Game of the month: TERRA NOVA System Shock goes to war

With unofficial Quake user guide

PCREVIEW • Issue 54

PC REVIEW

THE COMPLETE GUIDE TO PC LEISURE

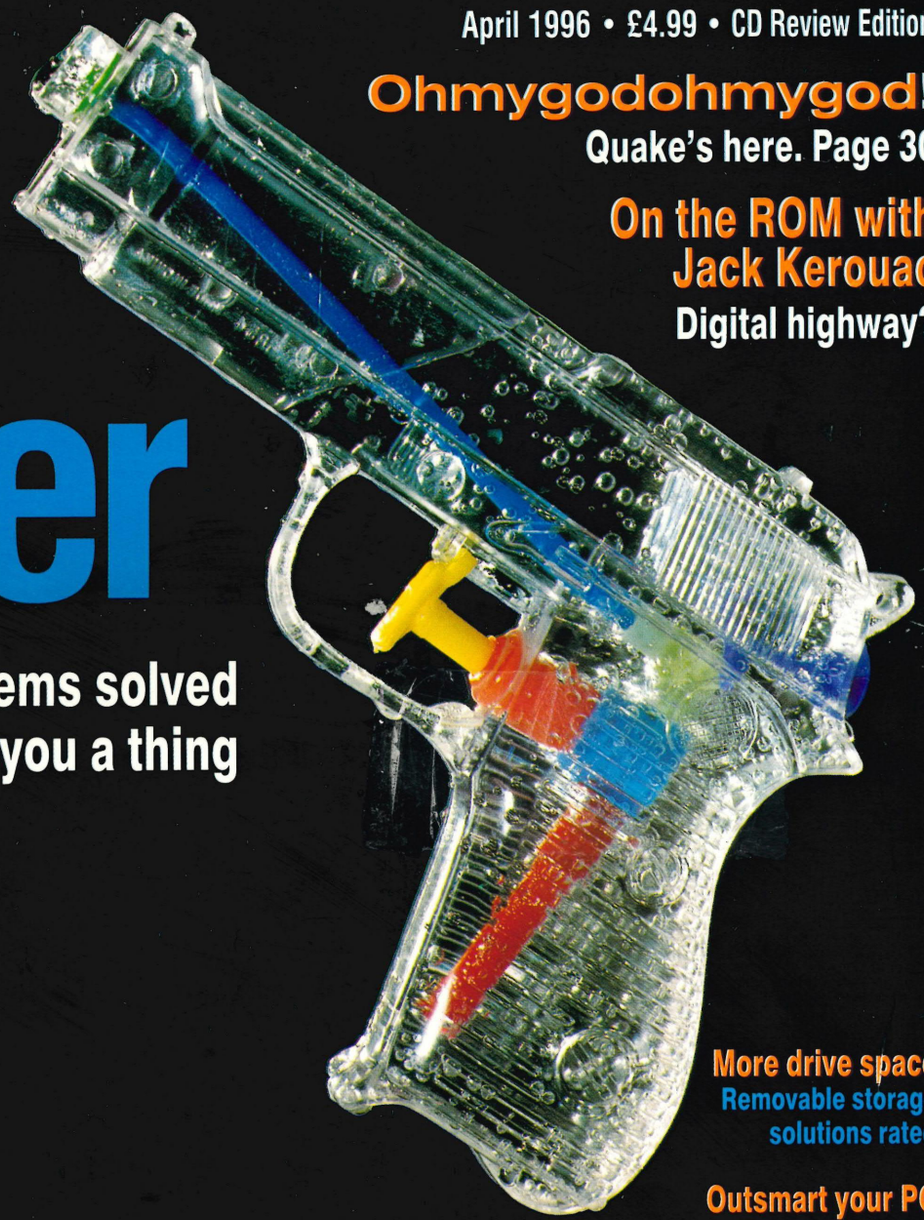
April 1996 • £4.99 • CD Review Edition

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Quake's here. Page 30

On the ROM with Jack Kerouac
Digital highway?

Trouble Shooter

Your most common PC problems solved
Over 50 fixes that won't cost you a thing



PGA Tour Golf 96
Play a few holes of the killer golf game

AutoDesk Animator
Make your own NASA movies

Cakewalk Pro Audio
Write your own dance tunes

Into The Void
Exclusive stragegy wargame demo

Afterlife
Try the LucasArts god game with Zombies

More drive space
Removable storage solutions rated

Outsmart your PC
Chess expert shows you how

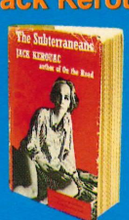
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Hard drive recording explained

Think you know about cars?
Find out more with the Net and CD-ROM

• Watch out, Guv. He's got a shootah! •

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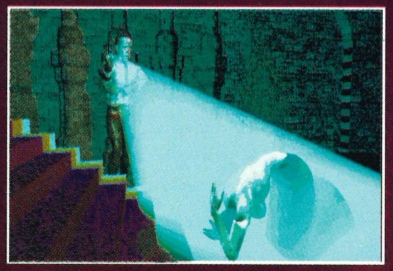
To serve king, God and country.



On a valiant journey from Camelot...



To Lyonesse.



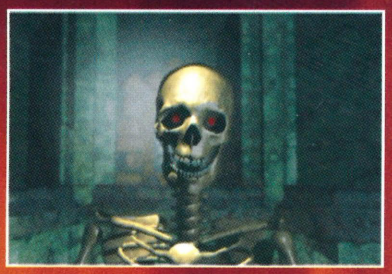
Aid the struggle of virtue...



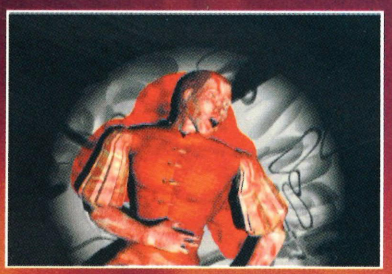
Against malignant sorcery



In a legendary tale of magic...



mystery...

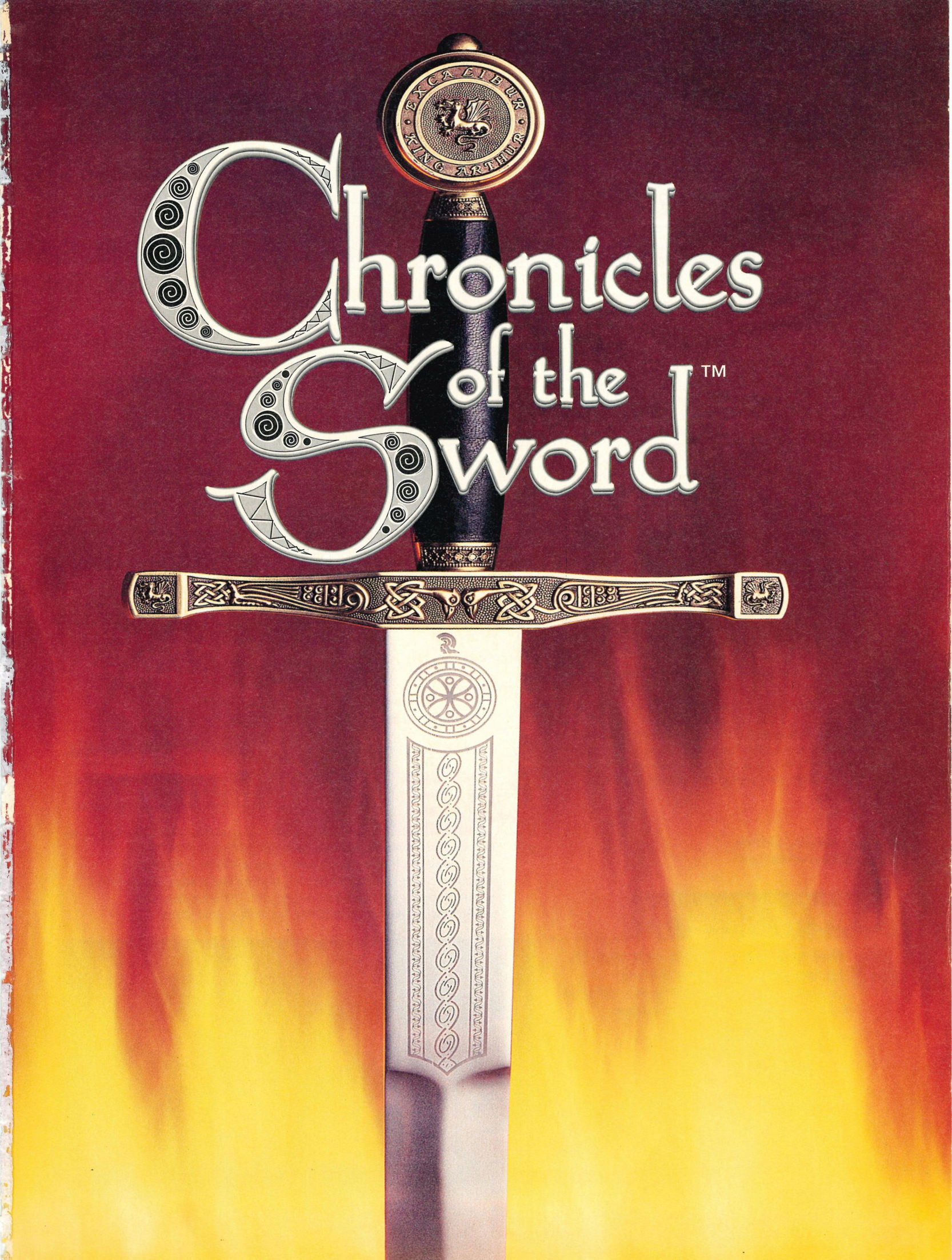


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Chronicles
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April 1996 Issue 54



What's going on? Your issue of *PC Review* has a new on-sale date, and there's all sorts of things that just don't feel familiar; the pages have subtly different designs, the writers' names are all new and it's even printed on nicer paper.

I'm to blame. Well, me and the company I work for, that is. You see, *PC Review* is now brought to you by Future Publishing – the home of such best-selling magazines as *PC Format* and *PC Gamer*. I'm James Binns, the new editor and I hope that you enjoy our debut issue.

This month our lead feature looks at sorting out all those trifling things that can go wrong with your computer. You'd be surprised how easy it is to maintain a PC – without recourse to expensive help lines, propellor head friends or big hammers and nine-inch nails. Become a Trouble Shooter today!

You'll also find our exclusive guide to getting the most out of *Quake*... if you haven't seen it yet, then you're seriously missing out. It's the business.

Enjoy the magazine and if there's anything you think would make it better then drop me a line. I'm looking out for feature ideas and promise to answer any mail marked 'Try this!' personally. See you next month.

James Binns, Editor
(jbinns@futurenet.co.uk)

Competition

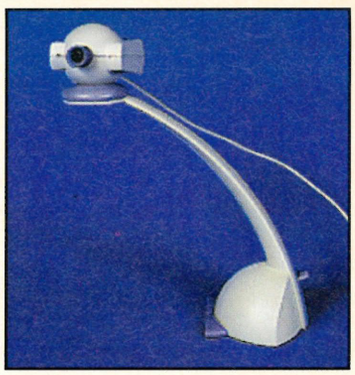


Want a new PC?

Win a Dan multimedia Pentium PC in our reader survey competition. Tell us about yourself and you could also win one of a 100 copies of Gremlin's latest game, Normality. Simply fill in the reader survey form included with this magazine, send it in, and you'll be entered into the grand prize draw.

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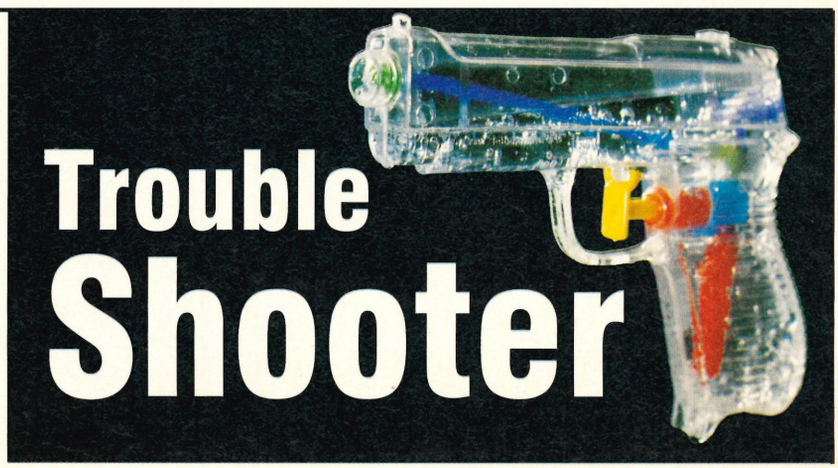
Who's watching you? We bring you the first photos of Philips' new digital eye in our News section, starting page 24.

CD REVIEW

14 Our massive nine-page guide to getting started with all the entertainment on this month's coverdisc. We're featuring an exclusive demo of *Terra Nova*, not to mention a complete home accounts package, *MoneyBox 4.06*, and the sound editing application *WaveLab*. Something for everyone's taste.

Cover Story

6 Get tooled up with our guide to solving all your most common PC problems. Show the machine who's boss.
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TS



Quake.
Big blokes.
Big guns.
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Highlights

30 Quake Report
We bring you the first screenshots of the best thing since Doom. Plus how to get your hands on the Public Test version for free and our unofficial user guide.



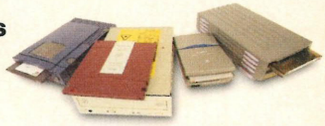
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95 On the ROM with Jack Kerouac
Meet THE beat writer, author of The Subterraneans and On The Road in our review of the latest literary multimedia CD-ROM.



Jack Kerouac's view of God.

110 More drive space
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Removable storage group test.

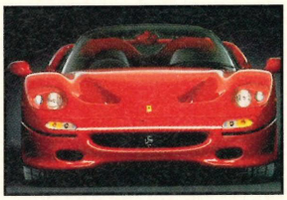
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The Ferrari F50. The Internet may be as close as you get.

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MULTIMEDIA

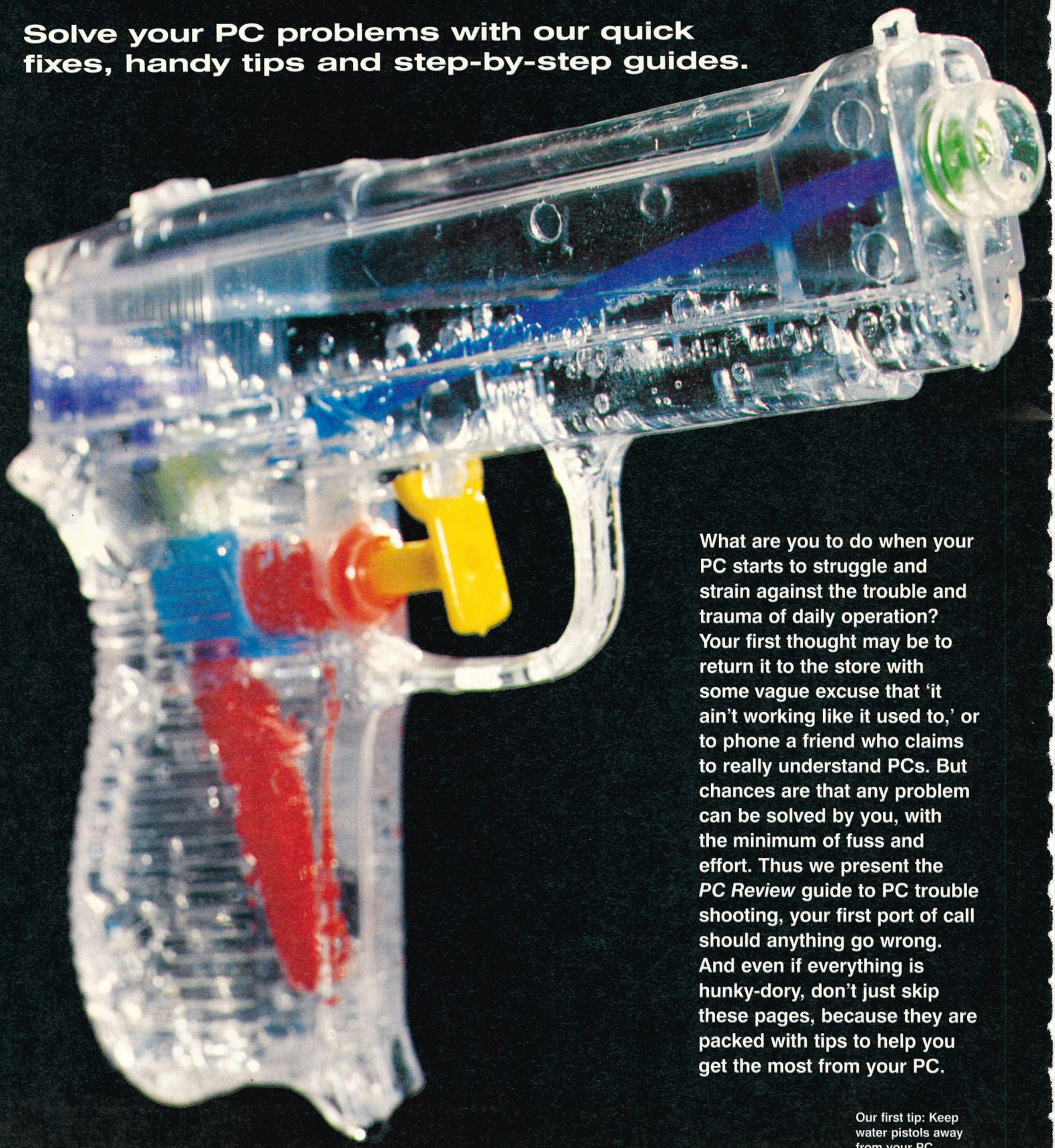
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We ignore the hype about the award-winning Scrutiny in the Great Round and tell it like it is on page 102.

Trouble Shooters

Solve your PC problems with our quick fixes, handy tips and step-by-step guides.



What are you to do when your PC starts to struggle and strain against the trouble and trauma of daily operation? Your first thought may be to return it to the store with some vague excuse that 'it ain't working like it used to,' or to phone a friend who claims to really understand PCs. But chances are that any problem can be solved by you, with the minimum of fuss and effort. Thus we present the *PC Review* guide to PC trouble shooting, your first port of call should anything go wrong. And even if everything is hunky-dory, don't just skip these pages, because they are packed with tips to help you get the most from your PC.

Our first tip: Keep water pistols away from your PC.

HARDWARE SOLUTIONS

Most hardware problems can be solved by checking your PC's setup. Often it's the software that's at fault.

Modern PCs are good for three to five years. If a PC which you've been using for a while is suddenly out of sorts, there's no need to panic.

These days, most PCs run Windows or Win95. These operating systems rely on the complex interaction of many different kinds of software. As far as hardware is concerned the most important type is the driver, also called a device driver or software driver.

Every type of hardware in your PC has its own driver. Examples include modems, hard drives, graphics cards, printers, CD-ROM drives, floppy disk drives and sound cards.

The single most common cause of a hardware problem under Windows is a driver failure. For one reason or another, the driver software running in memory becomes corrupted. The easiest way to fix it is to re-boot your PC. Close all your programs, exit Windows and either press the Reset button or turn the power off and on again.

If the hardware was working properly yesterday, this will usually put it right. However, it won't cure a mechanical problem. PC hardware can physically fail, and replacement is usually the only solution. If you are changing your hardware setup the best way to avoid problems is to read the instructions – and follow them.

Three steps to a faster hard drive

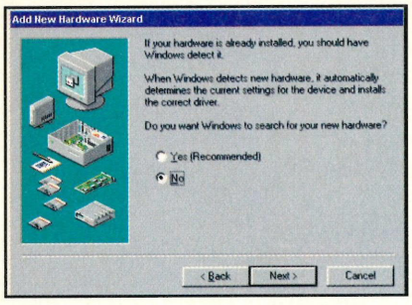
You can make hardware appear faster by ensuring your software makes the best use of it. Here are three ways to improve the performance of your hard drive.

1 Defragment it every month. As files and programs are written to and erased from your hard drive they become physically fragmented across the drive. Collecting pieces from all over is slower than fetching them in one lump. Use the Defrag utility on your PC to speed your drive up by putting all the pieces back together again.

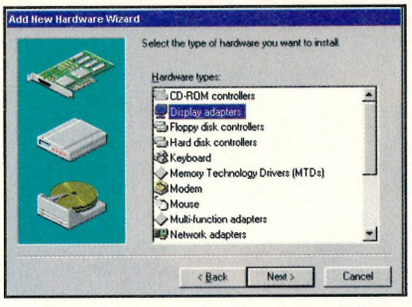
2 Ensure you're running a software cache. This keeps a copy of the most recent read from your hard drive in memory. If a program needs that data again, it can be loaded from the cache, which is quicker than loading it from the hard disk. DOS 5 and 6 have SMARTDrive and an improved version comes with Windows. It's built into Win95.

3 Compress your drive. DOS 6, Windows and Win95 include DriveSpace, a disk driver that compresses and decompresses data as it's written and read. Because the files are smaller they take less time to read from the hard drive, so PCs with a 486DX66 or better processor will appear faster. Data compression is extremely reliable.

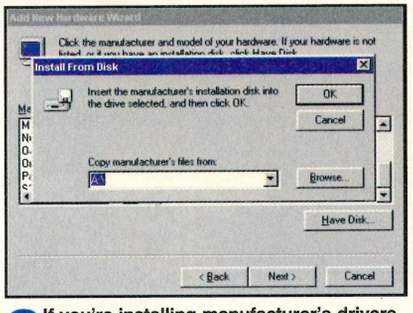
Installing a video driver in Win95



1 If you have downloaded drivers from a BBS or the Net, you should dearchive them to a floppy disk or directory. Start Add New Hardware from the Control Panel and tell it you want to take control. Then click on Next.



