

# reviews

**L**ots of exciting products have arrived just in time for this month's *Reviews*. We headline two new **400MHz CHIPS**, one from AMD and the other from Intel, giving users the chance to grab some serious power without breaking the bank. And, we take a second look at Microsoft's next office suite, **OFFICE 2000**, as beta 2 hits the streets. And what's this? Another new operating system! Version 4 of **BEOS** is now ready. We lift the lid of this powerful OS to see why you might choose to install it instead of, or alongside, Windows. We get a first glimpse of Sony's new **200Mb HiFD DRIVE** and those who want something for nothing will be eager to turn to our review of **WORDPERFECT 8**. In a radical move that gives further credence to Linux, Corel has made its renowned word processor compatible with the platform and put it on the net for free download. We probe the workings of Hewlett-Packard's latest arrival, the **DESKJET 2500C**, and see if three goes into one with the **BROTHER** MFC Pro 700C multifunction device. In **HEAD TO HEAD**, we pit a spreadsheet against Microsoft Money. Which is best for sorting out your budget?

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## VNU European Labs



VNU Labs tests all kinds of hardware and software, from PCs to modems to databases. All our tests simulate real-world use and for the most part are based around industry-standard applications such as Word, Excel, PageMaker and Paradox. Our current PC tests for both Windows 95 and NT are the Sysmark tests from BAPCo. In all our performance graphs, larger bars mean better scores.

## Ratings

- ★★★★★ Buy while stocks last
- ★★★★★ Great buy
- ★★★★ Good buy
- ★★★ Shop around
- ★ Not recommended

# Big Red Voyager Discovery K400

**This top-rate system using the latest fast K6-2 chip from AMD is pure pleasure.**

Those interested in non-Intel machines will be happy to learn that AMD has kept to its planned release of CPUs with a K6-2 clocking in at 400MHz and yapping at the heels of Intel's current 450MHz. The gap between the two is decreasing and with future AMD releases still planned to shoot processing speeds through the roof, the contest is hotting up.

Big Red supplied this showcase chip built in to a Voyager Discovery K400, a squat, chubby number which gives the impression that an extra 2in slice has been added to allow more space within the casing. This is possibly to accommodate air-flows required to top off the excessive heat that the K6-2 is reputed to pump out. But we found that the Pentium-class heat sink and fan arrangement minimised this need and that the majority of the heat generated was actually coming from the hard disk.

**To support** the CPU's impressive clock, Big Red has included a stonking 128Mb system memory on just one DIMM, leaving another two slots available for upgrading — impressive. A bonus was double the normal amount of Level 2 cache. We were disappointed that this 1Mb, favoured by the Super7 mainboard manufacturers, did not pay off in the form of drastic performance increases. Graphics are handled by the AGP version of the 3D Blaster Banshee from Creative Labs [PCW, Feb '99].

Basic 2D/3D functions are catered for by an impressive 16Mb SGRAM on-board with a super-fast 250MHz RAMDAC and, for the gamer, an onboard 3Dfx chipset. For your viewing pleasure, a Hitachi DVD is coupled with a Creative Labs decoder card for assisted movie playback using the bundled Encore DVD Player software. Checking out this combo revealed some configuration problems, but to be fair,

Big Red's normal three-day quality testing was cut back to one day by our copy deadline and the company assured us that the problems would be rectified for its customers.

Users will not feel let down by storage as there is a comfortable 8.4Gb IBM EIDE hard disk with platters spinning at 5,400rpm and seek times of up to 9.5ms. The rewards also extend to your ears with Creative Labs' PCI SoundBlaster 128 pumping through the TEAC 1000 Dolby digital surround system with eight speakers and a sub-woofer. Few vendors regard sound output this highly. And, in building the Voyager Discovery K400, Big Red has supplied a full multimedia kit.

**We were glad to see** the 19in Iiyama VisionMaster 450 supplied, a monitor which gives exceptional quality. The sharp, bright image is evenly displayed across the screen and it can reach an impressive 80Hz refresh rate at a resolution of 1600 x 1200. Three bezel-

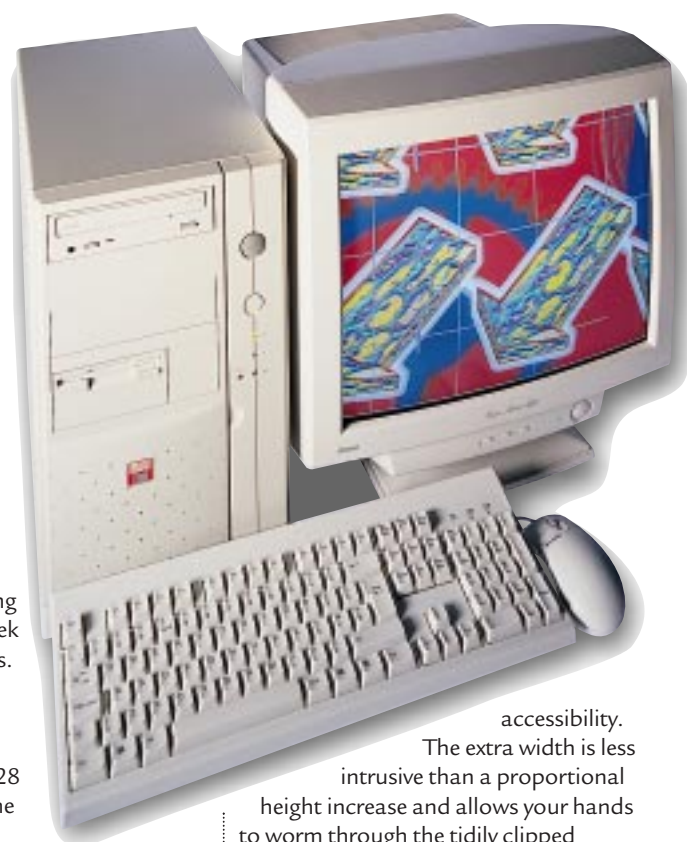
mounted buttons give users almost instantaneous access to every adjustment and setting. A PCI

Rockwell-based modem will allow telephony connections at up to 56Kbps.

There is scope for expansion with one PCI and one ISA slot free, plus room for one extra 3.5in and two further 5.25in devices. If you do venture inside, then one answer to the extra girth Big Red has afforded this model could be pure

accessibility. The extra width is less intrusive than a proportional height increase and allows your hands to worm through the tidily clipped cables and wires without fear. With a software bundle that includes SmartSuite Millennium and the DVD version of Wing Commander IV, Big Red has pulled out all the stops and supplied a top-notch system.

IAN ROBSON



## PCW DETAILS

★★★★★

**Price** £1,643.82 (£1,399 ex VAT)

**Contact** Big Red 0181 245 2456

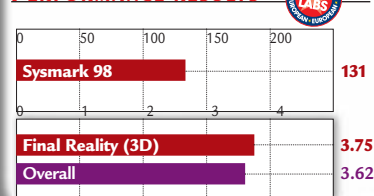
[www.bigred.co.uk](http://www.bigred.co.uk)

**Good Points** Impressive components and excellent monitor.

**Bad Points** Disappointing DVD setup.

**Conclusion** A stimulation for all the senses.

### PERFORMANCE RESULTS



**Big Red has included a stonking 128Mb of system memory**

# Tiny Home DVD 400

## A big deal all round

**The inclusion of a 400MHz Celeron makes this a great kit for home and business use.**

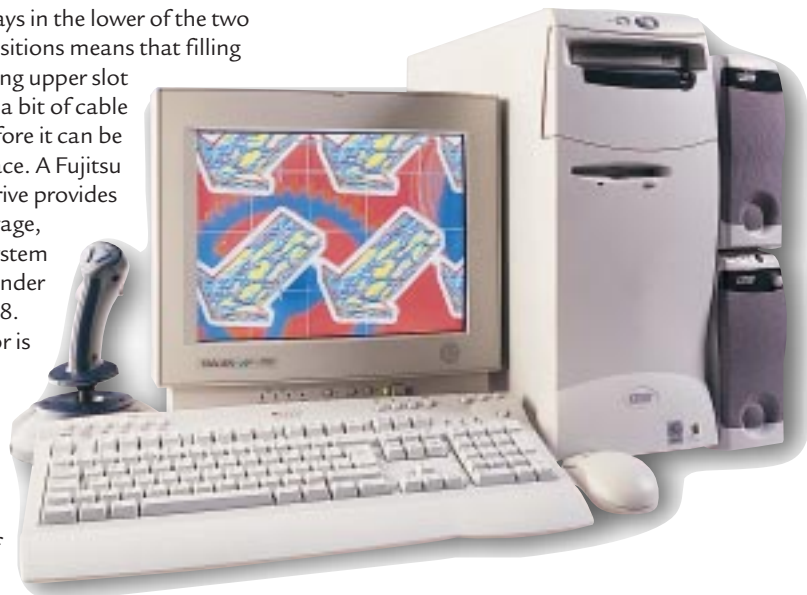
Intel has always claimed that the Celeron processor is not just for home users but for the business fraternity, too. Now, with the advent of the 400MHz model we may see this vision become reality.

**So what do you get** for your money? The case is fairly empty, with the compact motherboard taking up half the available space. This hosts the BX chipset, 64Mb RAM and a 400MHz Celeron processor. The chipset makes this a great PC for beginners who may want to upgrade. The RAM is supplied on just one DIMM which means that a further two SDRAM slots remain free for future use. The interior is tidy and well organised with cables tied back to facilitate easy access to the memory slots, processor and free ISA and PCI slots of which there are two of each type. Three spare power connectors allow plenty of scope for filling the remaining free internal 3.5in drive bay, as well as the one free external 5.25in bay which hides neatly behind Tiny's trademark case door. However, the positioning of

the 3.5in bays in the lower of the two possible positions means that filling the remaining upper slot will require a bit of cable juggling before it can be slid into place. A Fujitsu IDE hard drive provides 6Gb of storage, while the system itself runs under Windows 98.

