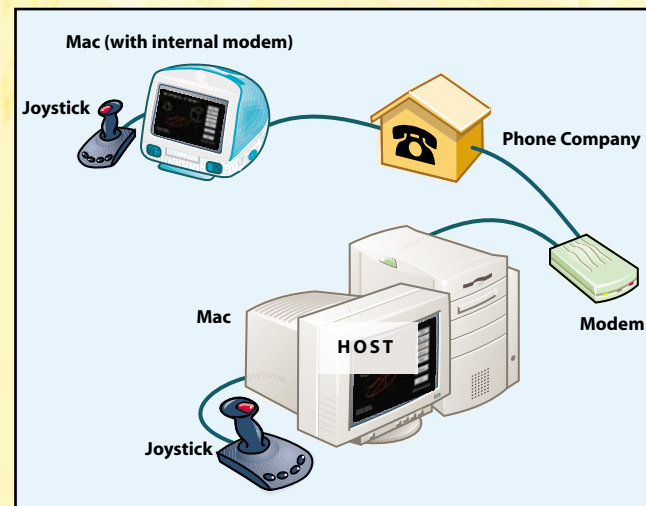
incoming call. Unlike serial connections, modems can negotiate differing baud rates, so the two Macs' baud rates need not match.

Some older games, such as Bungie's Marathon, don't directly support modem play, but you can still make the connection using Joe Kloss's NetLink Remote, a network extension that allows you to use AppleTalk networking over a modem connection. You can find NetLink Remote at **www.macdownload.com**.

Labels: Mac (with internal modem); Joystick; Phone Company; Mac; HOST; Modem; Joystick

Rules of engagement

Labels: Mac; Mac; Mac; Mac; Mac; Ethernet Hub; Mac; HOST; Mac

Network

Head-to-head gaming is fine for two-person grudge matches, but when you want to go up against the heartless harridans in Human Resources who denied your workers' comp claim – and do so without venturing onto the Web – network gaming is the means to that end.

Although Mac games such as Blizzard Entertainment's WarCraft II can be played across a LocalTalk network, game performance is anything but perky. To get the most out of modern Mac games, you need a Fast Ethernet connection. If you're playing in an office, you're pretty much set – configure the game and play on, Macduff. If you're trying this at home or setting up a small office, listen up: Most Power Macs bear some variety of ethernet connector – either 10BaseT or AAUI. If your Macintosh lacks on-board ethernet, you can add an ethernet card if you have a free NuBus, PCI, or – for PowerBook owners – CardBus slot.

Other than ethernet cables, the final link in the ethernet chain is a hub – a box that coordinates the packets of information that flow among the Macs connected to the network. Alternatively, you can bypass a hub and use an ethernet crossover cable if you're connecting

only two Macs. You can find the schematic for such a cable at **http://cafe.AmbrosiaSW.com/netgames/network101.html#chap**.

To configure the Mac OS for networking, consult the step-by-step instructions in Apple's Help system. While configuring the OS can be a little confusing, configuring most games for a network connection is simplicity itself.

After each person has launched a copy of a network game, the person who is designated the host selects the game's Host option. The other players then choose the game's Join option, and the fun begins.

If you're working in an office, your business may have unwittingly provided you with one of the great network-gaming accessories – speakerphones. Nothing adds to the thrill of the hunt like hearing your victims howl with rage after you've administered Quake's "missile massage" and scattered their virtual giblets from one side of the game to the other. It's a damn shame that the big cheeses in most offices look askance at this type of innocent fun.

Mac · **Server** · **HOST** · **PC** · **Mac** · **PC** · **Mac** · **ISP** · **Modem/Internet Connection**
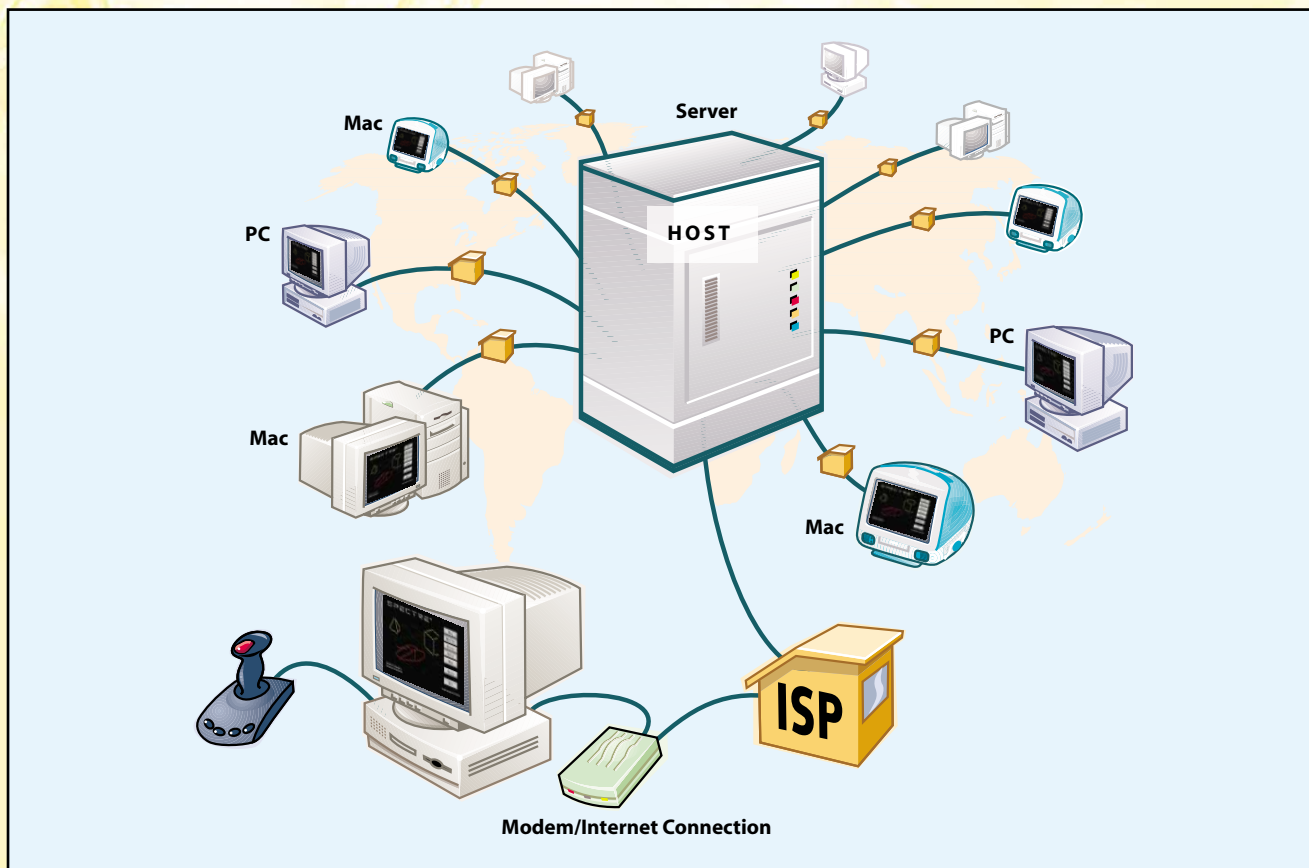
Internet

Because the Great Overseers of most businesses frown on game play during office hours, you may need to seek network-gaming challenges elsewhere. Thankfully, you need look no further than the Internet.

Despite what you've heard, Internet gaming isn't a recent phenomenon. For years, people have been playing online versions of such board games as chess, backgammon, and hearts. And text-based Dungeon and Dragons–style fantasy games (known as Multiuser Dungeons, or MUDs) have been around for nearly a decade.

What is new is the number of commercial games that now include an Internet-based multiplayer component. Instead of throwing the gauntlet merely across the cubicle wall, you can now challenge players from across the globe. Your weapons include such games as Myth, Quake, Blizzard Entertainment's Diablo, WarCraft II, Access Software's Links LS, Graphic Simulations' F/A-18 Hornet, MacPlay's Descent, and MacSoft's Duke Nukem 3D and Master of Orion II.

There are a few different ways to play commercial games across the Internet. Games such as Links LS and MacSoft's Duke Nukem 3D and Shadow Warrior allow you to enter in the TCP/ IP address of your fellow players. Once you enter those addresses, the game makes the connection across the Net. Of course, if your TCP/IP address is assigned dynamically (meaning that you're assigned a new address each time you connect to your ISP), you must first log on to the Internet and then provide your address to your friends. Using chat software to exchange this information in a chat room can save you the trouble of placing long-distance phone calls to fellow players.