2 Select the type of hardware you want to install a driver for – a video adaptor in this case. Win95 will usually auto-detect your video card; you can also select it from a list or install drivers from a manufacturer's disk.



3 If you're installing manufacturer's drivers click on Have Disk and either insert a floppy disk or select Browse and find the directory in which you put the new drivers. Windows 95 will do the rest.

Five Top Hardware Fixes

1 Use the latest drivers

Newer software drivers work faster and more reliably. The best place to get them is on-line. Most manufacturers either post them on commercial services such as CompuServe or on their own bulletin boards or FTP sites. Start your hunt by using one of the search engines to locate the company's Web site.

2 Secure cables

Movement can distort cable connections causing intermittent failures. Always use any clips, thumb screws or other device supplied to secure cables to connectors. Similarly, use backplate screws to fix expansion cards.

3 Check monitor settings

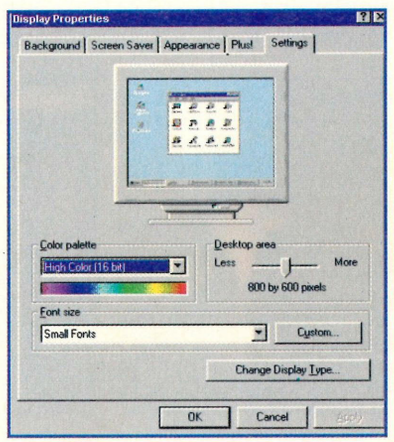
Reduce flickering by making sure your monitor runs at its highest vertical refresh rate. Win95 runs SVGA modes at 60Hz by default. You may need to run a DOS utility to alter this setting

4 Set up your video card

Your video card works faster at some colour depths than others. Most are best in 16-bit colour (64,000 colours) mode. This doesn't give you photorealistic colour, but it's more than adequate for most purposes. Lower resolutions also mean less work and faster response. Experiment to find the best combination.

5 Optimise BIOS settings

Manufacturers are conservative about machine set-up. Your PC may run faster, with more aggressive BIOS settings for clock speeds and memory wait states. Note old settings just in case.



Some combinations of colour depth and resolution are faster than others. If you're running image-editing software, you may need 24-bit TrueColour, but otherwise 16-bit HighColour should suffice.

Definitions

Drivers
Software programs which control hardware devices. The driver translates generic instructions from your application or system software into specialised commands which control the device in question.

Refresh rate
The number of times per second the screen is redrawn.

Colour depth
The number of colours your video card is set up to display, commonly 256, 64,000 or 16.7 million. You need more memory on your video card for the greater colour depths.

Screen resolution
The number of pixels (expressed as width x height) displayed on your monitor.

BIOS
Built-in software that contains the code required to control the keyboard, screen, disk drives, serial communications and various miscellaneous functions. It is generally stored on a ROM chip so it is always available and cannot be damaged by disk crashes.

WINDOWS 95 SOLUTIONS

Most of the problems you'll encounter in Win95 can be solved with either an upgrade or a little understanding.

Legacy Windows An older version of the Windows operating system, such as Windows 3.1 or Windows for Workgroups.

Context menus Menus that attempt to anticipate your needs. Win95 context menus are activated by clicking the right mouse button, and the items listed depend on where you click and what you're currently doing.

Desktop The screen you see when you aren't running any programs. You can place icons on the Win95 Desktop for quick access to your favourite programs.

Overall, Win95 is reliable and robust and far more feature-rich than previous versions. The main problems are due to some of the trade-offs Microsoft made to maintain backward compatibility with existing software. Even so, some legacy Windows software won't work properly under Win95.

When you install it, old-style Windows software can make changes incompatible with Win95. For example, it might replace a 32-bit Win95 support file with a 16-bit file of the same name. Normally, Win95 will keep the old file and put it back when it needs it. This may stop the software working at some later date. Only re-installation will fix it. When Win95 replaces such a file it shows a dialog box telling you what it's done. Basically, if you see one of these it's less fuss in the long run to change your software.

Most shareware now works with Win95 but you may not be able to get fixes for all your commercial software. Often the solution offered is to buy an upgrade. If that's the case, treat it as an opportunity to examine whether or not you need the particular problem software and, indeed, whether there is better software available.

Check, too whether you still need the Windows utilities you carried over when you started using Win95. Disk-editing utilities are out as they play havoc with Win95 long file names. Utilities that add context menus, icon bars, launch menus, undeletion and wastebins are all redundant as they duplicate features built in to Win95. Use the Win95 feature and lose the utilities.

Many of the benefits provided by Win95, such as more efficient 32-bit code, long file names, more flexible dialog boxes, OLE 2 support and so on aren't available to legacy software. If upgrading your current software isn't an option, go for Win95 versions of shareware and public domain programs.

Finally, the more you understand about Win95, the more you'll get out of it and the fewer problems you'll have. Many things happen via the context menus which appear when you click on something with the right mouse button. Check them out, along with the Help system, which is full of step-by-step instructions for a variety of solutions.

Windows 95 hands on: New Desktops for all

If several people have access to your PC, things can get broken – your things. The solution is user profiles. If you enable password access, from the Control Panel, you'll be asked for an identity and a password to get into Win95. As security it isn't particularly effective; you can add new users and passwords whenever Win95 starts. It is effective at providing a private, customised environment.

Once you create your own user profile you can start a version of Win95 customised just for you. Others start their own versions on the same PC. Preferences saved in each user profile include Control Panel settings, Desktop settings, Themes, Taskbar settings, network settings (including dial-up Internet settings), and even preferences in Win95 applications that use the Registry (that is, all properly behaved programs). A separate list of recently used documents is saved for each user.

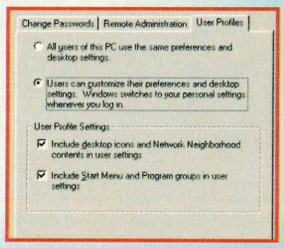
Some of the benefits of this arrangement include having different Internet settings for specific users, or perhaps no dial-up connection for some users. Each user can also have each Win95 application configured to work the way he or she likes.

1 The first step is to enables passwords from the Password icon in Control Panel. Go to the User Profile page and click on 'Users can customise their preferences and Desktop settings.'

2 You can enter a name and password immediately or when you restart Win95. Other people with access to your PC should do the same thing. Encourage users to write their details down somewhere. So many modern systems require user names, passwords and/or PINs that it's easy to get confused.

3 You can now customise Win95 to look and work exactly the way you want it to without worrying about upsetting or confusing other users. They can do the same.

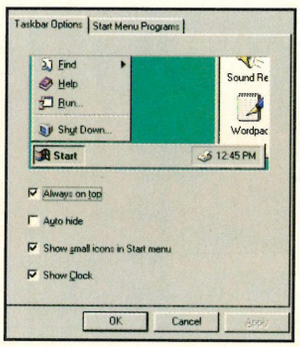
4 Try user profiles to overcome the problem of having others fiddling with your Win95 setup. Let them fiddle with their own instead! Don't rely on the built-in password system for high-level data security, though. If the material on your PC is confidential or sensitive, invest in a third-party security system.



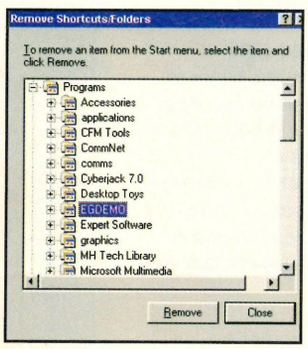
The Win95 password set-up.

Tidying up after trying demos

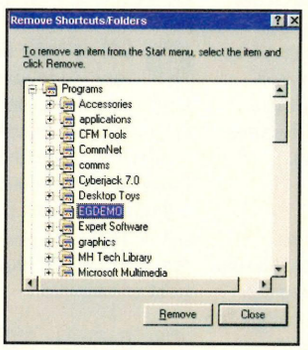
Demos often create program groups which Win95 adds to the Start button Program list. Real Win95 programs can be uninstalled via Control Panel but what about all those older programs you've deleted by hand? Here's how to remove them from the Program list.



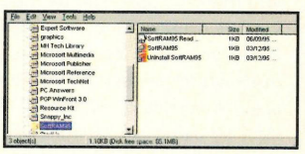
1 From the Start menu select Settings and then Taskbar. This brings up the Taskbar properties box (Alternatively, right-click on the Taskbar and select Properties).



2 Switch to the page marked Start Menu Programs. You'll see three buttons: Add, Remove and Advanced. You're only interested in Remove and Advanced at the moment.



3 The Remove button brings up a simple window showing the Program items. Select one and then Remove it. This deletes the folder, plus all the short-cut icons stored inside it.



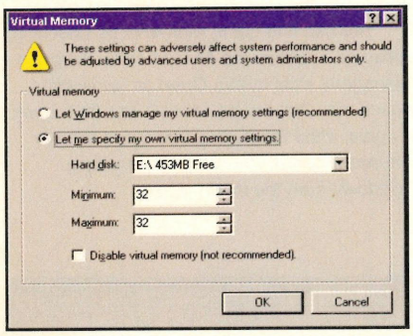
4 If you just want to eliminate icons for Read.me files and so on, use Advanced, which opens a special instance of Explorer to work with (it's special because it displays the Start menu folder automatically, but otherwise it operates just as normal). You can now locate and delete any extraneous shortcuts, or move shortcuts from folder to folder. Don't forget that deleting a shortcut doesn't remove the associated application – you'll have to do that separately.



12 Windows 95 tips

1 Banish some sloth

A slow hard drive can dramatically slow Win95 because of the way it uses swap files. For a more responsive system, force it to use a permanent fixed-size swap file from Control Panel, System, Performance, Virtual Memory.



Make the maximum and minimum sizes the same to create a permanent Win95 swap file.

2 Save it for later

If something you've copied might be useful later, don't lose it. Drag selected text or objects to the Desktop where they will become scrap. These scraps can be dragged into other documents at a later date, or tidied into the Recycle Bin.

3 Die evil program

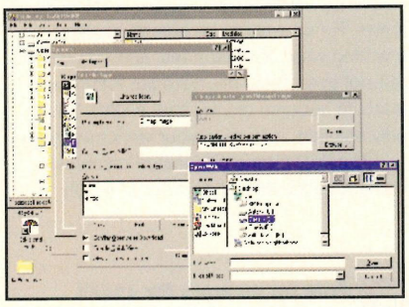
When an application locks up on you, hit [Ctrl][Alt][Del] once. This brings up a list of active applications. From here you can select the dead program and tell Win95 to End Task. It works a treat.

4 Clear some clutter

Simplify the Desktop by setting folders to List view and turning off their status bars. You can also set the Taskbar to use small icons on the Start menu and hide itself until your mouse cursor hits the bottom of the screen. Right-click on the Taskbar to bring up its Properties box.

5 Use the right program

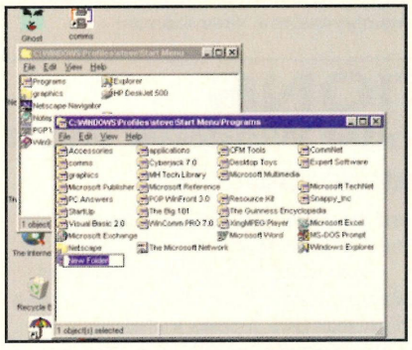
If you want to open a file with a new program open Explorer, click on View|Options, select the relevant file from the File Types page and click Edit. Click Open in the Actions box and then browse for the program you want to use in future.



There are a few boxes to traverse but it's easy enough to make the program of your choice open the files you specify.

6 Simplify the Program menu

If your Program menu is mushrooming rapidly, create a submenu for little-used items. Right-click Start, select Open and click on the Program icon. Click File|New Folder, create new folders, and drag related items into them.



You can add submenus to the Start button Program list to make it more organised.

7 Desktop fine tuning

You can alter the size and spacing of everything from icons to window frames from the Display properties box. Go to the Appearance page and then Item. Select the object type you want to tune and make those changes.

8 What is it?

It's easy to find yourself with a shortcut to a program or file when you actually need to find the program or file itself. Select Shortcut from its Properties box and you'll see the DOS-style path

9 Find it, once

If you're forever hunting for a list of the same files using the Explorer Find command, save time by saving the results of the Find on the Desktop or in a folder. Next time you need your files, the list will be waiting for you.

10 [Alt][Tab] to the Desktop

Yes, it's possible. In Explorer find the folder Windows\Desktop (or the one in Profiles if User Profiles are set up) and drag a shortcut to the Desktop. Open it and you'll see the shortcuts programs and folders from the Desktop. System icons, such as Inbox, you'll have to add manually. Minimise it for fast access.

11 [Ctrl][Esc] to the Start menu

You can bring up the Start menu by hitting [Ctrl][Esc]. This is handy if you run your applications full-screen and don't normally have the Taskbar showing.

12 Right-click on everything

Win95 makes extensive use of the right mouse button and you can discover all sorts of useful shortcuts by right-clicking at random. For example, you can close a minimised application by right-clicking on its Taskbar button.

Swap file
When you run out of memory, Windows creates space by copying some of the data to an area of your hard drive known as the swap file. When that data is needed again, it is 'swapped' back into RAM. This system is also known as virtual memory.

Taskbar
The Win95 Taskbar appears along one edge of the screen and enables you to switch between programs.

Explorer
The Win95 equivalent of File Manager. It enables you to organise your folders (directories) and files. You can also run programs or load files by double-clicking on the appropriate filename.

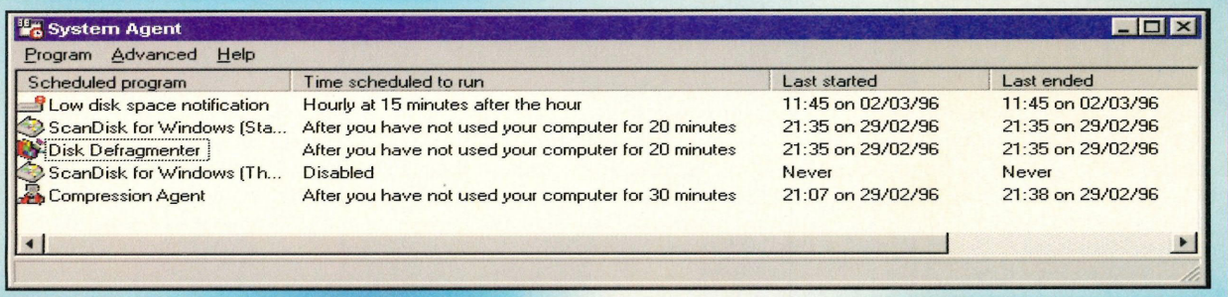
Properties box
A Win95 feature that enables you to find out more about programs, files, drives, system components and so on. You can also use it to set preferences. To open a Properties box, right-click on the object you're interested in and select Properties from the menu.

A little something extra

Okay, so the *Plus!* pack costs money, but hardly any – just £30 – and it provides so many solutions you'd be silly to do without it. And anyway, it makes Win95 look the business.

Plus! comes with an Internet Connection Wizard, a massively useful solution to your Internet set-up problems, and System Agent. This is a rather clever program scheduler which works best with Agent-aware software. Several utilities are set up automatically, including a disk defragmenter, which everyone needs. It also runs the Scandisk utility, a low disk space notifier and it adds an extra level of hard disk compression – DriveSpace 3 – for even better performance.

On the cosmetic side, *Plus!* includes 12 Themes which can completely transform your Win95 environment at the click of a mouse button. You get pretty backdrops, better colour schemes, new icons and even animated cursors.



The System Agent from the *Plus!* pack not only cures problems but can prevent them from occurring in the first place.

LEGACY WINDOWS SOLUTIONS

A massive 90 million users can't be wrong. Windows is the world's most successful graphical computing environment.

The Program Manager
The legacy Windows component used for running programs. Confusingly, it can also contain icons for files.

File Manager
The legacy Windows component used for organising files and directories. Confusingly, it can also be used to run programs.

Memory-resident
A program which sits in memory until it is activated by an event or keystroke. A virus scanner might be activated by a file transfer operation, for example, and a screensaver activates when you stop working.

UAE
Unrecoverable Application Error. A bug or a crash in software resulting in Windows not being able to return to that application or any open documents.

Despite its huge success, Windows suffers from a number of built-in problems. For the Windows user who doesn't care about technical issues the most obvious problem is the schizophrenic way Program Manager and File Manager treat your PC as two quite different places that work in different ways. As a result, some people can never quite tell what's happening.

The best fix for this is to replace Program Manager with a more logical and flexible shell. *Norton Desktop* is the best, though there are various other options, including a number of shareware shell programs.

Another acknowledged problem with Windows is the way it crashes – too frequently – with unrecoverable application errors. It's unusual to be able to recover anything when this happens, and you should re-boot even if you do, because Windows tends to become cranky after a UAE. The only solution, is to save your work frequently.

The final problem is limited resources. Resources are three 64k areas in which Windows stores data it needs quickly. It's easy to run out of resources: Microsoft's *Word* and *Excel* eat about six per cent each time they're closed and re-opened. It might be best to leave such applications running.

You can find out in moments by checking resource usage in the About box on Program Manager's Help menu. Open an application, check resource usage, close it and then open it again. If the Resources free figure is lower the second time your program is eating Windows from the inside. Nasty.

Five Windows tips

1 Make a permanent swap file

Windows makes extensive use of virtual memory – it pretends disk space is memory. A permanent swap file makes it work faster. Set it from the Enhanced icon in Control Panel.

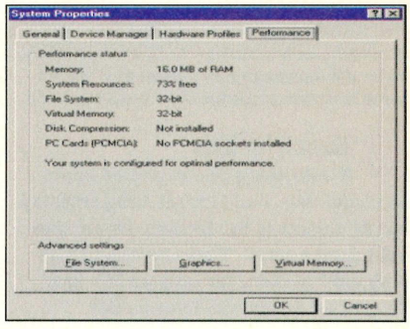
Don't get carried away, though, because the area you've set aside for the swap file is no longer available for storing applications or data files. Check that your disk utilities recognise swap files and leave them alone. Finally, real memory is better than virtual memory, so if you can afford to upgrade your system, do so.

2 Free up memory for speed

Windows seems faster if it has more free memory. Remove wallpaper and unused fonts, minimise applications you aren't using, clear the clipboard and run DOS boxes full screen.

3 Faster disk access

Use 32-bit disk access in enhanced mode. It's faster and more reliable. If it isn't available, it may be because you have a CD-ROM drive on the same IDE channel as your hard drive or use a DOS-based memory-resident virus scanner.



Using 32-bit disk access can make a dramatic difference to Windows' performance.

DOS SOLUTIONS

Until games all run under Windows you'll still have to know a little about what makes DOS run.

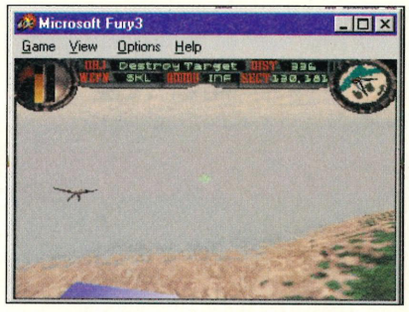
You can run a PC with DOS alone, but it's a waste of hardware. Still, DOS continues to be available either on its own or as a component of Windows and Win95. It's mainly used to run diagnostic utilities and, more importantly, for games.

The two main problems with DOS are the lack of memory available to it and the various kludges developed to get round the memory limitation. Most DOS problems boil down to making enough memory available for a game to run and configuring the kludges correctly.

DOS itself knows about the first megabyte of memory on your PC, and that's it. DOS can use only the first 640K of this 1Mb, some of which is required for DOS itself and the drivers necessary to make your mouse, CD-ROM drive and so on work.

The first kludge was EMS – Expanded Memory System. If you think of the 640K as a book, then EMS supplies a whole heap of loose sheets. While DOS isn't looking it steals a sheet from the end of the book and slips in one containing different information. Few games still use EMS.

These days games use DOS extenders, special programs capable of accessing memory beyond 1Mb. The one supplied with DOS is called EMM386 and needs a second program called Himem.sys to run. Most games, though, use one called DOS 4GW. This is best run on a system with nothing but DOS itself present, though it will also run in a DOS box under Win95.



***Fury,* from Microsoft claims to need Win95... and yet Terminal Velocity runs in DOS.**

Five DOS tips

1 Use the latest DOS

If you aren't using DOS 6 then upgrade. It has better utilities, and more of them, along with a collection of new features, such as boot menu support. This enables you to start your machine with a list of different configurations. For example, you might want different PC setups in which to run games, CD-ROM multimedia leisure titles and Windows.

2 Help is at hand

In DOS 6 you can get detailed help on any command by typing Help followed by the command name. Or just type Help and look it up. The Help system does a lot more than give you a list of command line parameters. It explains the circumstances in which you might use the command and gives you examples. It's case sensitive, so watch out for SMARTDRV.

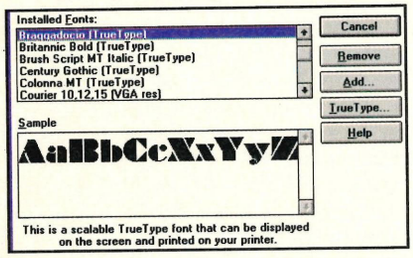
3 Print the screen

You can get a printout of instruction or help screens by pressing the Print Screen key at any time. This works with every DOS command without fail, but isn't as reliable when you are using DOS applications, especially graphical ones such as games. It is, however, worth checking out in a Windows DOS box, where you have a lot more options.



