reviews

The product of the month has to be Sony's fantastic **NEW SUB-NOTEBOOK**, reviewed opposite. Rarely has a new product produced such universal admiration around the *PCW* office. We've also got one of the **FIRST 350MHz K6-2 MACHINES**, which has been subjected to our usual scrutinisation and testing in the Labs. If you're looking for a **DESKTOP REPLACEMENT NOTEBOOK** rather than the super-mobile Sony offering, both Rock Computers and Gateway have likely candidates. The big software news is the new version of **ADOBE'S ILLUSTRATOR**, version 8. We tested a late beta, but the final version should be available by the time you read this. It's an **IMPORTANT UPDATE**, so make sure you check out the review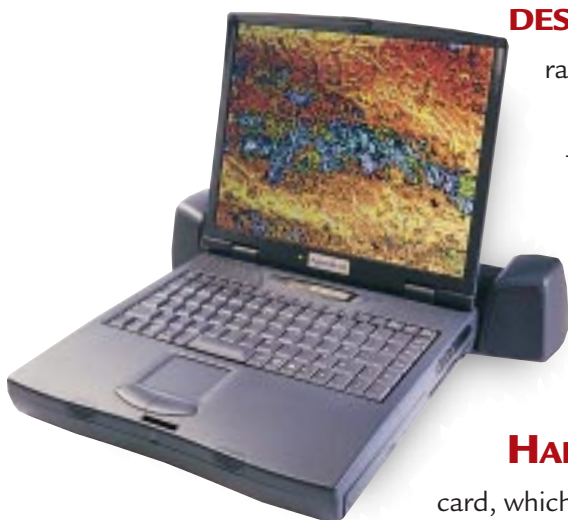 on page 105. An interesting piece of hardware is **CALLUNA'S HARDWALL** anti-virus and security card, which does some clever things with partitions. And in the regular PDA software slot, Widget's Software's **ROUTEPLANNER** is an impressive app for finding your way from A to B.

DAVID FEARON, REVIEWS EDITOR
david_fearon@vnu.co.uk

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.

Contents

Ratings

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

Sony PCG-505G
Slimline style

Sony has excelled itself: a feature-packed notebook with looks to match.

This isn't Sony's first notebook PC, but it should have been. While the PCG-737 we reviewed in August's *PCW* was a good product, the 505G beats it hands down for sheer style. Sony really has gone to town with all its miniaturisation expertise to produce an incredibly thin and light device with a footprint considerably less than the copy of *PCW* you're holding, and of approximately equal height when closed.

There's so much to this little beauty that it's difficult to know where to start. Taking it out of the box for the first time produced exclamations of disbelief, both at its size and the fabulous look of the thing. Clad in magnesium alloy top and bottom, it's reminiscent of the more expensive tape, CD and MiniDisc Walkmans for which Sony is so famous. The top of the lid bears the Sony logo, plus a large screen-printed Vaio logo. The lid catch, power and reset buttons are all silver and again bear a resemblance to Walkman controls. Being so thin, the 505G doesn't have built-in floppy or CD-ROM drives, nor does it have integ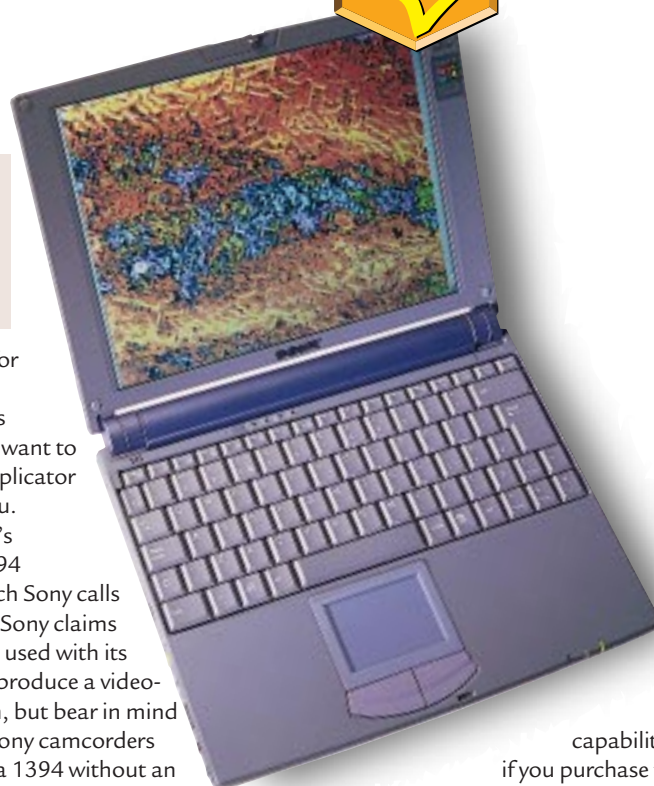ral serial, parallel, VGA or PS/2 ports. However, they're included via a port replicator and external drives. The port replicator and floppy drive both have their own dedicated connectors on the side of the machine: Sony has taken IBM's lead and attached the connector's covers via a flexible rubber mount, so that if they catch on something they're less likely to break off. The CD-ROM drive doesn't have a dedicated connector, connecting via a PC card adaptor to the single Type I/II slot sported by the unit. The notebook itself isn't totally bereft of standard connectors — there's a USB port which

There are no criticisms I can level against this exemplary product

could be used for external mice/keyboards should you not want to take the port replicator around with you. Uniquely, there's also an IEEE1394 connector, which Sony calls an i.LINK port. Sony claims that this can be used with its camcorders to produce a video-editing solution, but bear in mind that most UK Sony camcorders won't record via 1394 without an unofficial modification. With such a slim device, it would be easy for the keyboard's limited travel to render it impossible to use. Yet while it's not as fast as a decent desktop unit, the 505G's keys are remarkably positive and accurate. The unit is fitted with the ubiquitous touchpad for mouse cursor control, but with a unique twist: a flip-out bay inside the lid contains a plastic stylus pen. You can use this instead of your finger for more precise control. It works, too, but be careful if you're a Psion 5 or Windows CE user — it's all too easy to forget what you're doing and prod the screen by mistake, potentially causing damage.

Just about the only feature that the 505G lacks is stereo speakers: there's just the one, on the underside of the case. But that's been taken care of too, via connectors and mounting points on the lid for a special pair of speakers costing around £81 (£69 ex VAT). As far as connectivity is concerned, Sony has that covered as well. There's a ComOne 56K PC Card modem included, which also has Ethernet, GSM and ISDN

capabilities if you purchase the right connection kits. Software pre-installed includes a comprehensive battery-control app that gives masses of information about battery life, and estimates time required for a full charge as well as time remaining. There are no office applications included, though. The out-and-out performance of a unit like this isn't going to be an issue for most people, but it's fitted with a mobile 233MMX processor and 32Mb RAM. This amount of memory is adequate, but Windows 98 does grind the swapfile a little too often, so 64Mb would be preferable. Other than that, there are no criticisms that I can level against this exemplary product.

DAVID FEARON

PCW DETAILS

★★★★★

Price *£2,300 (£1,959 ex VAT)*
Contact *Sony 0870 2402408*
www.sony.com
Good Points *Gorgeous design, stuffed with innovative features. Super-small.*
Bad Points *Could do with more memory, but that's about it.*
Conclusion *The best sub-notebook we've ever seen.*

Carrera PowerMedia 350
Seconds out

This good all-rounder will suit someone looking to enhance their existing PC setup.

The PowerMedia 350 is a system with a respectable configuration and a price aimed at those perhaps buying their second PC. AMD's latest processor, the 350MHz K6-2, lies at the heart of the system. With 64Kb of Level-1 cache, it has double the allowance found in Intel's processors. It also benefits from the 1Mb of Level-2 cache offered by the Super 7 motherboard that features a 100MHz front-side bus, which pumps up the transaction speed. However, speed of processor alone is not enough to make a decent mid-range system.

The Power Media 350 is housed in an uninspiring standard tower with access to the innards through one side-panel. The case may be pedestrian-looking, but the quality of its internal construction is high. It's a splendid sight to open up a case and actually be able to access all the user-upgradeable components. All the annoying cables are kept at bay with some tight clipping, and if you want to add any devices into the bays, the power cables are dangling conveniently nearby. The supplied components are well thought

▶ NO REAL SPEED THRILLS, BUT THE POWERMEDIA WILL DO THE BUSINESS FOR THE HOME USER

out, giving you a taste of high-end multimedia without forking out excessive amounts of cash. A VideoLogic Sonic Storm PCI sound card plays through the Altec Lansing speakers and subwoofer, which should shift any loose grouting in your bathroom. A 56K PCI modem from Diamond provides access to the web. Graphics are handled by an 8Mb AGP Matrox Millennium G200 card, which is expandable to 16Mb for around £35. We would have liked to have used the Panasonic DVD-ROM drive to show off the graphics card, but a Matrox-compatible software MPEG decoder was not available in time for this review. Main memory is supplied on one 64Mb DIMM — the minimum you'll need to keep up with the rest of this spec. Storage comes in the shape of Maxtor's 7.5Gb Diamond Max Plus EIDE hard drive, which spins at 7200rpm to maximise data throughput and minimise latency (the average time taken for a particular area of the disk to reach the heads). All of the above should keep most people happy for a while, but it's easy to upgrade. The motherboard is open to various possibilities. Its CPU multiplier is currently set at half-mast, allowing faster processors to be installed later. Two spare SIMM slots allow you to transfer memory from an older system, and there

The PowerMedia offers the home user a sound, good-value PC

are two more DIMM slots to take advantage of the 100MHz bus speed.