The monitor is a 15in FST Taxan Ergovision 550TC095 with a viewable diagonal of 13.7in. For most home and office users this may be adequate, but power users running major graphical applications are unlikely to be tempted by the Celeron option and most will not want to push it beyond 800 x 600 resolution. However, it can still attain a respectable flicker-free refresh rate of 85Hz at 1024 x 768. It is driven by a 3Dfx Voodoo Banshee AGP for Windows 98 card with 4Mb of on-board RAM. We were impressed by its performance, with good screen uniformity, uniform image sharpness across both high and low intensity characters, no evidence of unwanted raster lines and no problems with convergence or colour mis-registration in either horizontal or vertical test patterns. It had no OSD, but buttons mounted on the bezel allowed for a wide range of alterations but omitted the degauss option — neither surprising nor a great hindrance at this level.

**Entertainment is catered for** by the inclusion of a Matsushita DVD-ROM drive. Using software decompression, the results of playing a movie disc were impressively smooth. Sound arrived courtesy of a Yamaha DS-XG card, mounted in a PCI slot and a pair of



Tiny-branded 180W PMPO speakers, shaped to complement the Home DVD 400's case design.

This system from Tiny is simplicity itself when it comes to setup. All cables are colour coded to match the case ports. The multimedia keyboard puts audio controls at your fingertips and has four hot-keys to launch applications. These can be configured by clicking an icon in the system tray and are supplemented by a further button to close applications. One hot-key is pre-configured to call up the Tiny FAQ

guiding users through twelve key problem areas. Europhiles will be pleased to see the inclusion of a Euro symbol and they'll be able to chat to their continental

counterparts using the internal V.90 modem. A generous software bundle included language instruction software and a range of Dorling Kindersley products which help make this PC a great buy for families with kids.

All in all, this PC is a very impressive package for home and small-office business users alike, as well as corporates looking to expand their current stock without the expense of a Pentium II chip.

**NIK RAWLINSON**

### PCW DETAILS

★★★★★

**Price** £1,291.33  
(£1,099 ex VAT)

**Contact** Tiny 0870 607 1294  
[www.tinycomp.co.uk](http://www.tinycomp.co.uk)

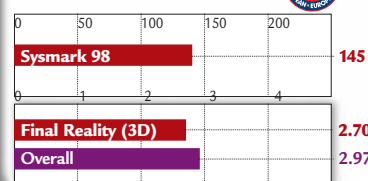
**Good Points** Software bundle. Monitor. Impressive component list.

**Bad Points** None to speak of.

**Conclusion** It's early days yet for the 400MHz Celeron processor but if this is anything to go by, the future looks bright.



#### PERFORMANCE RESULTS





# Compaq Armada 7800

## Powerhouse portable

**A desktop replacement with loads of power, a lovely big screen and no adapter to lug.**

Some users are happy with a super-small, super-lightweight yet cut-down computing device for their mobile computing needs, while others will settle for nothing less than a full-blown equivalent of their high-powered desk-bound PC. This top-of-the-range Armada 7800 sports the latest mobile Pentium II processor running at 300MHz — that's fast! — coupled with 64Mb of memory (expandable to 256Mb), a whopping 8Gb hard-disk drive and a state-of-the-art DVD-ROM drive. A 66MHz PCI bus, 512Kb Level 2 cache, 32-bit CardBus for PC cards, S3ViRGE/MX graphics controller with 4Mb SGRAM and 3D graphics acceleration, and a frame mode AGP implementation with a dedicated 66MHz graphics bus, all combine to provide the best possible speed for your applications.

That sort of specification provides more than enough processing power and storage capacity for today's operating systems and applications, and additional storage capacity and other peripherals can be added via the modular drive bay. The MultiBay on the 7800 can house additional hard disks, battery packs, CD-ROM or floppy drives, increasing hard-disk storage capacity to 16Gb or battery power to over five hours, for instance. The only drawback here is that the devices in the MultiBay cannot be hot-swapped.

As with most notebooks of this ilk, the Armada 7800 is neither svelte nor pretty. In fact, it is damned heavy — between 7.8 and 8.8lbs depending on configuration — and fairly utilitarian in appearance. But its catch is solid and its hinging action is firm, and once the case is open you have a very usable and tactile full-size keyboard with a few user-assignable function keys above it and dedicated buttons for volume control



and suspend operation. The lid houses the screen, a microphone and two speakers that provide excellent sound for a laptop.

The pointing device is one of those mini-joystick affairs set into the keyboard, with left and right mouse buttons beneath the space bar. The

action of the device is positive and accurate. The strangest thing about the keyboard is its position

towards the front of the case, virtually eliminating any kind of real wrist-rest. The reason for this, though, is one of the nicest features of the Armada range: an integrated power supply at the back of the case. No lugging around a separate power 'brick' for this machine — just plug in and away you go.

The screen has often been a sticking point on most laptop machines, but the 7800 sports a full-sized 14.1in CTFT screen which can operate at 1024 x 768 resolution and display 16.8 million colours. It is excellent — bright and clear, with good colours and a reasonable

viewing angle, and remains usable in most lighting situations. The only thing which spoils it was a thin, bright band along the bottom edge although this did not impair usability. With AGP and 3D acceleration, graphics performance is outstanding.

The back panel of the unit is a mass of ports, including the obligatory expansion/docking, serial/parallel, external keyboard/mouse, external SVGA and power connectors. Next to these is the

fast 4Mbps IrDA 2.0 port, and above are connectors for external microphone, headphone and line-in, as well as a USB port.

At the side of the unit are the PC Card slots offering the usual two Type II or one Type III arrangement. Both 16-bit PC Card and 32-bit CardBus cards are supported, along with zoomed video in the bottom slot only. Above these is the integrated 33.6/14.4Kbps fax modem with full-duplex speakerphone capabilities and this is upgradeable to the K56flex protocol. Security, management and docking options are all outstanding, as befits a machine of this class.

BOB WALDER

### PCW DETAILS

★★★★★

**Price** £3,878.68 (£3,301 ex VAT) including optional DVD drive; (£2,995 ex VAT without DVD)

**Contact** Compaq Computers  
0181 332 3000 [www.compaq.com](http://www.compaq.com)

**Good Points** High-performance AGP graphics. Excellent docking options.

**Bad Points** Not the usual 'kettle plug' power cable. No hot-swap of drive modules.

**Conclusion** A superb piece of kit which can act as a true high-performance desktop replacement for mobile users.

# Office 2000 Unwrapped suite

BETA

We check out the **latest three pieces** in the Office 2000 beta suite. Can you resist it?

Microsoft is still adding features to Office 2000 and the release date has been pushed back — at the time of writing, 'second quarter' is the best the company can offer. A strange twist is that PhotoDraw 2000, the last member of the suite to be announced, is also the first to be released ahead of the full version. Newly revealed in the latest beta are FrontPage 2000 and Publisher 2000, now promoted to the top-of-the-range Premium Edition. There will also be the familiar Standard and Professional versions, the latter including Access, and a Developer Edition aimed at programmers. The core applications are little changed from the earlier beta although there are improvements: Word can at last print two pages on one sheet.

With each release, Publisher 2000 gets less like a desktop publishing package and more like an overgrown wizard. The snag with instant Publisher designs is that, like ties bought in high-street chains, you may meet someone else wearing the same

one. Publisher 2000 offers some respite with a new, improved look throughout its templates. Online help is in the new intrusive style which automatically resizes your document window, and the publisher wizard takes up a chunk of space on the left, leaving little room for your actual document on many displays.

Publisher may have taken pop-up help beyond sensible limits but, having said that, most features can be turned off and there is a moderately powerful publishing tool lurking beneath. It can now make separations for high-end commercial printing but a curious omission is column balancing — you cannot force Publisher to align both the top and bottom of multi-column text. Publisher is not a tool for professional designers but for the rest of us who want to create decent-looking documents



without expensive assistance. It is good at what it does, but I would be cautious about using it for web design because of its inefficient HTML code.

**FrontPage 2000** makes great play of what it does not do. A section in the evaluation guide remarks that the new version leaves existing HTML code unchanged, unlike previous editions which had a habit of scrambling scripts or tags created with other software, including Microsoft web editing tools. FrontPage 2000 is also able to create disk-based webs: that is, you

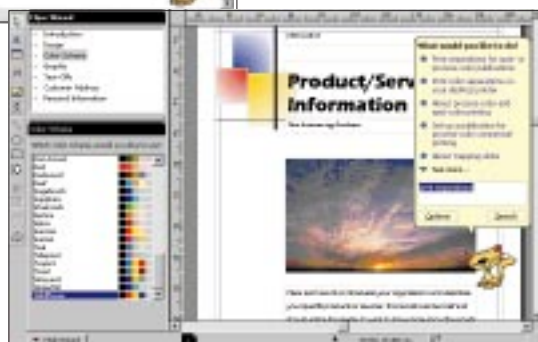
can use it without having to run your own web server. There is also a compatibility setting that lets you

disable extensions that will not work on particular web servers or browsers; a great feature, long overdue.