Lose the fonts

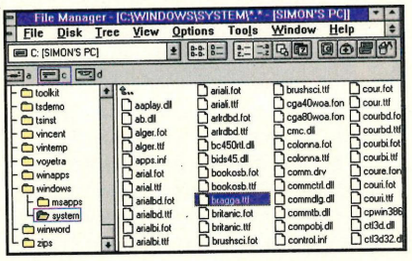
Under Windows, fonts are loaded into memory at start time. This can take a long time if you have dozens, or hundreds, of fonts. Keep just the fonts you use loaded.



1 Double-click the Font icon in Control Panel to see the current fonts. Use the sample window to check them out.



2 You must keep MS San Serif, and it's a good idea to hang on to Arial and Times New Roman, which are often used in Readme files and on-line manuals. There's nothing to stop you removing this peculiarly horrid font, though, and you might as well dump any script fonts. You can delete multiple fonts in one go if you're feeling particularly tidy.

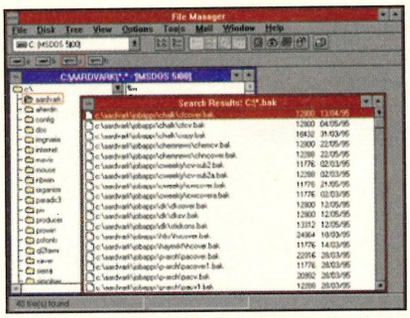


3 Removing fonts in 3.1 leaves the files on disk. In 3.11 you can tick the box to delete them from disk as well.

4 Make room, make room

You can use File Manager to tidy up fast. Tell it to find all the files with a BAK extension, for example, and delete them in one go. Unless you're chronically careless, it's also worth turning off most of the confirmations from the Options menu.

If you're desperately short of space, take a long, hard look at all your graphics files. Pictures consume a lot of hard disk space. You can also remove sound files, on-line tutorials, utilities that you hardly ever use and, if you're really desperate, on-line Help files.



Clear space on your hard drive by finding and deleting all those BAK files. Use File Manager's Search command to locate them.

5 Old news

If Windows says it can't find a file that may be necessary but then runs anyway, the file is left over from something you deleted. Note its name and check System.ini. It will probably be in the [Enh] section. REM it out and re-boot.

It's also a good idea to go through Win.ini every now and again and remove lines relating to programs you've long since deleted. You can edit either file with Notepad, or both at once using SysEdit, but do keep backups. It's all too easy to remove a line your system still needs.

Getting the most out of DOS

DOS games, and some DOS applications, often require a fair amount of free conventional memory. You can create space for them by editing your system files.

You need to edit two files to set up DOS with maximum memory: Config.sys and Autoexec.bat. In the first you need the following lines:

device=C:\windows\himem.sys
devicehigh=c:\windows\emm386.exe ram
dos=high,umb
country=044,850,country.sys

You then need any drivers required by your hardware, such as a CD-ROM driver. Use the installation routines provided rather than doing it by hand and use devicehigh rather than device. Technically, you don't need an Autoexec.bat at all, though in practice it's useful for setting up a prompt, a path and specifying UK operation, like so:

echo off
prompt=pg
path=c:\dos;c:\windows\system
lh keyb uk

LH has the same effect as devicehigh, pushing some of the programs into a small space in the top part of the 1Mb DOS can see. When you have the two configuration files working, run the Memmaker utility to move drivers out of the 640K memory area. On most PCs this process will free up over 600K of DOS memory.

For games making use of DOS 4GW, especially those not using the CD-ROM drive, make up a minimalist boot floppy disk and run the PC from that.



Many DOS games use DOS 4GW to access memory beyond 1Mb. Ever had trouble getting *Doom* to run on your system?

DOS
Disk operating system. Back in the bad old days before Windows, all PC programs were run from DOS, and it still underpins legacy Windows and, to a lesser extent, Windows 95.

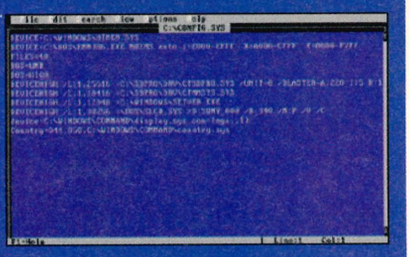
Conventional memory
Under DOS, only the first 640K of memory is available to programs, no matter how much RAM you have. It is referred to as conventional memory.

4 Read the read.me files

The fastest way to view the text files supplied with many DOS games and utilities is to use the DOS Edit utility. Just type Edit from the C:/ prompt. Interestingly enough, this is actually the editor supplied with QBASIC. The Edit command starts QBASIC with a parameter which causes it to lose all the programming options. Well, at least recycling is environmentally sound.

5 Historically accurate

If you make extensive use of DOS it's worth running the Doskey utility with the history option. This enables you to retrieve previous commands using the cursor keys. You can set the amount of buffer space Doskey uses to give you as many previous commands as you want. It can do other clever tricks as well, such as enabling you to edit command lines.



Use the DOS Edit utility to read text files.

COMMS SOLUTIONS

Comms is easier than it's ever been. Once you have a modem, it's also a low-cost way to get more from your PC.

Comms breaks down into four main areas (not including fax): the Internet, commercial services, bulletin board systems and remote machine-to-machine file transfer. Modems give access to all of them.

Each area, however, has its problems. Setting up a PC for Internet access can be tricky. You can't do it at all without an Internet service provider to give you access. Trial connections are freely available, though.

Commercial services include CIX, Compuserve, AOL and Prodigy. These days they provide Internet access, which can make them a good choice. They also come with easy-to-install software.

BBSs tend to be free or low cost and are mostly run by enthusiasts. They're mainly used for e-mail and file transfers. These days they're looking a little sad against the high-tech Internet.

Finally, with Win95 or specialist software you can connect two PCs together over a telephone line for file transfer or on-line chat.

The important thing to note is that each of these activities requires its own specialist software and expertise, though there is some overlap. You have to sort each one out individually, and experience with one system won't always help with another. Win95 provides the basic software for all four areas.

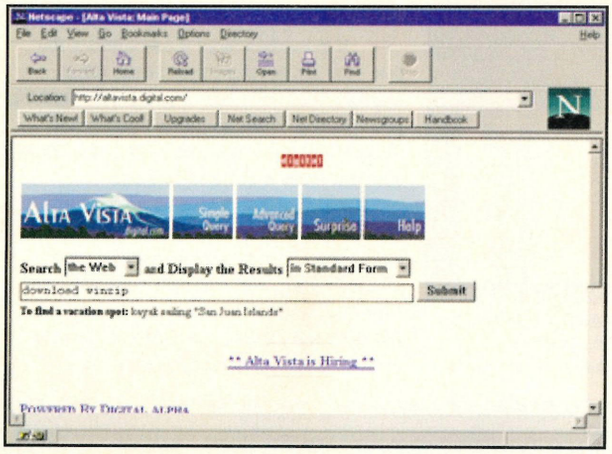
The Internet: A global network of networks which connects millions of computers. Services include e-mail, FTP (file transfer) and the World Wide Web. You generally pay a monthly fee for access via an Internet service provider.

Commercial service: A large bulletin board system that provides e-mail, discussion groups and files for download. You may also be able to access the Internet. You generally pay both a monthly fee and by-the-hour connect charges.

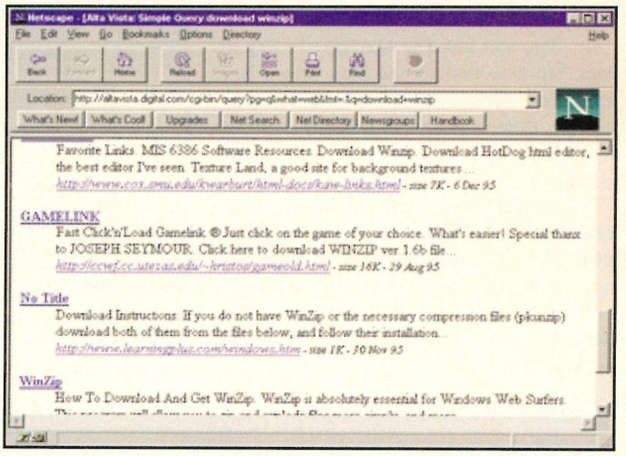
BBS: A computer you can dial into to download files or leave messages for other users. Some also provide e-mail. Most BBSs are free of charge.

Solutions as you need them

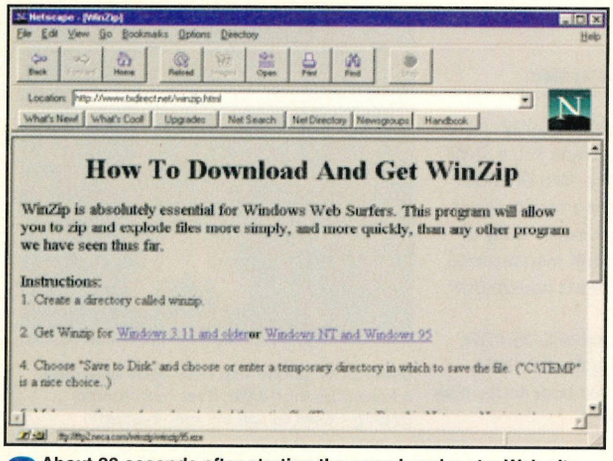
Along with information and entertainment of all kinds comms provides a solution to the perennial problem of needing a utility to do a job right now, not tomorrow or next week.



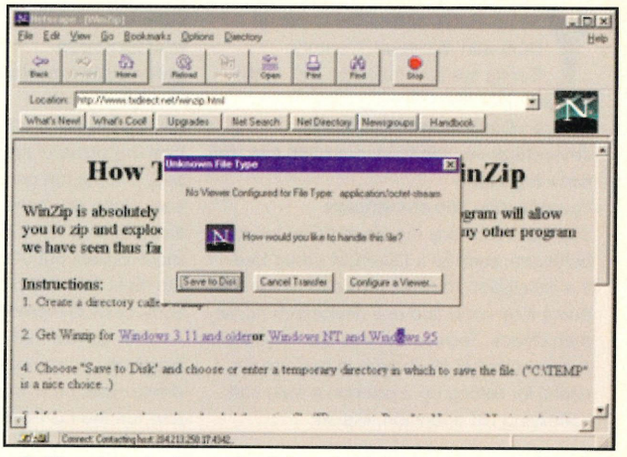
1 This is the start page of the Web search engine Alta Vista, maintained by DEC. We're looking for a Win95 Zip utility.



2 With the search words 'download' and 'winzip' the engine finds thousands of references. There are a few likely sites near the top.



3 About 30 seconds after starting the search we're at a Web site with a link to a downloadable version of Winzip for Win95.



4 All we have to do now is click on the link and choose to save the file to disk. The actual download will take a minute or two.

Five Comms tips

1 Access BBSs faster
If your favourite BBS has Telnet available then use the Win95 Telnet client to gain access via the Net.

2 More reliable downloads
Make sure your comms software supports the Zmodem download protocol. It's fast, and if you lose the connection part way through it starts the download again from where it left off.

3 Fastest Web browsing
Sure, the Web is colourful, but those pictures take a lot of time to slide down the wires. Turn graphics off until you need to see an image and you can watch the Web whiz.

4 Always there for you
Win95 has remote server software. If your modem has auto-answer you can dial into your PC from any other Win95 system and get its shared resources.

5 Take advantage
Use the free trials offered by most services to find one that suits you.

Next Month

Learn more in our Internet special next month. Turn to page 113 for more details.



Kent's In List

WHAT'S NORMAL.?

- Flared underwear
- Paisley golf courses
- Rocks from all nations
- Plaster casts on limbs
- Pleated underarm hair
- D.I.Y. topiary hair styles
- Sleeping 'till P.M.
- Bed baths
- Tea with digestive croutons
- Touching oneself, privately
- Trees made from recycled wood
- Stack heels with Goldfish in
- Boats made from Alka Seltzer
- Naked surfing on Christmas day
- Water soup
- Bright red snow
- Pre-chewed food
- Mohair underwear
- Cars that tan in the sun

EXPLORE THE VAST CITY OF NEUTROPOLIS THROUGH TRUE 3D MOVEMENT AND SOLVE THE RIDDLE OF A NATIONS APATHY.

Play with the unique voodoo doll interface and be rewarded by absurdly convincing motion capture sequences as you gather clues and solve puzzles. Chuckle at the bizarre plot and chew carpet while your brain wraps itself around puzzles that are greater than the sum of their parts.



ABSURDLY CONVINCING MOTION CAPTURE



PC CD-ROM

Gremlin INTERACTIVE

© 1996 Gremlin Interactive Limited. All rights reserved. Gremlin Interactive Limited, Carver House, 2-4 Carver Street, Sheffield S1 4FS, England. Tel: (0114) 275 3423.

Kent's Out List

CD REVIEW

Welcome...

We've got a new name for our cover mounted CD this month and a new front end. It offers got no less than three separate menus designed to accomodate all types of PC users. Before you run our menu it's a good idea to quit out of any other programs that you might might have running already Here's how to get the menu you want up and running:

Windows 95 users

Our disc is remarkably easy to run in Windows 95, just put the CD in the drive, wait a few seconds and the Windows 95 menu will autorun. However, this feature is not supported on all machines so if nothing happens click on Start, then select Run. Use the Browse option to locate the file REVIEW95.EXE, and away you go.

Windows 3.1 Menu

In Windows 3.1 first click on File, then Run, then use the Browse option to select the file REVIEW.EXE. Double click the file name to start the menu.

Our Windows menus are split into five main sections, the contents of which are described in more detail on the following coverdisc pages. To get to a section click on its icon from the main screen, and then use the arrow keys to move backwards and forwards through the demos in the section.

DOS Menu

Since many games still need DOS to run, you'll find most of this month's games in our DOS menu. To get it up and running just type PCR or GO at the DOS prompt of your CD-ROM drive. You'll then be asked how many colours you want to run the menu in. Most systems these days can support 256 colours, so make this your first choice.

The program remembers which choice you made and goes straight to the relevant menu next time you run it, so you'll only be asked once. If you want to change your mind, and run the menu with a different number of colours, then type TRY AGAIN at your CD drive letter (usually D:).

Once the DOS menu is up and running use the arrow icons to scroll through this month's demo selection.

Running Programs Manually

If you have memory constraints, or you experience palette problems, then you might find it easier to run the demos manually using the Windows Run command. We've included a table on page 22 which lists the executable files you need to run for each demo.

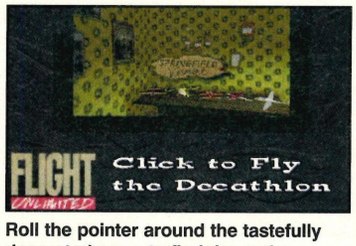
If your having problems getting a demo to work then turn to page 22 and read our section on Problems and Memory.

Terra Nova: Strik



Though the rendered bits look a lot better than the in-game graphics, as usual, this one pretty much captures the tone of the action. Plenty of jump-jet powered commando leaping, whilst the firepower is unleashed.

Flight Unlimited



Roll the pointer around the tastefully decorated room to find the options available to you.

Flight Unlimited is now almost a year old, and yet no one's managed to touch Looking Glass Technologies incredible flight engine. When the idea of a non-combat flight game was first mooted, everyone thought it would be taking on the Microsoft branded flight simulators. Long haul flights, lots of takeoffs and landings and a drive for authenticity that would rule out the word fun. Instead, the development team took the novel step of turning *Flight* into an aerobatic simulator where pulling stunts and behaving terribly in the sky was the main priority. But they never compromised on accuracy, employing a terrifyingly complex flight engine to replicate the feeling of controlling a light aircraft.



Glare on your aircraft's windscreen is just one of the lush details Looking Glass paid its attention to. The ground below, meanwhile, is based on aerial photographs of actual places in America and the instrumentation mirrors that of a real aircraft.

The Special Edition of *Flight Unlimited* puts you into the cockpit of a Bellanca Decathalon. This single-prop plane was introduced in the 1970s and is – in the real world – a comfortable and easy to fly piece of work. Just the ticket for mastering a repertoire of basic aerobatic manoeuvres.

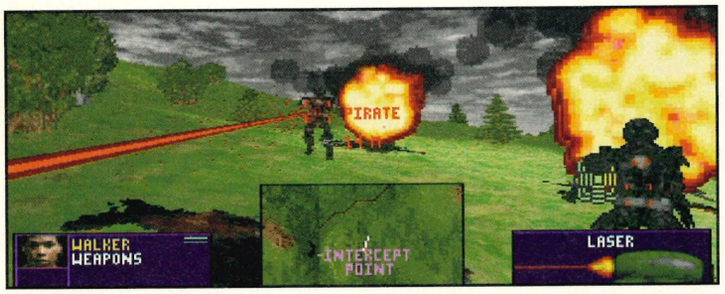
Starting up the demo you'll be presented with what to all intents and purpose looks like a club room. This is the FBO, your centre of operations. Exploring the room with your mouse or cursor keys, you'll realise that there's a tackily named beat-'em up arcade machine called *Fight Unlimited*. Ignore it. More interesting to you is the table where the models of planes are stored and the notice board which lists the lessons available in the demo. You can

e Force Centauri

In *Terra Nova* you take charge of a crack unit of Strike Force commandos trained to follow your lead. As the game progresses you assemble mission specific teams to face an increasingly cunning foe. Once the team is selected you get down to the planet surface for a bought of fast and furious blasting action.

A full list of the keys required to play is included in the CD booklet and turn to the review on page 52 for our key list and explanation of what the game window elements do. As for the weaponry… you'll find the multipulsar has the longest firing range while the grenade launcher does the most damage. If things get too hectic, just throw a few smoke grenades about the place for cover. Beam weapons cannot pass through smoke.

Check out the mission list to the right for our three exclusive sorties you won't find in the finished game. After your objectives are achieved, the dropship will come to the pickup point. When it turns up, press [Return] when you're ready to be picked up. If you need to abort the mission, press [Ctrl]-[Esc]. A final word of warning. Your dropship pilot will warn you if you're getting too far off of the mission area, wandering too close to the edge of the map terminate your mission.



Moving the mouse around aims your weaponry, click to fire, then see the explosions and billowing smoke. Your handiwork – well done, Commander.

Your missions...should you

Mission 1: Operation Brickdragger.
In this mission you beam down alone to lands around Thompson Steading. Pirates have recently occupied most of this area. They've built several small outposts which you have to take out. Intelligence reports suggest there are five such outposts, but there could be more, so take a good look around. Your mission is to clean out the pirate operations in the area.

Mission 2: Operation Flashlight
In this mission you learn how to co-operate with a partner. A band of Pirates by the Jez river are running a smuggling operation. Intelligence suggests that tonight is an optimum time to strike. You're going into battle with Private Gomez (sounds veeeery *Aliens*) from Strike force Urrutia. She's a weapons specialist and her experience will be vital to your success. This mission is played at night.

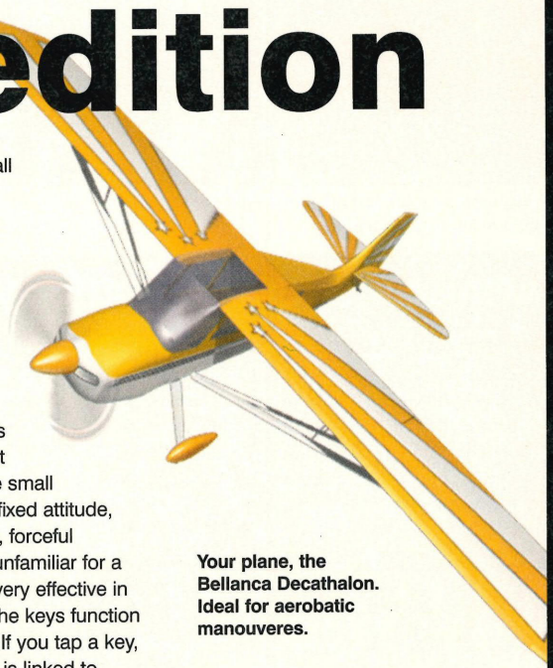
Mission 3: Operation Citadel
Now that you've weakened the pirates defences with the last two missions you're going in for the kill. In this mission you stage an assault on the main pirate base with Private Gomez and your brother, Brandt, a demolitions expert. Your mission is simple: take out all pirates and level the base.

Special edition

only select one plane: the Decathalon. It's the yellow one which will spin as you look at it. Clicking on the Decathalon gives you the option to start on the runway, the taxiway or go straight up in the air. Alternatively, choose a lesson from the noticeboard and take to the air with your tutor who'll issue lots of helpful comments and criticism as you go. The only scenery available is Springfield, Vermont. It's a built up area, surrounded by some stunning hill sides. All the ground detailing is accurate as it's taken directly from actual aerial photography, so if've you ever flown above the real Springfield it'll all be scarily familiar.

The key to flying your Decathalon is to take things gently. It's no good hammering on the keys, or expecting the plane to offer arcade type responsive controls. The most important controls are your elevators and ailerons, your throttle, and your rudder. All of these can be set up through the configuration menus, and if you're lucky enough to have a flight stick, throttle device, or rudder pedals you'll find the calibration routines simple enough. For all control and setup matters, access the Options Panel by pushing [Esc] from anywhere in the game. Flight's keyboard interface has been implemented to meet the demands of aerobatics flying. It enables you to make small adjustments, hold a fixed attitude, and also make rapid, forceful changes. It may be unfamiliar for a short while, but it is very effective in allowing you to fly. The keys function in the following way. If you tap a key, the control surface it is linked to moves slightly, then settles back to neutral. Tapping rapidly will quickly bring the surface to full deflection. If you hold a key down, this holds the control surface fixed in its current position. When you release the key it returns to neutral.