At first glance there is an array of expansion slots to add components, but you won't be getting the best out of your system if you fill up the three spare ISA slots. The world is going PCI, and they won't be useful for long. The measly two spare PCI slots won't be enough for a dynamic end-user. The spare drive bays paint a brighter picture with two available for 5.25in devices and the same for 3.5in devices, although only one 3.5in device has a front access panel. The 17in Iiyama Vision Master monitor is an excellent choice, providing a quality display controlled by a three-button on-screen menu system. Only Microsoft Home Essentials is pre-installed.

Performance was measured using SYSmark 98 from BAPCo. The result was the expected increase over AMD's 300MHz part. Nothing too surprising, but have no doubt that this is a fast machine. Overall, the Power Media has a lot to offer, with good but not stunning performance in comparison to the top-end Intel processor-based machines. It's not supposed to be an out-and-out speed demon, and it offers the serious home user a sound and good-value system.

IAN ROBSON

PCW DETAILS

★★★

Price £1,468 (£1,249 ex VAT)
Contact Carrera 0171 830 0486
www.carrera.co.uk
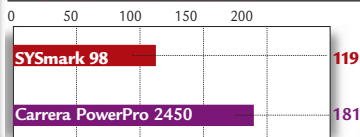**Good Points** *Good all-round specification. Excellent monitor. Well built.*
Bad Points *Not the fastest system around. Only two spare PCI slots.*
Conclusion *A high-specification system with everything most people will want.*

PERFORMANCE RESULTS

	0	50	100	150	200	
SYSmark 98						119
Carrera PowerPro 2450						181

Cobalt Qube
Box of delights

Plug-and-go network attachment that sports a most eye-catching design.

In a package not much bigger than Microsoft Office, Cobalt Networks has managed to squeeze in a complete 32-bit server operating system, a web server, a file server that can deliver disk space to Windows and Mac machines, a mail server, a free-text retrieval system, a comprehesive departmental document organiser, and a text-based conferencing system that handles private discussion groups.

The whole thing, including the management of the operating system, the applications and user access, is browser-driven from any client on the network. This means that all the software happily harmonises with whatever other operating systems and hardware you may be running, as long as they understand the basics of the web. Not bad for £849. Oh, and did I mention that the superbly designed translucent blue box the Cobalt software comes in happens to be a ready-to-run piece of hardware? The installation procedure is:
1. Plug in the power cable.
2. Plug in the network cable.
3. Switch on.
Taking the Qube out of the box for the first time is an interesting experience. It just doesn't seem like a computer, and certainly not like a server, given that you can pick it up with one hand. Measuring just 18.4x18.4x19.7cm and looking like an ornament you might buy in Habitat, the Qube 2700WG works very well as a simple plug-in "appliance solution". And that really is as much as the non-technical user needs to know to get the best out of the Qube. Yet thanks to its use of open software components, the Qube is also eminently configurable by any authenticated Unix administrator. The hardware is modest by current PC standards: a 150MHz

It doesn't seem like a computer, and certainly not like a server... you can pick it up with one hand

Mips processor that the manufacturers claim is equivalent to a 200MHz Pentium, and a 2.1Gb hard drive. Instead of a video subsystem and a keyboard, the console has been boiled down to a two-line LCD and an array of six buttons (and one more for power on/off) at the rear of the machine. This is only used during the initial setup to power up the machine and configure the IP address, unless there's a DHCP server on the network, since the rest of the system configuration is carried out through a web browser.

A Linux user telnetting into the Cobalt will find familiar territory, albeit somewhat stripped of features such as man pages. This version of the Qube comes with the Bash shell and the Perl 5.0 interpreter, enough for some fairly extensive tailoring. Using the Qube's own writelcd utility, for example, it was a breeze to customise the startup messages that appear on the LCD screen, and add a few extra diagnostics. A full development environment with a C++ compiler comes with the alternative Qube 2700D model, but this of course can be downloaded for free and added to the WG version of the Qube if you want to use the box to build specialist applications. Along with Linux 2.0.33 is the Apache web server, Sendmail, which empowers the machine as a mail server; Samba, which turns it into a Windows file server; and Glimpse, a useful though not comprehensive free-text retrieval system. There's one proprietary package too: InfoPlace, a document organiser that allows files of any kind to be stored and searched for by title, key field or

◀ AN APPEALING DESIGN — AND A COOL NETWORK SOLUTION

category. Missing from InfoPlace is an inverted index to allow full text retrieval, and a set of filters to convert files to HTML where appropriate so that proprietary formats can be viewed anywhere on the network without special features in the browsers.

With no serial port, parallel port or SCSI adapter, the Qube's use as a print or backup server is limited. However, there's a single spare PCI slot to extend the function of the machine in this direction. Alternatively, you could install an ISDN card or modem card to turn the Qube into a fashion-conscious internet router.

CHRIS BIDMEAD

PCW DETAILS

★★★★

Price £998 (£849 ex VAT)
Contact Mintra 0161 256 4030
www.cobaltmicro.com
Good Points Plug-and-go attachment to the network. Software solutions all installed ready to go. Design is almost too appealing.
Bad Points Network adaptor card is only 10Mbit/sec. Modest RAM and hard drive for a server device.
Conclusion A very neat, low-cost way to build an instant intranet and add collaborative tools to a small network.

Rock Agenda 960
Power pack

On this Agenda is an amazing specification that makes for a true desktop replacement.

Rock Computers, being one of the largest British-owned notebook computer manufacturers, can make some prestigious claims to its part in the evolution of mobile products. Industry impact is another matter; but with products like the Agenda 960, maybe a little more recognition will come its way.

On the outside you have a bog-standard notebook with no flirtatious curves to its plastic casing. It's not of the wafer-thin variety and a quick call to Weight Watchers wouldn't go amiss, but the build is reassuringly sturdy. However, once you flip open the 14.1in TFT screen and switch on, the numbers that flash past during the boot-up sequence give the first hint to the delights in store. The Agenda is fitted with Intel's mobile Pentium II processor, clocking in at an impressive 300MHz, and this is coupled with 128Mb of main memory. Remember that not so long ago, the average notebook came with 4Mb. The rest of the system spec is equally impressive, with a whopping
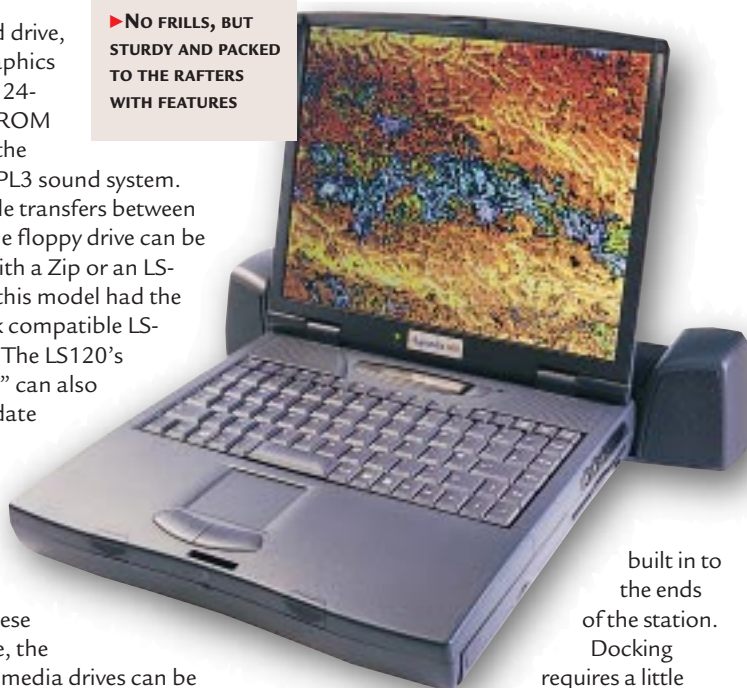
5.1Gb hard drive, 4Mb of graphics memory, a 24-speed CD-ROM drive, and the Yamaha OPL3 sound system. For large file transfers between systems, the floppy drive can be replaced with a Zip or an LS-120 drive: this model had the floppy-disk compatible LS-120 fitted. The LS120's "SmartBay" can also accommodate an extra battery or hard drive, and when either of these are in place, the removable media drives can be attached via the parallel port, although a slower data transfer rate will result.

The size of the screen, being larger than that of a 15in CRT, makes extended hours away from your usual workspace much more bearable. The display is equally bright across its whole surface, with sharp definition at the recommended 1024x768 native resolution.

The pointing device comes in the form of a touchpad with respectable sensitivity to your demands. No "special function" middle button or scroll option is available, which those used to the new "wheely mice" will no doubt miss. But the most important input device, the keyboard, is a joy to use and is far enough up the notebook to allow the two large spaces either side of the touchpad to be used quite practically as wrist rests.

Included in the attractive asking price is a full docking station, adding all standard ports as well as an extra PS/2 mouse/keyboard connector and USB port, plus a game port. The notebook's own tinny speakers also enjoy an enhancement, with stereo speakers, as good as many bundled system speakers,

▶**NO FRILLS, BUT STURDY AND PACKED TO THE RAFTERS WITH FEATURES**

built in to the ends of the station. Docking requires a little force but with practice can be achieved in seconds. With the docking station there's no need to spend a couple of hours transferring your files to your permanent desktop system via direct cable connection or removable media. A normal setup with 17in CRT, parallel port printer, USB scanner, full-size keyboard and mouse could be plugged into the docking station with a permanent power supply. When docked with your desktop setup there is also the added advantage of the ability to use PC Cards. One Type III or two Type II cards can be plugged in for peripherals in those formats, such as modems or digital camera flash memory cards, and IrDA2 infra-red data transfer is possible to compatible devices like PDAs.