Online games of MacSoft's Quake and Unreal are server-based – meaning that a fast server hosts the game and that players interested

> *For years, people have been playing online versions of such board games as chess, backgammon, and hearts. And text-based Dungeon and Dragons–style fantasy games (known as Multiuser Dungeons, or MUDs) have been around for nearly a decade.*

in a fragfest log on to that server to play the game. To configure Quake on your Mac, select the Multiplayer option, choose Join Game, and enter the IP address of one of the many Quake servers scattered among the continents. You can find a list of Quake servers at **www.gameaholic.com/servers/quake/**. The Unreal CD-ROM includes an application called UnrealFinder, a utility for locating Unreal games on the Net. You can also play many games on Kali, a popular cross-platform game-server system. Kali can be reached at **www.kali.net**.

Another variety of server-based games are those hosted by the companies that make them. Two such services are bungie.net and battle.net. Bungie.net is the home of the online version of Myth: The Fallen Lords and Myth II: Soulblighter. Battle.net is Blizzard Entertainment's host service for Net-based Diablo and StarCraft games. The advantage of having games hosted on a central server is that you can always find other people to play with. Additionally, because these servers are the source for online play for specific games, players can be ranked. This allows combatants to carefully select opponents with similar skill levels and makes it possible to hold Champion of the World competitions. Bungie.net can be found at **www.bungie.net**, and battle.net resides at **http://battle.net**.

Whether you prefer the intimacy of head-to-head exchanges or the kind of multiplayer melees found in a network and in Internet games, this much is clear: Mac gaming is no longer a lonely enterprise. Join us – you're just in time for the game.
Contributing Editor Christopher Breen coauthored *The Macintosh Bible Guide to Games* (Peachpit Press, 1996).

Pay and display

Mid-sized monitors have plummeted in price. **By David Fanning**

Two screens play a big part in most of our lives: the TV screen and the screen that sits on your desk. We probably spend more time staring at these than we do sleeping. So, just as you wouldn't plump for a lilo as your bed of choice, it makes patent good sense to spend some time – and money – choosing a suitable desktop pal. This month, we look at a selection of mid-sized monitors – a category comprising 17-inch and 19-inch models.

Monitors smaller than 17 inches should really be banished to server duty or perhaps act as support monitors to hold tool palettes for larger models.

If you're buying a new Mac – not an iMac, for obvious reasons – and you're choosing a monitor, don't consider anything less than 17 inches. The cost of a mid-size monitor is now roughly the same as a 15-inch monitor was a couple of years ago. The visible image on the new 19-inch models is just over 18 inches, and a fraction under 16 inches for the 17-inch models.

Of course, the larger the monitor the more space you have to let your creative urges flow. Large monitors are also more likely to have high-end features, such as colour matching and hardware calibration. The mid-range monitors we're looking at here, though, are a great half-way house: big enough to be used for most graphics applications yet small enough to be used at home without dominating the room. If you're used to using a 14- or 15-inch monitor, the extra screen size will feel luxurious.

Prices for this range of monitors start at just over £200 for a 17-inch model and £350 for the 19-inch models. This is great value for money, especially when you consider that just a year ago prices were double that. It's still possible to pay as much as £645 for a 19-inch monitor – the Cornerstone P1400 for example. This isn't a reflection of superior quality, just the company being slow to adjust prices in a fast and competitive market. The P1400 seems to use the same CRT (cathode ray

Editors' Choice

La Cie electron 19 blue

Macworld Rating ★★★★/8.3

This is virtually identical to the Misubishi Diamond Pro 900U, with its flat screen, but it has added features that are well worth the extra £35.

tube) as the £349 Hansol Magellan 900P, which makes the price tag difficult to justify. Hansol has the least expensive monitors in both categories. The 17-inch Magellan won the Editors' Choice award two years ago, so it's a good monitor, although less than cutting edge now.

Tube test

All the monitors tested achieved high scores in quality. The only models that suffered problems were those using Sony Trinitron tubes. These models offer superior contrast but experience problems with convergence. This manifests itself as coloured shadows and poorly-defined edges, particularly

Super Sonic?
The ViewSonic PT775 gives good picture but is slightly expensive at £405.

Good looker
The NEC MultiSync E900+ is an attractive model..

towards the corners. You can use the controls to minimize the effects of poor convergence and, when you're dealing with things like photographic images, you won't see it. But for text or spreadsheet work it can be a distraction. The shadow-mask models traditionally have less contrast than aperture-grille monitors. However, in our tests the difference, though noticeable, was minor.

The future of monitor technology is flatter and thinner screens. Already Mitsubishi has achieved the totally flat screen seen, as seen with its Diamond Pro 900U. It's both vertically and horizontally flat, and offers greatly reduced reflection. The same tube can also be found in the La Cie electron 19 blue and the Iiyama Vision Master Pro 450.

Screens can get no flatter, but can still take up a lot of desk space. In the next couple of years you'll see many more LCD flat-panel displays, which are both flat and just a few inches deep. Already there are 14- and 15-inch models flooding the market and prices are falling rapidly.

As time goes on, larger models will become available and current teething troubles will be addressed. Problems include less-than-perfect text reproduction and limited colour ranges.

It's rumoured that Apple is working on the next generation of the curvy Studio Display that may be as big as 18 inches. This would offer a work area equivalent to a 19-inch CRT. Other sources have suggested that Apple may stop making CRT-based monitors altogether. Lets face it, if Steve Jobs can take credit as the first guy to kill off floppy drives, maybe he also has plans to give old fashioned glass screens the boot.

Before that happens, I expect monitor manufacturers to continue to bring whichever enhancements they can to monitor design. I expect to see flat-screen monitors appearing in other sizes – both bigger and smaller – in 1999.

In testing the monitors we examined a number of key points. First, and most important, is image quality, which was marked on contrast and colour quality. To judge the contrast, we looked at a greyscale image that used the full range of greys. In this image the difference between the darkest and lightest areas should be as big as possible. If a monitor has poor contrast the blacks appear grey and, at the other end of the scale, the whites are not bright enough. The Trinitron and Diamondtron monitors are generally best when it comes to contrast.

This is because the thin wires used to mask the phosphor coating on the CRT do not hold back much light. This means that the glass used can be tinted more so that the blacks appear very black. Shadow-mask monitors use a screen with holes rather than wires to mask the phosphor, and this cuts out more of the light. This means that less tint can be used in the glass, and consequently less contrast is possible.

Colour quality is more difficult to assign, as it's very much a matter of opinion as to what colours are truly correct. A few companies actually supply the means to calibrate the monitor, and the Apple monitor is even capable of calibrating itself.

We also looked at aesthetics. Remember, you'll have to stare at this box for hours on end, so you may as well have a curvy number rather than the computer equivalent of a Sixties tower block.

In control

Control is also an important consideration. Controls should be simple to use but capable of all the adjustments necessary to get a perfect picture. Ideally, you should need to get involved with controls only when setting the monitor up. So, when buying a monitor you should not judge the controls too harshly.

The look of the monitor and features, such as simple controls or a flat screen, combine to make the overall score. The combination of the scores for contrast, colour and features is weighted against price in deciding the star ratings. This is the best guide for deciding on what monitor to buy.

Another figure I have included in the table is the dot/stripe-pitch. While this information can be of some help, you should understand the difference. The figure refers to the distance between the dots on a shadow-mask screen or, in the case of an aperture-grille screen, the distance between stripes. The smaller the distance, the sharper the image should be. The problem with comparisons is that the dot-pitch is generally a larger number because the dots are spaced diagonally. Stripe-pitch may have a lower number, but not necessarily a sharper image.

Case in point
The Formac ProNitron 17/700 – great picture, shame about the casing.

