up front ⃝

Among the new products reviewed are the first Handheld PC to be launched in the UK, the latest versions of Nestcape's and Microsoft's Web browsers, a Pentium MMX machine for games enthusiasts, an on-line service from News International, and a colour inkjet printer

Hewlett-Packard OmniGo 320LX

The first Windows CE-based Handheld Personal Computer (HPC) to be launched in the UK.

Microsoft's Windows operating system is now used on almost every desktop PC, so it should come as no surprise to hear that it's now popping up on palmtop computers as well. Windows CE (Compact Edition) was launched earlier this year and it has been designed specifically for a new breed of palmtop computers.

Known as Handheld Personal Computers, or HPCs for short, the first to hit UK shop shelves will be Hewlett-Packard's 320LX. In addition, it has the widest screen of any HPC currently available. The machine we looked at was in the final stages of production, so although it's pretty much complete, some changes might be made before its commercial release.

As far as palmtop computers go, nothing about the 320LX's design is particularly remarkable. It has the archetypal clamshell-style case that flips open to reveal an LCD display and a surprisingly usable Qwerty keyboard. This has a total of 64 keys and includes special buttons that call up the Windows CE Start menu and toggle the backlight. There's a single Type II PC Card on the left of the case and on the opposite side there's an IrDA-compliant infra-red port with a serial port nearby. The 320LX comes with 4Mb of memory which can be augmented by flash memory cards that slot into the proprietary CompactFlash socket. Two AA-sized batteries power it on the move, providing around 20 to 25 hours of use, and a mains power supply is also included.

A small plastic stylus slides out from the front of the machine. This is used to perform mouse-like pointing operations on the 320LX's touch-sensitive screen. The Windows CE interface closely resembles the Windows 95 desktop – the Start button sits on the Taskbar at the bottom of the screen and tapping it with the stylus brings up a familiar menu. Unfortunately, the contrast on the 320LX's screen is terrible and, although the backlight helps a lot in poor light, it's dif-

- ⃝ Backlit 640x240 pixel LCD panel
- ⃝ Type II PC Card Socket
- ⃝ IrDA infra-red port
- ⃝ Serial port
- ⃝ CompactFlash proprietary memory card slot
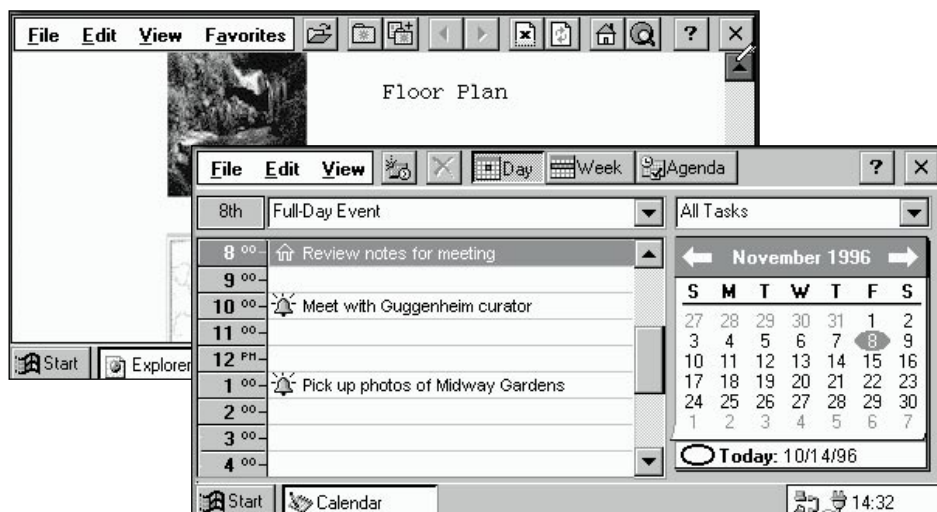- ⃝ 64-key keyboard

Hewlett-Packard OmniGo 320LX

(continued)

ficult to see anything on it very clearly under typical office lighting.

Like Windows 95, Windows CE provides the essential framework on which applications, such as a word processor or a spreadsheet, can run. However, unlike its desktop counterpart, Windows CE has some of these fundamental applications built in. The main two – Pocket Word and Pocket Excel – are simply cut-down versions of their counterparts that appear in Microsoft's Office software suite.

Pocket Word and Pocket Excel retain the general look and feel of the PC versions but their features have been drastically pared down. Pocket Word, for example, has all the basic editing tools – emphasis, alignment, copying and pasting and so on – but nothing more. If you're expecting Word 97 features like auto-correction and formatting features, you're in for a major disappointment. There isn't even a spell-checker, although this will undoubtedly appear as an add-in.

The cutbacks in Pocket Excel aren't quite so severe, with around 80 functions still available, but there are some inconsistencies in the interface. For example, while alignment functions can be accessed from toolbar icons in Pocket Word, in Pocket Excel these can be applied only by trolling through menus and dialog boxes.

Another very useful application is Calendar, designed to help you keep track of your schedule. Making a new entry is as simple as dragging across the required time slots and tapping on the appropriate toolbar icon. Entries can include a small description (although fuller notes can also be attached) and can be set to recur on a daily, a weekly, a monthly or a yearly basis. You can peruse your agenda by using either the daily or the weekly views, but cannot see an overview of an entire month.

Accompanying the 320LX is a serial PC link cable and suite of Windows 95 software on CD-ROM.

The latter includes Windows versions of HPC Explorer and Schedule+ 7.0a, along with the HPC-only Pocket Internet Explorer (not all HPCs have this pre-installed).

Most palmtop computers can grudgingly exchange data with a PC but Windows CE makes the process almost seamless. Using HPC Explorer on your PC, dragging documents to and from the 320LX automatically converts them between the Pocket and standard formats of Word and Excel. A single click of the mouse button also synchronises the information contained in the PC's and the HPC's schedule and contact databases.

Pocket Internet Explorer is the other major player in the Windows CE applications line-up; on the 320LX it takes full advantage of the machine's 640-pixel-wide screen. Getting hooked up to the Internet isn't too much of a struggle, as long as you've got a PC Card modem and a dial-up account with an Internet Service Provider. Viewing and navigating Web pages is much the same as it is on a desktop PC, with the most obvious difference being the lack of colour.

The 320LX – like all HPCs – displays only four greyscales, so surfing the Internet is not quite the graphical extravaganza it usually is. Also, during our tests using a 33.6Kbits/s modem, it didn't perform at anything like the sort of speed we would expect. As the 320LX is the first Windows CE system we've had a proper look at, it's difficult to say whether the hold-ups were caused by the machine or the software but our guess is that it's a combination of the two.

Although this first-generation Windows CE machine has its problems, we have to say that we'll regret returning the 320LX to Hewlett-Packard. Compared with many other palmtop computer operating systems, working with Windows CE is a pleasure.

Scott Colvey ▶

As a first attempt at a Windows CE machine, the 320LX is an admirable effort. While it's nowhere near as fast as a good desktop machine running Windows 95, it truly is like having a PC in the palm of your hand.

○ £616.88 (inc VAT)
○ HP: 0990 474747

HP OmniGo 320LX

Build quality	★ ★ ★ ★ ☆
Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ☆ ☆
Features	★ ★ ★ ★ ★
Value for money	★ ★ ★ ☆ ☆
Overall	★ ★ ★ ★ ☆

Internet Explorer 4 (standard version)

A pre-beta version of Microsoft's latest Web browser that integrates Internet functionality into Windows 95.
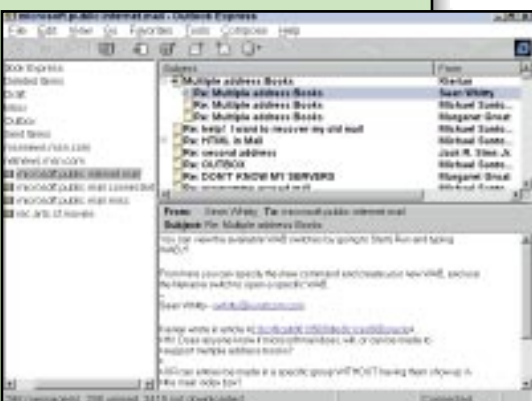
- Download size: 11Mb
- E-mail capability with filtering
- Supports Dynamic HTML, ActiveX, Java
- Web push support
- Windows 95 desktop integration

More of an evolution than the revolution that some expected, Internet Explorer 4 nevertheless fundamentally alters the way Windows 95 works. But owners of less powerful machines may find Netscape Communicator Suite a more comfortable fit.