The Agenda came with Windows NT4 installed, and running BAPCo's SYSMark NT benchmark gave a result on equal footing with a desktop PII 300 system. With its amazing spec, the Agenda places no restraints on working at your best while away from your desk. It's not for the road warrior, but it makes a great portable desktop replacement.

IAN ROBSON

It's not of the wafer-thin variety but the build is quite sturdy

PCW DETAILS
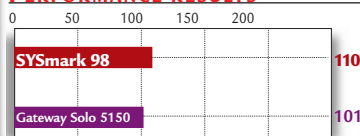
★★★★

Price £2,818.82 (£2,399 ex VAT)
Contact Rock Computers 01926 816609
www.rock-computers.co.uk
Good Points As powerful as most desktop systems. Docking station included. LS120 drive. Great keyboard.
Bad Points Overweight and unattractive.
Conclusion A notebook that can truly be regarded as a desktop replacement.

PERFORMANCE RESULTS

0	50	100	150	200	
SYSmark 98					**110**
Gateway Solo 5150					**101**

Gateway Solo
5150 S6-266LS

**A pricey, high-spec business notebook —
but you really do get what you pay for.**

As you may know, Gateway 2000 has recently dropped the millennial reference — perhaps to prevent crashes — and is now simply known as Gateway. This doesn't, of course, change very much; Gateway is still a top-five PC and notebook manufacturer with more sales than a struggling high street and more clout than most PC companies could dream of. This offering, the Solo 5150, is a notebook aimed at the business user. Aesthetically it is fairly standard: slim, and incorporating an ample 14.1in TFT LCD that fits almost the whole width and height of the casing. As is the case with several notebooks, the CD player and floppy drive are interchangeable. Like it or not, this is clearly a handy space-saving device that allows for smaller dimensions. You can also purchase an LS-120 or DVD-ROM drive to slot in, although these are not supplied. The Solo has the now

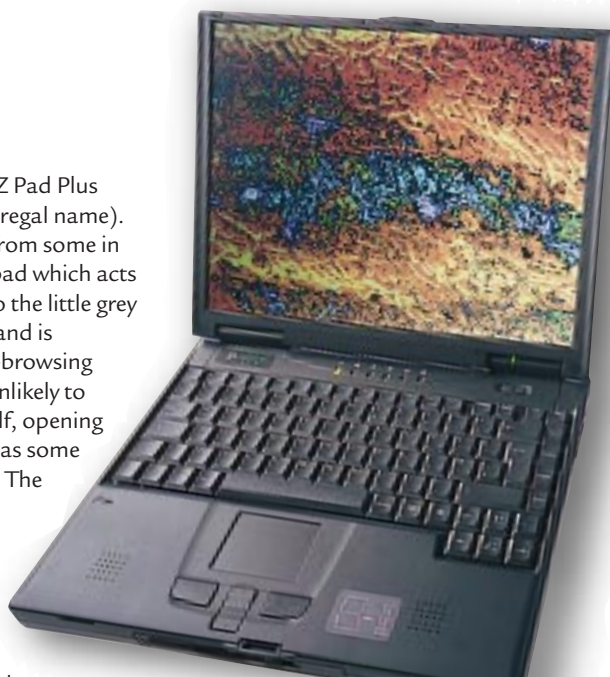*You can take this unit out on the average train journey and work away*

obligatory touchpad (or EZ Pad Plus Touchpad, to use its more regal name). However, the Solo differs from some in that there is also a rocker pad which acts in a fairly similar manner to the little grey wheel on an Intellimouse, and is particularly useful for web-browsing fanatics. It is refreshingly unlikely to randomly double-click itself, opening up applications uninvited, as some touchpads are wont to do. The full-size 88-key keyboard is springy but responsive, so no complaints there.

Moving on to its add-on potential, the Solo has the usual suspects along its back — serial, parallel, docking and VGA ports. All are protected by a dust/damage cover, and the docking port has its own bomb-bay doors for easy access. There are two USB ports, one PS/2 port, an infra-red port and two PC Card slots (for two Type I/II or one Type III cards). Add the line-in, microphone, headphone, line-out and volume wheel to this merry band, and you have a capital choice of ways to add peripherals and other devices.

Peeking underneath the exterior, you will find a Pentium II 266MHz processor at the heart of the action on an Intel 440BX chipset, plus 64Mb RAM. We ran several tests on the Solo, on the system and the battery. Solos have always tended to give good battery performance and this model is no exception, managing just over three hours. It's good to know that you can take this unit out on the average train journey and work away without worrying about it dying.

Also worth noting is the ACPI BIOS. This is a new specification designed by Microsoft, Toshiba and Intel; it stands for Advanced Configuration and Power Interface. In brief, it enables the PC to come on instantly when accessed by a user and remain available to perform

automated tasks after they are turned off. You can also leave it on, thanks to an advanced sleeping state, and it will turn other peripherals on or off itself. In turn, connected devices can also wake the Solo up without turning it on, thereby allowing for integrated computing, home communications and entertainment. Peripherals and hardware must also be ACPI-aware; unfortunately, many are not.

The Toshiba EIDE 6.4Gb hard drive is extremely generous for a notebook. As for on-board graphics, the Solo uses a 2.5Mb NeoMagic chipset, thereby giving 24-bit colour at 1024x768 resolution. The 16-bit sound is of course also on-board, and relies on two fairly unimpressive speakers located just below the keyboard.

There is a good Microsoft software bundle: Office 97 Small Business Edition, which includes Word, Excel, Outlook, Publisher and AutoRoute Express 98. It doesn't, however, include PowerPoint, which is annoying since one of the major uses for notebooks is giving presentations. Finally, the weight. At 6lbs 12oz it weighs the same as a small newborn baby. By 'eck though, is it less trouble.
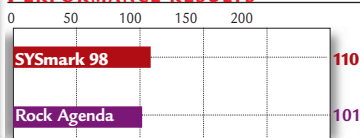
JIM HARYOTT

▲ WITH A GOOD SIZE AND SOLID BUILD, THE SOLO IS THE PERFECT BUSINESS PARTNER

PCW DETAILS

★★★★

Price £2642 (£2249 ex VAT)
Contact *Gateway* 0800 973132
www.gateway2000.co.uk;
www.gateway.com
Good Points *Screen area. Solid build. High spec.*
Bad Points *Slightly pricey.*
Conclusion *A well-built, well-specified if not particularly inspiring notebook. Fairly expensive, but you get what you pay for.*

PERFORMANCE RESULTS

0	50	100	150	200

SYSmark 98	110
Rock Agenda	101

Hewlett-Packard
2000C/CN Professional Series

A colour inkjet printer for the office environment.

Does the world really need another colour inkjet printer? Well, Hewlett-Packard obviously thinks that it does, otherwise it wouldn't have come up with the new 2000C/CN Professional Series Color [sic] Printer. We also know that Hewlett-Packard would be the first to jump up and declare that this unit is simply too fast to be classed as Just Another Inkjet Printer. And we'd be inclined to nod sagely, but we'll save that for later.

It has to be said that the 2000C/CN is not a small fellow, and as it weighs in at a scrap under 10kg, we don't have to ask who ate all the pies. And the bulk doesn't help its appearance any: it looks rather like a bulbous bread bin, hewn from beige plastic of course. Aesthetics aside, the 2000C/CN — and if you're wondering about the suffixes, the "CN" model is "network ready" — is a sturdy beast, to be sure. It's designed for fairly heavy use, with Hewlett-Packard stating a duty cycle of up to 5,000 monochrome pages per month; most inkjets would work up a sweat trying to churn out this many sheets, even if they worked 24 hours a day. As we said earlier, the 2000C/CN is faster than most. Print speed is always difficult to gauge because it depends very much on what you intend to do with your printer. On the 2000C/CN it is complicated further by the choice of three print modes: Econofast, Normal and Best. As Normal mode is the default, we ran our Labs tests using this. HP claims that the 2000C/CN will churn out up to eight pages per minute when printing black text, and that's true enough, so long as all you're printing is simple text without significant embellishments. In the real world, however, you're going to be producing a mix of text, graphics and styles, and here the

The 2000C/CN copes well with a mix of text, graphics and styles

2000C/CN still copes well, dropping an average of over four pages each minute into the output tray. This tray will hold up to 75 sheets of A4 while the paper feeder will gobble 150. This seems a little short-sighted, particularly for the network unit that boasts a larger paper input capacity of 400 sheets, to which you should be able to send a job and not worry about nursing it through the task.

Quality was consistent, if not always impressive. Photographic images printed onto glossy paper look fantastic, but nowadays that's hardly likely to set any printer apart from the crowd. Inkjet technology has come on in leaps and bounds in recent times and any model that can't take a good stab at a photo on glossy paper should stay on shop shelves and gather dust. Much the same could be said of the 2000C/CN's text output, though printed black characters were discernible right down to three-point fonts, a rare quality for an inkjet printer.

▲ **THE 2000CN IS THE IDEAL COLOUR NETWORK PRINTER FOR THE OFFICE**

However, on plain paper things are less meritorious. Text still sparkles but the graphics side of things goes a little flat. The same could be said of many colour lasers, though.