Mid-sized monitors: view from the bridge

MANUFACTURER	PRODUCT	STAR RATING	PRICE	SIZE (INCHES)	CRT TYPE	DOT/STRIPE PITCH (MM)	SCAN RATE* (Hz)	CONTRAST	COLOUR	FEATURES	DIMENSIONS (MM)	COMMENTS	DISTRIBUTOR	TELE NO.
Hansol	700P	★★★★/8.2	£ 209	17	Shadow-mask	0.26	100	7.4	7.8	7.1	428-x-415-x-442	Old model but still a bargain.	Hansol	01252 360 400
Samsung	SyncMaster 700s Plus	★★★★/8.1	£ 219	17	Shadow-mask	0.28	85	7.5	7.7	7.4	424-x-446-x-425	Cheap, but has low refresh rate.	Samsung	0181 391 0168
Maxdata	Belinea 10 70 50	★★★★/7.8	£ 259	17	Diamondtron	0.25	100	7.5	7.8	6.1	420-x-415-x-445	Cheapest Diamondtron model.	Maxdata	0118 936 2900
Formac	ProNitron 17/700	★★★★/7.5	£ 279	17	Trinitron	0.25	100	8.0	8.0	6.2	406-x-432-x-420	Great picture, ugly casing.	Formac	0181 533 4040
Iiyama	Visionmaster Pro 400	★★★★/7.6	£ 329	17	Diamondtron	0.25	100	8.0	7.6	7.0	412-x-424-x-420	Good contrast.	Iiyama	01438 745 48
Nokia	447XPro	★★★★/7.7	£ 349	17	Trinitron	0.25	100	7.7	7.8	7.4	428-x-424-x-445	Trinitron CRT with good controls.	Nokia	01793 512 809
ViewSonic	PT775	★★★★/7.5	£ 405	17	Diamondtron	0.25	100	7.7	7.8	6.4	415-x-427-x-457	Good picture, slightly expensive.	ViewSonic	0800 833 648
Eizo	FlexScan 56	★★★★/7.2	£ 409	17	Shadow-mask	0.26	100	6.8	7.4	6.0	410-x-413-x-439	Average performance, pricey.	PDS	01483 719 500
Sony	200PS	★★★★/7.3	£ 419	17	Trinitron	0.25	100	8.0	8.0	6.0	406-x-432-x-420	Great picture, basic controls.	Sony	0990 111 999
CornerStone	Color 40/95	★★★/6.9	£ 425	17	Shadow-mask	0.27	100	7.8	8.0	6.1	410-x-416-x-441	Good picture, too pricey.	CornerStone	01954 232 500
Mitsubishi	Diamond Pro 700E	★★★★/7.7	£ 425	17	Diamondtron	0.25	100	7.8	7.8	7.9	410-x-431-x-425	Great all-rounder, pricey.	Mitsubishi	0800 731 1222
Apple	Apple ColorSync Display	★★★★/7.9	£ 530	17	Trinitron	0.26	75	8.1	8.4	9.0	425-x-410-x-455	Great performer, should be cheaper.	Apple	0870 600 6010
Hansol	900P	★★★★/7.9	£ 349	19	Shadow-mask	0.26	100	7.4	7.6	7.0	468-x-499-x-483	Bargain.	Hansol	01252 360 400
Maxdata	Belinea 10 60 70	★★★★/7.5	£ 409	19	Shadow-mask	0.25	100	7.9	8.0	6.5	448-x-454-x-415	Good-performing bargain.	Maxdata	0118 936 2900
Samsung	SyncMaster 900P	★★★★/7.7	£ 429	19	Shadow-mask	0.25	100	8.0	7.9	7.0	468-x-499-x-483	Good deal, attractive case.	Samsung	0181 391 01
Formac	19/500	★★★★/7.2	£ 449	19	Trinitron	0.25-0.27	100	8.2	7.4	6.0	444-x-467-x-453	Great picture, cheap.	Formac	0181 533 4040
Iiyama	Visionmaster Pro 450	★★★★/8.0	£ 449	19	Diamondtron	0.25-0.27	100	7.8	7.9	8.5	454-x-458-x-456	Cheapest flat screen.	Iiyama	01438 745 482
Nokia	446XPro	★★★★/7.8	£ 449	19	Shadow-mask	0.26	100	7.9	7.9	7.4	450-x-464-x-473	Good balance of quality and price.	Nokia	01793 512 809
Mitsubishi	Diamond Pro 900U	★★★★/8.0	£ 475	19	Diamondtron	0.25-0.27	100	7.8	7.9	8.5	454-x-458-x-456	Flat and fab.	Mitsubishi	0800 731 1222
La Cie	electron 19 blue	★★★★/8.3	£ 509	19	Diamondtron	0.25-0.27	100	7.8	7.9	8.9	454-x-458-x-456	Flat, blue and full of features.	La Cie	0171 872 8000
ViewSonic	PS790	★★★★/7.4	£ 525	19	Shadow-mask	0.25	100	8.0	7.8	6.4	448-x-454-x-415	Good picture.	ViewSonic	0800 833 648
NEC	MultiSync E900+	★★★★/7.8	£ 549	19	Shadow-mask	0.26	100	7.7	7.9	7.8	447-x-462-x-482	Good picture, attractive case.	CAE	01923 210 923
Sony	400PS	★★★★/7.2	£ 549	19	Trinitron	0.25-0.27	100	8.2	7.4	6.0	444-x-467-x-453	Great picture, pricey.	Sony	0990 111 999
Eizo	FlexScan F67	★★★★/7.3	£ 579	19	Shadow-mask	0.26	100	7.7	7.8	6.5	452-x-455-x-478	Too expensive.	PDS	01483 719 500
CornerStone	P1400	★★★★/7.5	£ 645	19	Shadow-mask	0.22 * horizontal	100	7.9	7.8	7.4	448-x-454-x-460	Way too expensive.	CornerStone	01954 232 500

* Scan Rate at a resolution of 1,024-x-768 pixels

All rounder
The Mitsubishi Diamond Pro 700E is a great all-rounder.

One way that shadow-mask monitor manufacturers tackle this problem is by giving the distance between dots horizontally. This lets them win the numbers game – but these numbers are meaningless, as few manufacturers use this measurement. Cornerstone has used this method of measurement to achieve an amazing 0.22mm dot pitch, which may catch out some unwary punters. Be aware that the correct figure is around 0.26mm.

The monitor market is incestuous, with only a handful of companies producing CRTs. This means many of the manufacturers use the same tube. This, though, doesn't necessarily mean that the monitors are identical. It's not just the plastic casing that can differ; the electronic components are likely to be different too. Even if all these things are identical, the manufacturing process can produce monitors with different characteristics. Quality control and standard settings differ,

so seemingly similar monitors may be quite different. When you're looking at monitors it's fairly easy to get an idea who the CRT manufacturer is. If the screen is curved both vertically and horizontally, even slightly, then that denotes a shadow-mask CRT. If the monitor in question is a 19-inch model the chances are that the CRT is Hitachi-made.

The curvature on this screen is slight, quite different to the goldfish bowls of old. If the screen is 17-inches and curved then the manufacturer could be one of many.

If the screen is vertically flat but has a slight horizontal curve it's an aperture-grille CRT. Most likely it will be a Sony CRT, though Mitsubishi produces the DiamondTron CRT, which shares many of the same characteristics. If the screen is flat both vertically and horizontally then the CRT is the new DiamondTron NF (Naturally Flat) from Mitsubishi.

Value of resellers

Just because the manufacturer may have bought the CRT from somebody else doesn't mean that the manufacturer's own model is the best. The point of using reseller products is to give the product added value. This is best demonstrated with the La Cie electron 19 blue. This is virtually identical to the Misubishi Diamond Pro 900U, with

its flat screen, but it has added features. It includes colorific colour-matching software and a hood to reduce glare and reflection. It also comes in dark La Cie blue, a nice change from the normal grey. It does cost £35 more than the £475 Mitsubishi version, but I think it's worth the extra. If you're not convinced by the extras, then Iiyama has a similar model to the Mitsubishi for £26 less.

These flat-screen models are very attractive and are by no means the most expensive of the bunch. Other more expensive models are available from Sony, NEC, Eizo, ViewSonic and Cornerstone. These are very good monitors but none boast the features offered by the Misubishi CRT. With this in mind, it's difficult to recommend the more expensive models.

It's possible that the price we have been given may be higher than the street price available to careful shoppers. If you can get them cheaper they are still worth considering.

At the lower end of the price scale you will find that the cheapest models in both 17- and 19-inch categories are from Hansol. It's difficult to find fault with such a good deal. If you're happier with a better known name then Samsung offers a 17-inch model for just a few extra pounds. I don't think you're getting a better monitor though.

In the 17-inch category, the Apple

ColorSync deserves a special mention for being so loaded with features. Its self-calibrating software is pure genius, though the monitor itself has been around for a while. Its age shows, particularly when you look at the maximum scan rate. At just 75Hz it shows a tendency to flick slightly, especially compared with newer models that handle 100Hz plus. This is currently the only Apple monitor available, except for the LCD Studio Display.