- Free platform preview available for download
- Microsoft: www.microsoft.com

Internet Explorer 4

Ease of use	★★★★☆
Performance	★★★★☆
Features	★★★★☆
Overall	★★★★☆

Minimum requirements (subject to change): 486/66, Windows 95, 8Mb of RAM, 43Mb of free hard disk space.

The last time Netscape and Microsoft slugged it out with their browsers, Microsoft came out on top with the leaner, quicker Internet Explorer 3. That was only a year ago but now both companies have unveiled their plans for the next generation of Web browsers and, in Microsoft's case, Windows.

For the time being, Internet Explorer 4 (IE4) is available only as a pre-beta platform preview, so unless you're a software developer, Microsoft doesn't recommend that you download it. If you ignore this advice, you'll notice the difference in IE4 immediately. There's no multi-megabyte file to download, simply a small installer for the version required (we used the standard one). The rest of the download is fairly automatic – you're asked where you are and offered a choice of download sites, before actually fetching the necessary components.

IE4 adds much more than just Web browsing to Windows 95. The most significant new feature is the Active Desktop, which consolidates the way information on a PC is accessed, whether it is on a hard disk or a Web page.

This may sound straightforward, but if you're not entirely prepared for it, you could end up confused when you restart your system after installation. Your desktop will have disappeared, replaced by a black background with a few pictures and an orange blob that says 'Hey! I'm a desktop object'.

Static desktop wallpaper is now a thing of the past as desktop objects allow Web pages to be displayed instead. These aren't windows but part of the desktop itself. With an active Internet link, the page is 'live' and can be used for Web browsing. You can also specify times for the page to be updated and how many levels to grab, making it possible to browse stored pages 'off line'.

This Internet integration goes further still. Try opening a folder like My Computer by double-clicking and you'll end up elsewhere. The reason? Everything on the desktop is now a 'link' and, like links on a Web page, the default action to open them is a single click.

With a folder open, you can see right away what is happening – every window is now a browser window with the same toolbar as Internet Explorer. This means that although a folder opened on the desktop can be used to browse a disk drive (just as it always did), type in a URL and it can also browse the Web, providing you have an active Internet connection.

The browser itself seemed a little faster than the previous version, and it takes support for Active X and Java a step further largely by integrating them into the desktop. In the My Computer window, for example, a pie chart showing free disk space is updated whenever you point to a disk drive.

Another new feature is Outlook Express, a completely revised version of Internet Mail and News (for e-mail and Newsgroup reading). Also, clicking Find on the Start menu allows you to search on the Internet for sites and people.

IE4 is a capable Web browser and its integration with Windows 95 brings many useful enhancements. Turning every feature on does make great demands on a system but then this is by no means a finished product. It's remarkably polished and relatively stable, though and when finally released, IE4 will probably change the way people think about the Internet.

Nigel Whitfield

Netscape Communicator Suite (standard version)

The latest version of Netscape's suite of applications for the Web, e-mail, scheduling and collaboration.
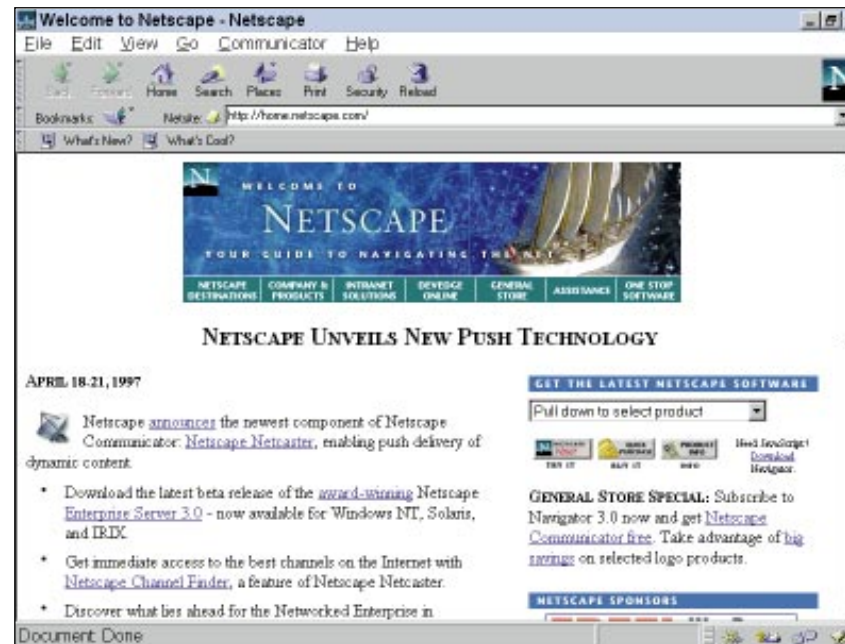
Netscape is further advanced than Microsoft with its next Web browser as it has already reached preview release 2. Rather than going for a single solution for various Internet tools though, Netscape has opted for a suite of applications.

The basic Communicator Suite consists of Messenger, the e-mail application; Composer, for creating Web pages; the Navigator browser; Collabra, for conferencing; Conference, for video and audio conferencing; and a few small applets, such as the e-mail notifier and a media player. There's also a Professional version available, which adds calendar, administration and IBM connectivity options.

Adding all this to your Start menu could lead to a confusing array of icons but Netscape has chosen a floating palette for launching different suite components. In addition, the components can be started from a menu in each application.

Of course, most people will want this suite simply to get hold of the browser. Superficially, Navigator 4 looks a little like Internet Explorer 4, in that the buttons are two-dimensional until the mouse pointer is moved over them.

Although not complete – for example, the security options weren't enabled in the version we tested – many of Navigator 4's new features are already in place. Most notable are 'layers', which are like layers in a drawing program. They allow you to put different elements of a page in the foreground and background and swap them round using JavaScript. This feature can be used to, for example, hide text or create simple animations.

On our test 486 PC, Netscape Communicator wasn't particularly fast but it was no worse than Inter-net Explorer 3.0. Given that this is a pre-release version, it's likely to be faster when it's finished, so in terms of speed there may not be much to choose between it and Explorer 4.0.

Another major part of this suite is the e-mail application, Messenger, a great improvement on the mail built in to older Navigator versions. Support is provided for MIME messages and there are also filters that can scan the headers of new messages, enabling you to automatically direct e-mails to different folders.

There's also an address book, and for those who want to track down less often used correspondents, you can automatically search the Bigfoot and Four11 online e-mail directories. There's an applet that will check for new e-mail and this can be monitored from the task bar, which also provides you with access to new messages with a couple of clicks. This feature isn't quite as integrated as Explorer 4's but it's still pretty straightforward.

The other major component is the Web editor, Composer. It's not very different from the Web editor built into Navigator Gold 3.0 but, although there's support for features like tables, it doesn't give you a particularly accurate representation of what you're designing – what you see is not necessarily what you get. The way in which text wraps around images, for example, can be seen only by viewing your new page in the browser, which seems a bit peculiar. Nevertheless, it's simple to use and the templates provided (which are accessed online, so running up your phone bill) will help most new users to get started.

All in all, the Communicator Suite is a good addition to the desktop and likely to perform better on slow systems than Explorer 4.

Nigel Whitfield
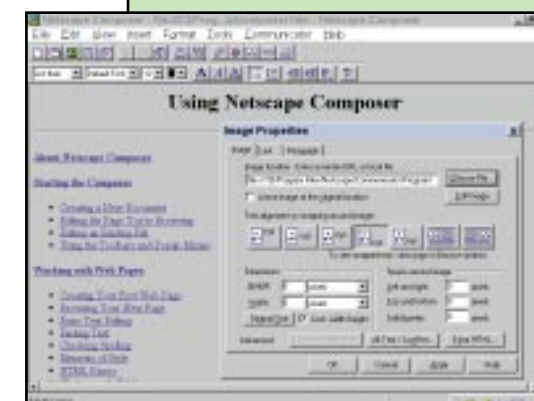
- Download size: 12Mb
- E-mail capability with filtering
- Web browser
- Supports dynamic HTML, layers and Java
- Web authoring tool
- Web conferencing tool
- Web push support

Not quite the paradigm shift of Internet Explorer 4, Communicator Suite is still a package that caters for most of a user's needs in a more flexible way than the previous, single, monolithic application.