As well as the speed, Hewlett-Packard is also singing the praises of the 2000C/CN's printing system, the audaciously named Smart Printing Technology. There's nothing particularly astounding here: individually replaceable ink reservoirs; low-ink indicators; ink-out indicator; end-of-printhead-life indicator; transparency sensor; and a cancel print job "feature", but the combination is unusual, if not unique. For those who are interested — pay attention, you network administrators at the back — the CN model is equipped with Hewlett-Packard's JetDirect 300X print server, allowing automatic switching between 10Base-T and 100Base-T speeds.

Overall, the 2000CN represents an attractive alternative to the considerable expense of a colour laser for medium duty-cycle workloads. It would be particularly suitable as a pre-press machine for colour proofing. It's not going to persuade you to sell your mono laser, though.

SCOTT COLVEY

PCW DETAILS

★★★

Price £1,057 (£900 ex VAT) for 2000CN; £705 (£600 ex VAT) for 2000C
Contact Hewlett-Packard 0990 474747
www.hp2000c.com
Good Points Particularly high-quality text. Faster than almost any other inkjet.
Bad Points Graphics look flat on plain paper. It's still not as fast as a laser for mono work.
Conclusion Would sit nicely in a small-to-medium-sized office, sucking print data from a network server.

Creative SoundBlaster Live!
Live and kicking

High fidelity and value for money combine in this great consumer sound card.

When Creative Labs introduced its original SoundBlaster ISA card, it soon became the standard in PC audio. However, the market domination of Creative's products has been challenged recently by the entry of Aureal Semiconductors with its Aureal synthesiser. Sound cards using the Aureal chipset — the Diamond Monster Sound and Turtle Beach products — are able to reproduce "true 3D" surround sound using just two speakers. Aureal's 3D sound algorithm makes the sound appear as if it's originating from behind the listener. Creative has never truly been able to match this through its line of AWE64 cards.

The SoundBlaster Live! is Creative's attempt to win back the listeners and developers who have defected to Aureal. Based on the EMU10K1 processor, which is allegedly as powerful as a Pentium 133, the SB Live! PCI card is a major departure from previous designs. It fully supports a new API, called EAX (Environmental Audio Extensions). Creative managed to enlist the support of Microsoft to make EAX a part of its DirectSound API. This means that unlike Aureal's proprietary A3D API, any developer that supports DirectX can use the EAX extensions. The SB Live! ships with a dedicated digital I/O daughtercard and four PC Works speakers from Cambridge Soundworks,

a subsidiary of Creative Labs. There is also a dedicated subwoofer. As the SB Live! is also aimed at home-studio enthusiasts, there is a sizeable software bundle that includes MixMan Studio (a MIDI sequencer), SoundForge and Cubase VST. Connecting the four speakers and subwoofer wasn't too laborious a procedure. The two rear speakers come with miniature tripods and there is a separate volume control that can be attached to the side of the monitor or PC. The SB Live! comes with excellent documentation describing each step of the process. Creative claims that the EMU10K1 processor on the SB Live! is consistently able to maintain a noise floor of -120dB. To test this in the real world, we connected the S/PDIF output of the daughtercard to a top-end Marantz AV amplifier and a pair of high-quality Alesis monitors. The noise level remained inaudible except at peak volume settings — impressive for such a low-priced card. The difference in sound quality between the bundled PC Works speakers and the professional ones was significant. Users who can afford to upgrade should do so. We tested the built-in effects processor by hooking up an electric guitar, a bass guitar and a Korg synth. The frequency response of the SB Live! wasn't quite up to reproducing the deep tones of the bass and the high notes produced by the electric guitar — you'll get noticeably better results from

The SoundBlaster Live! is aimed primarily at gamers

a dedicated effects processor. Yet while they're not up to professional standards, they're certainly usable if applied sparingly. Encouragingly, the 256-voice wavetable MIDI playback of the SB Live! is a great improvement over its predecessors. The SB Live! is aimed primarily at gamer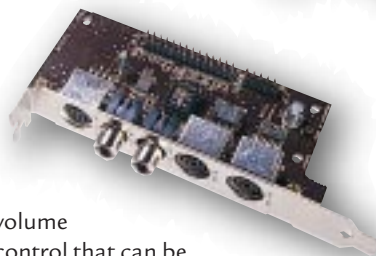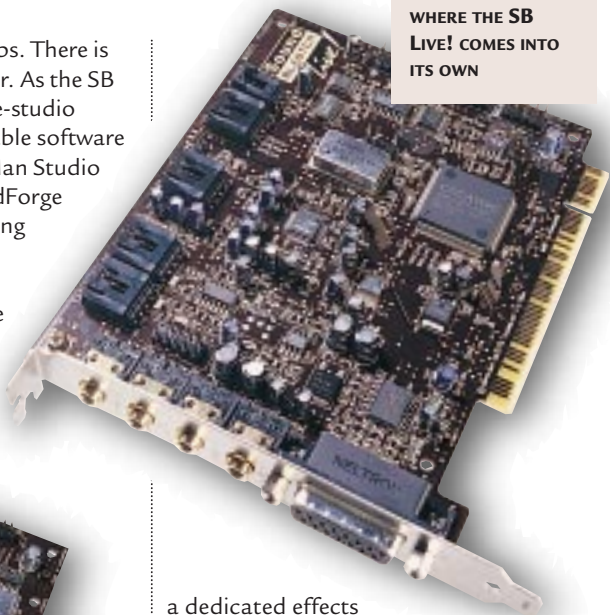s and comes with a version of Unreal which uses the EAX extensions. The card comes into its own in the games realm, reproducing gunshots, explosions and screams with profound realism. The unit comes with a number of preset environments for many popular games such as Age of Empires and Wing Commander. There are also generic preset environments like "underwater" and "concert hall", and even some exotic ones such as "bathroom" and "drugged". Gamers can also create their own environments by mixing sounds.

Creative claims that the full power of the EMU processor is yet to be tapped. Future driver updates should provide support for 512 hardware-accelerated voices and Dolby Digital support for DVDs. But even without these, Sound Blaster Live! is excellent value for money.

Ajith Ram

PCW DETAILS

★★★★

Price *£149 (£127 ex VAT)*
Contact *Creative Labs 0118 934 4744*
www.sblive.com
Good Points *EAX extensions. High fidelity. Good software bundle. Easily upgradeable.*
Bad Points *No support for Dolby Pro Logic or AC-3 playback.*
Conclusion *The most powerful consumer-orientated PC sound card to date, at an enticing price.*
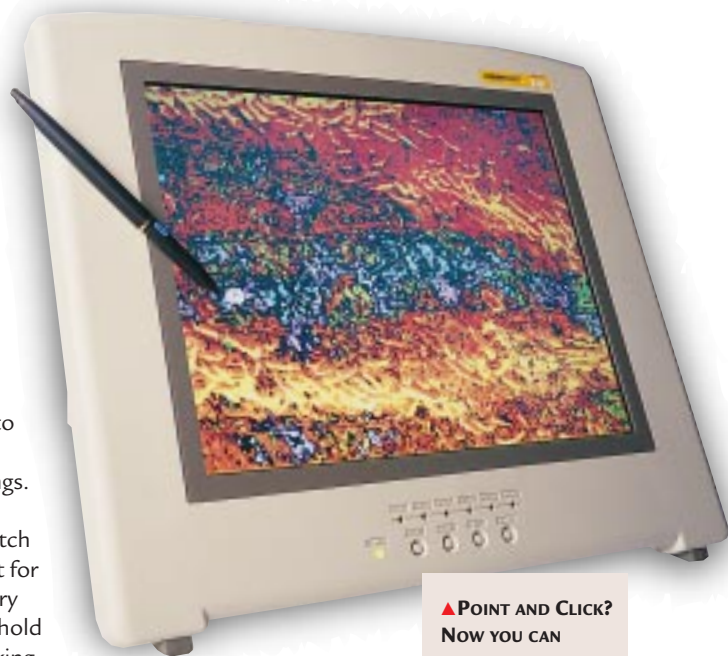
VisionMaker Sketch 14
Point-and-write device

The Sketch is the next step in creating hand-drawn images on your PC.

The Sketch is, as far as we know, a unique product. It combines a 14in TFT LCD flatpanel display with a pressure-sensitive graphics tablet to produce a true "writing surface" display. It has been well designed, and feels very solid when taken out of the box. It's not connected directly to the mains — there's a 12V power supply included. At the back of the display is a metal box containing the power supply and video inputs plus the serial output which goes into one of your free COM ports. The box itself hinges down and forms a stand. It's held up by a metal support in a similar fashion to a normal drawing board, and you can set it at any one of various angles, from flat to virtually upright.

Once you get over the psychological barrier of stabbing at an LCD panel with a pointy thing (something that will ruin a normal LCD), the system works brilliantly well: the barrier over the screen is tough enough to avoid any Newton ring-type distortion effects when pressing hard. The sketch comes with an attractive stylus pen that takes a single AAAA battery, but it's still pretty light — lighter than a decent-quality fountain pen. Because it's an active device, you don't actually need to touch the screen to control the mouse pointer

as you would with a notebook-type touchpad. We tested the Sketch on a system that already had a PS/2 mouse installed. Rather satisfyingly, the Sketch doesn't totally hog the mouse pointer, so you can still use the mouse normally when you want without having to press any buttons or alter any system settings. This is important, because using the Sketch as a total replacement for a mouse isn't really very practical. It's hard to hold the pen still while clicking, and particularly so while double-clicking, so Windows tends to think you're dragging icons rather than trying to activate them. The driver software supplied installs a small app to change preferences such as the pressure sensitivity and the action of the buttons on the pen,

When it comes to using the thing in anger, the Sketch 14 is great

and you can set it up to double-click automatically, reducing the accidental dragging problem.