The one monitor that stood out was the La Cie electron 19 blue. It has all the features of the Misubishi model plus some extras. It is these extras that make it the Editors' Choice, despite the extra £35 they cost. In fact, any of the Misubishi-based models make a good choice. If cash is a big consideration both the Hansol models offer great value. Of the monitors we tested there were no duff models. Some are in need of a price drop, but they all performed to a pretty high standard. They are so close that you can afford to get choosy about less important things, like how they look.

You may even wish to check on the prices of LCD flat-panel displays. They look great and the prices are still in freefall.

It's only a matter of time before they are as cheap as glass monitors. Perhaps next year I'll be including them in the same feature. **MW**

Pay to view
The Apple ColorSync performs well but is over-priced.

Batch of the day

DeBabelizer is the ultimate image manipulator. By Jim Heid

Today's designer wears more hats than a millinery model. In addition to producing printed materials, you might also be involved in Web-site and CD-ROM projects. Where graphics and images are concerned, each medium has its own unique requirements – colour catalogues need high-resolution images, for instance, while Web sites need fast-downloading ones.

These disparate requirements probably force you to spend more time than you'd like just converting files. Open a high-resolution TIFF file, shrink it down for the Web, save it as a JPEG; rinse and repeat.

But there is a way to automate this grunt work. Designers and multimedia producers have long sworn by Equilibrium's DeBabelizer, the ultimate graphics-manipulation and file-conversion utility (CU, 0181 358 5857; £375; v.3.0.1 reviewed *Macworld*, June 1998: ★★★★/8.2).

DeBabelizer can open and save every major graphics file format and most of the minor ones. It lets you apply quality-optimized colour palettes, tweak brightness and contrast, crop and resize, and much more. Best of all, you can automate these processes and apply them to an entire collection of images.

But before swearing by DeBabelizer, many designers find themselves swearing at it. It's ironic that visually oriented people must rely on a program that can be ugly and awkward, has cluttered dialogue boxes, and makes you use the Open command to delete a file.

DeBabelizer's beauty lies beneath its rough exterior, and the best way to break through that exterior is in small steps. What follows is a road map for mastering the product's automation features, with a sidebar ("Put your file conversion on autopilot" on the next page) showing how to tackle a common conversion scenario.

The DeBabelizer difference

All image-editing programs can convert between file formats, resize images, and reduce bit depth; many also have batch modes that let you automate these tasks. So why grapple with a program as arcane as DeBabelizer?

For one, DeBabelizer's ability to create custom colour palettes is unmatched. Even

JENNIFER JESSEE

Before swearing by DeBabelizer, many designers find themselves swearing at it.

better, the utility can examine a collection of images and create a single colour palette that best reflects their colours. You can then apply this SuperPalette to the images.

DeBabelizer also excels at dithering, the process of combining coloured dots in patterns to simulate other hues. Dithering is an essential part of the bit-depth-reduction process, and DeBabelizer offers more control over dithering than any image editor.

What's more, while the batch features in image editors are limited to manipulating the contents of a single folder, DeBabelizer's autopilot can transcend a single folder and even a single computer.

You can, for instance, set up a drop folder on a file server, and then tell DeBabelizer to monitor that folder so that whenever anyone tosses an image into it, a batch process executes. This can be a boon to large shops where several designers are working on their own sets of images.

Put your file converson on AutoPilot

Here's a common scenario that screams for DeBabelizer's batch-processing talents: You've just finished producing a lavish four-colour catalogue.

Now you need to adapt its images for use on the Web and for your company's sales force to plop into presentations and word processing documents. For the Web, you'll need to convert your original, high-resolution TIFF images into JPEG format.

You'll also need to lighten the images slightly so they display well under Microsoft Windows, where images appear darker than on Macs.

What's more, you'll want to create a thumbnail version of any image whose horizontal dimension is wider than 300 pixels; on the final Web site, you'll link these thumbnails to their larger counterparts. Finally, you'll need colour PICT files. Here's how to make it all happen.

1 Set up your folders
Create three folders to hold the final, converted images: JPEG Files, Thumbnail JPEG Files, and PICT Files.

2 Set up a batch list
DeBabelizer's BatchList window lets you set up lists of files to be converted. There are several ways to add files to a batch list, but the easiest is to open the folder containing the files, select the files, and then drag them to the BatchList window.
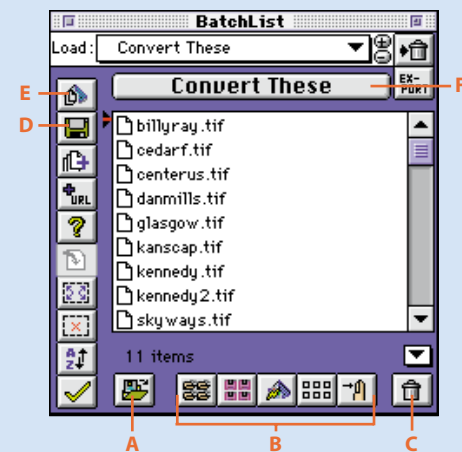
A   Opens the files in this batch list.
B   Performs batch-automation operations on those files.
C   Removes the selected file(s) from the batch list.
D   Saves this batch list.
E   Creates a new batch list.
F   Allows you to rename the batch list.

3 Create an automation script
The most complex part of any DeBabelizer automation chore is deciding which approach to take and testing that approach.

For this project's rather complex requirements, we'll create a single script named Convert Files. Choose Script from the Window menu, then click on the New Script button (C) to clear the Script window's contents and create a new script. Name the new script Convert Files. (You can apply the Convert Files script to a single image by dragging the image's icon from the Finder to the Script window's target button, the small bull's-eye. This is a handy way to convert and scale just one image.)
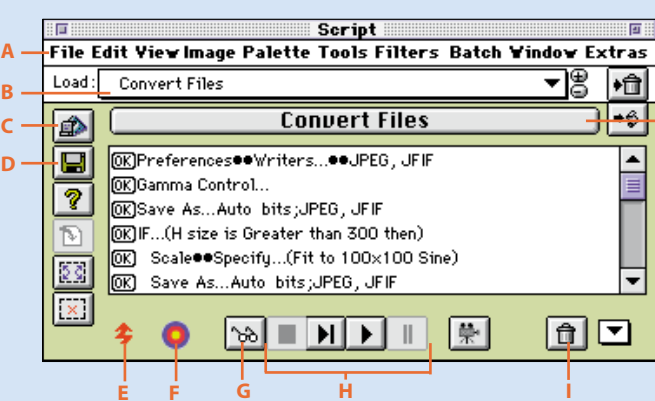
A   Menu of commands you can add to the script.
B   Switches between scripts.
C   Clears the script window.
D   Saves the script.

E   Action arrow – drag it to the BatchList window's Open button to apply the script to the batch list, or drag to an open image's window to apply the script to the image.
F   Target button – drag an image's icon to this button to apply the script to the image.
G   Turns WatchMe mode on and off.
H   Controls script playback.
I   Deletes the currently selected script line(s).
J   Allows you to rename the script.

4 Add some commands
To insert the script's commands, use the mini menu bar at the top of the Script window. After inserting a command, you must double-click on its name in the Script window to specify the command's settings.

For example, after inserting the Gamma Control command, double-click on it to specify the gamma settings you want to apply.

Here's a guide to each of the script's key areas, along with some details on how to set them up.
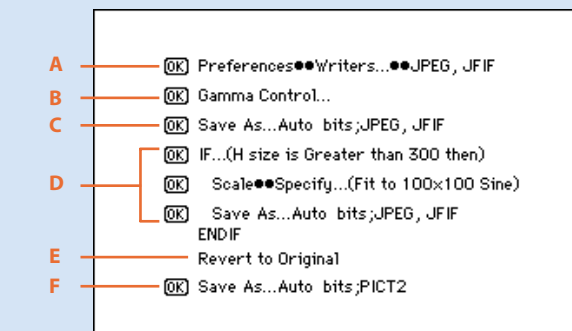
A   Controls the desired quality setting for the JPEG images. To add this command, use the Script window's mini menu bar to choose JPEG, JFIF from the Writers submenu, which is within the Preferences submenu of the File menu (*whew!*). In the JPEG Save Options dialogue box, be sure to click in the Skip Dialogue check box so this command's dialogue box doesn't appear every time a new image is opened.