- Free platform preview available for download
- Netscape Communications: www.netscape.com

Netscape Communicator Suite

Ease of use	★★★★☆
Performance	★★★☆☆
Features	★★★★★
Value for money	★★★★☆
Overall	★★★★☆

Minimum requirements (subject to change): 486, Windows 3.11 or later, 8Mb of RAM, 18Mb free hard disk space.

Lexmark is now an old hand at making inkjet printers. Although it was only formed in 1991, after a US-based investment firm bought IBM's ailing Information Products division, it was ideally placed to take advantage of the infant market for inkjet printers. Lexmark now has a multi-billion-dollar turnover and is one of the top four printer manufacturers in the world. Its latest model is the 2030 which features a print resolution of 600dpi (dots per inch)

The company has a reputation for building printers that look distinctly unlike printers. The 2030 is no exception and its elongated, sharp-sloping design makes it vaguely resemble the bonnet of a Mini. Raise the lid though, and you won't see an engine.

In fact, you'll see very little at all because the carriage that houses the ink cartridges is hidden under a recess on the right. At first this is disconcerting because the 2030 has no control buttons and there is no obvious way of gaining access to the carriage to install cartridges. However, a quick glance at the instruction sheet reveals that all the 2030's operations, including ink-cartridge replacement, are initiated through software.

Like many printers nowadays, the 2030 is a Windows-only device. This means it will work only with PCs that have Windows 95 or Windows 3.1x installed, and it will accept output only from Windows-compatible applications. It hooks up to your PC using a bi-directional parallel cable, which enables the 2030 to 'talk' to your PC. If you want to print from older DOS programs the 2030 can do so, but only from those which run happily within a DOS box under Windows. For most PC users this means that the 2030 will not cause any problems.

With the Windows printer driver freshly installed, the 2030's carriage sweeps out into view and an on-screen dialog box prompts you to insert the cartridges – one three-colour cartridge and a separate one holding black ink. By mixing the three coloured inks (cyan, magenta and yellow) and the black, the 2030 can create almost any colour.

Lexmark's driver software is quite advanced, allowing plenty of control over the media type and resolution settings and so on. It also gives users continuous feedback on the printer's status.

The 2030's printed text output on plain paper is impressive, even under the closest scrutiny. Common font sizes (such as 10- and 12-point) have smooth, clean edges, and at the smallest point size text is still readable. Unfortunately, the same cannot be said of colour output on plain paper. With the standard colour ink cartridge supplied with our review model, photographic images lacked vibrancy and contrast. The output looked much, much better on coated and glossy paper – although the 2030 is far from unique in this respect – with images taking on the sheen, but not the resolution, of a photograph. Lexmark also plans to release a 'photo-colour' ink cartridge in the near future that it says will further improve the quality.

Print speeds varied according to the job in hand, with our test sheet of A4 text appearing at a rate of just under 2ppm (pages per minute). Unsurprisingly, colour printing was somewhat slower with a half-A4-size image, taking around three minutes to complete. This is a pretty average performance for an inkjet printer and should be sufficient for the average home or small office user.

Scott Colvey

Lexmark 2030

Colour inkjet printer with a resolution of 600 dots per inch and a quoted print speed of up to three pages per minute.

- Two-cartridge, four-colour printing (CMYK)
- 100-sheet paper feeder
- Resolution: 600x300dpi
- Quoted print speed (draft black and white): 3ppm
- Quoted print speed (draft colour): 1ppm
- Interface: parallel
- Dimensions (mm): 462(w)x239(d)x188(h)
- Weight: 4.3kg

The 2030 is highly suitable for home use. It's easy to set up and use and delivers a print quality that any home or small office user would be more than happy with.

- £248.88 (inc VAT)
- Lexmark: 01628 481500

Lexmark 2030

Build quality	★★★★☆
Ease of use	★★★★★
Performance	★★★★☆
Value for money	★★★★☆
Overall	★★★★☆

PC PhotoStarter Kit

A low cost image-editing package offering special, fun features for photographs, plus a 12-print film and free processing.

- Free 12-exposure 100 ASA film and developing – Kodak Picture Disk must be ordered at same time
- Opens 14 image file types (but not PCD)
- Slideshow
- Supports all Windows-compatible output devices and printers.
- One-level undo for some operations
- Red eye correction
- Special effects including embossing and posterizing,
- Standard set of drawing and editing tools
- Over 20 levels of zoom

Good fun, good value and an easy way to get into digitised photography – but don't expect the image editing power or album management flexibility of more versatile products.

- £19.99 (inc VAT)
- Ingram: 01908 260160

PC PhotoStarter Kit

Ease of use	★ ★ ★ ★ ☆
Performance	★ ★ ★ ★ ☆
Features	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ☆

Minimum requirements: 486DX/33, Windows 3.1x or Windows 95, 4Mb of RAM, 4Mb of free hard disk space.

Turn photo into an Oil Painting
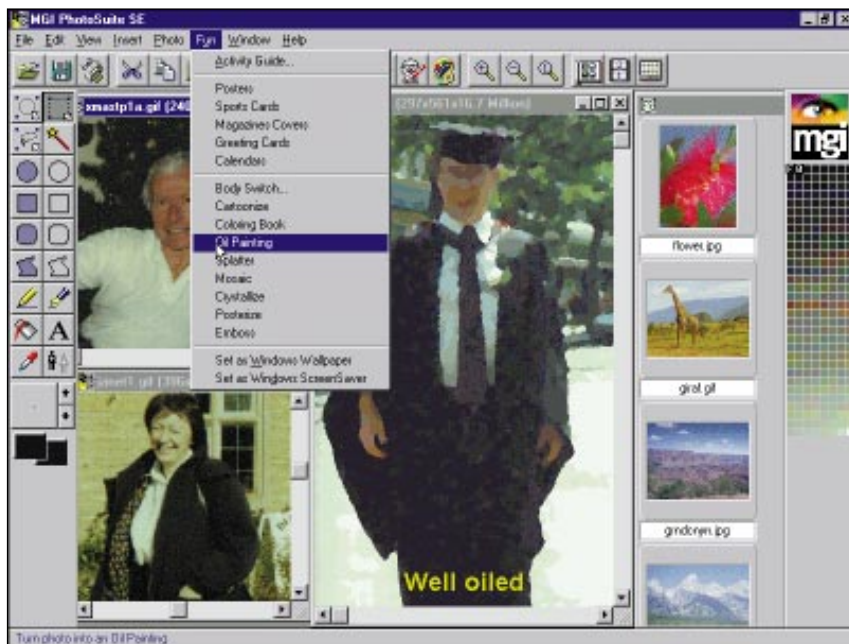
Although the era of digital photography is already here, it will be some time before we're all clicking away with our electronic cameras. Meanwhile, MGI's PC PhotoStarter Kit offers a way of getting some of the benefits of putting your snaps on the PC using a normal camera.

The PC PhotoStarter Kit comes with a 12-print roll of 35mm Kodak Gold Plus 100 film and an order form for the free development of standard 4x6in prints. According to the accompanying form, that's worth £3.59, although you could buy a 24-exposure film for £3.99 in most supermarkets.

You have to look closely to spot it, but the 'free' part of this offer applies only to the developing – and only if you also order your Kodak Picture Disk at the same time from KodaPost for £6.74. In one of several careless mistakes, the user booklet describes the offer in reverse, advising you that you'll get the disk free.

The MGI PhotoSuite SE software supports a range of popular image formats (PCX, GIF, BMP, TIF and JPG), so you can use it to open graphics already on your hard drive, from your collection of CD-ROMs, or via a scanner and its supporting software. However, because PhotoSuite SE is only a Starter Edition it doesn't support the mainstream PCD format used by the Kodak CD service, despite the on-line help stating that it does. For PCD support and several other desirable features you'll have to upgrade to the full product, MGI PhotoSuite 8.0.

PhotoSuite SE comes on two floppy disks. It is simple to install and to start it you just click on its icon in Windows 3.1or Windows 95. The opening window, called the Activities Guide, lets you choose the photos you want to work with and the types of operation you want to perform on them. You can save photos in an album of thumbnails for easy access, and make calendars, cards, posters, magazine covers and so on.