**PhotoDraw 2000** is inspired. It is a brand new graphics package although parts look eerily familiar, like the AutoShapes that come from Office 97. Its strength is that it does not force you to choose between bitmaps or vector graphics. With a bitmap you are painting with pixels: ideal for artistic expression or photographic reproduction but poor when scaled, and inaccurate for drawing. Vector graphics let you work with graphic objects, each of which can be individually sized, manipulated and scaled without loss of quality. PhotoDraw lets you mix the two techniques seamlessly, hence the .MIX extension in its native file format. It is

◀ AT LAST — TWO PAGES PER SHEET IN WORD. I WAS SO PLEASED, I HAD TO STROKE THE CAT

▼ PUBLISHER 2000 — A WIZARD TOO FAR?



laden with effects and features, and while it will not challenge the likes of Adobe Photoshop in the high-end market, it will be fine for home users touching up photos for web sites or business users creating simple graphics.

More polished than earlier betas, this version works well but installation is slow. It is difficult to set up Office web extensions which handle intranet publications and discussion groups thanks to a partial dependence on the unreleased SQL Server 7.0. Even so, this is a worthwhile upgrade, but those hoping for a leaner, meaner Office suite will be disappointed.

TIM ANDERSON

## PCW DETAILS

★★★★★

**Price** Not yet announced

**Contact** Microsoft 0345 002000

[www.eu.microsoft.com](http://www.eu.microsoft.com)

**System Specifications** Windows 95, 98 or NT 4.0. 200Mb disk space (approx).

**Good Points** Feature-rich. Much improved FrontPage. Strong PhotoDraw graphics package.

**Bad Points** North American flavour. Too many designs. Overkill for simple office use. Slow installer.

**Conclusion** The new Office will be hard to resist.

*The new Office will be hard to resist*

# BeOS Release 4

## New operating system

**This new kid on the OS block will appeal to high-end multimedia users.**

It takes nerve to launch a new operating system. The success of Linux, by offering robustness and stability, proved that users are prepared to adopt rival operating systems if they can offer something that Windows lacks. Now, BeOS provides the power and versatility needed for high-end multimedia applications like video editing and 3D graphics.

Previous versions of BeOS were essentially glorified beta releases, intended to drum up support from software developers. Release 4 is the first version aimed at ordinary end-users. The installation routine allows you to partition a hard disk so that BeOS can sit alongside Windows. Then, when you turn on your PC, you have the option of selecting either BeOS or Windows, which allows you to continue using the many business applications available for Windows while taking advantage of new multimedia software for BeOS.

**Be's graphical interface** is closer to the MacOS than that of Windows but anyone used to Windows should get the hang of Be pretty quickly. There's no equivalent of Windows Explorer — which is an immediate recommendation as far as I'm concerned — because you gain access to the contents of your hard disk directly from the main desktop, called the Tracker.

### PCW DETAILS

★★★★★

**Price** £49 (£41.70 ex VAT)

**Contact** UK Distributor:

Computer Warehouse 0181 400 1298.

Be web site [www.be.com](http://www.be.com)

**Good Points** High-performance multimedia operating system.

**Bad Points** Limited hardware compatibility and software availability.

**Conclusion** The technically sophisticated BeOS will appeal to content developers but its success will depend on future software support.



An on-screen palette called the DeskBar acts like the Start menu in Windows 95/98, or the Apple menu in the MacOS. This can be customised to provide instant access to control panels and your most important applications and documents. Open windows have a title bar which allows you to move them around the screen, and the usual scrollbars and resizing options are there, too. Applications use conventional pull-down menus

and tool palettes, and Be has duplicated most Windows keyboard shortcuts so new users should soon feel comfortable with the interface. The interface is probably the least important aspect of BeOS, though. It is the performance of the underlying architecture that is most impressive.

**BeOS is an object-orientated** operating system that supports multithreading and multiprocessing. Multithreading works by breaking running applications into a series of small tasks, allowing you to run multiple applications side by side and to switch between them at will. You can have a video clip running alongside a 3D animation at the same time as browsing the internet. If you've got a multi-processor PC, the BeOS can divide threaded tasks between processors for

◀ **ITS HIGH-PERFORMANCE MULTI-THREADING ALLOWS BEOS TO RUN MULTIPLE VIDEO CLIPS SIMULTANEOUSLY**

optimum performance but it also runs well on single-processor PCs. High-quality video and multimedia files

can take up huge amounts of RAM and disk space but Be's 64-bit file system can handle file sizes in the terabyte range. Windows has trouble with video files that are more than one or two gigabytes.

Be has gained surprisingly good software support. There are several audio packages already available, such as Steinberg's Nuendo, and a number of video editing programs are in development. Be has also pulled off a

coup with Hitachi, which has licensed the BeOS for use in a range of dual-boot (Be/Windows) PCs selling in Japan.

The only problem is Be's limited compatibility with the vast number of hardware components used in PCs, like sound, graphics and video capture cards. It's important to check compatibility before buying BeOS, as you may find that it simply won't work on your PC.

BeOS is technically impressive but it's facing an uphill struggle against Windows, especially now that NT is making progress amongst content developers. However, Linux has proved that there's room for rival operating systems in the PC market. A lot will depend on forthcoming software support, but if the software's good enough, BeOS might well carve a niche for itself among audio, video and graphics professionals.

STEPHEN DEAN

*The performance of the underlying architecture is most impressive*



# IBM Aptiva E18 Home PC

**A balanced, quality system that would make the ideal family PC.**

**T**he IBM Aptiva E Series of home PCs has received five additions to an already extensive range. This E18 model squeezes itself into the lower end, based on its price, which is borne out in its specification. How it stands up to the competition is another matter.

The name IBM conjures up fond memories of times gone by when the term 'IBM compatible' was on everybody's lips. There has been a dramatic shift in the attention paid to such details and this becomes increasingly apparent in the dog-eat-dog arena of the budget home PC market. It's brave of IBM to attempt to make its presence felt against the aggressive pricing policies adopted by most vendors, but to its credit, you can be sure that IBM's wealth of experience will translate to an expertly configured machine with a quality of build to match.

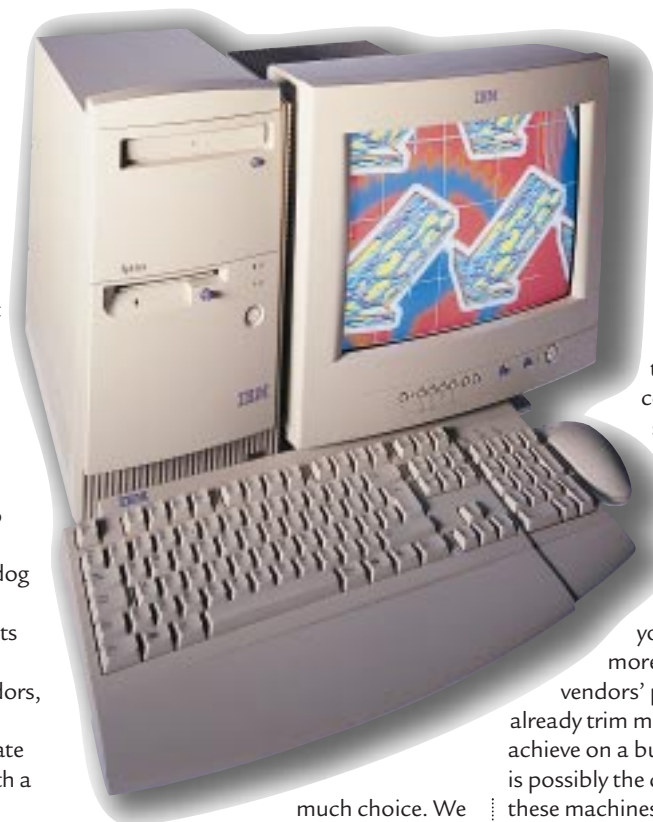
**What is on offer** is a system balanced around an AMD K6-2 300MHz processor with 48Mb main memory. For the majority of home uses this could well be sufficient, but you may begin to feel some lag if you're hoping to play games.

## IBM wins marks for its no-nonsense approach

Upgrading for high-end game support is limited by the on-board 4Mb AGP graphics from ATI.

Storage can at least be said to be ample, with 6Gb supplied in the shape of a 5400rpm EIDE hard disk from Maxtor with an average seek time of 9ms, giving fast enough access to the pre-installed home office software, including Lotus SmartSuite97.

If you fancy getting your hands dirty with a few enhancements, then once you've loosened the case screws you will immediately note the limitations. With only one free 5.25in drive bay and one shared ISA/PCI bus slot, there's not



much choice. We were impressed by the hard-drive housing which slides effortlessly into and out of position, allowing easier access to the already tight innards.

Connectivity is well catered for with the inclusion of an IBM branded 56Kbps ISA modem, while multimedia is taken care of by the on-board Crystal sound chips. The size of the compact system box, as well as the 15in IBM branded monitor, are further indications that this

machine is well suited to use in the home office. Users finding themselves making extensive use of it will be impressed by the monitor's sharp image at 800 x 600 resolution, where it sustained a 75Hz refresh rate.

**We were disappointed** with this machine's performance in our BAPCo benchmark test of standard office applications. Similarly, it failed to impress when subjected to our 3D Final Reality test, indicating that this machine may not be the best choice for PC gamers.

IBM wins marks for its no-nonsense

approach to what the intended end-user will be looking for. Ease of use is a major focus; an intuitive setup includes colour-coded cables and a host of friendly guides including Aptivaizer, Aptiva Helps and Aptiva Installer. Each is ready to escort the family through the essentials of modern computing. If you do get stuck, the IBM

HelpCentre is just a phone call away, 365 days a year.

Overall there's nothing remarkable to comment on here, and you could quite easily find more for your money in other vendors' products. With the already trim margin that IBM would achieve on a budget PC, £799 (ex VAT) is possibly the cheapest it can get, but these machines will sell through the sheer trusty build and experience that can be accredited to a company that has been around since the dawn of personal computing.