As to the quality of the display, it's good, but not up to the standard of the majority of modern TFT panels. Of course, having the extra protective layer over the screen to prevent the pressure of the pen damaging the display doesn't help, and will inevitably reduce brightness and definition. But the viewing angle is also rather restricted, meaning that the display seems darker at the bottom than the top when viewed from above, and darker at the top than the bottom when viewed from below. There are a few more criticisms of the display too, principally the controls. These are very basic, covering only LCD

▲ **Point and Click? Now you can point and write, or draw, with the Sketch 14**

clock phase and delay, brightness, and horizontal and vertical position. Control is via four front-panel buttons, with no on-screen display. Niceties such as colour temperature adjustment and power management timers are sadly absent. Colour temperature in particular would have been appreciated, since the Sketch's settings are a little on the warm side. An annoying oddity of the controls occurs when you're trying to adjust the display — press the left-hand button to try and move the picture left and it goes right, and vice versa.

When it comes to using the thing in anger, the Sketch 14 is great. The ability to adjust the angle of the unit means that it's very comfortable, and the sturdy build means that there are no worries about leaning on it in the same manner that you'd lean on a drawing board. The only slight glitch in the operation of the pen was that it would occasionally fail to register pressure at the beginning of a stroke, whereupon the pen needs to be taken away from the surface and reapplied. But this a minor problem that will no doubt be fixed in future versions.

David Fearon

PCW DETAILS

★★★

Price £5,287 (£4,500 ex VAT)
Contact VisionMaker 01483 202051
Good Points A unique product for the graphics professional.
Bad Points Seriously expensive. Display quality not as good as current flatpanels.
Conclusion You'd need to think very carefully before choosing one of these over a normal graphics tablet.

Yamaha DS2416
Music to your ears

RECOMMENDED
PERSONAL COMPUTER WORLD

Studio quality hard-disk recording at an extraordinarily low price.

The DS2416, part of Yamaha's new DSP Factory system, is an unassuming half-length PCI card that combines all the electronics of the 02R, minus knobs and sliders, with top-notch hard-disk recording features, for an astonishing £599.

Any sound card is capable of making, recording and playing music. However, push things a step further and you'll quickly run into problems. It's all very well having eight or 16 tracks of digital recording in theory. But try applying real-time equalisation or effects on multiple tracks and things rapidly become unbearably sluggish.

With the DS2416 you can apply as much processing as you like since everything's handled by the card's DSP (digital signal processor) chips. The card supports recording of up to eight tracks at a time at 32-bit resolution, with 16-track simultaneous playback. The mixer has 24 channels with 10 buss outputs and six auxiliary sends. Each input and stereo output has dynamics processors as well as four-band parametric EQ and full metering on all channels. Digital cross-patching makes it simple to route channel inputs and outputs. It's important to remember that we are talking about a real hardware mixer here: only the controlling interface is in software. There are two effects processors, equivalent in quality to Yamaha's REV500, that can be applied to any of the channels. They include numerous reverbs, delays, choruses, distortion, ring modulation, flangers, phasers, and combination effects. Having 24 channels is ideal for 16-track mixing. You need this many to accommodate all your inputs, outputs, sends and returns. In a PC-based recording setup you can get away with a

> *Remember that we are talking about a real hardware mixer here...*

single analogue stereo input for recording, and the 2416 provides this on the back of the card, together with a stereo analogue output and digital I/O. Recording one stereo track (or two mono) at a time, you will still be able to build up to 16 tracks of hard-disk audio. Installing and setting up the DS2416 is easy: it's fully plug-and-play and you won't get any conflicts with existing installed devices. A single floppy disk provides the driver, test program and basic patchbay utility. Unfortunately, that's it as far as software is concerned.

It's up to third-party developers to provide the means for accessing most of the DS2416's functions. However, all the major names have committed to supporting DSP Factory. Full mixer support is already available for Cakewalk Pro Audio 7 via a free web update. Steinberg's Cubase VST/24 is in beta, and Logic Audio Platinum and Gold are in the pipeline. C-Mexx offers a standalone mixer for DSP Factory, designed to integrate closely with SEKD's Samplitude hard-disk recording

software. It's worth mentioning Yamaha's forthcoming SW1000XG sound card. Not just because it promises to be the best ever sound card for the PC, but also because it neatly complements the DSP Factory thanks to a dedicated link between the two cards. The price is likely to be around £500, for which you get the equivalent of Yamaha's flagship EX5R synth module, which combines a huge 20Mb of wavetable samples with five different forms of sound generation including physical modelling and 128-note polyphony. The SW1000XG should be available now.

MICK ANDON

◄ **BUTTON HEAVEN. CUBASE AUDIO VST/24 VERSION 3.6 WILL INCLUDE FULL SUPPORT FOR YAMAHA'S DSP FACTORY**

▼ **THE BASIC DS2416 PROVIDES ANALOGUE AND DIGITAL I/O**

PCW DETAILS

★★★★★

Price £599 (£509.78 ex VAT)
Contact Yamaha Pro Music 01908 369269
www.yamaha.co.uk
System Specification
(for sequencing/recording software, etc, not the hardware): Pentium II, Windows 95, 64Mb RAM.
Good Points Professional performance and features at an incredibly low price. Easy to install and set up. No special PC requirements.
Bad Points No software included with the card.
Conclusion Brings the cost of entry for serious PC-based recording down to a new level, with no compromises on features or performance.

Philips PCA645VC
USB video camera

Inexpensive and easy to use, this camera features all the benefits of USB.

The Philips PCA645VC USB PC video camera is one of the first USB cameras to become available, apart from the QuickCam VC from Connectix. It's very easy to use, includes a microphone, and is aimed at the home and small-business user who doesn't require professional-standard video. The Philips camera's output is in standard H.263 or H.261 format, the accepted compression schemes for low-bit-rate video, enabling it to be used in business videoconferencing applications, for internet-based video telephony, or as a webcam. Philips also bundles a "Videogram Creator" application which compresses a minute of video into a megabyte and can be used to email videograms, which can be replayed in Windows or OS/2 Warp. The microphone in the camera transmits its audio digitally along with the video, but can also serve as your system microphone if needs be.

To decompress the video from the 645VC at an adequate speed, a Pentium is obligatory, and Philips recommends

a 200MHz system as a minimum. However, performance will also depend on how many USB devices are attached to the system. If you need high-quality, fast frame-rates, or only have a slow

Pentium or 486, you need a card-based video camera. However, for video calls over the internet to similarly equipped friends and relations, this camera is fine; with internet videoconferencing it's the bandwidth of the internet itself that's the limiting factor. Just don't move around a lot or you'll look like a Klingon. Price-wise, and in terms of functionality, USB cameras sit between cameras which are parallel port-based and those which require a peripheral card. You don't get the extra features which come with a card-based camera — onboard processing for better performance, external video inputs for camcorders, and so forth. The Philips runs up to 24 frames per second under ideal conditions, meaning fast PC, small picture window. Technically speaking,

this is QCIF (quarter common intermediate format), an image 176x144 pixels in size. It supports a maximum of 15fps at full CIF which is about half broadcast speed.

The big advantages of USB are low cost and convenience. With a small, lightweight camera like the Philips, you can videoconference while at the office, and after work you can carry it home in order to send a family videogram to granny. As it's hot pluggable and powered from the USB port there's no AC adaptor to drag around, and no need to hunt for a free power socket. And of course, as there's no peripheral card to install, there's never a need to crack open the PC case. However, there is a catch. USB devices are relatively new and they're only starting to trickle on to the shop shelves. As a result, the only operating system that directly supports them is Windows 98.

But as USB picks up [*see Newsprint, page 27*] support will get a lot better, and not just for Windows 98: Windows 95 and OS/2 Warp can be retrofitted with USB support now, and Windows NT 5.0 will have native USB support. USB will spread to other systems too, starting with the Apple iMac, so it's going to be a great way to share devices at home or in the office, or between

home and the office. You will also need a USB port on your PC. They're becoming common, but older machines (1995 or later), although without USB ports, might well have internal USB pin-outs already. You should peruse the motherboard manual or the PC BIOS for a mention of USB and if so, confirm visually by opening the case.

TERENCE GREEN

◄ **SMALL AND LIGHTWEIGHT, THIS USB VIDEO CAMERA OFFERS LOW COST AND CONVENIENCE**

The Philips runs up to 24 frames per second — fast PC, small picture window

PCW DETAILS

★★★★

Price *£116 (£99 ex VAT)*
Contact *Philips 0181 689 4444*
www.philips.com
Good Points *Inexpensive and easy to use.*
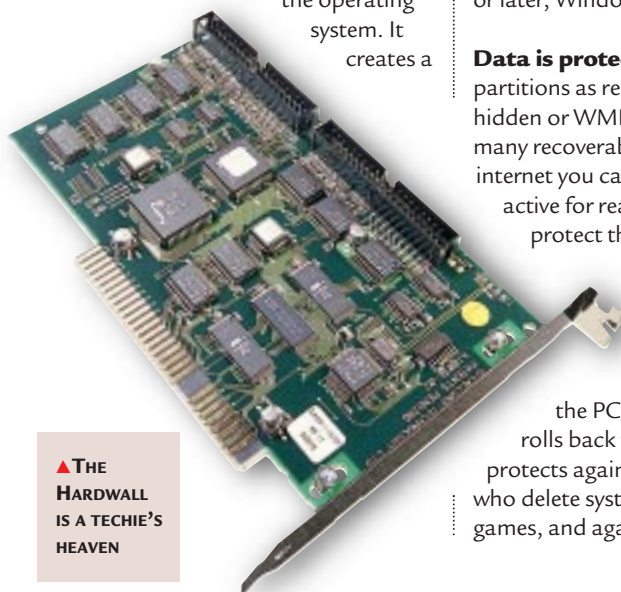**Bad Points** *Only fully supported under Windows 98 as of now.*
Conclusion *Ideal for the Windows 98-based home user or small office seeking a low-cost camera without the performance restraints of a parallel-port camera or the cost of a card-based camera.*

Calluna Hardwall

This data-protector is not for the technological novice.