For a full listing of the key commands in Flight, check out the CD case's booklet.



Your plane, the Bellanca Decathalon. Ideal for aerobatic manouveres.

Developer: Looking Glass

Publisher: Virgin

Contact: 0171 368 2255

Terra Nova: £44.95 **Flight Unlimited:** £29.99

Minimum system:
Terra Nova: 486DX, 4Mb, mouse
Flight Unlimited: 486DX/2/50, 8Mb

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Afterlife

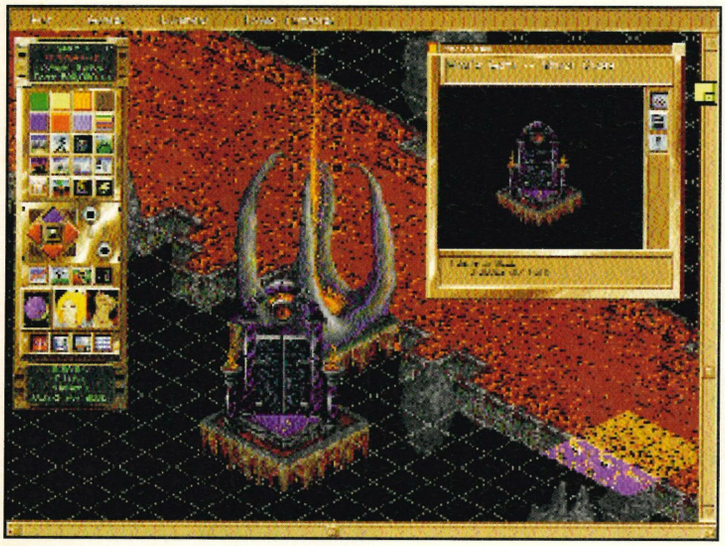
Afterlife is the first (and only) sim game where you, the player, get to build Heaven and Hell. You play the supreme being who must balance the two worlds of the Afterlife and the planet suspended between Heaven and Hell. In our huge, fully playable demo you'll get to do some Rewarding and, and some Punishing too. Have fun playing with the basic vehicles of reincarnation.

You'll find the panel on the left of the main screen contains all the icons you need to play the game. Just click on the tool you want and set your creations into being. There's a pull-down tutorial in the demo itself, and we heartily recommend checking it out. Simply choose 'Demo Tutorial' from the main title bar.

Minimum System: 486DX, 8Mb RAM, SVGA, Windows 95 only



Looks like SimCity 2000, but deals with the fundamentals of the soul.



When you've chosen what Hellish structure you wish to build, details of its nature appear in a separate window. Window shopping in Hell, you could say.

Bad Mojo

This is a game designed to make your skin crawl. You've been turned into a cockroach by the usual magical lockett jewel thingy and must somehow find away to overcome the challenges of the insect world to get back to human form.

Our fully playable, exclusive demo features the first puzzle from the game, which involves walking over a decomposing rat and outwitting a deadly spider. From the menu you can select to watch a trailer for the full game, which delves deaper into the story line.

For the game to run you'll need QuickTime for Windows installed, which is available in our PC Essentials section. To quit from the game you need to press [Alt] and [F4].

Minimum System: 486, 8Mb RAM, Windows 95 or 3.1



Book a room in a Roach Motel.

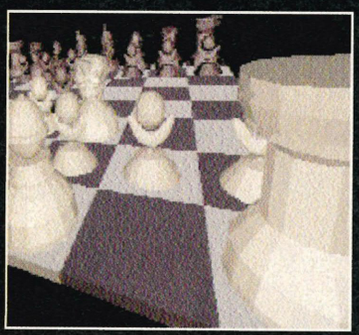


Listen to the pitter patter or little roach feet over the soft fur of the decomposing rat. Mind his mouth and his tail. Haven't Pulse paid attention to detail?

VIRTUAL CHESS

Virtual Chess is new for Windows 95. Our fully playable, exclusive demo lets you play up to 24 moves before pulling the plug.You can rotate the chess board to nearly any angle. Also, the DOS demo is on our disc so that Win 3.1 users don't miss out on all the fun.

Minimum System: 486DX, 4Mb RAM, Windows 95 or DOS

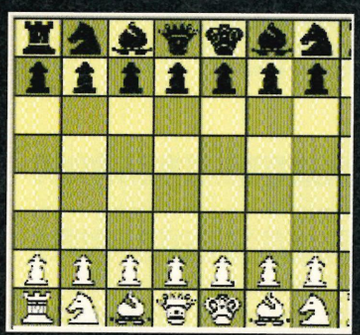


There are three different chess piece designs to play with in Virtual Chess. This is the Aztec design.

ARASAN CHESS

The complete version of a freeware chess game for both Win 3.1 and 95. There's a useful hint button, and you can play against the clock. To move your pieces click and drag them with the mouse. If you can manage more than 24 moves then you're doing well!

Minimum System: 386, 4Mb RAM, Windows 95 or 3.1



It may have a simple 2D board, but Arasan Chess is a challenging game. Use the hint option to win.

ABUSE V2.0

The latest shareware version of what is fast becoming a PC classic. In the new version the object is to escape from a prison where the warders and inmates have all been mutated into aliens. There's a full key listing in the CD inlay card and a review on page 81.

Minimum System: 486, 4Mb RAM, 13 Mb hard disk space, DOS

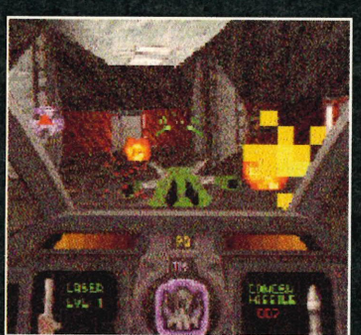


There's lots of traps waiting to catch you out in Abuse, like these huge spiked balls. Hour of frantic gameplay.

DESCENT 2

The sequel to *Descent* features twistier tunnels, superb graphics and gameplay to rival *Doom* With our fully playable demo you can try two whole missions from the full version and even multi-player action. There's a full key listing in the CD card.

Minimum System: 486DX2, 4Mb RAM, 15Mb hard disk space, DOS



Descent II. A full-on 3D blasterama. The object is to rescue hostages then blow the reactor on each level.

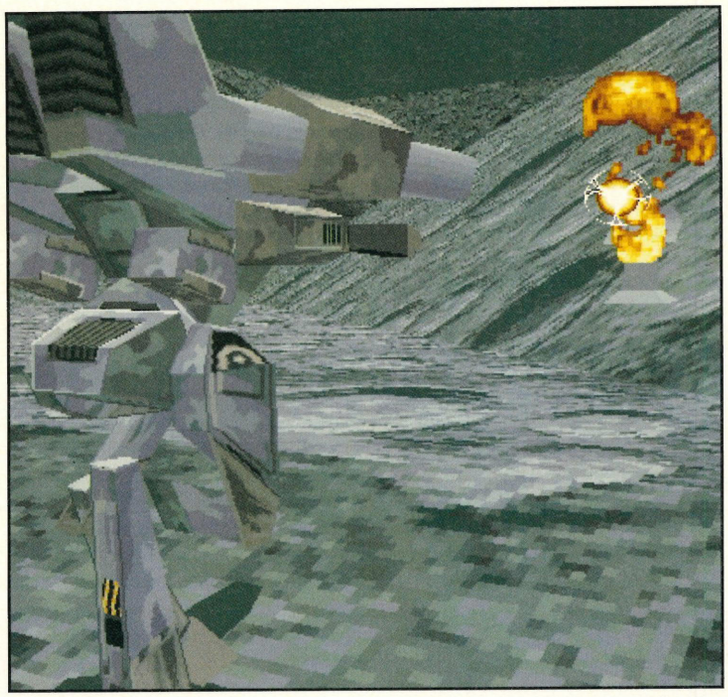
Earthseige 2

Now's your chance to wander the landscape in your very own Herc (that's a robotic exo-skeleton) with our fully playable demo of *Earthsiege 2*. There are plenty of similarly designed enemy robots out there as well. And be assured, they are determined to blow your socks off, so take care on your travels.

You'll find a full listing or all the controls and key presses in our coverdisc inlay. When you install the game you get two icons, one for running the game in lovely looking SVGA, and another for running in faster VGA. The choice is yours, but we've obviously found that SVGA works best on a Pentium. So it goes..

You'll find our demo has invunerability and unlimited weapons turned on by default, so don't worry when your on-board computer tells you that your shilds are critical. Just keep blasting.

Minimum System: 486DX2, 8Mb RAM, double speed CD drive, Windows 95 or 3.1



Playing the demo you'll notice that the feet of the robots actually appear to be in contact with the textured planetary surfaces. Good stuff.

Into the Void

Closely modelled on the likes of *Colonisation* and *Masters of Orion*, *Into The Void* is a space strategy game that allows players to build empires, exploring remote star systems, colonising new and exotic worlds and building fleets of star ships. But you're not alone, a selection of alien races exists in the universe.

All you need to do is move the mouse pointer over an object (i.e. a planet), and click the left mouse-button. This will bring up a palette-menu around the selected object. This menu displays your options.

The game is turn-based so you get plenty of time to mull over your moves. The demo is fully functionning, limited only by the number of turns you can play, so the clock is ticking. How much can you conquer before time runs out.

Minimum System: 486, 8Mb RAM, 23Mb hard disk space, DOS

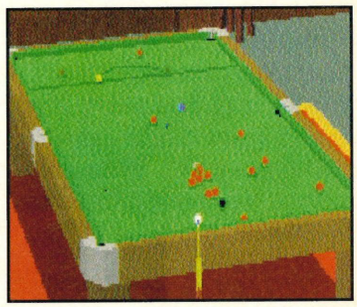


The planet selected is to the top left, and all the activities you can pursue are across the bottom.

Virtual Snooker

Now you can try the game endorsed by Steve Davis himself. Essentially, it uses the same engine as the very popular Virtual Pool which came out last summer. But, of course, it's not pool, it's snooker, and hence is far more tactical (owing to the increased number of balls and scoring system) and much harder (because the table's so much bigger). Try it, you'll see.

Our fully playable demo lets you rack up 12 points before pulling the plug. We recommend you press [F9] for help when you first start playing as the shooting control method takes a little getting used to. To take a shot you hold down [S] and move your mouse as if it were the cue stick.



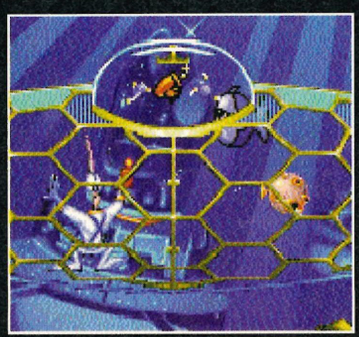
Virtual Snooker uses the revolutionary mouse control method first employed on Virtual Pool. It's like being there. Read our review on page 81.

Minimum System: 486, 8Mb RAM, 3Mb hard disk space, DOS

EARTHWORM JIM 1 & 2

Play the 'Down the Tubes' level from *Earth Worm Jim 1*, and the 'Anything but Tangerines' level from *Earth Worm Jim 2*. Full key controls are in the CD inlay, see the review on page 82.

Minimum System: 486, 8Mb RAM, Soundblaster compatible, DOS

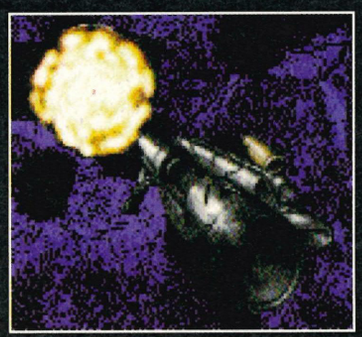


Originally a console hit Earth Worm Jim brings his zany world to the PC with two superb scrolling platforms.

DESKTOP TOYS

Ever wanted to blast the hell out of your desktop, then make it all return to normal? You'll notice that the installation routine puts an icon in your start-up folder. If you don't want the *Desktop Toys* demo starting every time you boot up then just remove it.

Minimum System: 486, 4Mb RAM, 1Mb hard disk space, Win 95 or 3.1



Die desktop, die! Take revenge on any program which has ever pushed you too far with Desktop Toys. It's great fun.

SUPER STARDUST '96

Asteroids reborn in 3D! Pilot your ship through a scrolling obstacle course. There's a full key listing inside the CD cover. You need EMS to play this game, see page 22 for setup help.

Minimum System: 386, 4Mb RAM, EMS memory, DOS



Super Startdust offers frantic blasting action as you dodge huge asteroids and shoot alien ships.

PGA TOUR 96

Try out a few holes from the SpyGlass Hill course with this incredible golfing demo. Click the Swing button with the mouse, a bar will start to ascend. Click again to register the force of the shot, and the bar will descend. Click again near the bottom for the direction.

Minimum System: 486DX2, 8Mb RAM and DOS



Our demo of PGA Tour Golf is fully playable. The game is easy to play too, all you need is one finger!

Shareware

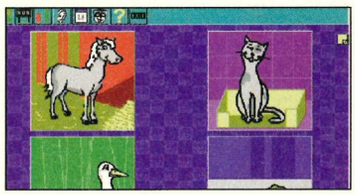
While you'd think that shareware is a dwindling form of software distribution, you'd be wrong. On the contrary most of the big boys now use save disabled demos or products cut down in one way or another to reach the biggest market possible. The try-then-buy model has taken the world by storm - so what is shareware now?

We sent CD Review editor Graham Barlow out scouring the Web for stuff that calls itself 'shareware'. This is what he came back with...

TasPhoto

With handy *TasPhoto*, you can view and organise photographs in PhotoCD format. Most photo film processors these days offer PhotoCD services in addition to doing prints and slides. Our Shareware version is fully interactive. Using it enables you to place a PhotoCD formatted CD-ROM into the drive. Just put it in and click Setup. Click New from the Setup Window to begin creating a new photo show. Pretty easy.

Developer: Tasman Software
Publisher: Tasman Software
Contact: 0113 243 8301
Price: £19.95
Minimum system: 386, 4Mb RAM, 1.5 Mb hard disk.



Kids can choose from four different, fun educational activities in Farnsworth Ferret's Fun Pack. Reading, maths and drawing are the skills taught.

Farnsworth Ferret's Fun Pack

Here's an excellent educational tool for children of all ages. *Farnsworth* guides you through *Maths Invaders* which addresses arithmetic skills, plus *Kids Scramble,* which tests letter recognition. *Kids Match* meanwhile requires concentration and memory skills. *Copy Cat* tests the ability to follow sequences and *Kid Paint* is a drawing program.

Developer: Elpin Systems
Publisher: The Thompson Partnership
Contact: 01889 564 601
Price: £12.46
Minimum system: 386, 4Mb RAM, 4Mb hard disk



In Maths Invaders you have to work out the sums before they reach your bases on the planet surface. Kids can have fun and learn at the same time.

SiteBlaster 3.0

Our shareware version of *SiteBlaster* acts as something of an internet primer, it contains full reviews and screen shots from some 3000 Web sites. Teachers can easily use the images in SiteBlaster to prepare students for demonstrations of the World Wide Web before going online. Apple's Web page is one of the many Internet Sites you can discover with this wonderful directory of the World Wide Web. There's lots of graphics too.

Developer: William Hogg
Publisher: The Thompson Partnership
Contact: 01889 564 601
Price: £24.95
Minimum system: 386, 4 Mb RAM, 4 Mb hard disc

Neobook and Neobook Pro

Neobook is a versatile DOS-based multimedia authoring package. In fact, you might be surprised to hear that its the authoring package we use to write our *CD Review* DOS Menu. Well, maybe not.

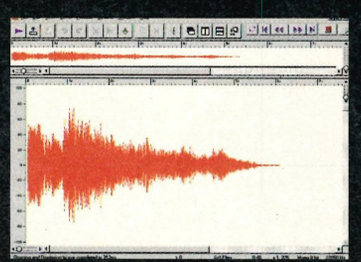
Using *Neobook* you can combine text, graphics and animations into your own presentations. The *Pro* version has

WaveLab

***WaveLab* is the second of this month's top-notch sound demo programs. It's a professional sample editor that you can use to record, trim and enhance audio samples. Although it may not appear to be as flashy as some programs you may have seen, it's more about quality than quantity. You can't turn voices into Daleks, or use your hard drive as a multi-track studio. The package offers smart features, but not the kind of things you're going to need on a daily basis. *WaveLab* is packed with the kind of low profile options that are nevertheless invaluable to anyone who does a lot of sampling or editing. Things like time stretching, mixing, cross-fading, equalisation and more.**

The demo version doesn't allow you to record or save samples, but you can still load one from disk and experiment with WaveLab's various options. Follow this tutorial. *Wavelab* works with most sound cards.

1 We'll start by loading a sound sample. Choose Open/Wave from the File menu. Go to the drive containing Windows 95, and look inside the Windows\Media directory. Look for 'The Microsoft Sound'. Double click to load it into the program. Click the maximise button at the upper right of the sample window to increase it to full-screen size. You'll now see the waveform in the main window and a smaller representation of it above. You can increase or decrease the vertical and horizontal magnification by changing the four button-sliders at the top right and bottom left of each window.



2 You'll see a floating Transport window that contains a tape deck-style control bar. Move the cursor so that it's below any of the buttons, then double click the left mouse button to send the Transport controller up to the menu out of the way. Now click the green play button to hear the sound sample before we start fiddling around with it to suit our musical tastes it. Happy?

The first thing we'll do to it will be to add an echo effect. Choose Select/All from the edit menu. Now choose Copy from the same menu. Move the cursor to the main waveform window and click at a point level with the 500ms mark. A green line should appear. This is the current insert or play position.

Below you see the control bar mentioned above. All the features of a modern CD-player, plus looping. Wow.



3 Now choose Paste Special/Mix from the Edit menu. This will insert the copied waveform at the current insert point, mixing it with the existing waveform. You'll notice that the waveform becomes much more complicated and erratic as in the screenshot displayed below. If you make a mistake, you can always click the Undo button (an anti-clockwise green arrow). Click the Play button. Notice that the program only starts playing from the beginning of the highlighted area? Click the Rewind to Start button to hear the sample from the beginning. Notice that the green insertion point line also denotes where the program will start playing from.





Neobook is the multimedia authoring tool for DOS that we use here at PC Review to create the front end interface screen of our famous CD Review.

extra features such as being able to run DOS commands from within your own presentations. Our shareware version is fully featured (you can even save and compile your publications).

Developer: NeoSoft
Publisher: Testware Publications
Contact: 01423 886415
Price: Neobook Pro £69.50 (includes a free CD of images)
Neobook Standard £41.13
Minimum system: 386, 4Mb, 3.5 Mb hard disk.

QuickView Plus

QuickView Plus is an indispensible add-on utility for Windows 95 which greatly enhances its built-in viewing feature, giving you a fast, high quality view of any file with the minimum of fuss. Once installed it fits sungly into your Windows Explorer, appearing as one of the options when you right click on a file. Our trial ware version gives you a 30 day free trial.

Developer: Inso Corporation
Publisher: Software Compatability:
Contact: 01344 885224
Price: £39.99
Minimum system: 486, 4Mb RAM, Windows 95

SmartBoard

This little utility expands the capabilities of the Windows clipboard by enabling you to capture and recall several items at once. If, for example, you want to copy three different paragraphs and a couple of graphics from a Word document and paste them somewhere else, you can do so easily without switching between applications and cut/pasting each element individually. Once running, the program 'hides' invisibly on your system, but a simple press of [Ctrl] and [0] will show you what it's currently storing.

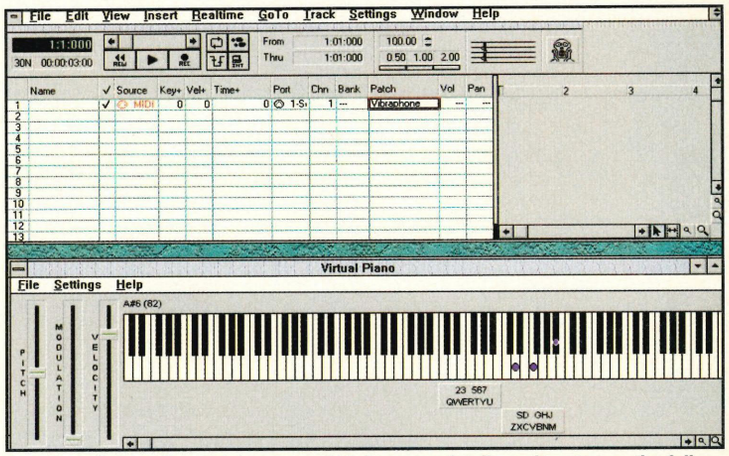
Developer: Oakley Data Services
Publisher: Oakley Data Services
Contact: 01270 759 739
Price: £17.63
Minimum system: 386, 4Mb Ram, 1.5Mb hard disk space

Cakewalk Pro Audio

Even if you don't own a MIDI keyboard, you can easily make music with the *Cakewalk Pro Audio* demo on this month's cover CD.

Start by loading the program, then select MIDI Devices from the Settings menu. Select TTS Virtual Piano In as the Input port. Click OK to return to the main screen, then double click the Patch column in Row 1 to set the instrument you want to play. Ensure that the source is set to MIDI, and that the port is set to your MIDI instrument or sound card. Use the patch list to choose an instrument, then click OK to return to the main program once again. Now press [Ctrl] and [K] to call up the virtual piano. Only drawback is your keyboard isn't totally polyphonic.