B   Specifies the gamma correction you want to apply to the image. I used 1.2, but you'll want to experiment to find the best value for your images.
C   Saves the gamma-corrected images in JPEG format. When double-clicking on this command, use the resulting Save dialogue box to specify the JPEG format and the destination folder (in this example, the folder named JPEG Files).
D   Scales the image down if its horizontal dimension is greater than 300 pixels. The indented commands within this IF-THEN statement execute only if the condition is true.

To insert the If statement, choose IF from the Script window's Extras mini menu, then double-click on the If statement and configure its dialogue box as shown.

For the Scale command, use the Fit Into Size action to maintain the image's original aspect ratio. For the Save As command, specify the JPEG format and the folder named Thumbnail JPEG Files.

After inserting and tweaking these commands, end the IF-THEN statement by choosing ENDIF from the Script window's Extras mini menu.

E   Reverts to the original image in preparation for the final step.
F   Saves the image as a PICT file. The destination folder is PICT Files. After you've created the script, click on the Script window's Save icon.

5 Apply the script
To apply the script to the batch list, drag the action arrow to the BatchList window's Open button, then sit back and relax while DeBabelizer crunches through each image.

Unlike image editors, DeBabelizer also supports conditional processing: you can specify that a task be performed only if certain conditions are true. The above sidebar shows this capability in action; it details how to set up the program so it automatically creates a thumbnail version of any image whose horizontal dimension is larger than 300 pixels.

Choosing an automation option
Fleshing out a DeBabelizer batch-processing job is a form of programming. You don't actually peck out lines of program code, but you do have to apply the same logical, stepwise thought processes – thinking through what you want to accomplish and then determining the best approach.

DeBabelizer offers several batch-processing options that can be combined in various ways. One of the challenges behind automating the utility is choosing the right mix of options for the job.

Batch automation   Eight built-in automation routines can handle the most common format-conversion and image-manipulation tasks. If you need to convert between file formats, create custom colour palettes, or generate contact sheets containing thumbnail versions of images, the Batch menu's Batch Automation command should be your starting point.

Scripts   A script is a series of commands that DeBabelizer executes in sequence, much like a set of Actions in Adobe Photoshop. But DeBabelizer scripts pack far more automation power, including supporting IF-THEN operations that execute only when certain conditions are true.

You can create scripts by using the Script window to insert statements manually via the mini menu bar. But an easier way is to use the voyeuristically named WatchMe feature, which records your actions and saves them as a script. This is a terrific way to create simple scripts and to flesh out the overall structure of complex ones.

ProScripts   DeBabelizer ships with a collection of canned scripts that perform common tasks, such as mapping a collection of images to the Netscape colour palette and then saving them as GIF files. These ProScripts live in a folder named DeBabelizer 3 ProScripts; to use them, you must import them into DeBabelizer via the Import command in the File menu's Import/Export DeBabelizer Resources submenu.

AppleScripts   DeBabelizer also supports the Mac OS's scripting language, AppleScript. You can save completed DeBabelizer scripts in AppleScript form and modify them to automate not only DeBabelizer, but other programs as well. You might, for example, create a script that converts a series of images for the Web and then uses Fetch to send them to a service provider.

Developing an automation style
As you work with DeBabelizer's batch-processing features, you'll find there are often many paths to the same end.

Should you write a script and then execute it within the Batch Automation window? Or should you use a script to execute a particular Batch Automation routine? Or do you forgo Batch Automation entirely and use WatchMe to handle the entire project?

As a general rule, look to the Batch Automation window first. It can handle the most common conversion and manipulation jobs.

If you need an extra measure of batch-processing power – IF-THEN tests, for example – then try writing a script and executing it within a Batch Automation routine.

In the end, there's often no right or wrong way to approach a batch-processing chore. What counts is that you succeed in automating the tasks at hand – and that you get home sooner than if you didn't have DeBabelizer.   MW

A contributor to *Macworld* since 1984, Jim Heid (www.heidsite.com) writes and lectures on Web and multimedia development tools and techniques.

create web

Buttons down pat

Animate your rollovers. **By Katherine Ulrich**

L ike rats in a lab, computer users – from gamers to Web surfers – know what to do when they see a button: click on it and wait for something to happen. With Macromedia's Flash 3, a £259 tool for creating vector-based animations, designers can create buttons that give users not just rewards but also real control over multimedia and Web environments.

In the filmmaking metaphor of Flash's interface, you place objects and elements on a stage, make frame-by-frame animations in a timeline, and create scenes. When you're done, you export your work as a movie. Flash buttons let users control the finished film by starting and stopping playback, going to a specific frame, and switching scenes.

But buttons are more than a mechanism for moving viewers from place to place; they can contain their own animations and form the foundation of sophisticated interface elements, such as pull-down menus. If you've already mastered the fundamentals of creating Flash movies, it's time to bring your buttons to life.

Build a basic button

To get a grip on how buttons work, jump right in and make your own simple button. You'll need to create a new button symbol, then add graphics to its Up, Over, Down, and Hit frames.

1 Choose Insert: Create Symbol (F8). In the Symbol Properties dialogue box, enter a name, select the Button behaviour, and click on OK to enter Edit Symbols mode.

2 The button timeline has just four frames: Up, Over, Down, and Hit. By default, Flash puts a keyframe in the Up frame; you must add keyframes to place graphics in the Over, Down, and Hit frames. Click and hold in a frame to bring up the Frame menu.

3 Use a different graphic in each frame to give users feedback about the button. The Hit-frame graphic should be big enough to cover the graphics in the other button states (turn on onion skinning to check); this Hit-frame graphic needs to be enlarged.
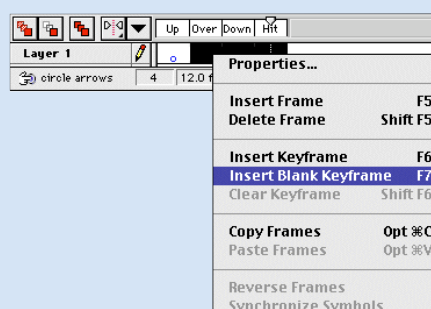
4 To see the button in action, choose Edit: Edit Movie, drag a copy from the library to the stage (the visible area of your Flash movie), and select Control: Enable Buttons. The button is now live, changing as you move the mouse over it and click on it.

TIP Another way to preview a button is to select it in the Library window and click on the Play button (the right-pointing arrow at the top of the window).

Animated buttons featuring movies

At the heart of animated rollover buttons in Flash lie movie clips. The process of making a movie clip is very similar to that of creating any animation in Flash; the difference is that you start by creating a symbol. Here, we'll create a simple animation that transforms an oval into a star burst.

1 Choose Insert: Create Symbol (F8), enter a name, and select the Movie Clip behaviour. Click on OK, and Flash brings up a new timeline and stage.
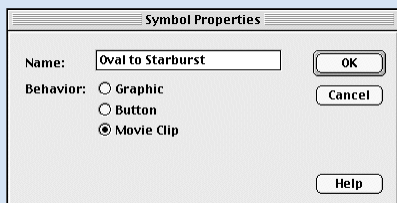
2 The status bar (A) displays the name of the symbol being edited; the filmstrip icon means that this symbol has movie-clip behaviour. Select frame 5 in the timeline and choose Insert: Blank Keyframe (F7).
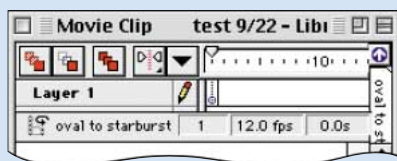
3 Place the oval in frame 1 of layer 1 and the star burst in frame 5. Turn on wireframe onion skinning (B) to help position the objects. Note: Shape tweens require that the beginning and ending objects sit directly on the stage. If you're working with a grouped object or symbol, select it and choose Modify: Break Apart (-B). (You may need to repeat the command several times until all components are at the stage level.)
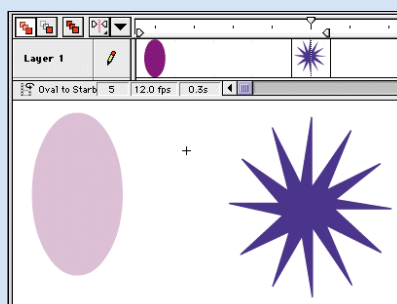
4 Double-click on frame 1 to bring up Frame Properties. In the Tweening tab, select Shape tweening and the blend type Distributive (for rounded shapes) or Angular (for shapes with corners). The default Easing setting keeps the rate at which the shapes transform consistent.
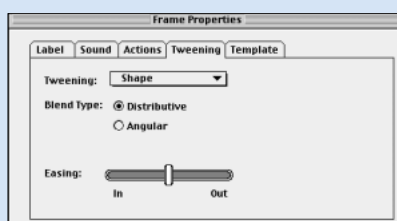
5 Click on OK, and Flash creates the in-between frames necessary to animate this morphing oval. Press return to watch the animation.
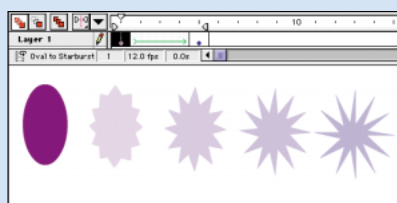
6 Choose Edit: Edit Movie to return to Edit Movie mode. Create two more movie clips. Now follow the steps in "Build a basic button," but this time place movie-clip symbols in the first three frames.
    (Check out www.macworld.com/more/ for a step-by-step tutorial on building a fully animated button.)