Calluna's Hardwall protects data from threats such as downloaded viruses, hacker attacks, sabotage and accidental or malicious damage to the operating system. It creates a microprocessor-controlled barrier that monitors and controls all data bound for the hard disk. It's a physical barrier, routing the data cable from the hard disk through the Hardwall and onward to the EIDE interface on the motherboard. All you need is a free ISA slot for the card and a Pentium-class PC running DOS 6.2 or later, Windows 3.x, 95 or NT 4.0.

Data is protected by designating partitions as read/write, read only, hidden or WMR (which stands for write many recoverable). When accessing the internet you can designate one partition active for read/write access and protect the others either with no access or with read-only access. WMR is even better as it permits multiple writes, but each time the PC is rebooted everything rolls back to the original state. This protects against viruses, against kids who delete system files to make space for games, and against any kind of malicious or misguided system reconfiguration. It's good stuff. Hardwall has some annoying limitations, though. It only works with IDE/EIDE drives and requires a minimum of five disk partitions with specific names. A copy of PartitionMagic Special Edition is provided for partitioning the drive. Unfortunately, Hardwall's installation process is counterintuitive and the documentation is complicated and unhelpful. Calluna is busy fixing this and a cheaper, simpler version aimed at ordinary people is in the pipeline.

TERENCE GREEN

▲ THE HARDWALL IS A TECHIE'S HEAVEN

PCW DETAILS

★★★

Price *£199 (£169 ex VAT)*
Contact *Calluna 01592 630810*
www.calluna.com
Good Points *Unbreakable data protection.*
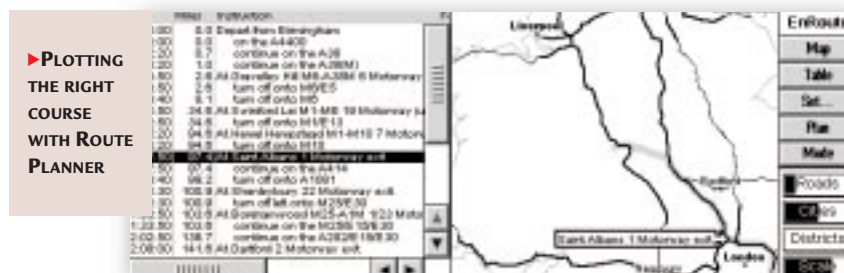**Bad Points** *Poor documentation.*
Conclusion *Great for techies who can figure it out. Ordinary people should wait for an easier version.*

Palmtop Route Planner

All roads lead to the Psion 5 with this super application.

Once upon a time there was AutoRoute, and it was good. It provided maps of the UK and would plot a course for you from A to B (via C and D if necessary). It flourished on the PC and was then ported to the Psion 3a/c. Bill Gates liked AutoRoute so much that he bought the company; and, of course, killed the non-Windows version.

The good news is that PalmTop has released Route Planner for the Psion 5 that does much the same job, but better. It arrives on a CD-ROM with enough maps to cover the whole of Europe and then some; it has GPS support built-in, so you can play moving map if you so desire. Route Planner makes good use of the touch screen: for example, you can outline areas on the map that you want to avoid and the route will skirt around them. Once calculated, the route can be displayed as a map and/or

▶ PLOTTING THE RIGHT COURSE WITH ROUTE PLANNER

a set of route directions. The only problem is the bizarre speed of calculation. Going from Birmingham to Dover, 99% of the route is planned in about 23 seconds after analysing 5,500 roads, with just 0.24 miles to go. So why does Route Planner have to examine a further 9,000 roads, taking an additional 35 seconds just to get me that last quarter of a mile?

But I'm not really complaining; I still love the product. If you need to route-plan on the road, this application is justification enough for buying a Psion 5.

MARK WHITEHORN

PCW DETAILS

RECOMMENDED
PERSONAL COMPUTER WORLD

★★★★★

Price *£49.95 (£43 ex VAT)*
Contact *Widget 01438 818818*
www.widget.co.uk
Good Points *Covers the whole of Europe. GPS support.*
Bad Points *Calculation times seem a little wayward.*
Conclusion *The kind of application PDAs were invented for.*
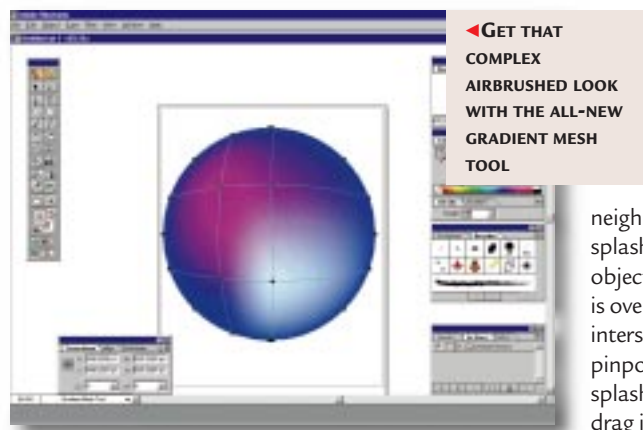
Adobe Illustrator 8 BETA
Back in the frame

Ken McMahon highlights the fine new features of this impressive upgrade.

It would be fair to say that the history of Illustrator for Windows has not been glorious. Initial releases lagged two years behind MacOs versions, with version 7 caught up at a lacklustre stage of the program's development. But we got hold of a late beta of version 8, and discovered that it's one hell of an upgrade.

Newcomers to vector drawing find getting to grips with a Bezier pen tool the most difficult hurdle to overcome. The new pencil tool for the first time provides a practical alternative to the pen tool, drawing smooth paths with points at respectable intervals. What's more, if your path isn't quite right, you can redraw sections of it simply by positioning the pencil over an existing section and redrawing: the new section of line replaces the old one.

Illustrator has followed the trend towards introducing paint-like tools to the vector environment with three new brushes: art, scatter and pattern. Any object can be defined as an art brush and then used with the brush tool to stroke any

path. You can, for example, define a flower as an art brush and draw multiple copies of it, each bending subtly in different directions to form a bouquet. The scatter brush repeats elements along a path. Image size, spacing, scatter and rotation can be altered at random or according to

Arguably the best vector drawing package around for any hardware platform

pressure if you're using a tablet. It's not new: CorelDraw and Painter have had their own variations for some time; but nonetheless it's a welcome addition to Illustrator's repertoire.

Since the very first release of Illustrator it's been possible to stroke paths with a PostScript pattern. The patterns brush allows you to do this in a much more intuitive manner than previously. There's a small library of pattern brushes including rope, laurel leaves and a fabric print, and you can, of course, create your own. Another significant addition to Illustrator's toolbox is the Gradient Mesh tool — a

complete reworking of the gradient concept. Clicking on a filled object with the mesh tool produces a splash of colour that blends into the background. Select another colour, click elsewhere and a new

colour splash appears, blending smoothly with both the background and its neighbouring pigment splash. The multicoloured object is overlaid with a grid, the intersecting nodes each pinpointing a colour splash. Select a node and drag it, and the shape of the blend moves with it; change the fill colour and see the results instantly. The Gradient Mesh Tool takes gradients into a new dimension, providing results you could previously only achieve with a bitmap package. Most of the remaining enhancements are directed towards making Illustrator 8 easier to use and bringing the interface into line with other Adobe products.

Several features of the Photoshop interface have been incorporated wholesale, including the navigator and actions palette, and it's possible to export Illustrator documents to Photoshop with layers intact.

The combination of new features, brand-new drawing tools, enhancements to existing tools and overall interface improvements puts Illustrator back in the frame as arguably the best vector drawing package around for any hardware platform.