Minimum system: 386DX/33, 8Mb Ram, 8Mb hard disk space, Windows 3.1 or 95, MIDI card or instrument



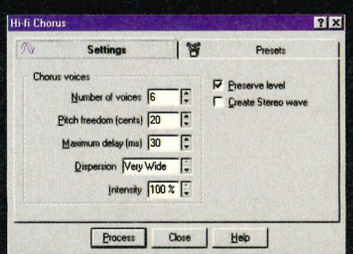
Read our Cakewalk tutorial on page 118, for more details on how to use the full range on features in this program.

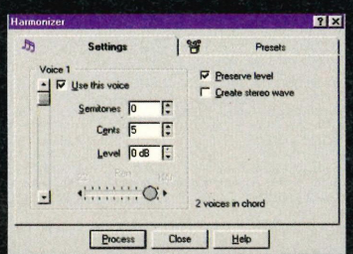
4 Select the entire sample again, then choose Hi-fi Chorus from the Process menu. This option enables us to make our single instrument sound as if it is being played by multiple musicians. Click the Preset tab and choose Heavy Stuff, then click the Load button. Now click the Settings tab and you can see how this preset is configured. Notice it's designed to simulate six copies of our instrument. Click the Process button to apply the effect. As you listen to it, you can hear how it's added body to the sound. This effect is particularly useful with stringed instruments.

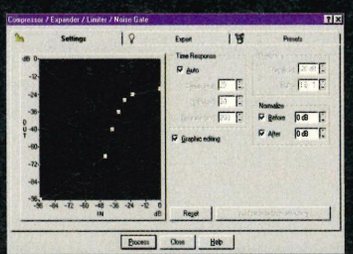
5 Now let's look at a different approach for adding richness to your sounds. Click the Undo button to remove the Chorus effect. Select the entire sample again, then choose Harmonizer from the Process menu. This also enables you to add extra voices, but this time you can vary their pitch, enabling you to create a chord effect. Click the Preset tab, then load and Process the Rich Panorama option. You shouldn't have to listen too hard to be able to hear what you've done to the sound.The effect should be evident the second you play it. Let its frequency course through your body!

6 Making sure that entire sample is still selected, choose Dynamics from the Level menu. Go to the Presets section and load the Tube Compressor/Gate. Go to the Settings window and right click on the second white graph square to delete it. Now process the sound and listen to it. Like the equaliser (EQ), the Dynamics requester is a powerful way of accentuating or suppressing parts of the audio spectum. In this instance, you should notice that the strings at the end of the sample are a lot stronger now. You're done. Now go to it and experiment with *Wavelab*.

By now, you should be getting a good idea about how the program works. Select a part of the sample, then choose an effect or filter to perform upon it. Feel free to experiment. Remember, you can always undo anything you don't like. You can read a full review of the program on page 108. It's a great piece of software, and will prove a valuable addition to your software library should you decide to buy the full version.







MoneyBox 4.06

Ease your financial worries with this indispensable cash-tracking and budgeting application. MoneyBox doesn't require an accountant to handle your cash. For a paltry sum it can take all these worries away from you.

Build up that financial muscle with this indispensable computerised money minder. Knowing where your money goes lets you keep more of it in your pocket. With the aid of this superb money manager, you'll be able to track and plan all of your transactions. Give your bank manager a statement before he gives one to you!

Install *MoneyBox* using the Householder option. This shields you from the murkier details and leaves you with the plain and simple choices for your first bash at this thing. When you get more proficient you can graduate through the levels and keep an even tighter reign on your finances.

MoneyBox features a wealth of superb little touches to make using the program much easier than you would have thought. With *MoneyBox* you'll be able to see how you're going to pay for this year's holiday months before it happens. You'll be able to find out if the bank has overcharged you. You'll be able to find out just how much you're paying for the honour of possessing that credit card. In short you'll be able to find out where it all goes.

MoneyBox enables you to keep track of your income and expenditure. This provides you with a vital overall picture of your cashflow. The provision of a multitude of accounts in *MoneyBox* enables you to break down your expenses, so you to find out what you can cut back on without it hurting too much. Did you invest in something that's adding to your income, or buy some shiny new toy (like a brand new PC with twenty new games, for instance)? Was that toy really vital (just like said PC), did it make you go overdrawn? Could you have waited a few days and then bought it without incurring the wrath of Mr B Manager? All such questions can be easily answered with the huge variety of reports and graphs with which *MoneyBox* can provide you.

Our great demo version lets you enter 100 transactions to see if the program fulfils your needs or not. should you decide you can't live without *MoneyBox* the good news is that should you want to continue with your accountancy past that 100 record limit, just phone the number below and they'll give you a PI Number.

This number will unlock for you the complete *Moneybox* package free of charge. If, furthermore, you find you need the manual (over 100 pages), backup disk and technical support too, there will be a charge of £14.95. A bargain of the utmost desirability by anyone's standards.

Hey, if it works out, you might even save enough money to buy one of those fab cars on page 38.

Multir

This month in our Multimedia section we've got four stunning titles which bring you some of the very best aspects multimedia has to offer.

War in the Pacific uses the acclaimed Flagtower multimedia documentary style to tell its story. With A Jack Kerouac ROMnibus you can rediscover the writer who pounded on the drum that the beat generation danced to for a decade, while the 3D Atlas and Wide World of Animals cast new light on our planet and its inhabitants.

All this month's demos require you to have a run-time version of QuickTime for Windows installed on your system to view their video clips. You can check and install the latest version via the PC Essentials section of our menu.

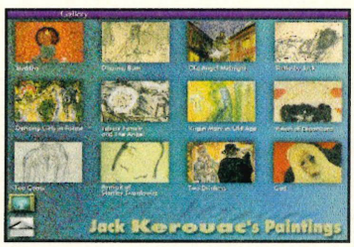
A Jack Kerouac ROMnibus

A Jack Kerouac ROMnibus is the essential multimedia literary companion for anyone interested in studying the man's life and times. Kerouac came to prominence with his second novel, *On the Road*, which introduced the American public to the 'beat' generation.

Our fully interactive demo is full of things to discover. Highlights include the Beat Family Tree which illustrates the relationship between key beat figures, as well as extracts from Kerouac's writing.

Another point of interest is the Gallery which contains some of Kerouac's paintings. These partially relect his interest in Buddism, but also show that his aesthetic ability ranged beyond poetry. For information on the ROMnibus have a look at our review on page 95.

Developer: Penguin Electronic
Publisher: Penguin Electronic
Contact: 0171 416 3000
Price: £49.99
Minimum system: 486, 8Mb RAM, Windows 95 or 3.1



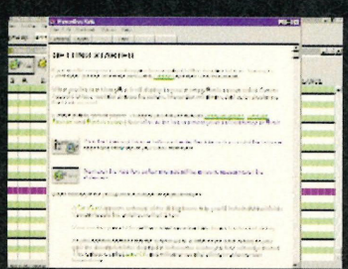
Kerouac also fancied himself as an artist, as you'll discover with our huge demo which brings the beat generation to life.

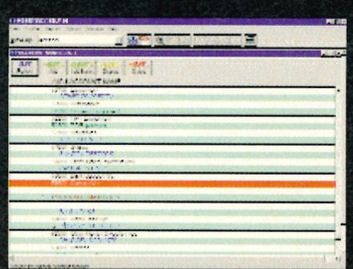
1 There's one uniquely special thing about *MoneyBox*. The first time you fire it up an introductory help screen appears. You can explore all the basics before you ever get near the program proper. Why doesn't more software do this? This help file is recommended reading. You can get back to it by selecting Getting Started from the help Contents menu.

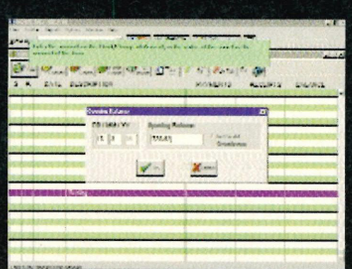
2 Get rid of the help. Select Account names from the Toolbar menu. You'll land on Current A/C choice. You can scroll up and down from here to see what other accounts are available. Double click on a category of your choice to see the current state of play in that area. Click the video-style buttons to step through accounts one-by-one.

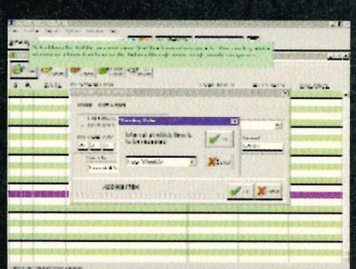
3 Naturally, all the accounts record zero at this stage as you haven't entered a single pound of your cash into the equation. Select View Account from the Toolbar menu. Scroll back to Current A/c. Click OK. Click Opening Bal. Enter your current worldly wealth. Click OK. The Receipts and Balance columns of your current account are automatically filled in.

4 Select Own Salary from the View A/C drop down listbox. Select Add. Enter the date on which you get paid. Click the S/O button. Select the frequency at which your salary arrives (ie weekly, monthly etc) from the drop down listbox. Enter the value of your salary into the Amount edit box. Select Current A/C from the Goes To drop down listbox.









media

War in the Pacific

Check out the unique multimedia documentary style of the FlagTower range with *War in the Pacific.* This demo features a fascinating look at the later half of the World War II, when Japanese and Allied forces struggled for supremacy both on the battlefield and in the media.

Our superb interactive demo includes a complete first chapter from each of the main sections of *War in the Pacific*. As the story unfolds you'll notice icons appear at the top and bottom, click on these to find out more about the subject they represent. The style in which this multimedia product presents its content is very similar to that of *Great Generals of the 20th Century* which we have reviewed on pages 92 and 93. When you're done looking at the demo flick there to see what we think of the Flagtower discs.

Developer: First Information Group
Publisher: FlagTower
Contact: 0500 486 500 (freephone)
Price: £29.99
Minimum system: 486, 8Mb RAM, Windows 95 and 3.1



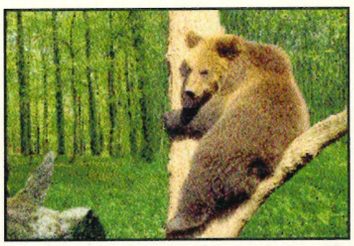
As well as the actual fighting the disc focuses on the propaganda war. FlagTower documentaries are renowned for their sensitive approach.

ABC Wide World of Animals and 3D Atlas.

Sample this captivating guide of to the animal kingdom offered by ABC's *Wide World of Animals*. With our demo version you can find out all about the disc. After a short rolling introduction go to the contents menu to explore four of the sections from the disc. There's a full review of ABC Wide World of Animals starting on page 98 of the magazine.

Also from Creative Wonders comes *3D Atlas*, a multimedia expedition to understanding the planet Earth. This is an older product, and its main feature is a zoomable, rotatable, 3D globe. Again, after a short rolling introduction demonstrating the disc's features, go to the contents menu to explore sections of the disc. These demos both run from the same icon in our menu.

Developer: Creative Wonders
Publisher: Electronic Arts
Contact: 01753 549442
Price: £39.99 each
Minimum System: 486, 4Mb RAM, Windows 95 and 3.1



Is ABC's Wide World of Animals good? Does a bear... recline comfortably on low branches in the woods? Find out about bears and more with this demo.

The Essential Selection

To help you out with all your day-to-day personal computing needs, as well as to assist you in getting the most out of this CD Review, we've bundled together a set of very handy utilities. It's called the Essential Selection for a pretty obvious reason: if you don't have these things already, you need them. Here they are.

Playing videos

Because multimedia products are so often produced on Apple Macintoshes, you'll find QuickTime for Windows 2.03 handy whenever one of those Apple standard videos rears its pixellated head. Likewise, there's a run-time version Video for Windows 1.1a for the Windows-based video files.

PaintShop Pro

Every PC user needs a graphics package and the most widely used is PaintShop Pro. We've included both Windows 95 and 3.1 versions on CD Review.

WinZip

Winzip is an invaluable compression tool which can even help you free up more hard drive space when you need it. It's also extremly useful if you send or receive files over the Net. We've included both Windows 95 and 3.1 versions on our disc.

Win32

A lot of Windows 3.1 programs require you to have Win 32 installed on your system. You'll find a version here. Register it if you keep it.

Killer graphics double bill

This month, we've got a couple of brilliant graphics programs for you to try. Whether 2D or 3D art takes your fancy, we've got a little something for ya.

Autodesk Animator Studio

The king of cartoon makers, *AutoDesk Animator* is a brilliant 2D graphics app. We gave it a straight 8 out of 10 when we reviewed it back in *PCR 47* and now we bring you the working demo. It's featured in our three-page project starting on page 118. We give you all the software you need to make your very own NASA cartoon. Blast off!

Developer: AutoDesk
Publisher: AutoDesk
Contact: 01483 303 322
Price: Approx £347

Dream On 3D

This handy application makes creating 3D animations very easy. The demo featured on *CD Review* will gradually slow down, as the program's designers at Adept thought this a fair way of limiting the software. Turn to page 123 for our tutorial. *Dream On 3D* is available direct from Future Publishing – the exclusive UK distributor. To get your hands on the full version, call our reader line on 01225 822511. Have your credit card at the ready. it'll cost you a mere £39.95 and runs on Windows/Win95 machine with a minimum of 4Mb RAM

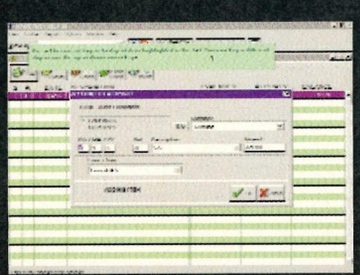
Developer: Adept
Publisher: Future
Contact: 01225 822511
Price: £39.95

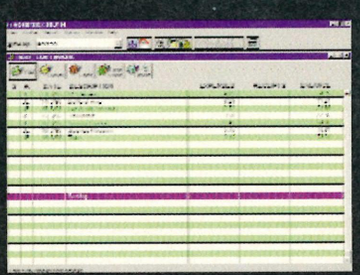
5 Now we're going to look at all our outgoings. Select Rent/Mortgage from the View A/C drop down listbox. Select Add. Notice that the Expenses/Receipts checkbox is a utomatically set to an expense. Fill in these boxes as in the last step. Having set up the essentials you can now add any other regular receipts or payments that occur in your life.

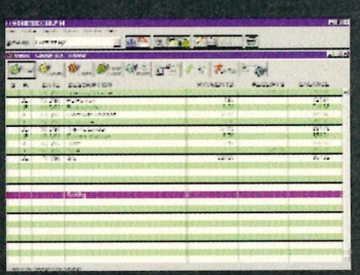
6 You can play around with *MoneyBox* and see what happens. Don't worry about entering pretend transactions as you can get rid of them again later. Switch to an account you use often. Press the [Enter] key. Enter some payments or receipts. Repeat this step to see what happens. Hey, *MoneyBox* is doing all your home accounting for you.

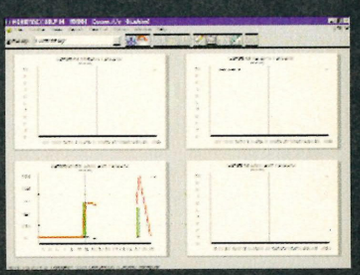
7 Switch back to your current account. All the money you've just entered is displayed in the top part of the Window. Notice that the mortgage and salary amounts that haven't happened yet are also displayed. This allows you to see what the state of your finances is likely to be in the future and plan around them. Put in your holiday plans and so in, if you like.

8 Select Skill Level from the Options menu. Change your skill level to Expert for a while. The toolbar icon representing graphs is now available, click it. A graph appears showing what's happening with your money. Look around the menus. There are many more options available. If you're not intimidated by them you can stay on this skill setting.









Gotta problem?
If you're having a problem with a *CD Review* demo we suggest you first read the corresponding entry in these disc pages. If you can see the files on your CD then the chances are that you don't have a faulty CD and may need to read through the Memory section below. If, on the other hand, your CD-ROM drive refuses to run, or read the disc then you should send your CD to the address below and a new, working version will be returned to you within 28 days.

PCR54 CD Returns,
PC Review,
Trevor Witt,
30 Monmouth Street,
Bath,
Avon,
BA1 2BW

Windows 95

Some DOS games have problems running in Windows 95. We've included an option to run all the DOS games that we know work in Windows 95 from our menu, but we can't guarantee they will work on all systems. If you find you're having trouble running a DOS game in Windows 95, try running it from our DOS Menu instead.

First select Restart in DOS Mode from our Shut Down Menu, then when DOS has started type D:\PCR, where D is the letter of your CD drive.

Install options

Make sure you select the default Installation path for all demos, otherwise when you click the Run button nothing will happen.

Support

If you need help getting a demo to work then phone our technical support line on 01225 442244 and ask for Trevor Witt. Or email him on support@futurenet.co.uk

Disclaimer

CD Review is thoroughly checked for all known viruses, and independently certified before duplication. While every care is taken in selection, testing and installation of *CD Review*, Future Publishing cannot accept responsibility for loss or damage occurring during its use. You are advised to have recent, verified back-ups of all important files before installing new software.

Memory

Configuring your PC's free memory can be a tricky but don't worry, follow these easy tips and everything should be fine.

If you have trouble running a demo it may be because you need more conventional memory. Conventional memory is the memory below 640K. Even if you have a PC with 8Mb of RAM, that doesn't mean you'll instantly have the conventional memory to run a *CD Review* demo.

To find out how much free conventional memory you have type **MEM [Enter]** at the DOS prompt. If the figure beside the line 'largest executable program size' is less than about 550k then you're system isn't set-up right.

You can free up more conventional memory by loading the EMM386 driver which allows you to move device drivers out of conventional memory and into upper memory, thus freeing up more space. To add the EMM386 driver you need to edit your AUTOEXEC.BAT and CONFIG.SYS files. It is always a good idea to make copies of them before editing them. At the C:\> prompt type:

COPY C:\CONFIG.SYS CONFIG.BAK [ENTER]
COPY C:\AUTOEXEC.BAT AUTOEXEC.BAK [ENTER]

If you have any problems later on you can return to these by typing:

COPY C:\CONFIG.BAK CONFIG.SYS [ENTER]
COPY C:\AUTOEXEC.BAK AUTOEXEC.BAT [ENTER]

To edit your system files type **EDIT** followed by the name of the file. The following lines should be in your CONFIG.SYS file:

DEVICE=C:\DOS\HIMEM.SYS
DEVICE=C:\DOS\EMM386.EXE NOEMS
DOS=HIGH, UMB

Any lines starting with **DEVICE** should be changed to **DEVICEHIGH.**

In the **AUTOEXEC.BAT** any device should now be sent to high memory. For example:

C:\MOUSE\MOUSE
should read:
LH C:\MOUSE\MOUSE

These changes should result in more free conventional memory.

Another way to free up more conventional memory is to remove any Terminate and Stay Resident (TSR) programs from the system files. The following lines are not essential for using *CD Review*. Kill them by putting REM at the start of the line.

In Config.sys
Any line containing **SMARTDRV.SYS, DISPLAY.SYS or COUNTRY.SYS**

In Autoexec.bat
Any line containing **SMARTDRV** or **DOSKEY.** Any line that loads a memory resident virus checker.

When you have finished using a *CD Review* demo you can return your system to its previous state by removing REM commands, then rebooting your system. Remember any change to system files will not take effect until your system has been rebooted.

EMS Memory

Some PC games require EMS memory rather then XMS memory. To configure your PC for EMS memory change the line in your **CONFIG.SYS** reading:

DEVICE=C:\DOS\EMM386.EXE NOEMS
to:
DEVICE=C:\DOS\EMM386.EXE RAM

Reboot your machine for the changes to take effect. You will have to change back to XMS by reversing the above change for your other programs to work.

Running programs manually

If you have memory constraints, or you find there are palette problems and the display colours look wrong when running demos from our menus, then you may need to run the demos manually.

Windows 3.1

To run a program manually using Windows 3.1 first select File from the Windows Program Manager menu, then select Run from the pull-down menu. Use the Browse option to select the directory, and then the file you want. double click on the file name to run it.

Windows 95

Using Windows 95 click the Start button from the menu bar, then select Run. Use the Browse option to select the directory, and then the file you want.

DOS

For DOS demos type CD followed by the directory name at the DOS prompt of your CD-ROM drive, then press **[Enter]**. Finally, type the name of the file and press **[Enter]**.