IAN ROBSON

## PCW DETAILS

★★★★

**Price** £938.83 (£799 ex VAT)

**Contact** IBM PC Response Centre  
0870 601 0136

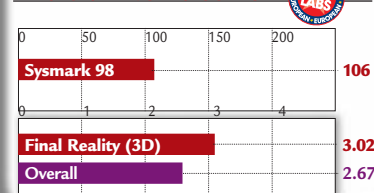
[www.ibm.com/pc/uk/aptiva.html](http://www.ibm.com/pc/uk/aptiva.html)

**Good Points** Intuitive. Quality build.

**Bad Points** Limited upgrade options.

**Conclusion** A purchase for those who need their hand held at all times, but when £799 is involved, that's hardly a childish approach.

### PERFORMANCE RESULTS



# Hewlett-Packard 2500C

## Colour printer

A big, hefty inkjet to take care of your office requirements in **mono and four colours**.

Mentioning the words 'office' and 'printer' in the same breath often conjures up images of one print technology only — lasers. And, as it's true to say that most substantial businesses have used laser printers for many years, it's an easy association to make. However, some small offices, more particularly the ones Hewlett-Packard (HP) calls workgroups, only need inkjets, but not the fiddly little ones you would use at home.

So, HP has come up with the 2500C, a colossus of a colour printer that is based on inkjet technology. Hailing from the Professional Series Colour range, the 2500C is designed for use in workgroups — in other words, for small businesses or other organisations with between five and ten users.

**The 2500C is absolutely huge** and has a virtually indestructible feel to it. All the trays and movable parts feel sturdy. It is easy to clear jammed paper from inside, and easy to replace ink cartridges. So, it's perfectly built for the small-office environment where staff have neither the time nor the inclination to look after office property. It's pretty easy to get up and running, too. Just plug it into the parallel port and stick the software CD into the drive.

It has clearly been designed with networks in mind, claiming to 'seamlessly' integrate into all major network environments and protocols as well as support all major operating systems. What it boils down to is that the 2500C supports Win 3.1x, 95, 98, NT 4.0 and MS-DOS. It is network capable with the option of inserting a Hewlett-Packard MIO internal print server.

Inkjets are, historically, slower than lasers; so how does the 2500C fare? Against a claimed mono speed of 7.5ppm using black text only, our laboratory tests measured a mono speed of just 4.2ppm — not quite so impressive,

but not so bad. Also worth remembering is that in HP's Econofast mode the mono print speed can improve by up to 2ppm. Standard memory is 4Mb but upgradeable to a whopping 76Mb.

The 2500C is more than just a mono inkjet printer. Probably its main selling point is its four-colour capability. The claimed mixed mono/colour speed is 3.3 pages in normal mode and up to 7.5 pages in Econofast mode.

**Our tests in this category** are not really comparable as we use not a text/image mix but a full A4 colour image with no text, and in optimum mode it took approximately half a minute to print. Still, quality was excellent in both mono and colour modes, with greys and blacks mixing well in large and small fonts and colours showing great clarity and respectable detail. The 2500C will print at a resolution of 600 x 600dpi in mono.

Extras include the ability to use the ColorSmart II technology for colour matching, and PhotoREt II colour-layering technology. There are also

Billboard and Handout print options enabling you to expand an image or document to cover lots of pages or to shrink several pages onto one side of paper, respectively. Its workgroup connectivity also comes through in the printer control language (PCL): it uses the enhanced HP PCL3 but supports Adobe PostScript 3.



**The machine is unusual** in that the print heads are separate from the ink cartridges. Mounted just behind each other, the four heads and cartridges are well labelled and it is simple to replace them. It also cuts down on running costs with no need to replace both print head and cartridge at the same time. In fact, both have indicators to inform you when they are reaching the end of their working lives. The inclusion of two media trays, with a combined capacity of 400 sheets, means that you can have an A3 and A4 tray at the same time. Having seemingly gone sensor mad, HP has included a sensor so the printer knows what media is in which tray.

JIM HARYOTT

**Unusually, the print heads are separate from the ink cartridges**

### PCW DETAILS



**Price** £1,104.50 (£940 ex VAT)

**Contact** Hewlett-Packard 0990 474747  
[www.hp.com](http://www.hp.com)

**Good Points** Features. Print quality. Sturdy build quality.

**Bad Points** Size. Slower than anticipated print speed. Price.

**Conclusion** The 2500C is an able, well thought out and well built colour inkjet for the small-office user. It is pretty big though, and it's not cheap.



# Brother MFC Pro-700C

## Multi-talented device

If office space is at a premium, a device that does everything but make the tea could be what you need.

Since every other manufacturer worth his salt has now added an MFD (Multi-Function Device) to its range, Brother has followed suit and now the MFC Pro-700C is available for the use of the SME market.

The MFC stands for Multi-Function Centre and for your money you get a multitude of peripherals squeezed into this rather large marvel. A Plain Paper Fax, Colour Printer, Colour Copier, Colour Scanner, Message Manager and Colour PC/Fax (where faxes are received by the PC) are all built-in and most work without connection to an active PC.

The main benefit of an all-in-one device is that all of the common office peripherals are merged into one, saving space and money, and improving ease of use.

**First up, the printer.** This is an inkjet unit capable of resolutions of up to 720x720 dpi that utilises the Piezo technology most commonly found in Epson printers. In our tests it achieved a quality rating of 70.4 percent, which isn't fantastic. Its weaknesses were greyiness and significant banding in blocks of black. It coped well with fine lines, and even gave our 'fine white lines through a solid block of black' test a good run for its money. The colour output was a touch too bright and this resulted in images looking faded. Ink density can be altered in the driver to correct this, but the factory setting is preset to a recommended value to save ink.

The claimed mono speed of up to 5 ppm is a bit overrated — in our tests it produced only 1.7 ppm. We were, however, impressed with the printer's performance in the positional test, where a test pattern is printed on the same sheet twice. The pattern looked as if it had only been printed once, and the text was only slightly blurred due to marginal horizontal misalignment.

**A fairly rare feature** on any MFD is the ability to produce colour copies without being connected to a PC. The Pro-700C's 4Mb of RAM enables this facility. A full A4 copy takes less than three minutes on the Best setting, and the result is very close to the original.

*You get a multitude of peripherals squeezed into this rather large marvel*

The fax functionality is extremely comprehensive, and there are so many advanced functions that most of them probably won't be needed. It can cope with speeds of up to 14.4Kbps, and documents of between 76x100 mm and 216x900 mm. The scanner, meanwhile, has an optical resolution of 300 dpi and incorporates a document feeder. The results of our scanner tests showed that it didn't cope very well with fine details such as extremely thin lines: these were either partly or completely missing in the scanned image. Colour was, however, faithfully reproduced and overall we were pleased with the quality.

The Pro-700C has a built-in phone

handset, full-duplex speaker phone and digital answering machine. It can store a maximum of 99 minutes of voice messages, up to 300 pages of faxes, depending on their content, or a combination of both. The front panel has been really well designed — buttons for the different functions are separated into obvious areas, making this machine easy to use.

**We only had two** small gripes about the Pro-700C. The first was that the telephone cable had a plug doubler so big that it wouldn't fit into our socket as it clashed with the cable box below. The second concerns the document support for the printer output. This is too short, so documents pile up out of order and, in our experience, after about 10 sheets can get pushed off completely.

Hewlett-Packard has released the OfficeJet 710 that, excepting the phone, has much the same functionality as the Brother yet costs only £470. That said, if you're looking for an MFD, the Pro-700C is well worth a look.

JAMES MARTIN



### PCW DETAILS



**Price** £649 (£552.34 ex VAT)  
**Contact** Brother 0161 330 6531

[www.brother.com/eu-fax/INFO/700c/700c.html](http://www.brother.com/eu-fax/INFO/700c/700c.html)

**Good Points** Usability. Built-in answerphone and colour copying without a PC.

**Bad Points** Slow printing. Poor document tray.

**Conclusion** A good all-round MFD that is well worth a look.

# Sony SFD 200S-BP HiFD

**An external unit can ease your file storage worries without costing an arm and a leg.**

The HiFD drive will initially only be sold as an external parallel port device — internal ATAPI and PC Card versions will follow. A special parallel cable is used and a pass-through connector is provided for your printer.

This external unit, slightly larger than the external

SuperDisk unit, is tastefully finished in grey and has a special drop-down cover for the mouth of the drive — presumably dust must be a problem for these drives.

**A green LED indicates** the presence of a 200Mb HiFD disk — a dim 'Busy' LED tells you it's busy. A small button ejects the disk after a couple of seconds. HiFD disks have the same form factor as standard 3.5in floppies but lack the bevelled corner and read/write and ID holes at the bottom. The shutter is also slightly different. As a result, the HiFD is backwardly compatible with 1.44Mb disks though not with LS-120 SuperDisks. One feature it shares with the LS-120 is sluggish performance. Although the HiFD uses a floating R/W head reminiscent of a hard disk, it doesn't offer hard-disk-like performance. As a result, filling that 200Mb capacity can take a while, unlike a Zip disk.

The HiFD uses the familiar

Connect-It Windows 9x parallel port driver utility which promises R/W speeds of between 740Kb and 900Kb per second. In theory Connect-It supports multiple parallel port devices but we were unable to daisy-chain a parallel port SuperDisk unit from the HiFD's pass-through port. Like the LS-120, accessing a newly inserted disk brings the system to a halt, which is irritating. The HiFD is easy to install, however, and reasonably well documented.