KEN MCMAHON

PCW DETAILS

★★★★★

Price *£351 (£299 ex VAT)*
Contact *Adobe 0181 606 4001*
www.adobe.com
System Specification *Pentium processor, Windows 95/98, 32Mb RAM, 50Mb hard-disk space.*
Good Points *Many powerful new tools. Greater ease of use. Improved interface.*
Bad Points *Poor record on speed and stability compared to the competition.*
Conclusion *It looks as though CorelDraw will be under threat when Illustrator 8 is released.*

L&H Voice Xpress Plus
Finding the right words

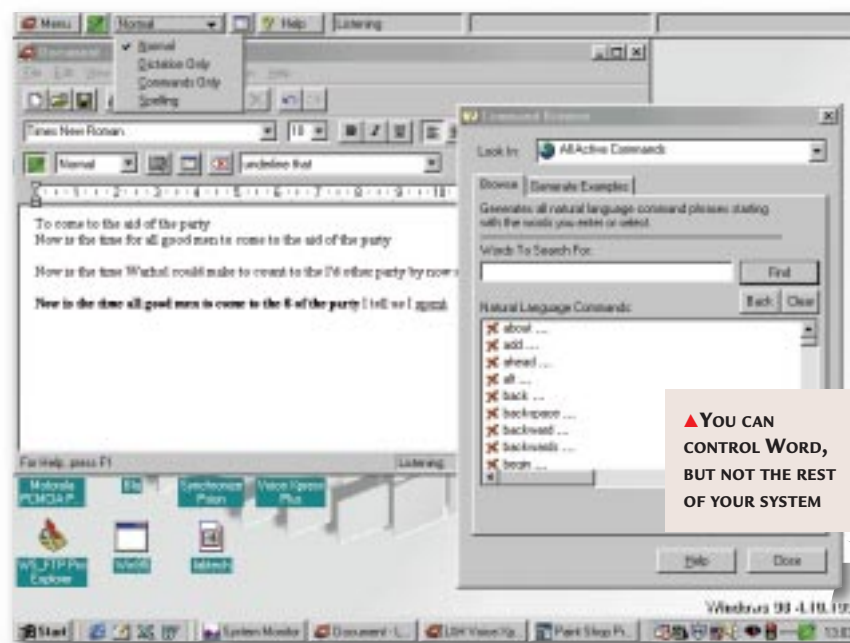**With Voice Xpress Plus, are you talking loud and clear?**

Voice Xpress Plus is the latest of the current generation of continuous speech recognition packages to hit the dealers' shelves. Coming from respected speech technologists Lernout & Hauspie, it offers integration with Microsoft Word 97 and as well as dictation, offers sophisticated command and control facilities within Word. It can additionally read back text.

I have to confess that I had some problems installing Voice Xpress Plus. It's best to install voice recognition software on the most powerful PC you've got; in my case this was an IBM IntelliStation M Pro, with a 266MHz Pentium II and 128Mb of RAM. It was running Windows NT 4.0 Workstation, but this is not a worry since Voice Xpress Plus supports it. However, the install crashed at the 85 percent mark, with a cryptic error message. The problem? It didn't like the IntelliStation's integrated Crystal Audio hardware. Not a big deal, but it should have checked for incompatible hardware before proceeding. I switched to a 200MHz Pentium MMX machine, with 64Mb of RAM running Windows 98. This had a SoundBlaster AWE64 Gold installed, which it liked and so installation proceeded smoothly. The first stage of configuring the program involves tweaking your audio hardware and setting microphone and volume levels. Voice Xpress Plus comes with the familiar Andrea NC-80 microphone headset: this has a bendy microphone boom which I had trouble getting to stay in the right position. I much prefer the old NC-50.

In common with all voice recognition packages, you have to "enrol" your voice if you want decent accuracy. This involves reading some 225 paragraphs. Of all the voice recognition packages I've encountered, enrolling Voice Xpress Plus was the most tedious and frustrating. It had trouble identifying short words like "and", "at" and "I", yet it swallowed hard words like "paraphernalia" without blinking. Part of this was down to my "slow" P200MMX — it was fairly sluggish in general use and so a Pentium II is essential. The enrolment speech data then has to be processed, which takes about an hour. Except that mine bombed out after a minute. I'd run out of hard-disk space — okay, my fault; but the program should have checked before leading me down the garden path.

Once enrolment is complete, Voice Xpress Plus can be launched — a slow process. It's similar in many respects to IBM's ViaVoice 98: it has an auto-hiding toolbar at the top of the desktop and uses either a WordPad lookalike, called XpressPad, or Word 97. It copes well with number formatting — you don't have to say "pounds 45" to get "£45", you just say "forty five pounds". You do have to let it know when you're about to spell out a word, however, by saying "switch to spelling mode". Unlike ViaVoice 98,

Recognition levels were acceptable, but it's hard to correct errors in Voice Xpress

Voice Xpress Plus doesn't offer system-wide command and control. What it does have that the others don't is "Natural Language Technology", which lets you issue commands in several different ways, making for great flexibility. For example, if you select a word in bold and say "unbold that", it will understand you. Recognition levels were acceptable, but it's hard to correct errors in Voice Xpress: it doesn't, for example, throw up a list of potential matches. And you must spell out your correction into the dialogue box.

ROGER GANN

▲YOU CAN CONTROL **WORD**, BUT NOT THE REST OF YOUR SYSTEM

PCW DETAILS

★★★

Price £79.99 (£68 ex VAT)
Contact Lernout & Hauspie 0800 973365
www.lhs.com
System Specification Windows 95/98/NT4, P166MMX, 40Mb RAM, 130Mb hard-disk space, 16-bit sound card.
Good Points Cheap. Flexible command structure. Good format and control in Word.
Bad Points Can't control other Windows apps. Difficult to make corrections. Install program requires attention.
Conclusion If most of your work involves creating or editing Word documents, Voice Xpress Plus isn't bad. Otherwise consider ViaVoice98.

MFX Research MFX2000
Millennium marvel

Year 2000 compliance is based on a four-digit year format, and MFX2000 delivers the goods.

MFX2000 is a Year 2000 solution with a difference. It focuses on where the problem with non-compliant date formats is at its most dangerous: in applications and their data files. The only guaranteed way of ensuring solid Year 2000 compliance is by forcing applications to use a four-digit year format, which is exactly what MFX2000 does.

As we all know, PC users are being bombarded with software that fixes a PC's BIOS. What many don't realise is that only a tiny minority of programs directly address the BIOS to extract date information — it's much simpler to do it at a higher level using operating system calls. However, even if your PC has a Year 2000 compliant BIOS plus an operating system which claims to be Year 2000 compliant, applications are still vulnerable because of the way they handle date formats in the first place.

Windows 98 and many applications use a method called "windowing" to avoid year inconsistencies. Windows 98 defaults to a hundred-year window of between 1930 and 2029 and so assumes that any two-digit year date, say "98", falls between 1930 and 2029 — in this case, it's assumed to be 1998. However, not all applications use the same window range and confusing results can occur. MFX2000 actually examines and modifies application object code and data files to convert date representation to four digits. Versions of MFX2000 covering Windows 3.x, 95, 98 and NT are available for standalone systems as well as network servers.

The software comprises two central applications: a diagnostic tool and a corrective tool. The former can scan individual files or the contents of a whole drive and report back which applications or files are using dodgy two-digit year date formats. It then enables the user to select which of the non-compliant files should be processed by the corrective tool, which is run separately. The corrective tool takes about an hour to process the contents of a typical hard-disk drive, depending on its size and the speed of the system, so it's an out-of-hours job.

MFX2000 as it stands is not a solution for the faint-hearted PC novice. It's a tool for reasonably knowledgeable system software maintenance staff. For example, there is an option to manually select dates identified at certain address offsets. Only someone with an in-depth

Applications are vulnerable because of the way they handle date formats…

knowledge of that application could make sense of this. However, a sanitised consumer version of MFX2000 is in the pipeline and should appear some time next year. Another point to note is that it's not recommended to selectively correct your system as applications may be interdependent. MFX2000 can't help if you store your dates in strings: unformatted dates in word processing files won't be corrected, for example.

Ensuring that the year is internally represented by four digits is the only cast-iron way of guaranteeing Y2K compliance and so MFX2000 has to be a serious

choice. We were worried that tinkering with application object code and modifying data files might be risky, but we had no problems, and MFX Research, the Australian developer, says that the independent NSTL test lab in the US has tested the software thoroughly with no major problems. As this is a professional product aimed at business users and support companies dealing with business-critical systems, the relatively high price is justified.

IAN BURLEY

◄**MFX2000** HUNTS DOWN SHORT DATE REPRESENTATIONS…

▼…AND PUTS A FULL FOUR-DIGIT YEAR IN THEIR PLACE

PCW DETAILS

★★★★

Price £210 (£179 ex VAT); multiple site licences available

Contact POW! Distribution 01202 716726

www.pow-dist.co.uk

System Specification 386 or later, Windows 3.x or later, 4Mb hard-disk space, 4Mb RAM.

Good Points The most convincing Year 2000 fixer so far.

Bad Points Not for consumers — yet.

Conclusion An innovative solution for a tricky problem.

ULead Cool 3D Version 2.0
Special effects

For web pages, presentations and the occasional doodling, these text effects will suffice.

Y ou don't have to be looking at a TV for long these days before being exposed to some kind of clever-looking 3D title winging its way across the screen. It may not convey any more information than plain 2D text, but it's hard to beat for sheer visual impact, and no self-respecting game show would be complete without an expensive computer-animated intro.

The biggest problem with creating any kind of 3D graphics is the sheer complexity of the whole enterprise. Creating 2D documents and images on a PC is relatively easy, as the computer's interface is also two-dimensional. Drag a picture up and to the left on-screen, and that's where it will be when you print it out or put it up on the web. However, manipulating 3D objects and scenes with a mouse and a keyboard is a lot less intuitive, which is why 3D graphics design is still a highly specialised field. You don't necessarily need a piece of general-purpose 3D design software to produce 3D text effects, though, and Cool 3D claims to do just that with the minimum of fuss (and skill). Ulead has achieved this simplicity by providing a library of objects, colour schemes, textures and effects that can be dragged to where they're needed from a preview gallery.