Button basics

To make a button in Flash, you first create an object called a symbol, a reusable element stored in a movie's library. You can modify the colour, brightness, transparency, and other attributes of a symbol each time you use it, but Flash downloads the basic graphic just once.

Creating a button is similar to creating a regular Flash movie: you work with objects on a stage and frames in a timeline, and you change the look of those objects by using keyframes (see "Build a basic button"). But where regular movies may have hundreds of frames that play sequentially over time, buttons have four frames that play in response to certain mouse actions. The first three correspond to the three possible button states: Up (nothing is going on; the button is just sitting there waiting for someone to notice it), Over (the mouse has moved into the button area), and Down (the user has clicked on the button). The fourth frame, Hit, defines the boundary of the button.

Although it's invisible to the end user, any solid graphic in the Hit frame becomes the active trigger for the button in the final movie. The Hit graphic can be a copy of the Up, Over, or Down graphic; you can also draw a shape enclosing all the elements that make up the button and then fill the shape with colour. You can even draw a shape that doesn't touch the Up, Over, and Down graphics at all. For example, an invisible square in the lower right corner of the stage could trigger a circular button that appears in the upper left corner.

Button feedback

We humans are like lab rats in another way: we rely on visual cues to tell us what constitutes a button. In a straightforward informational site, a button might look like something from the real world – say, a light switch or a volume knob. In more-whimsical sites or games, buttons might be camouflaged as part of the scenery. As the mouse moves over such a button, a slight change in appearance or the triggering of a sound might be the only indication of the graphic's dual purpose.

Flash 3's button symbols make it easy to provide visual feedback; you simply use a different graphic for each of the button states. Flash also lets you associate sounds with individual button frames. For buttons that emulate real-world switches or toggles, you can attach a clicking sound to the Down frame to add realism. For more-fanciful buttons, you might add sound to the rollover frame to alert users to the location of an interactive element.

Buttons on the move

To move beyond static three-frame buttons, you need Flash's movie-clip symbols – looping, self-contained animations that play within a single movie frame. Place a movie clip in the Up frame of a button, and you've got an animation that responds to the user's mouse.

You can vary the animations slightly for each button state or change them completely. For example, a blinking question mark might start to spin when the mouse rolls over it; clicking on the button might make the question mark change colour or shape. The trick lies in creating a different movie clip for each frame of the button (see "Animated buttons starring movies").

Movie clips are really mini Flash movies; they can contain all the elements of a regular movie. You can nest movie clips inside other movie clips and even nest buttons within movie clips. Because they loop continually within a single movie frame, you can use movie clips to create buttons that stay animated even when the movie containing them is paused.

Buttons in Action

Besides looking lively, buttons should do something. To make buttons work, you need to assign them actions – embedded commands that control such things as starting and stopping movie playback, going to a specific frame or screen, or linking to a specified URL (see "Actions put buttons to work").

You can assign actions to frames as well as to buttons. In the case of frames, Flash executes an action as soon as the movie reaches the frame containing the action. Buttons, however, respond to mouse events. That's why buttons offer one action not available to frames – On MouseEvent – which lets you define the precise mouse movement that triggers the button's actions. Note that you must attach actions to an instance of your button (a copy used in a movie), not to the frames that make up the button symbol itself.

To override the default On MouseEvent option, Release, select another parameter in the Actions tab of the Modify Instances dialogue box. Press responds to the downward part of a click when the mouse is over a button. Release Outside responds when the user clicks the mouse inside the button area but then moves the mouse outside before letting go. Roll Over responds to the cursor's rolling into the button area; Drag Over responds to the cursor's moving into the button area while the mouse button is down. Roll Out responds to the cursor's moving out of the button area; Drag Out responds to the cursor's moving out while the mouse button is down.

Give buttons a whirl

The best way to get a handle on buttons is to build some yourself. Start with a simple, static button that looks different in each state, then add movie clips and actions. With a little practice, you'll soon be building buttons that amaze even the most jaded multimedia rats.   MW

Actions put buttons to work

How do you give users mouse control over a Flash movie? add actions to your buttons. By definition, buttons always respond to certain mouse events: move the mouse into the button area and Flash displays the Over frame; click on the button and Flash displays the Down frame. You can make buttons respond to other mouse events by adding actions and setting the parameters of your choice.

1 Select an instance of the button on the stage and choose Modify: Instance (-I). In the Actions tab of the Instance Properties dialogue box, click on the plus sign and select On MouseEvent from the pop-up menu.
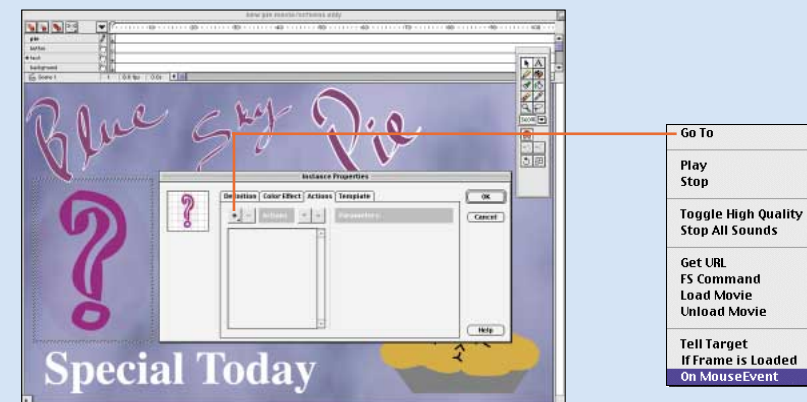
2 Select a mouse event under Parameters. You can set multiple parameters for a mouse event – for example, to make the button respond to rollover as well as drag over.
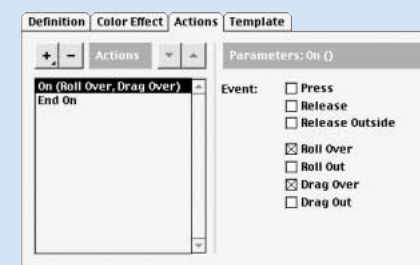
3 Once you've set up the On MouseEvent parameters, click on the plus sign again to choose the action the button will carry out. Stringing actions together allows the button to respond differently to different mouse events. For example, On (Release) might take you to the next scene in the movie, whereas On (Drag Out) loads a movie that displays a help window. A single mouse event can also trigger several actions – for example, moving to another frame or scene in the current movie and then loading a second movie.
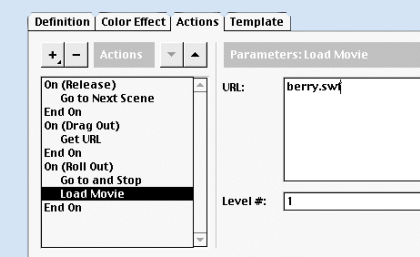
Keep 0ffice running

What to do when Office 98 misbehaves. **By Ted Landau**

The buzz on Microsoft Office 98 has become a deafening roar of approval: Office 98 is a vast improvement over previous versions. But given the abundance of features, it's not surprising that the suite is still experiencing growing pains. If you're an Office user, or thinking of becoming one, learn how to protect yourself from the bugs you may encounter – before one of them bites you.