There's nothing you can do with PhotoSuite SE that you couldn't do at least as well through the imaginative use of a much more flexible image-editing program like PaintShop Pro. However, novice or occasional users would find PhotoSuite SE's special range of editing tools and effects easier and quicker to use.

These are accessed through the Fun Guide, which offers six assorted activities. For example, you can embellish photos with various types of word balloons and then add appropriate text. The Body Switch feature lets you take someone's face and put it on a predefined cartoon body. One of the most interesting options allows you to convert a photo to resemble an oil painting. Used with PhotoSuite SE's printing capabilities and your colour printer, you can turn out some reasonable Impressionist-style work. With a little more more artistic skill, you can also transform selected photos into neat colouring books to keep your kids occupied.

For more serious personal or business use PhotoSuite SE offers more familiar graphic editing facilities as well. You can change colours or brightness, insert text of varying sizes and fonts, rotate images, apply special effects such as softening, sharpening or removing scratches, as well as removing the dreaded red-eye effect. When you're satisfied with the results, PhotoSuite SE lets you view your album as a slide show.

Terry Pinnell ▶

Dotlink 3D Raider

A PC built for games enthusiasts, combining an MMX-enhanced Pentium processor with accelerated 3D graphics.

- Intel Pentium MMX 166MHz processor
- 32Mb of EDO RAM
- 512Kb of pipeline burst cache
- 2.5Gb EIDE hard disk
- Eight-speed CD-ROM
- Creative Labs AWE32 wavetable audio
- Aiwa active three-piece speaker set
- 4Mb Hercules Dynamite graphics card
- 4Mb Orchid Righteous 3D board (3Dfx Interactive Voodoo chipset) for 3D acceleration
- 15in FST monitor
- Microsoft Sidewinder analogue joystick
- Windows 95
- 3D games demos including Tomb Raider, Monster Truck Racing, Scorched Planet, Descent II, Actua Soccer, Hellbender, Fatal Racing

An excellent-value machine in its own right with the added enticement for gamers of 3Dfx graphics. Compared to the sort of specifications and prices you often see on the high street, the Raider deserves to be taken very seriously if you're looking for a relatively affordable but powerful games PC.

- £1,761 (inc VAT)
- Dotlink: 0181 902 5802

Dotlink 3D Raider

Features	★ ★ ★ ★ ★
Build quality	★ ★ ★ ★ ☆
Performance	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ★

If Santa didn't leave a top-of-the-range games PC in your stocking last Christmas, he might have been doing you a favour. At that point, the MMX-enhanced Pentium was still under wraps and something like the Dotlink Raider couldn't be produced.

Since MMX is all about making multimedia go with a bang, it makes a lot of sense to consider an MMX-based machine if you are likely to use it for playing games. The indications are that MMX-optimised games will be a common sight on shop shelves in the near future. This being so, the Raider's 166MHz MMX processor is a good base on which to build, although that's not all this machine has to offer the games player.

Unless you've been on a long trip to a remote part of the planet, you will have noticed that 3D acceleration is currently a big thing in the PC world. Of the various competing approaches slugging it out in the market, 3Dfx seems to be one which is edging ahead, and this makes Dotlink's choice of a 3Dfx-powered Orchid Righteous 3D card an encouraging one.

The machine comes in a manageable midi-tower case with a reasonably quiet cooling fan. One of the drive bays is taken up by a holder for a removable tape backup module, an optional extra which costs £149.

Dotlink settled on a particularly good-quality Fujitsu keyboard years ago and has had the good sense not to change it since, so there are no problems in that department and the accompanying Microsoft mouse is an equally safe and satisfactory choice. If you're new to the delights of PC games, you may also appreciate not having to go out and buy a vital accessory – a Microsoft Sidewinder joystick is supplied as part of the package.

The Dotlink-badged 15in FST monitor can't have been all that expensive given the overall cost of the system but it doesn't let the side down quality-wise. It gives a largish 13.75in picture diagonal. You can have a resolution of 1024x768 at a relatively flicker-free 75Hz or you can opt for 800x600 for extra crispness and bump up the refresh to a rock-solid 85Hz.

Other items of interest to games enthusiasts are the Goldstar 8-speed CD-ROM drive and the Creative Labs AWE 32 soundcard. The Raider also comes with a small but punchy set of Aiwa speakers, consisting of a subwoofer unit and a pair of satellites. These measured up well both in terms of volume and sound quality and although there are fancier speakers on the market, it's debatable whether you'd need them under normal circumstances.

The Raider has two video cards, a 4Mb Hercules Dynamite 128 for handling normal operations and the Orchid Righteous board for 3D software. This leaves two free 16-bit ISA slots, both full-length, and two free PCI slots. The generous 32Mb of EDO RAM occupies only two of the six memory sockets, so upgrades won't be a problem. Should you need to, you can add one 3.5in and one 5.25in floppy disk drive using the pair of free front-opening bays.

The Raider is fairly fast thanks to its 430HX motherboard chipset, an abundance of RAM, a large secondary cache and a reasonably responsive hard disk. The impact of the 3Dfx board on 3Dfx games, notably Tomb Raider, is genuinely impressive and all in all, this is a lot of computer for the money.

Dominic Bucknall ▶

Mini Office Draw

Low-cost but powerful

graphics design package

suitable for novices as

well as skilled users.
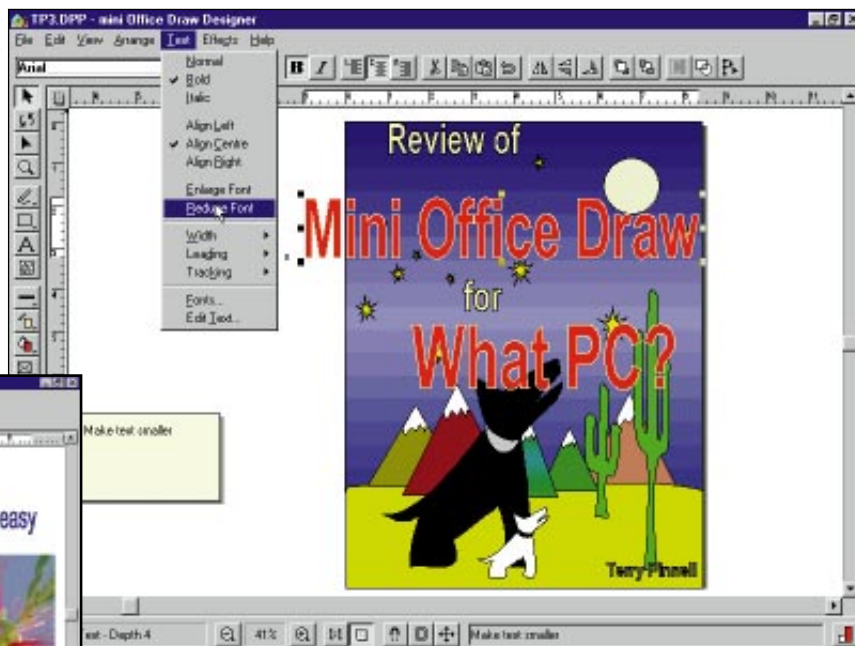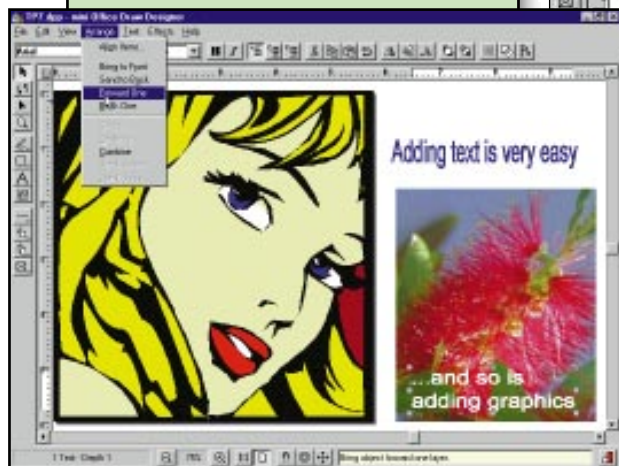
- Clip-art and Photo browser program included
- Standard tools for lines, boxes, ovals and text
- Bezier curves
- QuickShapes feature provides wide range of 'intelligent' shapes
- Envelopes permits distortion and other effects
- Edges of imported images can be simplified
- Solid, linear and radial graduated fills, with precise blend control.
- Any object can be converted to curves
- OLE support

Its versatile capabilities make Mini Office Draw good value for a wide range of users, but even such a budget-priced package should have more accurate documentation.