In the columns to the right is a list of the executable files you need to run to (assuming your CD-ROM drive is D:\)

Program Directory and File Name

Flight Unlimited D:\GAMES\FLIGHT\INSTALL.BAT
Terra Nova D:\GAMES\TNOVA\INSTALL.EXE
Afterlife D:\GAMES\ALFDEMO\ALFDEMO.EXE
Bad Mojo D:\GAMES\BADMOJO\DEMO23\BMDEMO.EXE
Earthsiege 2 D:\GAMES\ES2\SETUP.EXE
Into the Void D:\GAMES\VOID\ITV.EXE
Super Stardust D:\STARDUST\DEMO.EXE
Arasan Chess 16-bit D:\GAMES\ARASAN\INSTALL.EXE
Arasan Chess 32-bit D:\GAMES\ARASAN32\INSTALL.EXE
Virtual Chess (95) D:\GAMES\VCHESS\INSTALL.EXE
Virtual Chess (DOS) D:\GAMES\VCDOS\VCHESS.COM
Virtual Snooker D:\GAMES\SNOOKER\INSTALL.BAT
Desktop Toys D:\TOYS\SETUP.EXE
Abuse D:\GAMES\ABUSE\INSTALL.EXE
Earthworm Jim 1 D:\GAMES\EWJDEMO\EWJ1.EXE
Earthworm Jim 2 D:\GAMES\EWJDEMO\EWJ2.EXE
Descent 2 D:\GAMES\DESCENT2\INSTALL.EXE
AutoDesk Animator D:\APPS\ANIMATOR\SETUP.EXE
Cakewalk Pro Audio D:\APPS\CVADEMO\SETUP.EXE
Dream on 3D D:\APPS\DO3D\INSTALL.EXE
Wavelab D:\APPS\WAVELAB\SETUP.EXE
MoneyBox D:\MBOX\INSTALL.EXE
ABC Animals and 3D Atlas D:\ANIMALS\CWDEMO.EXE
A Jack Kerouac ROMnibus D:\KEROUAC\PECDEMO.EXE
War in the Pacific D:\SETPUP.EXE
Ferrit's Fun Pack D:\SHARE\FERRET\SETUP.EXE
Neobook D:\SHARE\NEOBOOK\SETUP.EXE
Neobook Pro D:\SHARE\NEOPRO\SETUP.EXE
QuickView Plus D:\SHARE\QVPLUS\SETUP.EXE
SmartBoard D:\SHARE\SMART\INSTALL.EXE
SiteBlaster 2.0 D:\SHARE\SITE\INSTALL.EXE
PaintShop Pro 3.1 D:\NEWPC\PSP311\SETUP.EXE
PaintShop Pro 95 D:\NEWPC\PSP32BIT\PSP.EXE



Make sure you have original Microsoft® software. Check your Certificate of Authenticity.

Is the pre-loaded Microsoft software when you buy a new PC the original or a dastardly copy?

It is elementary to detect. Look for the Certificate of Authenticity that comes with your product manuals for your Microsoft operating system. This is your guarantee of original Microsoft software.

The Certificate of Authenticity is a valuable document, my dear PC User, because this is the key to support, future upgrades, and your peace of mind that your software is virus free. Without it, your software could be at risk.

If your Certificate of Authenticity is suspiciously missing, begin your investigation now by calling the Microsoft Hotline.



Introducing

Microsoft Windows 95

For distribution only with a new PC



1. *Hologram (clear picture of boy).*
2. *Light Sensitive Microsoft Label.*
3. *Product Identification Number.*
4. *Bar-coded unique serial number.*

Call the Microsoft Hotline on 0345 300 125 ext. 1001.

Microsoft

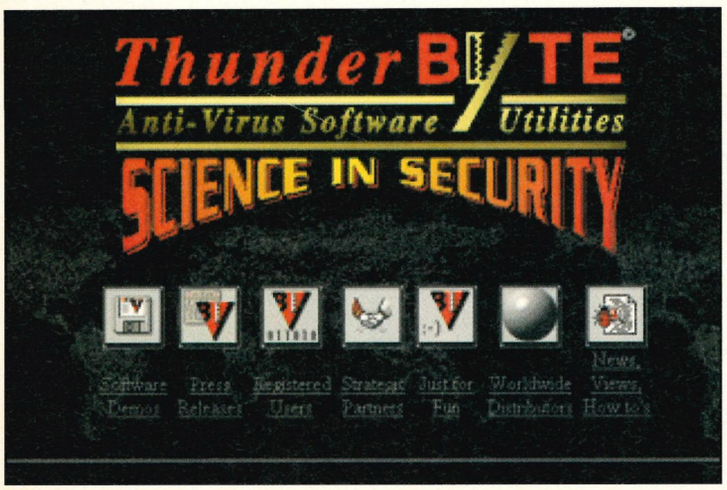
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NEWS

Windows 95 viruses, Web computers, PC communications on the airwaves and Big Brother's digital eye – all this and more in the news.

A dirty little infection



There are several shareware virus scanners including Thunderbyte, which is available for download from the Web at http://www.thunderbyte.com.

Boza, the first Windows 95 specific virus, has escaped into the wilds of the Internet. Fortunately, however, it causes little harm and can be detected and deleted quite easily.

A common file infector type of virus, Boza will add itself to a maximum of three other EXE files residing in the same folder as the infected file when it's run. Its only distinguishing feature is its use of Win 95 code and its understanding of Windows 95 file formats. All anti-virus vendors have issued patches that enable their scanners to detect it.

Boza was written by VLAD, a Bulgarian group which is apparently more than a little upset with the name the virus has been Christened with by the anti-viral community. In Bulgarian it means something poorly assembled. Internally, the virus refers to itself as Bizatch – presumably a name with an altogether more macho meaning in Hungarian.

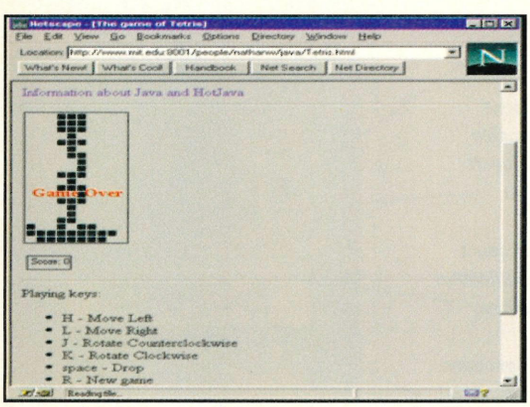
Of course, because Win 95 is so good at running existing Windows and DOS based programs it's also open to infection from most existing viruses as well as those written especially for it.

To protect your PC from new viruses under Windows 95 you'll ideally want a scanner written for that OS. More than a dozen are available, including the excellent shareware *McAffee* scanner, *F-PROT* and *Thunderbyte*. No protection is no excuse. We'll have a free virus scanner on our CD-ROM next month.

Even hotter Java

According to Lawrence Ellison, Chief Executive Officer of the multi-billion dollar company Oracle, the next PC you buy will be a low-cost Web computer. In effect, the entire Internet will act as a peripheral for it, adding the power of over a million processors to your own.

What will make this feasible, Ellison argues, is a programming language from Sun called Java. Instead of loading a word processor or game from your PC's hard drive, you'll download one from the Net which has been encoded using Java. As an example, he points to a simple 27K Java spreadsheet applet which takes about as long to download from the Internet as *Excel* takes to boot up from your hard disk.



Java applets have potential – already you can play Tetris on-line through the Java information WWW page.

Of course this tiny Java application doesn't include spreadsheet publishing, charting, regressive analysis, multidimensional sheets or any of the other high end features *Excel* offers, but it can do the basic maths most users will need.

Sun, the inventor of Java, has now designed a special chip which runs Java code directly in hardware so that a Web computer won't have to run a local interpreter on an ordinary, general purpose processor. The advantage of Sun's new chip is that it will provide faster running applications and might make Web computers even cheaper than originally projected.

Don't hold your breath waiting, however. At the moment most Java applets, such as the 27K spreadsheet mentioned above, are only test programs and part of new technology demonstrations. Certainly no one will be writing a flight sim any time soon, and if they did it would take you all afternoon to download it. Nevertheless, Web computers are already beginning to appear.

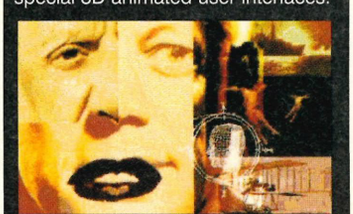
For more see **Web Computers**, page 26.

One to watch...

The Makers of the 20th Century

Based on a series of supplements run in with the Sunday Times a few years ago, *The Makers of the 20th Century* is all about famous men and women who shaped the history of modern times. Due for release next month, Makers will be the first CD-ROM to be produced by News Multimedia, a subsidiary of Rupert Murdoch's News Corporation.

Included are profiles of 200-odd historic figures as diverse as Marilyn Monroe and Mao Tse Tung. Photos, text entries and other multimedia features are in there, tied together by special 3D animated user interfaces.



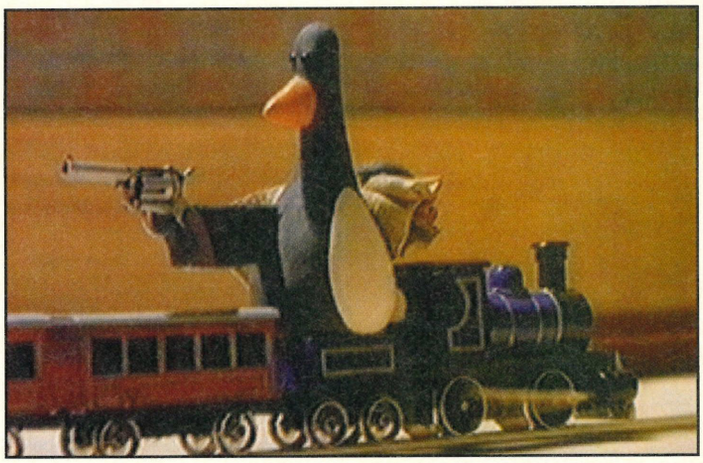
Better multimedia

New PCs won't need any special hardware to handle sound and full motion digital video. If new technology from Intel proves successful, they will be able to do it using software. The MMX, or MultiMedia eXtensions software, will take advantage of new features Intel is building into its next generation of Pentium.

The first of these new chips is code named the P55C, and is expected to run at 200MHz – faster than anything currently in production. Along with the usual Pentium operations it includes new instructions to run some of the complex mathematical routines required to decode digital images, and to a lesser extent, sound.

Although there is software around for playing VideoCDs in a CD-ROM drive, decoding MPEG standard video requires complex calculations which take a long time to run on a general processor. Implementing some of more common complex instructions in hardware can make them run much more efficiently. The result is a cheaper multimedia PC.

Microsoft, prefering to leave its options open, isn't currently supporting the initiative. However, Intel plans to use the technology in its entire Pentium line by the end of 96.



Intel is building technology that will enable the next range of Pentiums to play VideoCD discs through a CD-ROM drive with no hassles or slow-downs.

No more hardware problems

The Universal Serial Bus – USB – is a faster, simpler, cheaper replacement for the PC serial port. One USB can support up to 127 daisy chained peripherals and, unlike your current serial port which can't go faster than 115,000 Kilobits per second, USB runs at 12Megabits per second.

USB isn't a new idea, it's been kicking around for several years, but the reason it's about to take off is Intel's decision to include support for it in the next revision of its PCI bus support chipset. This means all motherboard manufacturers need to add is a tiny four pin socket costing a few pence.

Contrast this with the technically more sophisticated Fastwire serial link. Fastwire is a general serial solution for computers with the added bonus of working at 400Mb/p/s – fast enough for full screen digital video transfer – and it even has official industry body's recognition as IEEE 1394. Unfortunately, it costs more than a few pennies to include Fastwire.

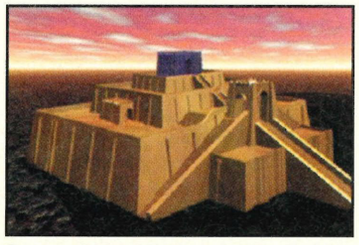
To begin with we'll see USB in portable PCs where just fitting the existing chunky serial port is a problem, but by the end of the year expect to see it on desktop PCs – and soon after that expect to see USB modems, sound cards, printers and more. Of course, you'll also see lots of people complaining that Fastwire is better than USB and it's Betamax and VHS all over again. Never mind, USB is much better than what we've got and essentially, it's free.

In production: new multimedia

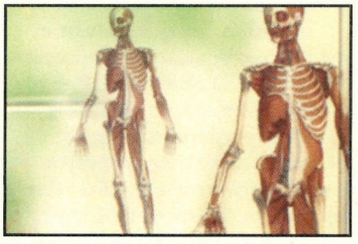
Sampling top ales, wines and brandies could be the main passtime around here next month if we receive a copy of ***Wine, Spirits and Beer***, the upcoming reference work from Notting Hill Multimedia. With data from *Which? Wine Guide* and *Bloomsbury's World Beer Guide 1995*, the disc will deliver its liquid-inspired contents via an explorable architectural environment. Over 1000 beers are to be covered.

Maris, another UK developer, is busy at work on ***Atlas of the Ancient World***, and is also due to follow up its successful *Red Shift 2* with ***Discover Astronomy*** and ***Solar System Explorer***. Not a lot is known of these titles as yet, but we'll be reviewing them and bringing you demos of them if they're good.

Finally, keep one eye peeled for the ***History of Medicine*** from First Information Group. This is the first title in its Flagtower range not based on war. It promises to document its subject factually, but with a pinch of entertainment too.

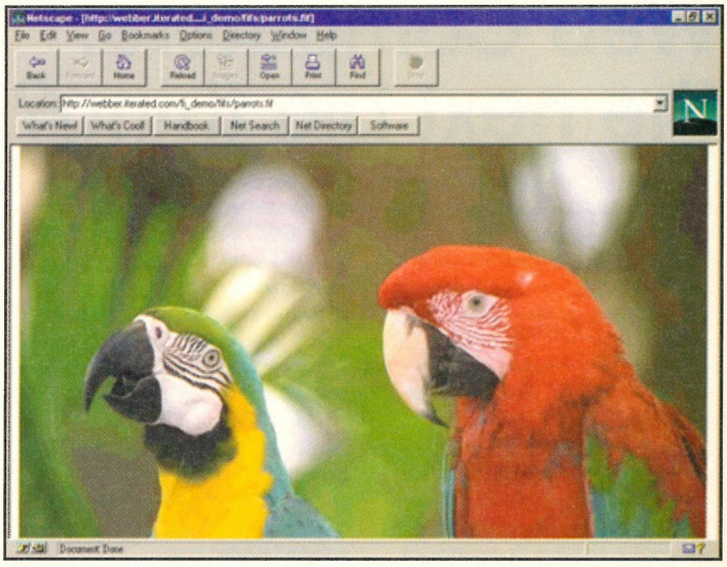


Some rendered structure from antiquity in Atlas of the Ancient World by Maris.



History of Medicine – the book has become a multimedia documentary.

Images get faster, smaller and better



Newly available fractal compression technology could vasty reduce the time it takes to download quality images such as this from the Internet.

Fractal image compression is much better than JPEG, and that's why Microsoft chose to use it in their multimedia titles. The reason it's not more widely used, however, is that between since its invention in 1987 it has been entirely proprietary, excluding it from shareware graphics programs and the Web.

Now, however, Iterated Systems – the company owned by the inventor of fractal image compression, Michael Bardsley – has made the decompression algorithms publicly available. The technology has been released in standalone fractal compression utility as well as in two fractal plug-ins for Web browsers.

Expect a massive increase in the number of images supplied in FIF format within weeks of these programs landing on the PCs of everyone interested in graphics and the Net.

The Netscape plug-ins are called *Fractal Viewer* and *CoolFusion*. The first enables you to view and magnify FIF images on Web pages – you'll be amazed at those on the Interated site at *http://www.iterated.com*. The fractal image algorithm enables you to produce quality images at larger than original size by making up extra detail.

CoolFusion, meanwhile, is for watching digitised video images downloaded from Web pages. Its speciality is reliability, speed, the ability to watch them as they download, run backward and forward through partly downloaded sections of a movie and stop the download if it isn't what you want. Make no mistake, these programs are explosive.

Digital radio gets tuned in



Who needs telecom cables when digital data is on the air.

Fast digital PC communication is now possible via radio. No more slow dial-up access to BBSs and the Net, with comms by radio. You'll be using the same basic digital technique that makes company networks so fast, but with a cheap dish arial on the roof rather than an expensive new cable to your door. This is happening because the Department of Trade and Industry has auctioned off 10GHz fixed access radio licences for digital communications.

After a five month battle Mercury, NTL and the Ionica/Scottish Telecom partnership came out on top. NTL's John Okas said trials would start soon and he hoped NTL would be able to offer a service by the beginning of 97, including cheap, fast Net access.

The alternative is ISDN (Integrated System Digital Network), which enables you to send up to 142Kbits per second of data over an ordinary telephone line. This takes the form of two 64Kbit B channels and one 16Kbit D channel. It sounds great, but BT is doing its best to make it as unattractive as possible while claiming it's doing it's best to make it as attractive as possible.

At the moment, you have to pay a £400 conversion charge up front, you then have to pay for the connection as if it were really two lines – BT counts the two B channels as equivalent to two voice channels. Then you have to pay £84 a month rental. Time charges are the same. Oh, yes, and you need various other bits of kit which will add £200 to £500 to the overall cost.

June Campbell, BT's marketing manager for ISDN, claims the price reflects the service's worth, and adds that anyway, BT loses money on every connection. Mind you, it loses money on an ordinary voice connection too – but it sure makes it back on the calls. British Telecom made profits of £68 per second in 94.

All this pales into insignificance compared with the cost of an ISDN connection into the Internet which can easily set you back £2,000 a year. Radio ought to be cheaper to install and hopefully also make it cheaper to get on the Net. Whatever happens, it will be the first viable alternative to buying digital connections from BT, which has to be a good thing.

Web Computers: the next big thing?

The idea is simple enough. Instead of a whole £2,000 PC you get a £500 Web computer capable of doing most of the things you do now but using the entire Internet as a source of applications and data. Apple, in conjunction with Bandai, already has a Web computer called Pippin.

Among others, Oracle, IBM, LSI Logic, Silicon Graphics and Sun Microsystems are all working on Web computers. While we're calling them 'Web computers' even that isn't set in stone yet. Among other things they're being called Network Computers (or NCs for short), Internet Appliances and Java terminals.

Similarly, there's no specification for them yet. The Pippin includes a CD-ROM drive, but others may not. Part of the problem is the lack of an obvious market. While superficially they're attractive to home users in practise you'd have to be pretty techy to get any value from one, and anyway, having to do everything over a slow analogue, dial-up connection would be both expensive and frustrating.

More likely they'll act as replacements for PCs in offices. PCs remain expensive for businesses to buy and maintain. Similarly, software is expensive and new upgrades are a constant hidden cost.

It may be some time before we see Web computer appearing on the shelves at Dixons. By that time we'll be telling you about the next next big thing.



The Pippin by Apple started its developmental life as a games console and ended up becoming a Web computer.

Sailing. Not surfing



'Come sail away' is the cry of Europress software as it prepares to release Interactive Sailing, a program designed to teach you how to be a mariner. Aye.

Funny how the verb chosen to describe using the Internet was surfing. Ridiculous really when you consider the discipline and patience required to be an average surfer. But at least they didn't call it sailing! And while we're on the subject of sailing (tenuous link time) Europress Software is planning to launch a new title in their Lifestyle range based around, you guesssed it… sailing.

Interactive Sailing is set to be a mix between simulation and education. You get over 40 video clips taking you through all the aspects of yachting life, including navigation, starting procedure, race tactics and maybe even a few dirty tricks to pull on your competitors. The second half of the software puts you in the dodgy cagoul of either a skipper or a crew member in a selection of regatta courses. Gadgets like wind gauges, sail controls and even satellite guidance systems are all explained. *Interactive Sailing* is expected to sell for £19.99.

Europress also has plans to follow up on the success of its *Driving Instructor* program by releasing a sequel. It will feature official questions nabbed directly from the written examinations learner drivers will be soon have to pass in order to get their license. *PC Review* will bring you the first chance to try the the test through a demo on our June issue. Finally, Ottowa-based Corel has bought the rights to Europress' *Klik and Create*, giving the multimedia and games creation tool a new, international lease of life. Corel will release 16- and 32-bit versions in May.

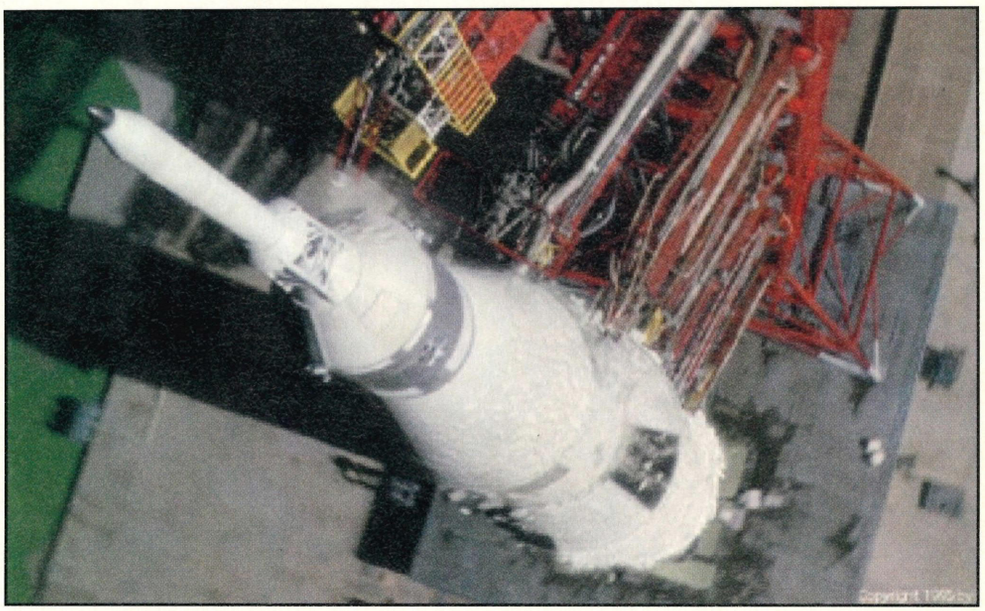
IBM is coming for you

Big Blue – the company which brought the world the PC, the stalled OS2/Warp and no end of corporate services has a new target in its global strategy. You. Apparently, one of the suits gathered information on the home consumer market, did a calculation on his spreadsheet, and came back with the magic figure of one billion dollars. That's what IBM says the home market is worth and hence it has decided to don casual slacks and soft shoes and, launch the IBM home range. Yes, it does sound a bit like Microsoft Home doesn't it?