ROGER GANN



## PCW DETAILS

★★★★★

**Price** £149 (£126.80 ex VAT)

**Contact** Sony Computer Peripherals and Components 01932 816660

[www.sony.co.uk](http://www.sony.co.uk)

**Good Points** Good capacity. Easy to use.

**Bad Points** Slow data transfer rate.

**Conclusion** The upcoming 250Mb Zip will offer the HiFD very stiff competition indeed.

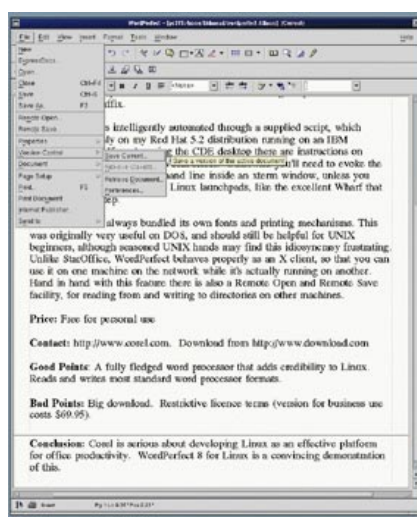
# WordPerfect 8 for Linux

**Options for doing without Microsoft are becoming more attractive with Corel's help.**

Linux continues to gain credibility as a server, but doubts remain about its value as a desktop operating system. While the flame wars rage, the Canadian company Corel is quietly getting on with helping to develop Linux in that direction. The arrival of Corel's WordPerfect 8 for Linux, freely downloadable for personal use, is another step along the way.

The files are gzipped, although at [www.download.com](http://www.download.com) they're incorrectly given the .GZ suffix. This should be lower case, so you'll need to rename the file, or use gunzip's -S switch to permit the upper-case suffix.

The installation is intelligently automated through a supplied script, which worked effortlessly on my Red Hat 5.2 distribution running on an IBM ThinkPad 560x. If you're using the CDE desktop there are instructions on setting up a desktop icon for WordPerfect.



Otherwise you'll need to evoke the word processor from the command line inside an xterm window, unless you know how to tweak one of the Linux launchpads like the excellent Wharf that runs with AfterStep.

**WordPerfect has always** bundled its own fonts and printing mechanisms.

This was originally very useful on DOS and should still be helpful for Unix beginners, although seasoned Unix hands may find this idiosyncrasy frustrating. Unlike StarOffice, WordPerfect behaves properly as an X client, so that you can use it on one machine on the network while it's actually running on another.

CHRIS BIDMEAD

## PCW DETAILS

★★★★★

**Price** Free for personal use.

**Contact** [www.corel.com](http://www.corel.com)

Download from [www.download.com](http://www.download.com)

**Good Points** A fully-fledged word processor that adds credibility to Linux. Reads and writes most standard word processor formats.

**Bad Points** Big download. Restrictive licence terms (version for business use costs \$69.95).

**Conclusion** Corel is serious about developing Linux as an effective platform for office productivity. WordPerfect 8 for Linux is a convincing demonstration of this.

# Intuit QuickBooks 6

## The number-cruncher's friend

If ease of use is important, QuickBooks can't be beaten.

QuickBooks is often touted as the easiest accounting package for small businesses. There are three main reasons for this. Firstly, everything entered into QuickBooks remains fully editable, so if you make a mistake, you can alter it at any point. Secondly, QuickBooks tries to banish the accounting jargon found in other packages — you will never need to 'post a journal entry to the nominal ledger', for example. Finally, and key to QuickBooks' appeal, is that purchases and sales can be typed exactly in the same way as if you were using a paper-based system. So while entries can be typed into dialogue boxes, QuickBooks also allows them to be typed in spreadsheet-style lists it calls 'registers'. This reduces the learning curve and makes it much easier to see what's going on.

**Version 6 is the first** QuickBooks incarnation to be a 32-bit application. The right mouse button now displays context-sensitive menus, and registers can be sorted according to any of their fields. The main improvements, however, have been geared towards the help facilities. Videos explaining the program's key features have been created (these are provided on QuickBooks' CD-ROM, but integrated into the rewritten help system), and every window now has a 'How do I?' button,



◀ **SIMPLY ORGANISED AND EASY TO NAVIGATE, QUICKBOOKS IS APTLY NAMED**

I found QuickBooks' interface impressive; for example, making a payment involves filling out an on-screen cheque. Every transaction

providing help related to that particular window. None of the additions is likely to make existing users rush for an upgrade, but they are worthwhile nonetheless.

For more demanding companies, a 'Pro' edition of QuickBooks 6 adds time

entered into a dialogue box is transferred into an appropriate register: if you create an invoice, a corresponding entry appears in the Customer Register. In the register, you can look at an on-screen list of past transactions and double-click

on one to see its corresponding invoice. For entering purchases you can type entries directly into the register, just like using a cash book.

***Purchases and sales can be typed as if you were using a paper-based system***

tracking, billing, job costing and estimating. It also adds multi-user capabilities, allowing up to five users on a network to run the package at the same time (assuming enough licences are bought). Additionally, a couple of separate utilities are provided: Depreciation Calculator is a useful program for working out the depreciation of fixed assets, while Business Health Check displays information either numerically or graphically on eighteen indicators of business performance and alarms can be set to warn users if performance goes below a specified level.

Each time a company file is loaded, QuickBooks displays a list of reminders on-screen, such as which customers' accounts are overdue — very useful. Getting to features in QuickBooks can be done either through menus, a customisable button bar or the Navigator, a graphical menu window.

For VAT-registered businesses, QuickBooks calculates VAT and works out the VAT return. In the June '98 issue of PCW [p200] we pointed out that (with version 5) entering an invoice late could mean the VAT is added to a previous VAT quarter and, therefore, would not be calculated in the VAT return. Although strictly speaking QuickBooks 6 still suffers from this, there is a better workaround. Using its new 'close dates' option, users can prevent dates from previous VAT quarters being entered, which acts as a reminder to type in the current date rather than the invoice date. Ideally, Intuit should allow two dates to be given to each transaction.

**There is little to** encourage existing users to upgrade. But if you run a small business and are looking for an accounts package, I would recommend QuickBooks 6 unconditionally.

ALEX SINGLETON

### PCW DETAILS

★★★★★

**Price** QuickBooks 6, £99 (£84.26 ex VAT); QuickBooks 6 Pro, £199 (£169.36 ex VAT); QuickBooks 6 Pro five-user, £599 (£509.79 ex VAT)

**Contact** Intuit 0800 585058  
[www.intuit.co.uk](http://www.intuit.co.uk)

**System Specification** Windows 95, 98 or Windows NT 4.0, CD-ROM, 486/33 with 16Mb RAM.

**Good Points** Entries remain editable. Multi-user version.

**Bad Points** Late entries can complicate VAT returns.

**Conclusion** The easiest small-business accounts program we've come across.





# InDefense

## Protect and serve

Tough on viruses, tough on the causes of viruses? Not really, no.

In the war against viruses, the most common method of detection is to use a signature file containing the unique hexadecimal code that identifies each specific virus. Unfortunately, with new viruses appearing almost daily, this file requires regular updating, with some vendors charging extra for this service. InDefense takes a different approach that doesn't require a signature file as it looks out for unusual behaviour that indicates a virus is at work.

**InDefense uses** a three-pronged attack with a memory-resident module providing the first barrier. This constantly scans the system and looks for unusual actions such as program code being modified or extra code being added. The next hurdle occurs when the PC is switched on, as InDefense runs a DOS utility that takes a low-level look at the hard-disk boot and partition sectors and compares them with a snapshot taken during installation. This also keeps a record of the amount of available conventional memory and InDefense checks to see if this has decreased as well, indicating a boot sector virus may have loaded itself.

Next, InDefense tries to fool viruses into giving themselves away by loading false executable files as bait. Finally, it creates a unique rescue disk containing CMOS parameters and images of the hard-disk partition and boot sectors.



◀ **VACCINATION FILES ARE USED TO CHECK FOR INFECTION AND RECONSTRUCT DAMAGED FILES**

user licenses allows InDefense to be run on small networks and installation can be forced on users by using a NetWare or Windows NT login script.

During installation, InDefense scans the entire hard disk and creates special vaccination files that contain detailed information about any COM or EXE files that are found. At only 65 bytes for each executable file they won't take up much

Rescue-disk images for each PC can be stored on a server for easier management and macro control can be centralised.

InDefense sounds sophisticated but, during testing, a few holes became apparent. Infections with boot sector viruses were all spotted due to the change in conventional memory but some file viruses were allowed through the net. When we ran the Hare virus, InDefense indicated

### ***InDefense uses a three-pronged attack with a memory-resident module***

disk space and are invaluable for reconstructing damaged files. File viruses are particularly nasty as they move program code around and conventional anti-virus software frequently cannot repair infected files, requiring them to be copied back from the latest clean backup. InDefense scores well here as the vaccination files contain information such as program entry points so it can repair virtually any damaged file.

**InDefense is tough** on macro viruses as it assumes all automatic macros are potentially hostile. During the initial scan it displays the location of any it finds along with the commands contained within the macro. You can opt to accept legitimate ones and delete any you don't recognise. InDefense sensibly offers an Undo option in case you later find you removed valid macros.

A workgroup pack (£499) with ten

that some unusual activity had been detected but it didn't stop the hard-disk boot sector from being destroyed. Neither did it stop Junkie from corrupting COMMAND.COM and causing a complete Win98 load failure. We repaired the damage using the rescue disk but these particularly nasty bugs should never have been allowed through in the first place. The test system also became unstable with the VFAT VXD (Virtual Device Driver) regularly failing with fatal exceptions and requiring a re-boot to clear.

**Although InDefense** does away with the cost of regular signature updates, you will need a sound understanding of virus tactics to use it correctly. Furthermore, its failure to stop some viruses from infecting the test system makes it a risky choice at best.