Remove Office 98 goes too far
Problem If you want to uninstall Office 98, one of your options is to use a utility called Remove Office 98 (located in the Administration Tools folder). This program does a clean sweep, removing virtually all traces of Office 98 files from your disk. Unfortunately, it can get overzealous and move your entire System Folder to the Wastebasket. According to Microsoft, this can happen only if an MS Library file named Microsoft Office 98 somehow winds up in the System Folder instead of in the Microsoft Office folder. Regardless, numerous users have run this utility and had their System Folders vanish before their eyes.

Solution Fortunately, only version 1.0 of the utility is prone to this disaster. More-

recent copies of the Office CD-ROM ship with version 1.1, which fixes the bug. If you have version 1.0, be sure to download the 1.1 upgrade from Microsoft's Web site (see "Bookmarks").

PowerPoint fails to convert
Problem If you ever need to convert a PowerPoint 98 file to an earlier version of the program, simply selecting the appropriate translator from the pop-up menu in the Save dialogue box should work. If your file is a relatively large one, however, you may get a "Memory full" error message when you try to convert the file.

Solution Surprisingly, increasing PowerPoint's memory (in the Get Info window) won't help. To get the conversion to work, you need to increase the memory of another utility, PP Translator 8-4 (which turns out to be the one that does the actual conversion). You'll find it in the Translators

folder (Microsoft Office 98: Office: Translators).

Word refuses to save
Problem Saving a Word 98 document usually works without a hitch. But Word may occasionally refuse to save your document, claiming you have too many files open. Mysteriously, Word 98 will stand by this claim even if the document you're trying to save is the only open file.

Solution Save the file in Word 6

RICCARDO STAMPATORI

Solving Office extension conflicts

Office 98 places many files in the System Folder's Extensions folder (see "A full office"). Like anything else on your disk, these files can become corrupted, or installers for other applications that use some of the same files may replace them with newer or older versions. In either case, the result may be that Office applications no longer launch. If you can identify the likely problem file, you can use this generic fix.

1 Move the file from the Extensions folder in your System Folder to the desktop.
2 Delete the Microsoft Component Library file from the Extensions folder.
3 Start any Microsoft Office 98 program. The First Run install process begins, and

the missing extension file is replaced with the uncorrupted version from Office 98.

A known instance of this problem involves Adobe Photoshop 5: it installs OLE Automation 2.06, which prevents Office 98 applications from working.

One solution is to install Photoshop, move the Automation 2.06 file from the Extensions folder to the Photoshop folder, and then install Office 98.

If you've already installed Office 98, remove the OLE Automation and OLE Library files from the Extensions folder and then install Photoshop. Move OLE Automation 2.06 to the Photoshop folder, and launch Word 98 to get the First Run application to reinstall the removed files.
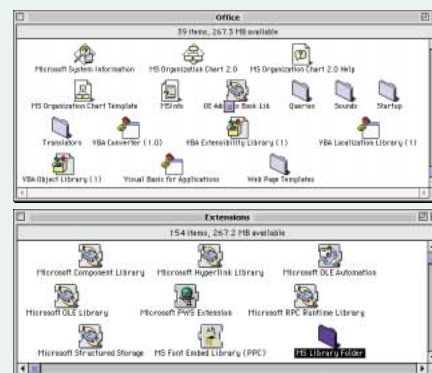
A full office
Here's a peek at just some of the dozens of files and folders Office 98 installs.

format. Next, quit Word 98 and reopen the document. You should now be able to save it in Word 98 format. This solution is less than ideal if the document contains formatting unique to Word 98 and that can't be converted, but at least it lets you save the text.

Since the problem seems to be related to the proliferation of work files Word creates when you repeatedly save an open document, turning off Word's Fast Save option should help. To do this, select Preferences from the Tools menu and then clear the Allow Fast Saves check box in the Save tab.

The Red X of Death
Problem Word 98's Insert Picture command lets you embed graphics in a Word document. The problem, particularly if the file contains several graphics, is that the images can suddenly disappear; in their place is a red X, dubbed by its victims "the Red X of Death."

Solution Whatever you do, don't save the file! If you do, all the graphics will be lost and you'll have to reinsert them. Instead, quit Word, select Get Info for the Word application, and increase the Preferred Memory size – give it as much as 30MB if you have enough memory. The X's are unlikely to reappear. (Microsoft is working on a permanent fix.)

Ê's Disappearing Act
Problem In Word 98, typing option-I followed by shift-E should produce a capital E with a circumflex mark over it (Ê, a character not often used in English but common in other languages). If you try this, however, you'll probably get a space where the letter should be.

Solution Select Preferences from the Tools menu. From the Nonprinting Characters section of the View tab, deselect All (if it's selected), make sure Spaces isn't selected, and click on OK. The Ê should magically appear.

Word 98's Security Leak
Problem Open a Word 98 document in any text editor, such as Bare Bones' BBEdit (select Any File from the pop-up menu in BBEdit's Open dialogue box to list Word files). Now scroll through the document. If your experience is typical, you'll find extraneous text that's invisible when you're viewing the document in Word.

This text comes from other, usually deleted, files on your hard disk. Why worry about this? Because if you send these files to users who know how to make the extraneous text appear, you could be revealing confidential information.

Solution Microsoft's Office 98 Unwanted Data Patch squashes this bug. By the way, this problem isn't unique to Word; it can occur with any application that uses Microsoft's OLE (Object Linking and Embedding) technology, which allows applications to share data.

Contextual menus hide and seek
Problem In Mac OS 8, you can access contextual menus by holding down the control key when you click the mouse. Office 98 has its own built-in contextual menus that override the Mac OS contextual menus that would otherwise appear.

But if you've installed Contextual Menu Enabler – an extension needed by some contextual-menu software, such as Apple Data Detectors – it trumps even Office 98, and you're back to the Mac OS menus.

Solution If you want the Office 98 contextual menus but want to keep the Enabler installed (for use with other applications), go to the Help menu and select the Turn Off Contextual Menus option for the Office application.

This option appears in the Help menu when you install Apple Data Detectors 1.0.2 or later.

Contributing Editor Ted Landau maintains the MacFixIt Web site (www.macfixit.com), where you'll find still more solutions to Office 98 problems.

Amateur MoviePlayer via browser

TIP Do you want to save QuickTime movies via your Web browser but haven't yet paid for the $30 QuickTime 3.0 Pro upgrade that makes this possible? If you use Netscape Navigator or Communicator and have QuickTime 3.0's standard Web plug-in, you can use several workarounds. Some readers suggest scrounging for the movie files in the Netscape cache folder, but Tobias Lee of London has a more direct procedure for Navigator 4.0 and Communicator 4.0.

After watching a QuickTime movie in Navigator or Communicator, choose Page Info from the View menu. A split window appears. The top pane lists URLs for all the images and movies on the Web page, and the bottom pane displays details about the listed items one at a time as you click on the URLs. In the top pane, locate the URL for the movie you want to save (it's labelled Embed, not Image) and click the adjacent URL to see details about the movie in the lower pane. In the lower pane, click the URL labelled Netsite to load the movie into the pane, and choose Save As from the File menu. Be sure to set the Format option to Source in the Save As dialogue box. With default preference settings, Netscape saves the movie as a MoviePlayer file; you can then double-click the movie's icon in the Finder to open it with MoviePlayer.

If you use Navigator 3.0, you can use a similar procedure sent in by Paul Burney. After watching a QuickTime movie in the browser, choose Document Info from the View menu. In the top of the split window that appears, click the link for the movie and hold down the mouse button until a contextual menu appears. Choose Save This Link As from the contextual menu, and be sure to set the Format option to Source in the Save dialogue box.

Control too-speedy scrolling
Q My G3 Mac scrolls too fast. When I drag my cursor past the bottom of a ClarisWorks 5.0 spreadsheet window, hoping to scroll to cell A35, my computer flies to cell A134 before I can stop it. This also happens when I try to highlight text in a word-processor document. Is there any way to control my G3's scrolling speed?
Robert Trieff

A The free Scrolling control panel by Ken McLeod (found on Ted Landau's MacFixIt Web site at **www.macfixit.com/library/tul/scrolling.sit.hqx**) lets you adjust how fast windows scroll and how quickly scrolling accelerates

Print from iMac via LocalTalk

Q I want to connect a 68040 Macintosh to my iMac. Since the iMac has only an ethernet connection, do I need to buy an ethernet card for the 68040 Mac? And once I get these babies connected, can I print from the iMac over my spiffy new network to a laser printer connected to my old Mac?
Jim Lavrakas

A You can connect the iMac and your old Mac via ethernet (see Q&A, December 1998), but this network is separate from the LocalTalk network connection used by most lasers. Although the ethernet and LocalTalk networks both use the AppleTalk protocol, the Mac OS can connect via only one at a time.