Getting started with Cool 3D is about as easy as it could be. An icon on the toolbar brings up a dialogue box where you type in the text you want, specifying the usual properties like font and size, and it appears in the centre of the workspace window but as a 3D object to be manipulated rather than dull old 2D text. You can also import graphics in Windows Metafile format. Applying effects, textures and colours to the text is then simply a matter of browsing those available, and dragging to the workspace. The textures are mostly static, but a few are animated. You can

easily import your own if the ones provided aren't to your taste, but the range included with Cool 3D includes all the usual favourites such as marble, wood and blue sky. The bevel selection is a range of styles that define how the

> ### *Cool 3D is a fun piece of software … creating flashy-looking text is simple*

characters have been "chiselled out" — how they appear in 3D. Again, there's quite a selection of these, and they can be combined with the textures to create user-defined styles. The text in the workspace itself can be moved around, rotated and resized easily using the mouse. The three axes of rotation are handled fairly sensibly, with the left mouse button combined with mouse movement controlling two of them, and the right button the third. It's not always this easy in some 3D packages, and it only takes a couple of minutes to get used to this system.

The best thing about Cool 3D is the animation, and Ulead has made creating moving text effects as easy as pie. First of all you select the total number of frames that you want for your animation. Next,

you move the time-line slider to the next "key frame", which is a point in your animation where you want something to happen, and move, resize or rotate your text. The software then works out the intervening steps of the animation, producing a smooth transition.

Cool 3D is an easy-to-use and fun piece of software, and it makes creating flashy-looking text as simple as possible. While it's not clear how much use most of us have for this sort of thing, they certainly liven up web pages and presentations. In any case, the low price means that even if you only use it occasionally, you won't regret buying it.

DAVE MATHIESON

TDK Global Pulse
Mobile phone software modem

Harnesses the modem built in to the phone for PC comms applications like email and fax.

TDK Grey Cell is one of the first companies to sell a so-called software modem package for GSM mobile phone users. Its product, Global Pulse, connects a GSM phone to its host PC via a standard serial port — there is no need for a discrete "hardware" modem like a PC Card. This means PC Card slots can be reserved for other uses, and notebook users will benefit from a small but useful increase in battery life if no other PC cards are being used.
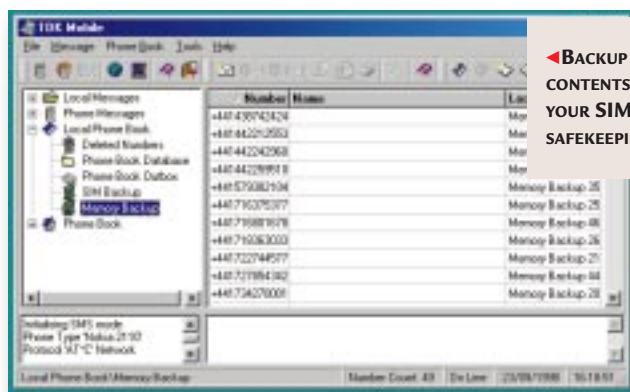
There has long been talk of replacing modem hardware with software. Originally, Intel's prediction was that 200MHz Pentiums would be able to run software DSPs (digital signal processors) which could emulate the functions of a typical modem and so lower costs. Even with 450MHz Pentium IIs now available, Intel seems to have gone quiet on that idea recently. However, there is one market which sees a lot of potential in a different kind of "software" modem — the mobile phone sector. Modern GSM phones are essentially specialised hardware modems anyway. They convert analogue audio (your voice) into digital signals and back again. Global Pulse effectively provides a way of harnessing the modem built in to the phone for PC communications applications, like internet browsing, fax and email. Hardware is, in fact, a critical part of the Global Pulse package. The only bit of hardware in the box is a serial port to phone lead which, incidentally, is specific to certain phone models. Older phones, like the ubiquitous Nokia 2110 we tested Global Pulse with, require a sophisticated cable which converts signal voltages between the serial port and the proprietary data port of the phone and identifies which phone model it is connected to. More recent phones are practically RS232 compatible and so the cable is quite simple, but all Global Pulse cables act as dongles, so the software is useless without an original cable. Dongles are rarely considered a good idea, but in this instance the plus side is that TDK Grey Cell can publish the latest versions of its software without the worry of piracy. This is just as well, because the original version 1.1 software we tried was pretty appalling. We'd vigorously encourage any existing Global Pulse users to download the latest version 1.4, which is very good.
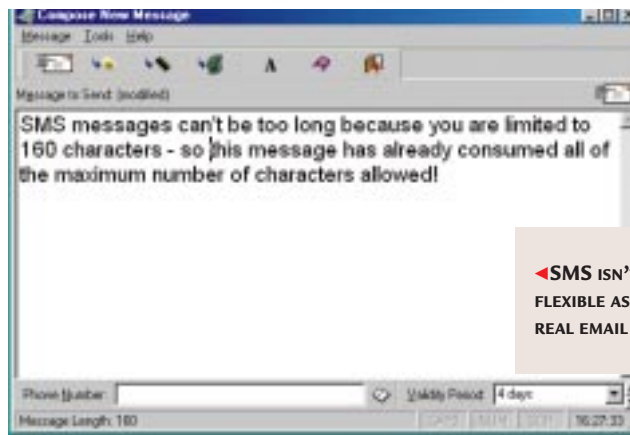
Once installed, Windows modem properties reveals a Global Pulse modem entry. You must quit the main Global Pulse software application, called TDK Mobile, before attempting to go online. TDK Mobile integrates an SMS (short message service) client and a phone book. The latter can make backup copies of the names and

Moderm GSM phones are essentially specialised hardware modems

numbers you have programmed into your phone, either from the phone's own memory or the SIM card memory which also contains your phone account details. It also serves as a convenient way to edit entries and enter new ones. A problem is that some older phones can't transfer names along with their respective numbers. The SMS client's message editor is easy to use and can also serve as an archive of your old messages.
If you already have a PC Card modem that's GSM-ready, Global Pulse is probably not for you. But if you've been thinking about getting a GSM-only card, you may find Global Pulse cheaper and its bundled software superior. TDK Grey Cell currently only supports Nokia GSM phones and branded derivatives, but other manufacturers are in the pipeline. A Windows CE version of Global Pulse has just been announced.

IAN BURLEY

PCW DETAILS

★★★★

Price *£116 (£99 ex VAT)*
Contact *TDK Grey Cell 0118 9216230*
www.tdkgreycell.com
System Specification *486DX, Windows 95/98, 8Mb RAM, 6Mb hard disk, 9-pin RS232 port, Nokia GSM phone.*
Good Points *Manages your phone's phone book. Helps preserve your notebook's battery.*
Bad Points *Only for Nokia phones so far.*
Conclusion *Ideal alternative to GSM-only data cards.*

Caere PageKeeper Standard
Document storage

Pan and scan: how Caere simplifies the daunting task of document organisation.

The dream of the paperless office has been around for as long as the desktop computer, but as everyone knows, the amount of paperwork in the average office has actually increased as more people have access to PCs and printers. Scanners and OCR (optical character recognition) software mean that it's relatively easy to turn bits of paper into files that can be stored on your hard disk, but keeping track of the myriad different types of documents can be a daunting task. PageKeeper is designed to help you organise things by allowing you to store different types of documents together, convert scanned pages into word processor documents, and search for them based on categories and keywords that you provide, all within one application.

The basic premise behind PageKeeper is that you scan your pieces of paper, provide them with meaningful descriptions, let the software take care of any conversion, and use PageKeeper to launch the relevant application when you want to edit a document. Obviously, PageKeeper is designed to be used with a scanner, and you're prompted to select your model from an extensive list during installation. The scanner settings are then accessible from within PageKeeper, although the default settings bypass the scanner's default TWAIN pre-scan settings. On our system this proved a problem, as documents were scanned at far too low a resolution. However, the software installs a Control Panel icon that enables you to use the scanner's own front-end, which worked much better.

The main interface is split into two panes, with a standard folder tree on the left and contents on the right. PageKeeper's installation also scans your system for supported applications and provides icon shortcuts to those applications on one of the toolbars.

◄ PAGEKEEPER SEAMLESSLY HANDLES DIFFERENT DOCUMENT FORMATS

Importing a document is achieved by clicking one of three icons on the toolbar — from the scanner, disk and the web. Importing a document isn't simply a matter of copying a file into PageKeeper's workspace, as you could simply use Windows Explorer to do this. Instead, PageKeeper converts the document in the background into a format that can be used by other applications. For example, if you place

PageKeeper converts the document into a format that can be used by other apps

a sheet of paper containing text in your scanner, it's OCR'd on the fly and a thumbnail is placed in the workspace. If you have Word installed, you can then select the document, click the Word icon in the toolbar, and it's opened as editable text. Similarly, clicking the Netscape icon opens the document as HTML, while Photoshop opens it as the original image file. This automatic conversion means that you don't have to worry about what type of document you're dealing with: you decide what you want to do with it, and PageKeeper worries about the rest. The OCR engine in PageKeeper does a reasonable job, as you'd expect from the makers of OmniPage, although some of the more advanced features, such as support for multi-column documents, are missing.

If you require this extra support, then PageKeeper integrates fully with OmniPage Pro 8.

It's one thing being able to store a whole range of documents, but another to find what you need. PageKeeper Find is a separate utility that enables you to search for text, either in the documents themselves, or in the titles or annotations.

Overall, PageKeeper works well, and the on-the-fly conversion is very powerful. This power comes at a price, though, and certain operations were accompanied by quite a bit of disk thrashing on our 32Mb test machine, which shattered the illusion of transparency between document types somewhat. More RAM would undoubtedly help in this respect, though.

DAVE MATHIESON

PCW DETAILS

★★★★

Price £39.95 (£34 ex VAT)
Contact Caere 0171 233 6677
www.caere.com
System Specification 486, Windows 95/98/NT, 8Mb RAM (16Mb for NT).
Good Points Powerful. Easy to use.
Bad Points Needs plenty of RAM for smooth operation.
Conclusion A very capable product for the asking price.