DAVE MITCHELL

## PCW DETAILS



**Price** £49.95 (£42.50 ex VAT)

**Contact** POW! Distribution  
01202 716726

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

**Good Points** No need for regular virus signature updates.

**Bad Points** Causes some instability under Windows 98 and not 100 percent reliable.

**Conclusion** Unusual method of virus detection that includes some sophisticated tools, but far too complex for the average PC user.

# OmniPage Pro 9.0

## Optimum recognition

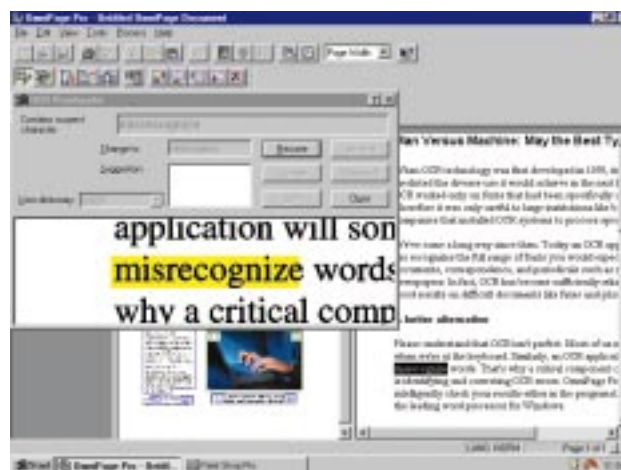
Time-saving and accurate, a reliable OCR can be a godsend.

OmniPage Pro solves one very tedious problem — that of getting printed documents into the computer in an editable form so that they can be used in a word processor, in a spreadsheet, on the web, or stored in any other computer-based document format. In short, OmniPage saves you from a lot of retyping, as once your document is scanned, the package translates it into a text file.

The four most important factors in judging the standard of an OCR program are: the speed with which it works; the accuracy of recognition; its ability to handle different types of fonts and qualities of print; and its ability to reproduce the page layout of the original document. Not all of these factors are important to every user, but the first two, accuracy and speed, are essential. OmniPage Pro is one of the best programs in the field of OCR software and it performs well in fulfilling each of the above requirements and more.

**It claims better** than 99% accuracy on laser-quality documents using standard fonts. However, it also performs well with faxes, photocopies, dot-matrix print and magazine and newspaper articles, as well as working on documents of degraded quality. It can handle skewed pages (up to 10 degrees) for better recognition results, faded faxes, bad photocopies, small text sizes (down to 4 point) and large text sizes (up to 72 point). It can also recognise reversed-out type (white or light-coloured text on a dark background). Further, OmniPage can retain the original layout and formatting features of a page including columns, graphics, tables and font attributes such as size and emphasis.

Special Table support features enable the program to recreate tables as table objects used in Microsoft Word and WordPerfect. This allows the user to edit the table characteristics as well as the text within each cell. In addition, a new



spreadsheet mode identifies and preserves the content and layout of numeric-based documents, saving them directly to Excel, 1-2-3 or Quattro Pro.

OmniPage now supports colour scanning. Colour graphics from scanned

***OmniPage Pro is one of the best programs in the field of OCR software***

documents are preserved, which allows users to edit them, from within OmniPage Pro or a third-party image editing program, before saving them to a word processor or other application.

**OmniPage Pro** is very easy to use, with virtually no learning curve. This is enhanced by the AutoOCR Toolbar, which takes users through the complete OCR process with the push of a single button. Once a page is scanned, the program identifies and separates regions (zones) of text and graphics in order to improve recognition and formatting. Such zones can be generated automatically or manually, and modified by the user once defined. The proof-reader facility comes in to play once the text on the page has been recognised. This automatically checks the OCR results and displays the original image

◀ **OMNIPAGE RECREATES PRINTED DOCUMENTS IN EDITABLE FILE FORMATS**

for comparison. Like a spell-checker, it highlights suspicious characters and suggests corrections. OmniPage Pro integrates with

Microsoft Office 95 and 97 applications, facilitating text scanning and recognition functions from directly within Word and Excel. This integration is enhanced as the program shares a dictionary with Word, saving time as users will now no longer find themselves adding a word twice.

Files can be opened and saved in a variety of file formats, as well as to HTML, which makes scanning a page and saving it as a web page a long-awaited reality. Fonts, formats and graphics are, of course, preserved. OmniPage Pro recognizes 13 Western European languages, including multiple languages on the same page.

PANICOS GEORGHIADES

### PCW DETAILS

★★★★★

**Price** £464.13 (£395 ex VAT). Upgrade, £79 (67.23 ex VAT)

**Contact** Caere UK 0171 233 6677  
[www.caere.com](http://www.caere.com)

**System Specification** Windows 95, 98 or NT 4.0, 486 PCs and above, 16Mb RAM minimum (32 Mb recommended), 45Mb free hard-disk space, CD-ROM drive, SVGA or VGA monitor with 256 colours.

**Good Points** Fast, accurate. Holds layout. Handles degraded documents.

**Bad Points** None.

**Conclusion** If you need to recreate printed documents in computer-editable formats, you won't go wrong with OmniPage Pro 9.



# Fujitsu DynaMO 640 SE

This external drive just got **smaller and faster**.

There are two external DynaMO drives at present: the 640SE, with an external power supply, and the 640SD with an internal PSU. Later on, Fujitsu will be releasing the DynaMO 640AI, an internal version which is ATAPI-based — the first non-SCSI MO drive we've come across.

The new DynaMO 640Sx series delivers a performance gain of 20% (the data transfer rate is up from 3.9Mbps to 4.7Mbps) over the previous DynaMO

640 drives. It's also 40% smaller and is thus more or less portable. Capacity remains unchanged at 640Mb, though, with the ability to read the original 540Mb, 230Mb and 128Mb MO disks. The new DynaMO uses Light Intensity Modulation Direct Overwrite (LIMDOW) technology which performs the overwrite process in a single pass and at full speed, instead of in the slower two-pass method of earlier technologies.

## What else is new?

Cosmetically, the 640 SE version looks nothing like its predecessor: it's had a makeover, turning jet black and space age in the process.

The Centronics-style connectors have been superseded by a pair of high-density SCSI-2 ports. The unit is still as fiddly to configure as

its predecessor thanks to the same block of DIP switches on the back, though this device is now SCAM-compliant, which can automate the configuration process.

I like the fact that you get a pair of SCSI cables — one for 25-pin Mac-style connectors and another for HD SCSI-2 connectors, as these can cost £30 each. You also get a 640Mb MO disk.

ROGER GANN



## PCW DETAILS

★★★★

**Price** £252.63 (£215 ex VAT)

**Contact** Fujitsu Europe 0181 573 4444

[www.fujitsu.co.uk](http://www.fujitsu.co.uk)

**Good Points** No longer expensive. Low media costs. Archival durability.

**Bad Points** MO is still a slow medium.

**Conclusion** Great for archiving data long term, but more expensive than conventional technology.

# Insignia Hyperceive

Make your **web site sing** with this new sequencer package.

Sound can make a real difference to web pages, but given the net's limited bandwidth, is it really possible to have uninterrupted audio playback on-line? Insignia Technologies think so, and its Hyperceive sequencing package enables you to achieve just that, allegedly. What makes this software different to other audio-on-the-web solutions is that the end-user doesn't need a web browser plug-in. So how does it work?

When someone visits a Hyperceive site, the sequence file is downloaded along with its Java-class file player. The player then downloads the first audio snippets that are used in the sequence and starts to play them back. Meanwhile, the remaining audio files (mono 8-bit, 8kHz au format) continue to download. If a file hasn't downloaded by the time it is needed, Hyperceive continues to loop, or recycle, previous



parts that are now stored in cache.

The sequencing software provides control for the structure of loop points and can handle up to 24 audio channels. Each audio file is placed on its own track and can be configured to play just once (which is useful for voiceovers), or continuously as the arrangement loops. When you have a sequence up and running — and by no means is this hassle-free — you can test how it will perform over the net with the built-in modem emulator. If everything runs smoothly, Hyperceive can generate an HTML file for

integration with your web pages.

In principle Hyperceive is a viable product, but given current net traffic, and that most users have only 28K modems, the results don't come close to justifying the time and money spent.

STEVEN HELSTRIP

## PCW DETAILS

★★★

**Price** £149 (£127 ex VAT)

**Contact** Insignia Technologies 01285 643600

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

**System Specification** Windows 95/98, 120MHz Pentium, 16Mb RAM.

**Good Points** No plug-ins required by the end-user.

**Bad Points** No audio editing inside host application. Works with milliseconds as a time reference rather than BPM. Tricky to get good results. Limited features.

**Conclusion** Useful for adding speech and one-off sounds to your web site, but if you want half-decent sequenced audio, stick to MIDI.



# Rhinoceros

**3D modelling software** that's powerful, intuitive and easy to use.

**R**hinoceros is a 3D object modelling package based on the NURBS principle. Like Organica [reviewed in February's PCW] it focuses solely on object creation rather than generalised modelling, rendering and animation. There's a simple renderer to help with design, but it's no use for finished output.

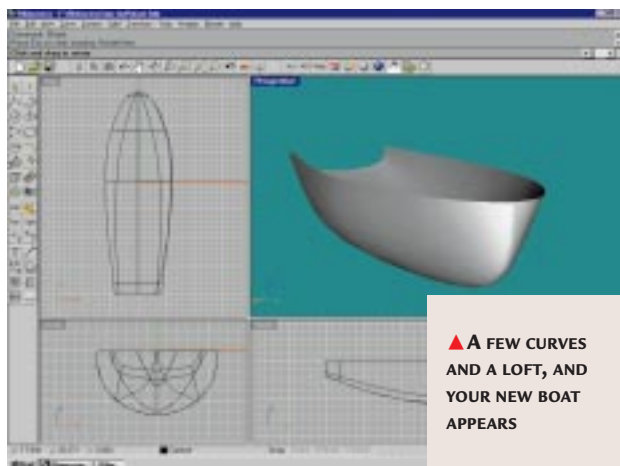
Rhino is streets ahead of Organica in every respect. It's a more formal package, aimed not only at 3D animators and artists but also product design and manufacture. To this end it sports a raft of CAD-like features such as precision numeric input, support for design via cross-section templates and output to stereo lithography systems. There's also a permanently active command line interface that can be used at any time to perform or modify functions.