- £29.99 (inc VAT)
- Europress 0800 454330

Mini Office Draw

Ease of use	★ ★ ★ ★ ☆
Performance	★ ★ ★ ★ ☆
Features	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ★ ★
Overall	★ ★ ★ ★ ☆

Minimum requirements: Windows 3.1 or Windows 95; 486 and 8Mb of RAM for Windows 95, less for 3.1; maximum of 9Mb of hard disk space, mouse.

Mini Office Draw is a low-priced graphics package. It's essentially a slightly cut-down version of Serif's DrawPlus 2.0, which originally cost about £100. So at £30, the re-badged Europress product potentially offers a lot for your money.

This proves to be the case, but the package is let down by its documentation. For a start, the developers haven't bothered to rename the product in the on-line docmentation, which calls it 'DrawPlus' throughout. Furthermore, the Mini Office Draw on-line help (where the program is correctly named) describes some DrawPlus features that are no longer included.

A novel feature of Mini Office Draw is that you can choose the level of skill at which you want to use it – Introductory or Designer. However, it's unlikely that you'll need the former after a short while, because the program is intuitive to use. You also get an extremely generous amount of on-line assistance, providing you're alert to the carelessness already mentioned. Pop-up Tool-Hints, a HintLine in the status bar, a yellow QuickHelp window and Event Tips all supplement the usual on-line help.

All Mini Office Draw's functions are accessible from well-designed tool bars as well as via a menu. The basics include good alignment and layout tools such as vertical and horizontal rulers, coloured guide lines that don't print, a snapping feature to ensure objects conform to page geometry, and a grid to help you align and measure objects by eye.

The QuickShapes feature is one of Mini Office Draw's greatest strengths because it helps to speed up the preparation of drawings. The pre-designed objects include commonly used shapes, such as boxes, ovals, arrows and polygons. Others are more complex, such as the spiral shape which would be very tricky to draw by hand.

You place the shapes by clicking on them and dragging them to the desired position. They can then be scaled, rotated and filled. What's more, you can edit them by using Mini Office Draw's clever Node tool. For example, dragging the handles on a polygon will change the number of sides to make a triangle, pentagon, hexagon or other polygon; dragging the handles on a box alters its corners to make them more or less rounded. Each shape also changes in a logical way to allow its appearance to be altered. The shapes work like customisable clip-art but their 'intelligence' makes them considerably more flexible than standard, passive images.

For more complex drawings, you can add lines, curves and text as building blocks, as well as importing other graphics. You can change the colour of anything and cause it to stretch, slant or rotate. Masks are another neat feature. They let you combine objects to create complex graphic fills using one object as a background to another. Envelopes, a facility often found in more expensive products, allows you to distort objects to 'fill' predefined shapes. Mini Office Draw also allows you to convert any object to curves for creating custom shapes and letters.

Text is easy to apply and edit, although, for more advanced use, there are no automatic wrapping capabilities, either within a text box or for flowing text past other objects. When your work is complete, you can print it, export it, or use OLE (Object Linking and Embedding) to place your drawing directly in another Windows application.

Terry Pinnell ▶

LineOne

Web-based consumer-oriented on-line service from News International with built-in parental controls and proprietary content from the Murdoch empire.

- UK-only service
- Discussion groups and chat
- Proprietary content from *The Sun*, *The Times*, HarperCollins and Sky
- System-wide searching of all products
- Wider searching of UK-only sites and the Web at large
- Family controls
- Video clips from Sky News
- Available with Internet service provision or content-only via ISP of your choice.
- Built-in intelligent agent functions
- E-mail delivery for user-selected content
- Local listings for cinema, theatre, dance, music, and clubs

This reasonably priced service needs some improvements but has made a promising start. The intelligent agent features make it useful, as do the five accounts per subscription, but the system needs work to match its competitors.

- Content-only £6.95 a month; £9.95 for five hours plus £1.50 for each additional hour; unlimited access £14.95 a month (inc VAT)
- Springboard Internet Services: 0800 111210

LineOne

Ease of use	★ ★ ★ ★ ☆
Performance	★ ★ ★ ☆ ☆
Features	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ★ ☆
Overall	★ ★ ★ ☆ ☆

With CompuServe, AOL, MSN and a sprinkling of other on-line services throughout the world, you may be wondering if another such service can work. News International might be too but that hasn't stopped it from teaming up with BT, in a partnership called Springboard Internet Services, to launch LineOne.

Although it is an on-line service, LineOne is Web-based and uses a customised version of Microsoft Internet Explorer for Windows 3.1, 95 or the Mac. Once you're past LineOne's login screen, the interface is pleasingly straightforward.

There are three main parts – links to LineOne's various services are lined up on the right, providing a quick means of navigation wherever you are. Step into an area, *The Sun* on line, for example, and the area's sections (news, Page 3, features, and so, in *The Sun*'s case) are displayed on the left. The final stage is when the content itself appears in the middle. This approach is maintained throughout LineOne and the consistency makes it easy to use.

LineOne's content is of mixed usefulness. The on-line editions of *The Times* and *Sunday Times* are useful but these happen to be already freely available on the Internet. *The Sun* and the *News of the World* aren't but they don't have quite the same value as research and news resources.

The Sky News and Sports service has up-to-date information and a searchable archive. There are also video clips for stories and live Sky News audio via RealAudio broadcasts. There's the usual selection of weather and entertainment guides, and ticket-seller First Call's involvement means that you can buy tickets on line.

Other parts of LineOne offer features such as Web site and game reviews, areas for children, and home finance help and information. Graphics are widely used and, although screens can get a little cluttered at times, it's still fairly clear to see what's going on.

Another useful LineOne feature is the Intelligent Agent. This is an area at the bottom of the screen with three buttons. Click on Links and links for stories and information relating to the area you're currently looking at are displayed.

There's also a button to search LineOne's content and an on-line diary. The diary offers what seem to be the usual day and month views and allows you to enter timed appointments to which you can attach an e-mail alarm.

Like AOL and Delphi UK, LineOne doesn't have an off-line reader for its internal forums – a must for anyone wanting to control the size of their phone bills. You may also dislike the presence of advertisements and animated graphics on many pages.

Although it is the way the Web works, point-and-click isn't a solution for everything either. AOL works with keyboard shortcuts just as well as the mouse and in something like on-line chat, it can be irritating to keep moving your hand between mouse and keyboard.

LineOne is a new service and is still evolving. Although visually it is comparable with AOL and CompuServe, the content and features still have some way to go. News International is one of the world's largest media conglomerates, so financial backing should never be a problem but only time will tell if there really is room in the market for another on-line service.

Wendy Grossman

JVC GR-DVM1

JVC's latest MiniDV digital video camera, now with built-in LCD panel and docking station that links to a PC.

- DV PAL format using MiniDV cassettes
- PCM digital stereo sound (two channels at 48KHz, four channels at 32KHz)
- 60 minutes maximum recording time
- 2.5in, 180,000-pixel TFT panel displaying 400 lines
- Built-in speaker
- Snapshot mode
- F1.6 (f=4.5-35mm) lens
- 670,000-pixel ^{1}/$_3$in CCD
- 10x optical zoom, 100x digital
- Size (mm): 59(w)x156(h)x 94(d)
- Weight: 620g

It's expensive but the GR-DVM1 crams everything into a case the size of a coat pocket that all but the most finicky camcorder user could ever want. The JLIP software is a bit of a let-down but it is still a handy freebie for PC owners.

- £1,999.99
- JVC: 0181 450 3282

JVC GR-DVM1

Ease of use	★ ★ ★ ★ ★
Features	★ ★ ★ ★ ☆
Build quality	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ☆
Overall	★ ★ ★ ★ ☆

Minimum requirements (editing software): Windows 3.1, DX4 processor, 8Mb of RAM, 8Mb of free hard disk space, CD-ROM drive, serial port.

JVC's first attempt at a digital video camera, the GR-DV1, was impressive. Barely larger than a Penguin paperback and yet capable of recording high-quality video with CD-quality stereo sound, it was the most desirable piece of consumer electronics of 1996 and we loved it. Or rather, we used to, because JVC has provided a rival for our affections – the GR-DVM1.