Fortunately, you can interconnect the two different AppleTalk networks. One way is to install Apple's free LaserWriter Bridge control panel on your old Mac. This allows the iMac and any other computers you might add to the ethernet network to use the laser printer on the LocalTalk network, as long as the old Mac is turned on. But LaserWriter Bridge doesn't enable any communication between Macs on the LocalTalk network and computers on the ethernet network. Apple's LocalTalk Bridge control panel enables computers on the two networks to share files and services, but it tends to sap the performance of the computer it's
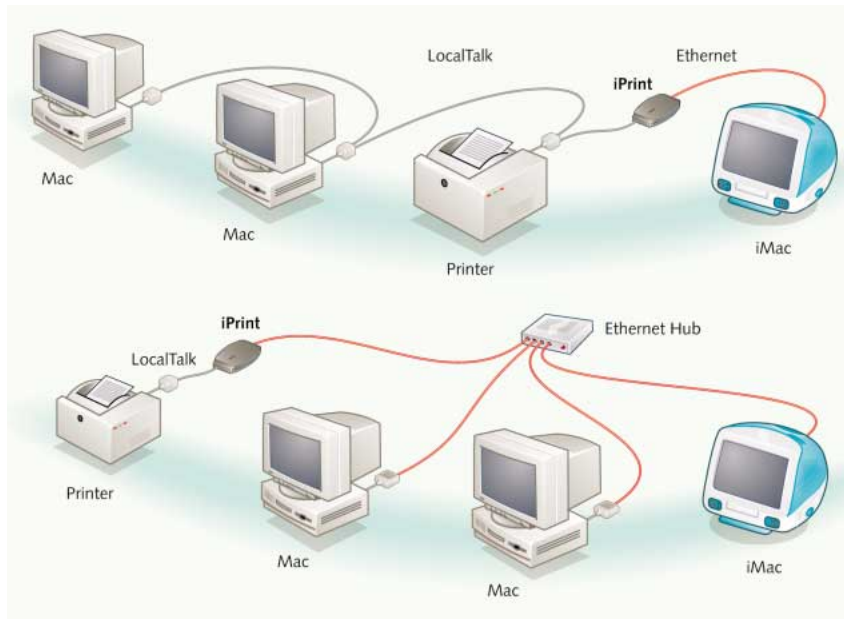
installed on. You can avoid all the shortcomings of the bridge software with a device such as Farallon's £93 EtherMac iPrint Adaptor LT. (Principal, 01756 704 040) You simply connect the LocalTalk network and the ethernet network to the iPrint, and then computers on either network can use printers, files, servers, and other services on the other network. The iPrint actually gives you a couple of network-connection options, as shown above.

Printing via LocalTalk from an iMac If you use a Farallon EtherMac iPrint Adapter LT to connect an iMac to older Macs and a LocalTalk printer, you can either put all the computers on an ethernet network (bottom) or put the old computers on a LocalTalk network with the printer (top). Using an ethernet network gives you better file-sharing performance, but you need to buy a hub and ethernet transceivers or adaptor cards for some old Macs. Printing performance is the same with either option.

to the speed limit. It doesn't seem to affect scrolling in menus, however. Although this control panel has been around since 1991, it worked fine in my brief tests with Mac OS 8.1. It does not work in Mac OS 8.5, however.

Test your phone line
Q When my 56Kbps modem connects to the Internet, the connection speed is only 24Kbps. I would like to get at least 38.8Kbps, but I'm not sure whether the problem is my Internet service provider or my telephone line. How can I test my phone line to find out if it's the limiting factor?
Michael O'Laughlin

A You can test your telephone line by having a terminal program such as the freeware ZTerm or the communications module of

ClarisWorks call 3Com's US Robotics BBS from your computer. You can find instructions for doing this on 3Com's Web site at **www.3com.com/56k/need4_56k/linetest.html**. If your phone line passes the test, then make sure the correct modem script is selected in your Modem control panel. Or if your Mac uses FreePPP or MacPPP for Internet connections, make sure the FreePPP Setup control panel or ConfigPPP control panel is configured properly for your modem.

Track installation with labels
TIP To track the installation of control panels, extensions, and other items in the System Folder, I use the Finder's Labels feature. I assign a label to all items installed in the Control Panels, Extensions, and other special folders as part of the Mac OS installation. Each time I

install new software, I know that the unlabelled items in these folders have been added by that software's installation. If no problem arises, I give them a different label to distinguish them from newer items placed during the next installation.
Dieter Kerschbaumer

Keep your lap cool
TIP Does your PowerBook overheat your lap? Since the day I got my PowerBook 1400, I've used it on a lap desk. Lap desks typically have a ledge to keep pens from rolling into your lap, which helps your PowerBook stay put, and some have a beanbaglike bottom that conforms to your lap. The flat desk surface supports your PowerBook's feet, ensuring an airspace underneath, and the beanbag bottom lets you position the desk comfortably.
Jon Haverstick

Peter Worlock

Courting the Windows vote has cost
this year's "Apple" Expo dear

Expo '98 loses faith

My garden is full of fallen leaves, the shops are full of Christmas trees, the first snow has fallen in parts of the country, and the cover of this issue says January - yes, it's November again. I write this some days ahead of Apple Expo, what should be the biggest event in the UK Macintosh calendar. But this year there's a wintry gloom over the event and it remains to be seen whether this would-be celebration of our favourite computer will deliver any festive cheer.

This year, the Expo will be marked by the singular non-appearance of Apple. Most of you will know the story, but here's a brief recap.

Double-header
Oddly enough, Apple Expo has never been organized by Apple; instead it is owned by Emap Trenton, the exhibitions arm of publishing giant Emap. This year, for reasons we'll look at in a moment, the show organizers lost the faith, and decided to run alongside Apple Expo a new exhibition called Total Design Technology, apparently in the belief that a cross-platform, digital-media show would be more successful than one dedicated to the Macintosh.

Various hardware manufacturers and software publishers signed up for either (or in some cases both) exhibitions. And then a few weeks ago Apple announced it was pulling out of Apple Expo and taking its name with it.

The last twist in the tale came when Apple then relented and allowed the use of the Apple Expo title, but stood firm on its decision not to be there in person. The result is an exhibition called Apple Expo, dedicated to Apple products, without Apple.

Organized chaos
The first portion of the blame for this mess can be placed firmly on the shoulders of the show organizers. It became apparent even during last year's show that Emap Trenton had no faith in Apple's ability to deliver an audience 12 months later.

Granted, Apple was deep in the mire of its financial troubles then, but it seems to me that the status quo was worth another year, especially given the fanatical loyalty of the average Macintosh user.

Any difficulties Apple suffered didn't seem to me likely to seriously impact attendance at this year's show.

Emap Trenton pre-judged the issue – and got it wrong.

But then another portion of the blame goes to some other agitators in the industry, more weakhearts who also lost the faith and lobbied Emap Trenton to switch the focus with the aim of luring in some of the Windows market.

Show Windows
Of course, there are very few companies who trade exclusively in Macintosh products, whether software developers, peripheral makers, dealers or distributors. But there has been no shortage of alternative exhibitions where those companies could reach a Windows audience if they chose. Apple Expo has always been unique in catering for the interests of the UK's Mac community.

It's also open to question how successful the switch has been. A visit to the Apple Expo Web site reveals an apparently-healthy exhibitors list, while a quick perusal of the exhibitors list for Total Design Technology seems equally lengthy.

But closer inspection is suggestive: all 91 Apple Expo exhibitors are also included in the TDT list of 106 – even down to identical stand numbers. In other words, although Emap Trenton is billing them as two separate shows, around 90 per cent of the exhibitors are the same.

Absent friends
Notable by their absence, apart from Apple, are many of the key names in the Mac market, including Adobe, Computer Warehouse and Microsoft.

Finally, Apple UK also needs a bloody good spanking. Although it seems blameless in the early shenanigans, its non-appearance at the Expo looks like nothing so much as a bad-tempered sulk.

Macintosh users attending Apple Expo have every right to expect a substantial presence from Apple, and while the company's withdrawal may sting Emap Trenton in the pocket, it's nothing less than a spit in the face for users who have stuck with the Macintosh through a difficult period.

There's enough blame, and shame, for everyone concerned.   MW