**Rhino provides** a superb array of powerful modelling facilities. The variation on offer is stunning, particularly for creating swept surfaces and objects. Aside from the run-of-the-mill sweep tools, you can sweep using one or two curves as rails, or revolve using a

closed curve as a rail. You can also use the loft function to create a surface from a set of profile curves — great for modelling complex surfaces such as boat hulls.

With any 3D design package it takes a while to get used to the particular application's modelling conventions. But Rhino's interface is remarkably easy to use, and you feel completely at home after just a couple of hours. If you do any 3D design work, you need Rhino.

DAVID FEARON



## PCW DETAILS

★★★★★

**Price** £586 (£499 ex VAT)

**Contact** Softcover 0171 259 2100

[www.rhino3d.com](http://www.rhino3d.com)

**System Specification** Pentium, Windows 95/98/NT, 10Mb disk space, 32Mb RAM.

**Good Points** Very powerful surface creation tools. Intuitive interface.

**Bad Points** None.

**Conclusion** Expensive, but well worth it if you're serious about your 3D.



# CenturionSoft Steganos

**Give snoopers a run for their money with this data security package.**

**S**teganos performs a trick that seems almost magical the first time you use it. It will take any file and completely hide it within a pre-existing image or sound file. After hiding, the carrier file is exactly the same size with the same date and time attributes as before. While hiding the original file, you can encrypt it using a backdoor-less

2048-bit encryption scheme.

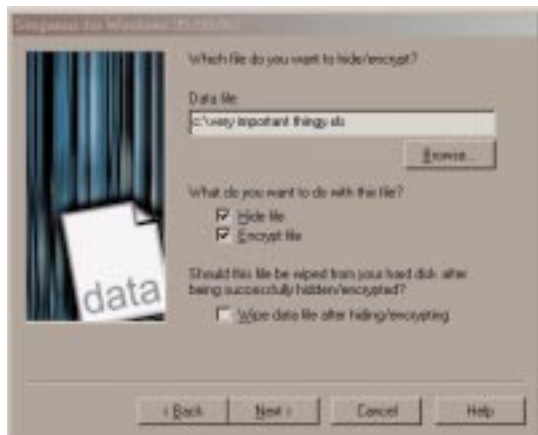
How does Steganos perform such a trick? For images and sounds it puts the data into the least significant bit of every word of the file, thus the data appears to be background noise. But this means you need a carrier file significantly larger than the file you're hiding: trying to put a 282Kb Access database into a 900Kb

BMP image failed. You can also use text files as carriers: Steganos simply appends coded spaces and tabs (to represent binary ones and zeroes) to the file — this is obviously less secure than using images and sounds since the file size increases.

**Once you're aware** of the limitations, however, Steganos works flawlessly: you can open up images and sound files containing hidden data and they

appear completely normal. You can even convert formats, so long as lossy compression schemes like JPEG aren't used. The application also provides secure file deletion with the Shredder, which overwrites the entire file with random data.

DAVID FEARON



## PCW DETAILS

★★★★★

**Price** £34.95 (£29.74 ex VAT)

**Contact** POW! Distribution 01202 716726

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

**System Specification** Windows 95, 98 or NT4, 10Mb hard-disk space, CD-ROM drive for installation.

**Good Points** Very effective for hiding small amounts of data.

**Bad Points** Inefficient on a larger scale. Image and sound files need to be much bigger than the data you're hiding. All data security schemes carry the potential for abuse.

**Conclusion** One more thing for nosy governments to get stressed about — hurrah!

# VideoLogic SonicStorm Pro

**Surround sound is the new big feature for good-time gamers.**

The original SonicStorm was one of the first PCI sound cards.

Sporting the Maestro chipset, this card eliminated the limitations of the ISA slot. The Pro is built around the new Maestro2 chipset, hosting a range of new features. Chief among them is surround sound using only two speakers.

While many audio cards use the A3D standard from Aureal Semiconductors, the Maestro2 uses technology developed by Sensaura. This has two advantages. While A3D is a proprietary standard, Sensaura's 3D

audio implementation can be accessed through Microsoft's DirectX API, making it accessible to all games developers. Also, Sensaura's 3D audio is arguably more accurate than the better-known A3D version, mainly due to Sensaura's patented Digital Ear technology.



The SonicStorm Pro handles 64 MIDI voices in hardware and the same number of audio voices. As befitting a next-generation sound card, it has a dedicated digital SPDIF output. Unlike the SPDIF output in the SoundBlaster Live!, which is locked at 48kHz, the SonicStorm Pro has a frequency response of 44.1kHz which enables it to output CD-quality audio to a DAT

or MiniDisc. A daughtercard with an SPDIF input is also available. The SonicStorm Pro's performance is good but not exceptional. Although its MIDI synthesis is better than older cards like the AWE64 Gold, it is slower than the new SoundBlaster Live! However, its audio reproduction in games is excellent. The surround sound effect is enhanced by its ability to handle four speakers.

AJITH RAM

## PCW DETAILS

★★★★★

**Price** £49.99 (£42.55 ex VAT)

**Contact** VideoLogic 01923 260511

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

**Good Points** Surround sound using two speakers. Digital output. Two stereo outputs. Very reasonable price.

**Bad Points** Not the most powerful DSP for MIDI synthesis.

**Conclusion** A good sound card for the gamer and home-studio enthusiast.

# Paradise Modem PRO

**Answerphone/fax/hands-free unit with a modem to boot.**

The Modem PRO follows a trend set by Olitech and Pace, among others, of providing standalone fax and answerphone capabilities without the need to be connected to a PC. It can even operate as a hands-free speakerphone. The Modem PRO takes this trend a stage further: it's a device that

actually looks like an answerphone, complete with large Play, FF and Rewind buttons, mic and speakers.

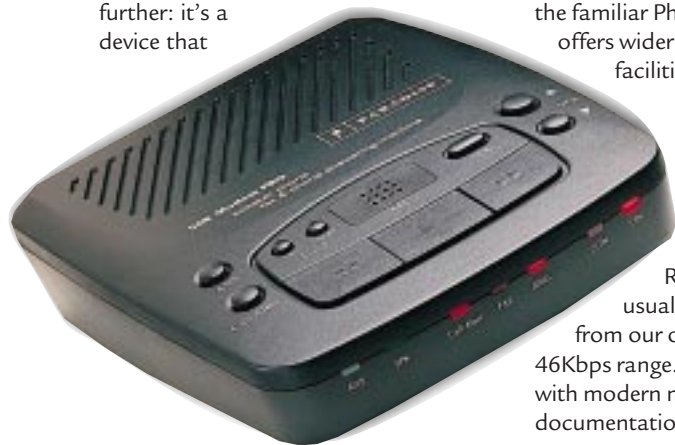
Only the basic array of status LEDs on the front panel betrays its alter-modem-ego. It can store up to 20 messages or faxes and offers the usual array of remote access options, including the ability to dial another number to forward/replay messages recorded while you were out. The PRO also comes with the familiar Phone Tools software which offers wider voicemail and fax facilities, but using a PC.

The Modem PRO is also a capable 56Kbps V.90 modem driven by the Lucent chipset rather than the ubiquitous Rockwell. It returned the usual spread of connect speeds from our office lines in the 44 to 46Kbps range. As is so often the case with modern modems, full documentation is supplied only as

an Acrobat file on the CD-ROM.

A 12-page pamphlet is sufficient to take you through installation. Audio input and output sockets are provided so that you can hook up the Modem PRO to a sound card, but this probably isn't essential unless you are fussy about sound quality. Although the Modem PRO has an integrated microphone and speaker, the quality of the digitally recorded message is a bit lo-fi.

ROGER GANN



## PCW DETAILS

★★★★★

**Price** £99.95 (£85.06 ex VAT)

**Contact** Eurotech Marketing 0118 981 0118 (no URL)

**Good Points** Cheap. Easy to use. Good answerphone features.

**Bad Points** Lightweight build quality.

**Conclusion** Given the price and the range of features it offers, with and without software, on top of its 56K functionality as a straight fax/data modem, it makes the shortlist.