Similar in design to the DV1, the DVM1 has dropped a few features and added some new ones. The most obvious omission is the expanse of brushed chrome used on the DV1 – the DVM1's case has a sturdy matt-grey rubber finish. The confused rear control panel has also gone, replaced by a more logical arrangement of dials and buttons.

The DVM1 is wider and it has a thicker case which makes single-handed use precarious unless the supplied screw-on handgrip is brought into play. The extra bulk does house a useful new addition, though – a fold-out 2.5in TFT panel. This locks snugly into the left of the case and swings out on a hinge at the front. The panel rotates through 270° to adjust the viewing angle and the image flips upside down if the panel is turned back to front for self-recording.

LCD panels aren't quite as intuitive as an eyepiece when it comes to making recordings but the system does have its advantages. Footage can be shot over the heads of crowds in 'periscope' mode and Jeremy Beadle-type accidents are far less likely if you can see where you're walking while recording. The panel can also be used for video playback and has controls beneath it for this purpose. LCD panels aren't noted for their clarity outdoors but the DVM1's is visible in all but the brightest of direct sunlight.

The DVM1 comes with a docking station that connects to a TV, allowing recordings to be seen on the 'big' screen. Add a VCR to the chain and the tedious affair of transferring footage to VHS tape becomes possible. Tedious, maybe, optional, probably not. MiniDV tapes are expensive, which makes reusing them a must. Fortunately, MinDV's digital format means constant re-recording onto a tape doesn't degrade image quality, so it's a workable proposition.

In fact, tape-to-tape transfers with the DVM1 are more fun than usual because the docking station has built-in video-editing. This is usually possible only with additional equipment and it allows the compilation of scenes to VHS tape in any order, with various wipes, fades and special effects. It's a simple process – a small remote control marks the start and end points of each scene and the type of cut between them. Pressing the 'edit' button then hands control over to the docking station, which assembles the footage from DVM1 to VCR automatically.

PC owners will also be intrigued to find a CD-ROM supplied with the DVM1. This contains two Windows applications – JLIP Player and JLIP Video Capture. Briefly, JLIP (Joint Level Interface Protocol) allows equipment with a JLIP interface to be controlled by computer. Plug the DVM1's docking station into a PC's serial port and you're ready for 'expanding applications in the multimedia age'.

At least that's the idea. Unfortunately, the software supplied doesn't really match expectations. The JLIP Player is merely a software version of the docking station's video-editing. It can handle more scenes, and start/end points are marked with the mouse instead of the remote control, but that's all. JLIP Video Capture sounds more exciting but it simply captures stills from the DVM-1 to the PC. Although both applications add to the DVM1's uses, they do little to exploit the vast potential of digital video.

Julian Prokaza

GoldMine 3.2

The latest version of the professional contact manager for Windows 95, now with Internet awareness, built-in spell checker and improved organisational trees.

○ Fully customisable and expandable database structures
○ Mass fax/mail merging capabilities
○ Comprehensive history tracking
○ Pager support
○ Remote data synchronisation

Very powerful and fully customisable, GoldMine looks daunting to use and the interface is dull, but it's one of the best contact managers for the serious user.
○ £347 (inc VAT) for single user; upgrade free to existing GoldMine for Windows 95 users
○ AVG Sales and Marketing: 0171 335 2222; www.avg.co.uk

GoldMine 3.2

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ★
Features	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ★ ☆
Overall	★ ★ ★ ★ ☆

Minimum requirements: 486 or above, 8Mb of free hard disk space, 8Mb of RAM, VGA monitor, Windows 95 and any DOS file record locking compatible network.
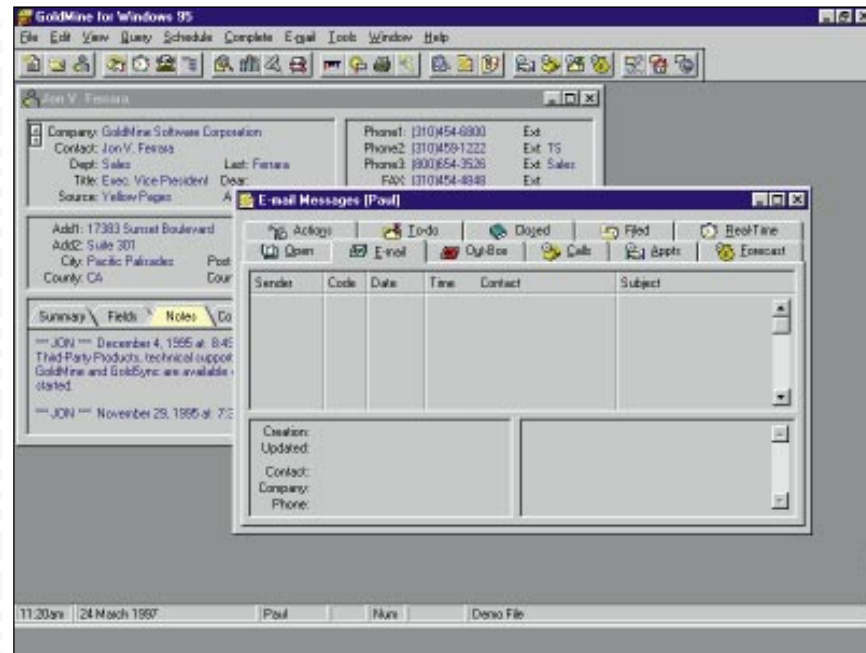
GoldMine is an established and impressive contact manager. It isn't very inspiring to look at, with its grey, dull and slightly old-fashioned interface. Indeed its appearance hasn't changed much since it was first launched. In terms of functionality, however, GoldMine is bang up to date and version 3.2 has a number of new features which make it easier to use.

Version 3.2 introduces several features. You can now display timed and timeless activities and schedule multiple activities per time slot. There is a graphical planner and you can create an Organisational Tree to display the hierarchy of a company.

Although not difficult to use, time and effort are required to get the most from GoldMine. It comes with three manuals, from which you'll gather that it is a hefty program in more ways than one. However, GoldMine is a solid application whose functions go far beyond that of a glorified address book which some people confuse with contact management. The functions it can perform include day and time planning, sales automation (including forecasting, analysis and lead management), mail list management with group 'calendaring', database design, data synchronisation and e-mail messaging.

The main contact screen is split between general contact information, like company name and telephone numbers, and several tabbed cards which give quick access to more specific information such as alternative contacts and notes. Creating a new contact is simple and there are a number of tricks to speed up data entry. For example, if you type in a postcode, GoldMine automatically inserts the city and country.

All the other usual contact management modules are present, such as a calendar and a to-do list. Of considerable value is the Information Centre – a knowledge base which can be personal or shared. This is the place to store all those documents you never seem able to lay your hands on when you need them – price lists, technical information, help files and so on. GoldMine now has an integrated spelling checker and user dictionary, so the Information Centre will never contain spelling mistakes.

The software integrates with popular Windows applications, such as Microsoft Word, WordPerfect, AmiPro and Excel, and links your documents directly to your contacts. It also comes with its own e-mail editor, and a superb new feature is the ability to send messages from GoldMine to alpha-numeric pagers and have the contact manager remind you of your activities by forwarding alarms to your own pager.

GoldMine has also taken full advantage of the Internet. You can now send and receive e-mail messages directly from a contact record and the integrated spell-checker will check the spelling in your message. You can also use GoldMine to import contact data created from an incoming e-mail message and process the information, perhaps turning the contact into a client.

The software's great strength is its full customisability, which means that its use isn't restricted to a sales force. It can be adapted for use by numerous departments in a company, from accounts to the customer helpline, making it worth considering by any business that wants its contact management software standardised company-wide.

Paul Begg

Sharp PC-9090

A multimedia Pentium notebook with a high-resolution screen and ports for importing and exporting motion video.