Spurred on by the collapse of the American school system and its apparent inability to teach moral values, IBM has acquired the rights to distribute a PC version of the Book of Virtues, a non-religious collection of 16 fables written by ex-Secretary of State, William Bennet. Based around age-old tales of courage, honesty, friendship et al, there's aready a cartoon mini-series of the book in the States, animated by ex-Hanna Barbera staff.

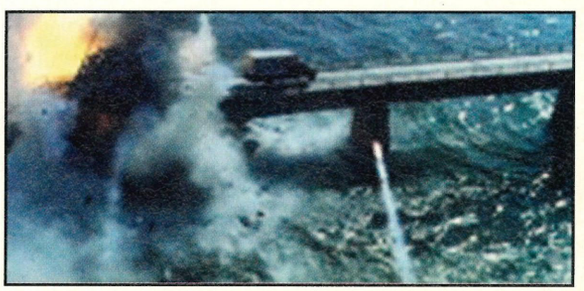
But it's not all group hugs and family values. IBM's Kid Riffs CD-ROMs are also looking top notch. Ostensibly designed to teach music while entertaining, Kid Riffs hides sophisticated music systems behind a deceptively facile interface.

On the games side, IBM will have it's work cut out to compete. While the branding works well on educational and reference works, gamers tend to crave a little more, shall we say, irreverence. Still, IBM has a promising-looking golf game in the works. An odd affair called



Pandemonium Golf, it has you bashing golf balls around rendered American cities.

Even more promising, IBM is wheeling in special effects gurus Digital Domain – whose credits include sequences in *Apollo 13*, *True Lies* and *Interview with A Vampire*. The game DD are developing goes by the snappy name of *Ted Shred* and is a gratutitious extreme sports affair, including the likes of snow boarding and surfing. At time of going to press IBM wouldn't release screen shots of *Ted Shred*, but it's looking like being a glossy side scrolling dodge-'em-up. More news on this and other IBM releases as it breaks.



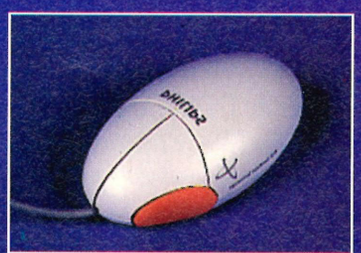
Recognise these two images? They were produced by Digital Domain for the movies Apollo 13 (top) and True Lies. And now DD are producing a game for IBM. You can find loads more pictures like these on the DD Web site at http://www.d2.com.

Watching You

Remember how much PC Review liked the QuickCam (Reviewed *PCR 51*, scored 8), the digital eyeball that made image capture a piece of cake?

Well, technology never stands still and we're proud to bring you the first photos of the next big thing in digital surveillance. It's from the Observation Systems devision of Philips – yes the people you're used to making fridges, TVs and CD-ROM drives. Featuring an infinite focus lens with colour image processing and sound, it could be just the ticket for keeping an eye on others. Or even yourself, as the hardware will come with a rubber clip that allows it to be mounted on the top of your monitor. Beyond serving just as a gimmick, it could possibly facilitate video phone calls. Possibly. It's still at the prototype stage, so it's probably not such a good idea to start pestering Philips for it just yet.

But Philips do have plenty of new products turning up in high streets near you soon. Look out for its brightly packaged U4IA (Euphoria, geddit?) range including a mountain 'o' sound and video cards, a couple of immensely cheesy 3D pointers and, most interesting of all, a CD-ROM writer they're hoping to shift for under £1000. For more details call Philips on 0181 689 4444.



Looks like a normal mouse doesn't it? But it is in fact a 3D pointer. Simply...



... lift it up to disengage the roller balls and kick the mercury switches into life.

The ultimate toy for the boys from Philips. More on this prototype next month.

This man has a secret



He's the Formula One World Champion

GRAND PRIX 2 - AVAILABLE FOR PC CD-ROM

MICROPROSE

For further information telephone: 01454 893900

Spectrum HoloByte - MicroProse World Wide Web Site: http://www.microprose.com

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Who are you?

Tell us and you could win this Dan Pentium multimedia PC worth more than £1,300.



In case you weren't aware, *PC Review* has some new owners. And we're just dying to get acquainted with our new extended family (that's you, that is!). So in the interests of democracy we're doing an absolutely massive survey.

Complete and return your April reader survey and you'll be automatically entered into our prize draw and could win this high-spec Dan Pentium PC or one of 100 copies of Normality from Gremlin.

This Dan PC is fast, reliable, and powerful and includes the:

- Pentium 75MHz processor
- 8Mb EDO RAM, 850Mb hard drive
- 1MB PCi 64-bit graphics card
- 15-inch monitor
- Desktop case
- 14.4Kbps fax/modem
- SoundBlaster 16 sound card
- Dan Hi-Fi Power Speakers 80W (PMPO)
- Dan Microphone
- Quad-speed CD-ROM drive
- Cherry Win95 keyboard
- Microsoft mouse
- Windows 95, MS Works & Lotus Organizer

Plus, 100 copies of Normality from Gremlin, each worth £44.99, are up for grabs. Enter now.

How to enter:

All we ask is that you take ten minutes to complete and return the reader survey that you should find inserted in this issue. It'll help us to improve *PC Review* and will tell us much more about who are readers are so we can tailor our magazine to your tastes.

This competition is only open to UK residents. Full entry rules can be found on the reader survey.

QUAKE'S HERE!







The characters in Quake are made up of textured polygons. This makes them surprisingly versatile. Here we see a player from the side, then looking down and up. Chances are though you'll never get this close to anyone. Unless you're dead sneaky that is...

The people who brought you Doom unveil their next generation game. In these pages we present our first look at Quake, along with an Unofficial User's Playing Guide...

Quake is in the building. After months of the stern faced statements from id Software that, "Quake will be ready when it's finished" the firm has finally let the world at large try its next masterpiece. Make no mistake. This game is important. *Quake* comes from the developers who may as well have invented the first-person perspective shoot-'em-up. *Wolfenstein* and *Doom* were both hailed as massive leaps in PC gaming technology. And *Quake* is their third leap forward.



Attention. Testing under way

On Saturday 24th February, 1996 the Public Test version of *Quake* was posted on the Internet. Not an alpha, a beta, or a shareware demo version. Just a multi-player game engine to test the graphics, sound and network routines id has developed. Sure they can call it a 'test' all they want, but we'd prefer to call it wonderful, marvellous, magnificent and utterly compelling. And this isn't even the finished game.

First impressions won't be great when you boot up *Quake*, negotiate the text based 'console' and wander around alone in its 3D environment. It's currently just a set of rough and ready test levels with half-implemented sound effects and wall textures that look uncannily similar to *Doom* – grey and brown, metallic and rough. It's only when you master the innovative control system, get networked to other PCs and sample the Deathmatch that you'll see *Quake*'s brilliance in full effect.

But it's not the game we expected. The last time any of the *PC Review* team got their hands on *Quake* it, was a fantasy-style action affair with Norse-type gods and Thor-esque hammers. Much in the style of *Hexen*, it was going to feature plenty of close-in contact, fantasy melée style weapons and magical 'boom-sticks'. It would appear that at the last minute id has had a change of heart. Wonderful news. It's now a game featuring big blokes with even bigger guns. Nice!

Not the million clones

The only problem with long range weaponry however, is that you won't get to appreciate just how swanky the graphics engine is. Where *Doom* and its million clones have employed sprite-based characters drawn as animation cells, for *Quake* id has instead opted for textured polygons. You'll have seen similar engines in *Descent* and *FX Fighter*, but you won't have beheld anything nearly as good as this. Even though the character

Out of The Shadows

Within hours of *Quake* being posted on-line the game already had it's own folklore. The hacking fraternity of the world had uncovered the monsters hidden away in the code, and one particularly bright hacker posted a patch to put them into the game. Not strictly fair or legitimate since the game's still at prototype level. But, hey, who cares. You get the first look at them here. Two more monsters were rumoured but unfound at time of going to press...



Magic Carpet eat your heart out. The dragon leaked a few months ago now flies, spits out fire and is hopefully as heartless as it is elegant.



No one's too sure what kind of weaponry this demon packs. It's massive and has the nasty habit of crashing the test version whenever it appears.



It might not look so scary but this flying fish, almost certainly based on the face huggers in *Alien*, can be a right pest when it gets up close.



Normally found running after you waving his chainsaw in the air or pinging off nine-inchers at you with his nailgun, you should beware the Ogre.



Yeah, like I'm afraid of a knight with a medieval sword? On the contrary, be afraid as this armoured chappie is fast, even if he relies on toe to toe contact to wound you.



Meet the Shambler. A huge chap with big claws, big teeth and a nasty habit of firing lightning bolts in your direction. Hello Sir. Say hello to my little friend. The chainailgun.



Yes. We've all seen *Terminator 2*. And yes, cease your internal dialogue, the Tar Baby does behave uncannily like the liquid metal, polymorphing, robot character in that film.



The wizard-like the knight is a throwback from the days when *Quake* was set to be a fantasy game. He zips around and fires fireballs at you – reminesent of *Doom*'s cacodemons.

styles are chunky, with body armour and helmets, the polygonal models are fantastically detailed and flexible. If you're playing a network game and can persuade one of the others players to make their character stand still for long enough, have a good look. You won't be disappointed.

The models walk, can be viewed from any angle and even appear to look up and down if so commanded. The only shortfall at this stage is that the weapons don't change. But, as we've said before, you're unlikely to get close enough anyway – and id still has a long way to go before finalising the designs. And another thing about polygonal bodies. They can be broken down into their constituent polygons with all manner of vicious weaponry.

King of game speaks

The guys at Id know what makes a good action game. It's not the cut scenes, the puzzles, the conversations or even the plot. A line from John Romero's *read.me* file sums it up best: "Playing *Quake* is very much like playing *Doom* – get weapons and kill stuff." Yup. That describes the network game experience. Lots of running around – though you'll run slower than in *Doom* – and lots of deadly mayhem.

We'll have much more *Quake*-related news for you next month, but in the meantime, just feast your eyes on these screen shots and make the most of our unofficial user guide over the page. *Quake* is good now. And it's going to get better. Oh

Tools of the trade

The Deathmatch test features six different weapons. Run out of ammo and the guns disappear from the base of the screen leaving you tool-less. As you approach guns left lying around, you'll notice them spinning in the air. Eventually, *Quake* will also feature a lightning gun and chainlightning gun, but in the meantime here are current toys...



Shotgun
You always start out with this. Pretty pitiful for multi-player games. Don't even bother taking anyone on with this pea shooter.



Double-Barreled Shotgun
We'd rather call this 'shootah' the Super Shotgun (as in *Doom 2*). Two barrels of fun.



Nailgun
The *Nine Inch Nails* connection shows up here with rivetting effect. Imagine a nine-inch nail embedding itself in you.



Chainailgun
Faster-fire nail gun with a spinning barrel. The effect of the nails pinging off the walls is good, but soft, flesh is best.



Grenade Launcher
Pipe-bomb-type weapon that fires bouncing, booming, metallic cylinders. Handy for stairs, but don't toss them up in the air.



Rocket Launcher.
The ultimate network weapon. Quick kills and an impressive smoke trail. Turns polygonal players into polygons. Brutally.

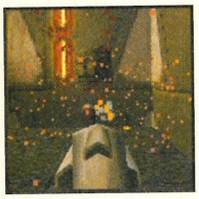
Where can I get it?

You've probably heard all this before, but the *Quake* demo is not available in stores. It's not even available mail order. Ever proud to show off their shareware roots while getting the whole world to test their graphics and network engines at the same time, id has released Quake for electronic distribution over the Net. And you can get it from us, *PC Review*. No seriously, you can. Although the aggressively worded copyright notice means that you're unlikely to ever see Quake on a cover mounted CD-ROM, you can visit the *PC Review* home page on *FutureNet* (www.futurenet.co.uk) and download the Public Test zip file QTEST1.ZIP from us. Alternatively, find a friend with a modem and get them to zip it up on some floppy disks for you. It's less than 5Mb compressed and freely distributable so spread some Quakin' around!

And the finished game?

It'll be ready when it's finished okay? Quake is shipping through GTi. They might get it out for May. They might not. In the meantime, try to resist temptations to pester GTi on 0171 258 3791. We'll bring you the review and the covermountable demo when id are good and ready.

The unofficial Quake User Guide



You'll need armour to survive a rocket launcher attack.



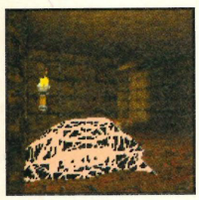
Body parts like this disembodied head litter the play area.



In the underwater sequences, things go decidedly hazy.



Wading from the water players should beware ambush.



The monster hacks also revealled this turtle-like wireframe.

Default keyboard settings

[Up arrow]	Move forward
[Down arrow]	Move backward
[left arrow]	Turn left
[Right arrow]	Turn right
[Ctrl]	Attack
[,]	Strafe left
[.]	Strafe right
[Spacebar or Enter]	Jump/Swim
[+]	Size screen up
[-]	Size screen down
[\]	Freelook
[Esc]	Toggles console MODE
[F1]	Clear memory cache and reload map and programs
[F2]	Reload map
[F3]	View BSP order correctly (debugging)
[F4]	View BSP order backwards (debugging)
[F5]	Take a screenshot in PCX format
[F6]	Turn off drawing speeds (debugging)
[F7]	Turn on drawing speeds (debugging)
[F8]	Turn monster targeting off (debugging)
[F9]	Turn clipping on/off (debugging)
[F10]	Turn godmode on/off
[F12]	Quit game to DOS

Customising the controls

bind <key> <action command>	Set a keyboard key to a specified action

Key names

Regular letter and number keys are entered as you see them, however for special keys use the following terms. Make sure that you use upper-case for the key names.

K_ALT, K_DEL, K_PGDN, K_PGUP, K_SHIFT, K_CTRL, K_UPARROW, K_DOWNARROW,
K_LEFTARROW, K_RIGHTARROW, K_SPACE, K_ENTER, K_TAB,
K_PAUSE, K_ESCAPE, K_F1, K_F2, K_F3, K_F4, K_F5, K_F6,
K_F7, K_F8, K_F9, K_F10, K_F11, K_F12

Action commands

+attack, +jump, +forward, +back, +speed, +moveleft, +moveright, +strafe, +mlook, +lookup, +lookdown, +left, +right, +showscores, +moveup, +movedown, +forward2

The [+] character before the action commands means a KEYDOWN event will be called for that action. A [-] character before the commands will signal a KEYUP event instead, but that is mostly useless. Try it if you want a command to be more permamently enabled - ie always speeding!

Customising your mouse

mouse1 <action command>	Set up your first mouse button
mouse2 <action command>	Set up your second mouse button
mouse3 <action command>	Set up middle mouse button
sensitivity <value>	Set your mouse sensitivity (Default is 3)
lookspring <speed>	Make your freelook button auto-centre (Default is 0)

Customising your movement

cl_forwardspeed <value>	Set up your forward movement speed (Default is 200)
cl_backspeed <value>	Set up your backward movement speed (Default is 160)
cl_sidespeed <value>	Set up your sidestep/ strafing speed (Default is 320)

Launching a Quake Server

***Quake* servers take two forms – dedicated and listening. To launch a dedicated server that you can't actually play a game on add the command line parameter '-dedicated' to your loading command. To launch a listener server that you can play on too add the command line parameter '-listen' to your loading command. Remember the second option will place more demands on which ever machine your are using as the server.**

Customising network games

name <string>	Set your name
color <0-15>	Setting your player colour as solid character
color <0-15> <0-15 >	Setting your player colour – top then trousers
fraglimit <value>	Set the amount of frags at which the game will quit (Default is 20)
timelimit <value>	Set the amount of time that the game will last before quitting out
teamplay <value>	Set teamplay (Default is 0)
pausable <0/1>	Set whether the game can be paused
hostname <string>	Set the name of your server
host_framerate <value>	Change the speed of the game (Range is 0 to 0.01. To go slower, use 0.01.)
sv_maxspeed <value>	Change the maximum speed of the player (Default is 320)

Other console commands

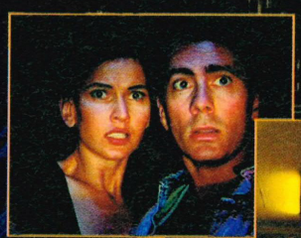
map <level name>	Start a map - the three test levels are called TEST1, TEST2 and TEST3
connect	Start a session with a server
disconnect	End a session and disconnect from the server
clear	Clear console screen
exec <filename>	Run a configuration file
slist	List all available servers
[Cursor up]	Step back through previous commands entered
[Cursor down]	Step forward through previous commands entered
[Tab]	Command-completion function
teamplay 1	Sets up a team play game - set colours to the same values to make up groupings. Note must be typed on the server console
fly	Toggles fly mode
fox <value>	Changes you point of view. Experiment!
gamma	Gamma correction
god	Toggle God Mode
kill	Kill the session
profile	Player profile

cutout and keep!

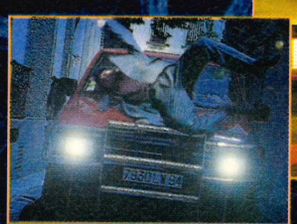
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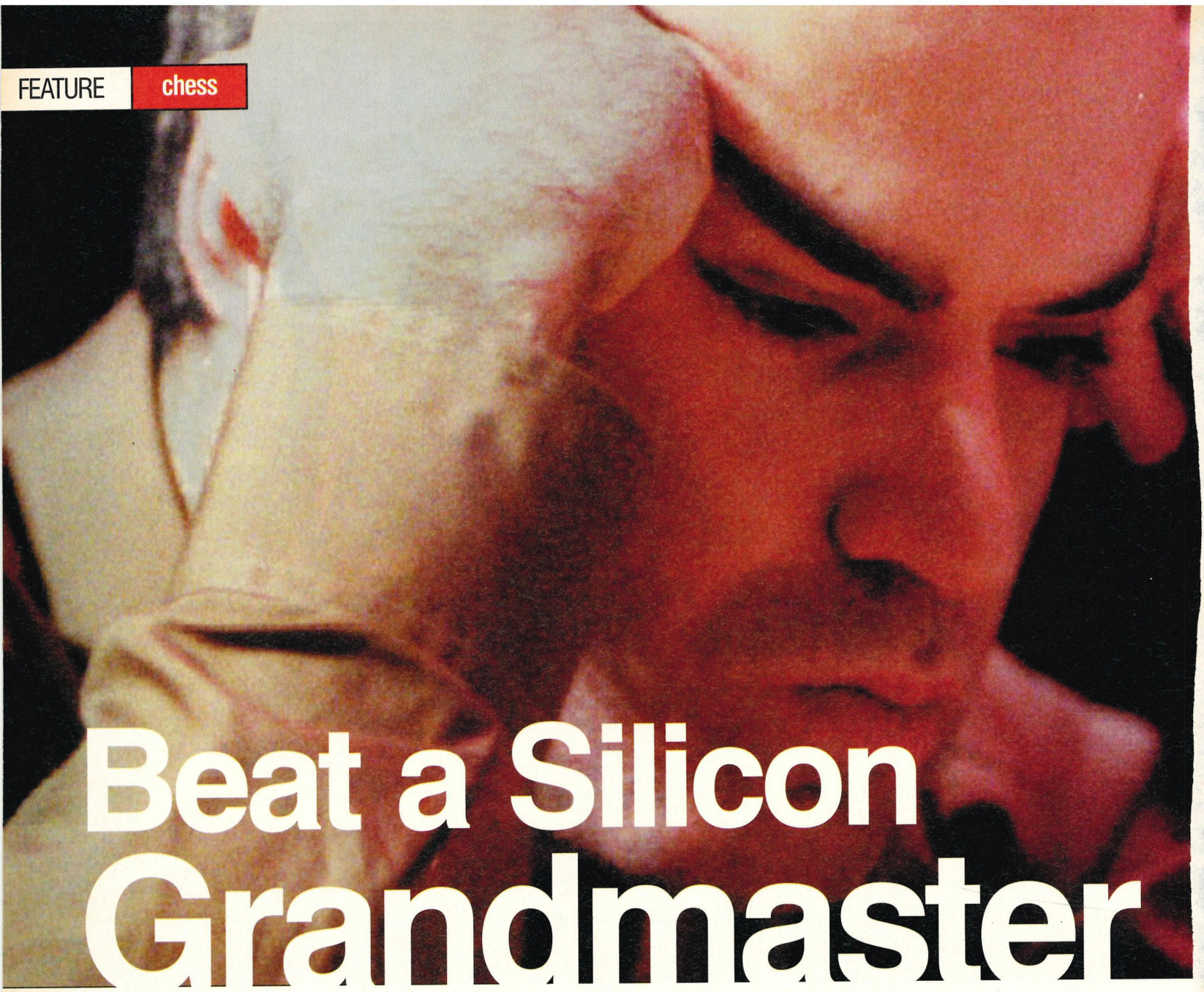
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Beat a Silicon Grandmaster

Last month, Garry Kasparov beat Deep Blue, IBM's chess dedicated supercomputer. Could you do the same? We talked to a leading chess game designer for some hints and pointers...



The ability to render on the fly a fully rotatable chess board and all its pieces shows off your PC's graphics capabilities, but how well can it actually play?

The scoreboard read thus: Humankind 3, Silicon Intelligence 1. We refer, of course, to last month's chess challenge between Garry Kasparov and Deep Blue, a computer built and programmed specifically to play chess by IBM.

Significantly, Deep Blue did manage to win once and draw twice in the competition. Could computers be reaching the point where they can defeat human beings at chess.