# Yamaha

## SW1000XG sound card

**With stunning sounds and wicked synth, this card puts PC audio into the premier league.**

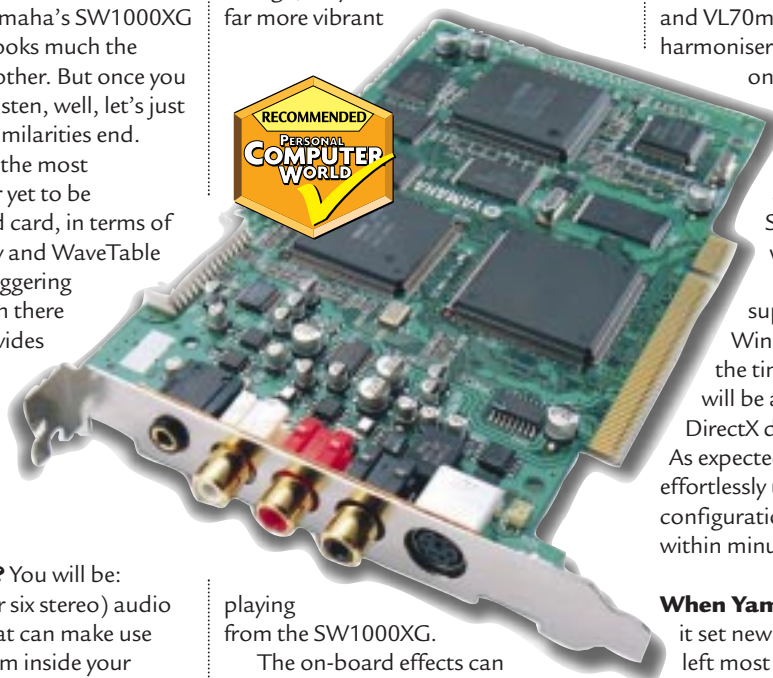
At a glance, Yamaha's SW1000XG sound card looks much the same as any other. But once you plug it in and have a listen, well, let's just say that's where the similarities end. Without doubt it has the most impressive synthesiser yet to be integrated on a sound card, in terms of both its sound quality and WaveTable memory: there's a staggering 20Mb of ROM built in there somehow. It also provides six parallel 24-bit effects, over 70 programmable effects types and first-rate hard-disk recording facilities.

**Still not impressed?** You will be: there are 12 mono (or six stereo) audio playback channels that can make use of all those effects from inside your sequencing software. Better still, it is able to apply and mix these effects without hogging your system's CPU. There are two reasons why this is a positive step forward. Firstly, it will enable you to playback more audio channels if your PC isn't busy running processor-intensive software-based plug-in effects; and secondly, it could just save you from having to upgrade your PC to run such effects.

The synthesiser is equivalent to Yamaha's flagship XG tone module, the MU100. Although similarly priced, the SW1000XG is capable of far more and can easily integrate with your current setup. Mixer templates are supplied for the main sequencing packages and XGEdit now fully supports all the card's features. The synth provides 64 voices of polyphony over 32 MIDI channels and is equipped with over 1,200 instruments and 46 drum kits.

**... provides first-rate hard-disk recording facilities**

All the sounds from the highly successful DB50XG WaveTable daughterboard are present and even those from the MU90 are included. As you might expect, though, they sound far more vibrant



playing from the SW1000XG.

The on-board effects can be configured as auxiliary or insert-type processors and include a comprehensive set of reverbs (12 types), choruses (14 types), delays and dynamic processors. In addition to compression and noise gate algorithms, the card provides a fully parametric EQ, distortion, tremolo, phasing and an aural exciter.

**Much of the card's wizardry** is performed by Yamaha's custom Digital Signal Processing chip, the DSP3. This

can be programmed for many intensive audio tasks and has already featured in Yamaha's professional O2R and O3D digital mixing consoles.

Round the back, the card has RCA connectors for analogue and S/PDIF digital outputs, a mini-stereo jack for external input and a PS/2-type socket for MIDI. A cable is included in the box for MIDI input and output, though disappointingly there's no S/PDIF input. Internally, the card can

be linked to Yamaha's DSP Factory [see *Reviews*, PCW Dec '98] or optional PLG100 daughtercards. Three cards are available so far, which include two additional Yamaha synths, the DX7 and VL70m, and a three-part vocal harmoniser. Similar to the effects

on-board the SW1000XG, the harmoniser can be accessed via the external input or from within your audio software. Because the SW1000XG is a PCI card, it will work with a Mac or PC.

The card we reviewed was supplied with MME drivers for Windows 95 and 98, although by the time you read this, ASIO drivers will be available for both platforms. DirectX drivers are also in the pipeline. As expected, the card installed effortlessly under a plug-and-play configuration and was up and running within minutes.

**When Yamaha released** the DB50XG, it set new standards for PC audio that left most sound-card manufacturers quaking in their boots. Going on what we've seen and heard, the SW1000XG is likely to have a similar effect. Although it's too expensive to be an option for everyone, for those who want to run a virtual studio inside their PC, with loads of effects, it's well worth the asking price. It's a shame about that digital input, though.

STEVEN HELSTRIP

### PCW DETAILS

★★★★★

**Price** £449 (£382 ex VAT)

**Contact** Yamaha 01908 369269

[www.yamaha.co.uk](http://www.yamaha.co.uk)

**System Specification** PC: Windows 95/98, 166MHz Pentium, 32Mb RAM. Mac: Any PowerPC, System 7.6.1, 32Mb RAM.

**Good Points** Stunning XG sounds. High-quality effects. Doesn't require a heavyweight PC or Mac.

**Bad Points** No S/PDIF input. No sampling capabilities.

**Conclusion** This card will transform your PC into a self-contained, professional audio production studio.



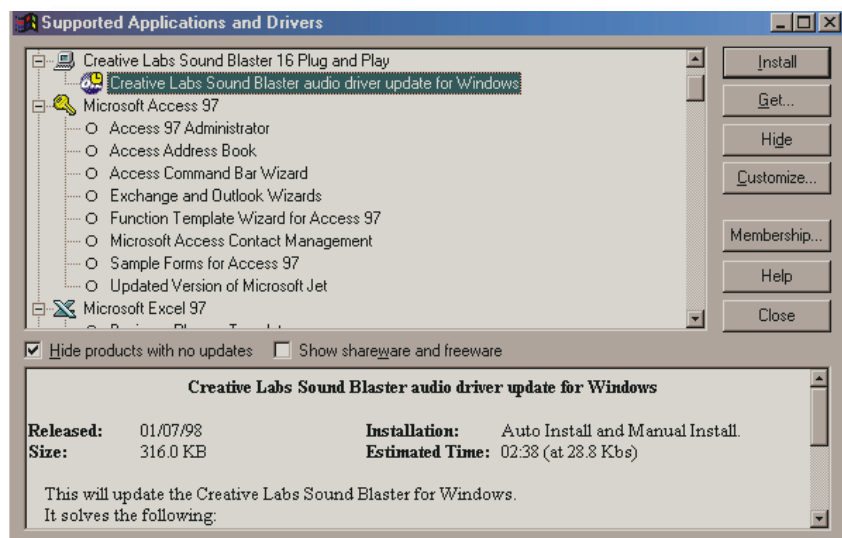
# McAfee Office Application collection

**Not a bad package, but choose two or three — you probably won't want them all.**

McAfee hasn't gone mad and started trying to muscle in on Microsoft's territory. Office is a 'best of' compilation of nine previously released utilities: Oil Change, VirusScan, Nuts & Bolts 98, Hurricane, UnInstaller, First Aid 98, Guard Dog, PGP Personal Privacy and 2000 Toolbox. The disparate nature of the collection becomes obvious on installation. Each application has its own install routine, which means sitting through the whole InstallShield rigmarole for each one you want to load.

**The quality of the applications** varies. There's no doubt that VirusScan is an excellent anti-virus system. This is particularly true now that McAfee has acquired Norton's anti-virus technology and will be incorporating the Norton Antivirus engine into VirusScan with future engine updates. Hurricane is a collection of caching utilities that aims to increase the speed of operations such as bootup and application launch.

The most impressive part, the application Launch Rocket, is also incorporated into Nuts & Bolts and this halved the startup time for the applications with which we tried it. PGP Personal Privacy is also well worth having if you need encryption. McAfee has managed to sidestep the United States Government's restrictions on the export of encryption technology, supplying the



full 128-bit encryption engine rather than the less secure 40-bit version that Bill Clinton would prefer you to have.

**Other components** of the package are not so useful. First Aid 98 is aimed at solving beginners' PC problems. It is a fluffy user interface that bends over backwards to avoid nasty technical details — but nasty technical details are a fact of PC life. Particularly daft are the tutorial animations that tell you how to do basic tasks: they're hopelessly general and convey nothing that you couldn't find with a short perusal of your own system manuals. The tutorial on how to clean your inkjet printer advises: 'You should clean your inkjet printer every time you change the toner cartridge'!

Oil Change is an interesting concept for a utility. It scans your system for the hardware and software it recognises, using a downloaded list for reference. It then searches the web for updates, patches and drivers and presents the user with a list of what it finds. The results weren't phenomenal. It failed to bring to light the fact that there were newer drivers for the STB graphics card in the test system, and it also didn't notice that there were newer VirusScan definition files available than the ones supplied.

But on the plus side, it came up with a very comprehensive list of updates and add-ons for Office 97 as well as recognising that the SoundBlaster card in the system was in need of new drivers.

The problem with supplying this many standalone utility packages in one bundle is that many of the features are replicated. First Aid, for instance, has its own virus scanner despite the inclusion of VirusScan, and Nuts & Bolts has a Year 2000 diagnostic even though there's a utility to do just that in the shape of 2000 Toolbox. Guard Dog is aimed at stopping malicious ActiveX components and Java applets downloaded from the web, but VirusScan claims to do the same thing. At least McAfee Office gives you the choice. It's not the best-integrated package, and we wouldn't recommend installing all of the components at once — doing so just about brought the PII-266 test system with 128Mb RAM to its knees. But if there are two or more applications in the collection that take your fancy, it provides decent value for money over separate purchases.

**▲ OIL CHANGE DOES ITS BEST TO KEEP YOUR SYSTEM UP TO DATE**

***It [McAfee Office] provides decent value for money over separate purchases***

## PCW DETAILS

★★★★

**Price** £69.95 (£59.53 ex VAT)

**Contact** McAfee 01753 827500

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

**System Specification** 486 (Pentium recommended), Windows 95/98, 16Mb RAM, CD-ROM drive, around 150Mb drive space to install all components.

**Good Points** Good virus scanner and 128-bit PGP encryption.

**Bad Points** Very poorly integrated: application features overlap.

**Conclusion** Not a great bundle, but a good one.

DAVID FEARON