○ Intel Pentium 150MHz processor
○ 256Kb of pipeline burst cache
○ 24Mb of EDO RAM (maximum of 56Mb)
○ Hitachi 1.6Gb hard disk
○ Removable 3.5in floppy drive
○ Removable 10-speed Matsushita CD-ROM drive
○ Two Type II PC Card slots (fits one Type III card)
○ 2Mb S3 graphics controller
○ 12.1in 1,024x768-pixel TFT screen (at 65,536 colours)
○ Integrated Creative Labs 16-bit audio with stereo speakers and microphone
○ Standard cable and S-video inputs plus video-out port
○ Infra-red serial port (4Mbits/s IrDA 1.1 standard)
○ Lithium-ion battery
○ Weight: 3.5kg to 3.7kg depending on configuration
○ Dimensions(mm): 297(w)x245(d)x58(h)
○ Windows 95 plus system, audio and power management utilities included

The Sharp is a good-quality notebook which benefits from modularity and an impressive high-resolution screen. However, unless you specifically need the video ports and the screen, you don't have to spend this much money on a portable
○ £4,577 (inc VAT)
○ Sharp: 0800 262958

Sharp PC-9090

Features	★ ★ ★ ★ ☆
Build quality	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ☆
Value for money	★ ★ ★ ☆ ☆
Overall	★ ★ ★ ★ ☆

This season's fashion in notebooks has several defining features, most notably a modular build allowing for full multimedia functionality (despite the limited space available), an active-matrix screen capable of at least SVGA (800x600) resolution and Lithium-ion batteries.

Judged by these criteria, the Sharp PC-9090 qualifies as trendy and up to the minute, although some might wonder why the company chose a standard Pentium 150 processor instead of the MMX-enhanced version now available.

This slightly puzzling choice aside, the rest of the system makes sense – 24Mb of EDO RAM (enough to run MS Office at a realistic pace), 256Kb of pipeline burst cache and a reasonably large 1.6Gb hard disk. What might be a little harder to swallow is its price of £3,895 excluding VAT, although this is a recommended retail price which will be discounted to some extent.

The Sharp is a fairly thick-set machine which can weigh as much as 3.7kg with its battery and CD-ROM drive module installed. The weight also includes a built-in mains transformer, which is normally a separate unit, although something that you'd still need to carry around.

In addition to the usual ports (which include a docking station connector, a 9-pin serial port and a mini-DIN mouse/keyboard socket), there's a fast 4Mbits/s infra-red serial interface and a pair of inputs for motion video that allow you to connect to the video source using either S-video or standard cable.

The lower of the machine's two Type II PC Card slots supports Zoomed Video, which provides a direct connection between the slot and the machine's video subsystem. This reduces the impact of video processing on general performance, for example, when using an MPEG decoder card to uncompress video clips.

The floppy disk drive and the 10-speed CD-ROM module are removable and the battery pack can fit in either of the two bays. An optional second battery can be used to double the machine's running time but there's no provision for running either of the drives externally with an adaptor cable, so you can't have both in operation and run on battery power at the same time.

The Sharp's keyboard is pleasant because it combines the advantages of a logical, standardised layout with a fairly perky action. A wide palm-rest, correctly functioning mouse pad and tilt feet in the base all play their parts in making the machine that bit more comfortable and add to the general air of quality.

The speakers were quite powerful and not as awful as most notebook audio systems, but what really caught our attention was the large 12.1in TFT screen. This runs at 1,024x768, a mode more commonly associated with larger desktop monitors. Despite this relatively high resolution, the screen was easily readable and the presence of 2Mb of graphics memory means that users wanting near-photographic quality images can run in 65,536 colours without needing to drop the resolution to SVGA.

You can change the power management settings using a software utility from within Windows. A fully charged battery lasts an average of two hours of moderate usage, although this can be doubled if you remove the remaining drive module and substitute a second battery.

Dominic Bucknall

First Aid 97

A completely rewritten version of CyberMedia's automatic problem solver and fixer for Windows 95 and its applications.

First Aid 97 attempts to prevent and fix problems with Windows 95. Installation of the program is largely automatic but you are given the chance to copy the reference database onto your hard disk and asked whether you want to install Dr Solomon's FindVirus and the Oil Change feature. The latter provides software updates via the Internet and if you haven't got the latest version of Internet Explorer, First Aid will install this too.

Once installed, part of First Aid loads automatically every time you start Windows 95. This is the Guardian module and it sits in the background, keeping an eye on your PC and trying to anticipate problems that might cause you to lose your work.

If a Windows program is about to crash then Guardian's Crash Protector pops with up a message telling you it has just stopped it and offers to fix the problem or close down the offending program. A second level of protection is provided by the Computer Program Reactivator, which can be invoked by a right mouse click whenever a program freezes. The idea is that you reactivate the program, save your work, then close it down.

During several days of experimentation, we had only occasional success when attempting to reactivate frozen programs. Whenever Crash Protector popped up to tell us it had prevented an error, it couldn't restart the offending program and always closed it down.

Another Guardian feature is a warning system to tell you when memory and disk space are low or when part of a program is missing, giving you the chance to resolve the situation before things get critical. This worked fine.

Apart from the automatic Guardian, there's a separate First Aid program offering three facilities. The first is to automatically carry out a basic check of your PC's hardware and the way Windows is set up to find any problems. In our case, it came up with an alarming list of more than 60 items, most of which related to missing files. When we investigated further, they were usually components of programs we had elected not to install. Only two of the 60 items offered any genuine improvement to Windows 95's operation.

The second facility is a reference database. It's easy to use in the sense that if you click on a picture of a disk drive you get information relating to hard disks, but then you have to wade through a laborious set of screens to try and find the precise information you want. A natural language query system into which you could type questions in English would be a better approach. Answers to questions are not illustrated and we got fed up with reading advice along the lines of 'confirm that your drivers and IRQ settings are correct', accompanied by a warning that such work should be performed by a qualified computer technician only. Isn't the lack of computer technicians the reason why people buy programs like this?

Finally, there's the Emergency Care section. Here you can make an emergency recovery disk to start up your PC if the hard disk fails and also create backup disks. Windows 95 can do both these tasks without using First Aid so the only useful part of Emergency Care is the BackTrack feature. This logs changes made to critical Windows files and lets you go back to a previous setting if an alteration screws up your PC.

Paul Wardley

- ○ Simple graphical interface
- ○ Crash Protector aims to prevent system breakdowns
- ○ CPR (Computer Program Reactivator) restarts frozen programs
- ○ One-click check-up procedure looks for potential problems
- ○ Early warnings of dangerous conditions such as low system resources or disk space
- ○ Dr Solomon's FindVirus software is included
- ○ Makes emergency start-up floppy disks in case of hard disk failure
- ○ Internet link to keep First Aid utilities up to date

This program promises more than it is able to deliver. For the complete novice with no other means of technical support it offers some peace of mind, but not total security.

- ○ £34.95 (inc VAT)
- ○ CyberMedia: 0800 973631

First Aid '97

Features	★ ★ ★ ★ ☆
Performance	★ ★ ☆ ☆ ☆
Ease of use	★ ★ ★ ☆ ☆
Value for money	★ ★ ★ ☆ ☆
Overall	★ ★ ★ ☆ ☆

Minimum requirements: 486DX or greater, Windows 95, 8Mb of Ram, CD-ROM drive, 17Mb of free hard disk space, optional modem and Internet connection for software updates.

CV Write Away System

A low-cost, effective and easy-to-use solution for producing and managing your own – or other people's – CVs.

○ Comes with a database of 250 major employers
○ Geared to produce single-page CVs, for greater impact
○ Over 50,000 available formatting options
○ Automatically records details of all letters sent and CVs produced
○ Free technical support for one year after purchase

CV Write Away is an effective and very straightforward way to produce professional-looking CVs. Although the content is still left to the user, the program's structure goes a long way to helping with the creation process.

○ Family edition £17.89; Professional Marketing Pack £89 (inc VAT)
○ HSC: 01938 570428

CV Write Away System

Ease of use	★ ★ ★ ★ ★
Performance	★ ★ ★ ★ ☆
Features	★ ★ ★ ★ ★
Value for money	★ ★ ★ ★ ☆
Overall	★ ★ ★ ★ ★

Minimum requirements: 2Mb of RAM, 3Mb of free hard disk space, Windows 3.1.
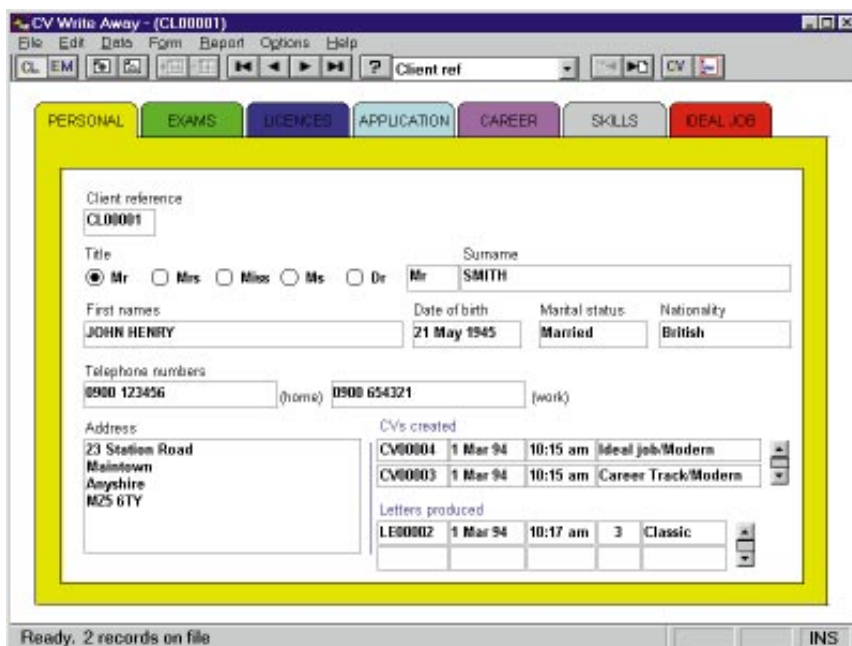
Most of us, at one time or another, need a CV. While major word processors now have templates and wizards to help you produce a smart-looking CV, the range of formats is very restricted. They merely give you the ability to produce a simple CV and offer little or no help on deciding what information to include or how to best present it.

Enter CV Write Away, a 'Professional Career Management System'. There are other programs that offer the ability to manage your own career in considerable depth but CV Write Away is unique in also letting you do the same for other people, if you pay extra for the Professional Marketing Pack. The cut-down, Family edition, however, is more than adequate for personal use.

Installing CV Write Away takes no more than a few minutes and even the Professional Marketing Pack is supplied on only three floppy disks. When the program is first started, a 'hint' message appears that gives a pertinent tip on using CV Write Away, rather like the ones that pop up in Microsoft's products. The main screen is the 'Clients Database' and in the Family Edition, the number of people whose CV information can be stored (the clients) is four. The Professional Marketing Pack has no such limitation.

Information about each client is split into seven separate groups. For example, details of academic qualifications are entered in Exams, while details of full-time employment are recorded in Career. The coverage is wide and effective, while entering the data is simple.

Creating a CV is equally straightforward. With the appropriate information entered, all that's required is to select a client, pick a CV type and then click the 'print' button. CVs can be previewed before printing, saved as a file or copied to the clipboard for pasting into a word processor. The Professional Marketing Pack also allows CVs to be saved as a Web file, although they are limited to a single style unless the underlying HTML code is altered manually.

Complementary to the Clients database in the Professional Marketing Pack is the Employers Database that stores company names, addresses and contacts. However, the real benefit comes from the effective use of a more specialised feature: keywords. Employer entries can be categorised according to the client who supplied them, simply by inserting the client's reference number in a special field. Employers can also be classified by occupation – PUB to denote publishers, for example. There are no pre-set categories, though – it's up to users to create their own. All this becomes especially helpful with another CV Write Away feature – the Ideal Letters Helper.

The Ideal Letters Helper is a wizard to help with the process of creating letters to accompany CVs. It allows the style of the opening, middle and closing paragraphs to be specified; keywords can be entered to restrict the targeted employers in a mail shot; the text edited; and, finally, the letters printed.

The Professional Marketing Pack comes with template forms and questionnaires, sample CVs and instruction booklets that can be used as models for dealing with clients. The Help files contain full instructions on how to do this and the software can be used to provide a full CV production service. If you don't need this extra functionality, the Family edition represents particularly good value.

Stephen Copestake ▶

⬤ **Reliability** survey

Fill out our survey form to enter a prize draw for a FREE one-year subscription to *What PC?*

Most of us depend on our PCs at work or at home, but just how reliable are they? Tell us about your system by filling in this form and return it to us at *What PC?*

editorial, Reliability survey, VNU Business Publications, 32-34 Broadwick Street, London W1A 2HG. The first 10 out of the hat will receive 12 issues of *What PC?* absolutely free.

What make is your main desktop PC?

❑ Acer
❑ Adams
❑ Apple
❑ Apricot
❑ Aries
❑ Armari
❑ AST
❑ Brother
❑ Carrera
❑ CIC
❑ Colossus
❑ Commodore
❑ Compaq
❑ Compuadd
❑ Dan
❑ Dell
❑ Digital
❑ Dotlink
❑ Escom
❑ Evesham Vale
❑ Fujitsu/ICL
❑ Gateway
❑ Hewlett-Packard
❑ Hi-Grade
❑ Hyundai
❑ IBM
❑ ICL
❑ Mesh
❑ MJN
❑ Olivetti
❑ Opus
❑ Packard Bell
❑ Red Box
❑ Special Reserve
❑ TAG
❑ Tatung
❑ Tiny
❑ Tulip
❑ Viglen
❑ Zenith
❑ Other (state) ....

What processor type is your main desktop PC?

❑ Pentium   ❑ 486   ❑ 386   ❑ 286

How long ago was your desktop PC purchased?

❑ Less than 3 months   ❑ 3 months to a year
❑ One to two years   ❑ Over two years old

Has your PC ever broken down?

❑ Yes   ❑ No

If so, what was the problem to do with?

❑ Hard disk drive
❑ CD-ROM drive
❑ Floppy disk drive
❑ Processor
❑ Memory
❑ Power supply unit
❑ Motherboard fault
❑ Serial or parallel interface
❑ Internal modem (if supplied with PC)
❑ Keyboard
❑ Mouse
❑ Windows 3.1
❑ Windows 95
❑ Business software application
❑ Leisure software (ie game, multimedia, etc)
❑ Sound card
❑ Graphics card
❑ Monitor
❑ Don't know
❑ Other (state) ....

How did you fix it?

❑ Did it myself
❑ Sent it back to manufacturer/supplier
❑ Manufacturer/supplier serviced it on-site
❑ Phoned manufacturer's technical support line
❑ Repair shop
❑ Friend
❑ Still broken

How do you rate the support you got from your supplier/manufacturer?

❑ Very good   ❑ Satisfactory   ❑ Poor

How do you rate your desktop PC for reliability?

❑ Very good   ❑ Satisfactory   ❑ Poor

Do you have a printer? If so, is it a...

❑ Laser (including LED printers)   ❑ Inkjet printer
❑ Dot-matrix printer
❑ Other (state) ....

What make is your main printer?

❑ Apple
❑ Brother
❑ Bull
❑ C.Itoh
❑ Canon
❑ Citizen
❑ Dataproducts
❑ Epson
❑ Fujitsu
❑ Hewlett-Packard
❑ Integrex
❑ Kyocera
❑ Lexmark
❑ Mitsubishi
❑ Oki
❑ Olivetti
❑ Panasonic
❑ QMS
❑ Samsung
❑ Seikosha
❑ Sharp
❑ Star
❑ Tally
❑ Tektronix
❑ Triumph Adler
❑ Xerox
❑ Other (state) ....

How long ago was your printer purchased?

❑ Less than 3 months   ❑ 3 months to a year
❑ One to two years   ❑ Over two years ago

Has your printer ever broken down?

❑ Yes   ❑ No

If so, what was the problem to do with?

❑ Paper feed
❑ Toner cartridge
❑ Ink cartridge/print head
❑ Power supply unit
❑ Leads/connections
❑ Software (drivers etc)
❑ Don't know
❑ Other (state) ....

How did you fix it?

❑ Did it myself
❑ Sent it back to manufacturer/supplier
❑ Manufacturer/supplier serviced it on-site
❑ Phoned manufacturer's technical support line
❑ Repair shop
❑ Friend
❑ Still broken

How do you rate the support you got from your supplier/manufacturer?

❑ Very good   ❑ Satisfactory   ❑ Poor

How do you rate your printer for reliability?

❑ Very good   ❑ Satisfactory   ❑ Poor

Name: ....

Address: ....

....   **Postcode:** ....