Despite Kasparov's resounding victory, the answer is generally yes. Most PC chess programs – even the shareware – can beat an average human player quite easily. Deep Blue, with its 256 individually configured chips working out some 200 million moves a second, is a special machine and it took the equally exceptional Kasparov to beat it.

No sooner had he done so than the artificial intelligence theorists were jumping up and down calling Deep Blue thick. They hold that Deep Blue employs brute force in the form of faster processing rather than any elegant artificial intelligence. Instead of solving problems or learning the techniques of its opponent, Deep Blue solves problems by simply surveying a huge number of options quickly.

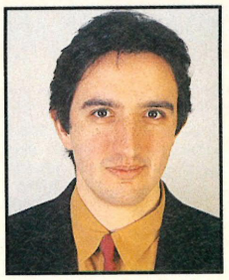
Your PC is very like Deep Blue in many ways. As PCs have become faster, new software has, in general, been designed to exploit greater speed. When you lose to your PC it's not because your computer is smarter, but because it can analyse hundreds of thousands of moves much more



Kasparov punishes Deep Blue for its brute force style of chess.

Eric Caen's five chess tips

Who better to ask for computer chess tips than Eric Caen, President of Titus and the man behind Virtual Chess? Here are five gems of his wisdom...



Eric's an accomplished club player, but he can't beat his own creation.

1 Don't be afraid to attack – many players begin games too cautiously. But when you make an attack, be sure that it is working. If there is any way at all for the computer to escape your onslaught, it will find it.

2 Be extremely careful when making a sacrifice. Your PC is considering more than just the obvious ways it can take your pieces. If you're not 100 per cent sure a sacrifice will pay off, you're probably already dead.

3 If you get into a strong position, try to hold it for a few moves rather than rushing in. Your PC isn't programmed to wait; it will start trying a range of moves and could, desperate to improve its own position, make a mistake. Then you must pounce.

4 The best way to improve your skills is to practice. If you're playing a game like ***Virtual Chess*** where the program advises you on what moves to make, use the tips and think of the reasoning behind the advice given. Look at the lists of move sequences and learn the logic.

5 More expert players should try to get a PC chess program out of its opening books within the first 20 moves. Like Grandmasters, chess programs usually start play using libraries of moves called opening books. If you can recognize these systems, and crack them, you can beat your PC.

CD REVIEW



Virtual Chess for Win95 – exclusive CD-ROM demo.

The review
Read our review of *Virtual Chess for Windows 95* on page 81.



The most practical way to play Virtual Chess is with a traditional overhead view.

quickly than you ever could. But although a human player usually only works on up to around 500 possible moves at a time, we exercise a better quality of judgement when evaluating what move we should make.

Truck on the horizon

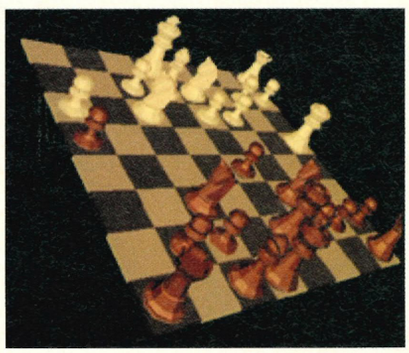
According to Eric Caen, President of Titus and designer of *Virtual Chess*, chess programs suffer from the horizon syndrome. "The horizon syndrome means that the computer can see a clear way ahead from where it is to the horizon," says Eric. "The horizon, in fact, is at the top of a hill and just beyond the hill a huge truck is coming, but the computer can't see it." The truck here symbolises Kasparov's attack.

Although Deep Blue is about 4000 times faster than *Virtual Chess*, Caen estimates his program could still take 30 of 100 points from IBM's machine. "Speed is not everything and even with that power there are still many things that come with the right software and accurate algorithms," he holds.

Nevertheless, nearly all chess programs work in the same way. At any time in a chess game roughly 30 moves are possible. For each of the 30 moves 30 responses are possible. So, in one full turn there are 900 outcomes to consider. Another full turn later and you're close to a million possibilities.

"The way Virtual Chess runs is that, analysing a potential move, if it feels its positional score will go down too much it marks that move in red. If the red colour remains in the branch of the logic tree extending from that original move, it eliminates that branch of the tree. This is how it selects – to restrict the tree to a reasonable size," says Eric. "The key is not to remove some branches too early."

Just to emphasise the quality of the AI system in *Virtual Chess*, Eric is quick to point out that it has beaten *Fritz 3*, which itself has beaten Deep Blue. *Virtual Chess* can add to its scalp list Yossif Dorfmann, the top player in France and a known machine killer, and Boris Goulko who has been champion in both Russian and in the US. But can Virtual Chess beat you? ***(GW)***



Virtual Chess for Win 95 employs 'artificial stupidity'. It can match the level of your play.

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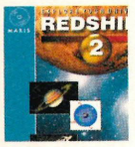
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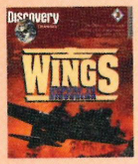
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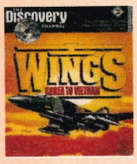
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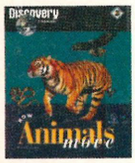
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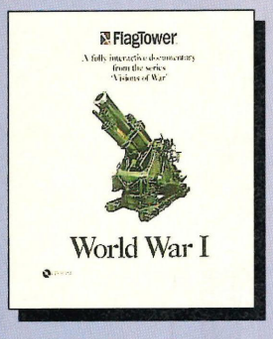
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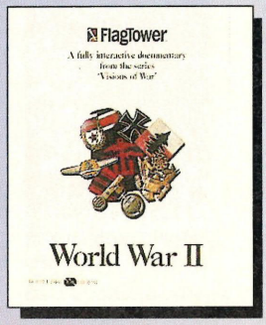
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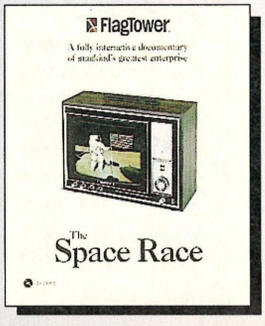


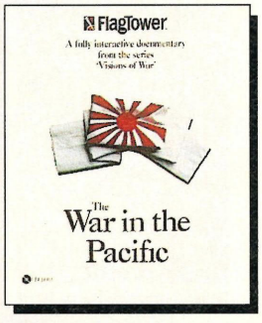
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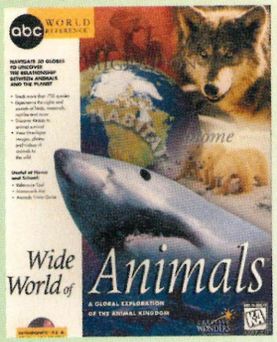
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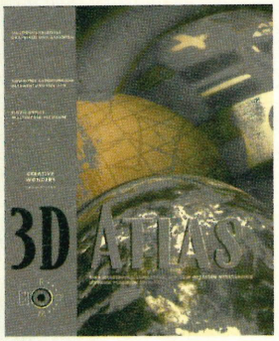
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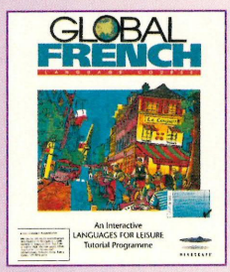
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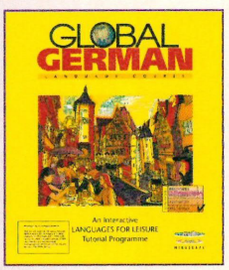
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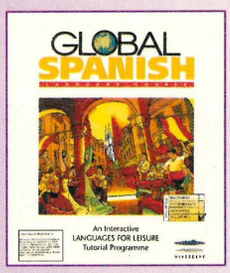
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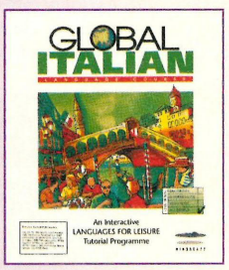
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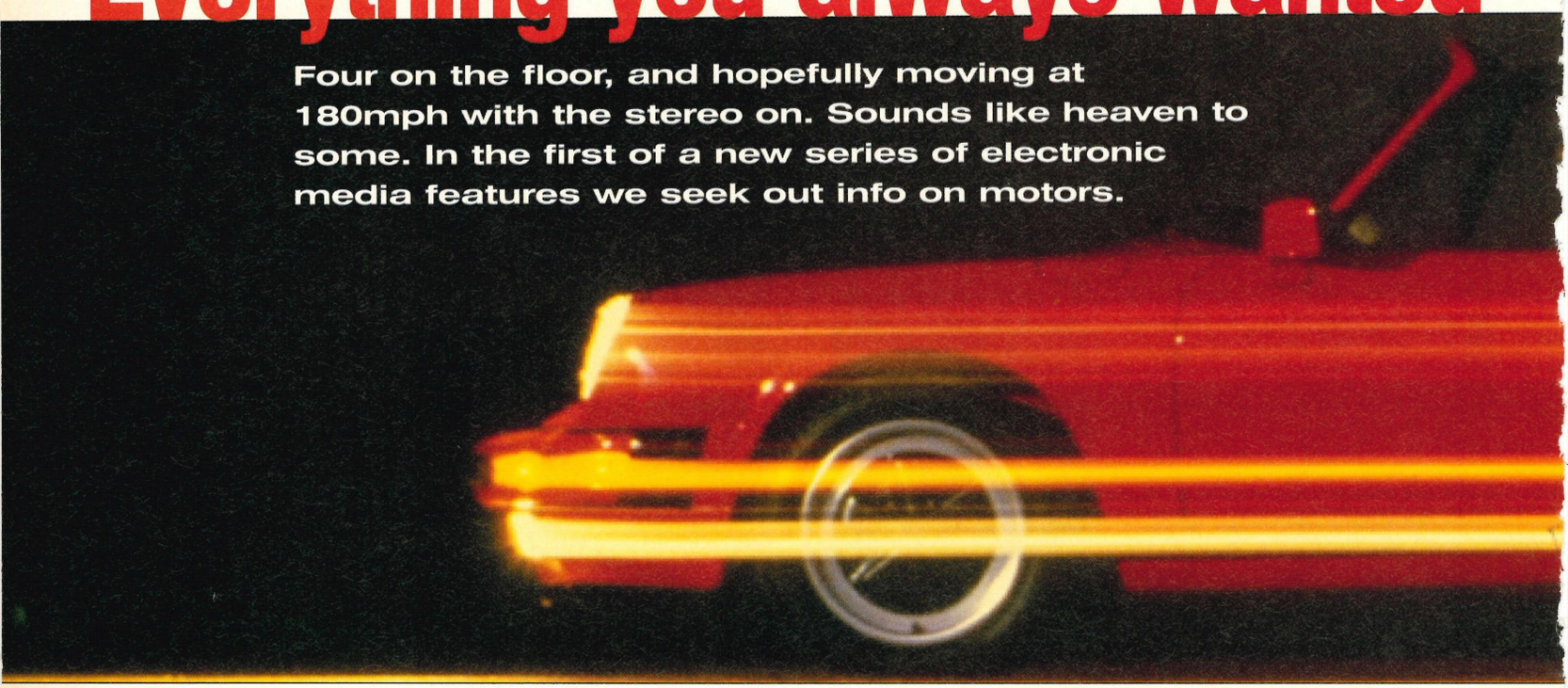
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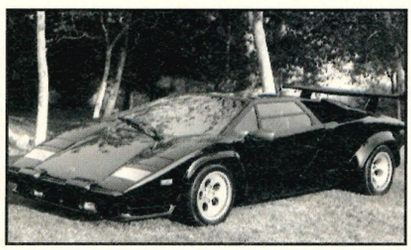
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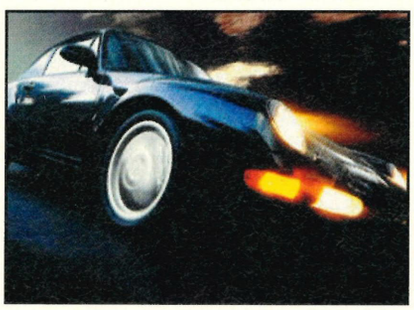
Four on the floor, and hopefully moving at 180mph with the stereo on. Sounds like heaven to some. In the first of a new series of electronic media features we seek out info on motors.



FutureNet
Links to all the Web sites mentioned in this article can be found at *PC Review*'s page on FutureNet. That's http//www.futurenet.co.uk



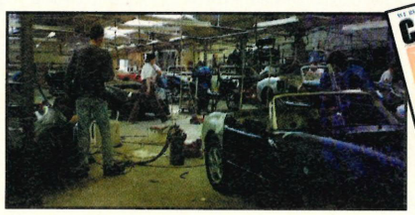
Log onto Lamborghini WEB and you can enter a charity raffle to win this 1986 Countach... for a price. And there's quite a bit of information on Lambo models at the site too.



The Porsche 911 Carrera. Just the sort of thing you'd drive to visit your plastic surgeon. There are on-line brochures for new models available via the Autoscape Web site.



Automobili Lamborghini should soon be going live.

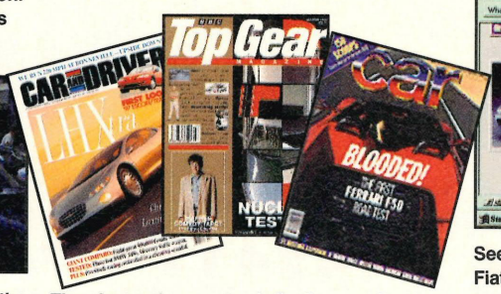


New sports cars on the way: TVR is one of the only car companies to offer an Internet window into their manufacturing works.

Digital superhighway? Frankly, using the Internet is more like a night drive down a country B-road. Lots of humps, bumps, twists and turns. You're never sure quite where you're heading, and there's always the chance of a crash. If, however, you learn the art of navigation, you should be able to reach your destination. Provided you have one.

Firstly, perhaps, we should indulge ourselves and find out as much as we can about the world's greatest road cars. Jags, Ferraris, Porches, Lamborghinis, Bugattis – all the sporty speeders. The ones we aspire to touching without setting off their alarms…

The Lamborghini is a very exclusive make of auto, and appropriately there is only one proper Web site devoted to the car symbolised by a charging bull. *Lamborghini WEB*, with tyre tracks running down it's main page, isn't as slick as the cars it's devoted to, and doesn't exactly tell you everything there is to know about Lambos, but when we logged on it did feature the fantastic opportunity to win a 1986 black Countach. To enter, all you need to do is donate $100 to a children's charity in California.

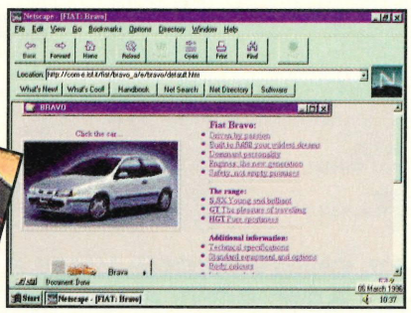


The electronic newstand: On-line versions of several top car magazines, both British and American, can be found on the WWW.

Still, the prospect raised a hope or two, and the rest of the site has plenty to offer including a 'virtual visit' to a Lamborghini museum. As you'd hope, there's a great deal of information on the various models and their specifications. Until the official *Automobili Lamborghini* site is ready, this is the best spot to stop if you're a Lambo fan.

A bemusing quotation from Enzo Ferrari kicks off *Ferrari: The Official Web Site*. "Many important people invite me to go to this or that city. I respond that I do not go because they would see me, a man like any other," he complains in Italian.

Well, he wasn't like any other man, and just as his cars remain superior to most others, so his company's Web site really is special. It looks reasonable for a corporate site and includes texts on the history of the firm, all the details on Ferraris of today and yesterday, plus heaps of racing news including all the lastest news from Formula One. Photos and specs of every road Ferrari ever are available. Excellent.



Seen the Fiat Bravo ad on TV? Well, the real Fiat Web Site is nothing like the one the company purports to have in the ad. It does, however, resemble the on TV a bit and isn't the worst car site.

to know about... CARS



All the Web sites mentioned are listed on the overleaf. ➤

Ferrari of the Month is also a good site, as is *FerrariNet*, but if you really want to know everything about Ferraris, the company's official site is highly recommended. In fact, it's better than the two Ferrari CD-ROMs which you can buy for around £30 each.

Firstly, there's *The Interactive Guide to Ferrari Road Cars*, which operates via an interesting gear-stick interface. Changing gears moves you between the sections of the disc. It's got heaps of fancy photos and the history and specifications of each model. If you can't get onto the Internet and see the Ferrari Web site, then consider this disc because it does come pretty close to telling you all you need to know about Ferraris.

With pictures and details on some 39 models of Ferrari, *The Ferrari Legend* is a poorer alternative. Its only advantage is that it has sampled engine noises of each car and a choppy video interview with Enzo Ferrari. The text isn't great, but there's an adequate helping of history. The Ferrari Legend was a precursor to its cousin, *The Porsche Legend*, a very similar disc in most respects. Of course, instead of Enzo Ferrari, it has Ferdinand Porsche, designer of the VW Beetle. Over a dozen photos of some 22 models of Porsche are offered.

If, by some slim possibility, you actually want to buy a Porsche, you can see the new models using the *Autoscape* Web site. Albeit, this is an American service, and it isn't very comprehensive, but general info on the likes of BMW, Honda, Alfa Romeo, Volvo, Rolls Royce, Mercedes and VW is only a link away. The main decent Porsche site, however, is called *Porsche Automobiles*. "It all began in 1948 with the 356, the very first Porsche ever built," says the site. "Since then, cars from Porsche have been known world-wide to be the best, both in quality and in performance." Sounds just like an official site… but isn't. It's the work of a bigtime Porsche fan trying his best to put everything there is to know about Porsches onto the Web.

Aston Martins, Bugattis and Jaguars are other class cars honoured on the Web, but now we must turn our attention to cult cars. The biggest cult car ever has to be the VW Beetle and, predictably, there are plenty of Web sites by Beetle fanatics, none of them will tell you everything you need to know, but several of which will tell you things you definitely don't need to know. Sites like *Marc's '70 VW Bug* even include details on sexual acts that have happened in, on or near said Beetle. After going to great length to illustrate how his Beetle has been repaired, restored, refloored and repainted, Marc then adds, "I am personally not a bug fanatic, I just don't have much money and ended up getting a bug for cheap." Right below it is a link to a log of his Bug's fuel efficiency.

More romantic is the approach taken by Karmann Ghia lovers. *Karmann Ghia World* is a good site, profiling of some 20 Ghia restorations. Help is at hand if you're working on a car, and you can see dozens of other people's jobs. The Mini, however, fares less well on the Web. We only found one decent site: *Mini InterNet International*. "99.9% of the fun of owning a Mini comes from driving it. No other car in the world can match it for point and squirtability," they claim. ➤



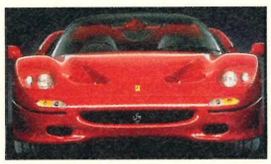
Minis are famous around the world, as a visit to Mini InterNet International will prove.



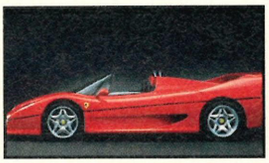
Media Factor Cars includes trivia on cars like this 1899 Renault 1.75hp, the first auto to feature a drive shaft.

The Italian Stallion on the Web

No, not Sylvester Stalone. We're talking about Ferrari: The Official Web Site, an excellent spot full of Ferrari delights. For instance, you can pick up all the specs on the newest Ferrari, the F50, a car so exclusive, rumour has it, that you can only buy one if you already own a Ferrari.



This beatiful thing is 78.2 inches wide. Perfect width.



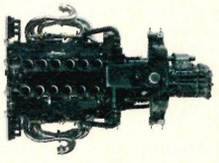
And it's 176.4 inches long with a 101.6-inch wheelbase.



Sit behind this dashboard and you can hit 60 in 3.7 seconds.



With a top speed of 202mph it roars to 513hp at8500 rpm.



Based on a 12-cylinder F1 engine, this is the F50's heart.

INTERNET ADDRESS DIRECTORY

WEB SITES:

ASTON MARTIN
http://www.ultranet.com/~dwc/am/

AUTOMOBILI LAMBORGHINI
http://www.lamborghini.com/

AUTOSCAPE
http://www.autoscape.com/show.html

BUGATTI
http://www.stud.unit.no/~jacob/BILsidor/Bugatti/Bugatti.html

CAR
http://www.erack.com/car/

CAR AND DRIVER
http://www.caranddriver.com/index.html

FERRARI OF THE MONTH
http://cpcug.org/user/titusb/ferraris/mferrari.html

FERRARI:
THE OFFICIAL WEB SITE
http://www.ferrari.it/ferrari/

FERRARINET
http://www.psc.edu/%7Ersnodgra/Ferrari/

JAGUAR
http://www.oslonett.no/home/nick/jaguar.html

KARMANN GHIA WORLD
http://www.serve.com/bacani/kg.html

LAMBORGHINI WEB
http://www.csv.warwick.ac.uk/~bsuqg/lambo/lambo.html

MARC'S '70 VW BUG
http://grimmy.santarosa.edu/~mhawkins/bug.html

MINI INTERNET INTERNATIONAL
http://miniweb.aspect.com.au/miniweb/homepage.html

PORSCHE AUTOMOBILES
http://www.cs.cmu.edu/afs/andrew.cmu.edu/usr18/mset/www/porsche.html

TOP GEAR
http://www.tecc.co.uk/topgear/

TVR
http://www.domino.com/tvrcc/tvr.html

NEWSGROUPS:
alt.autos.antique
alt.autos.rod-n-custom
rec.autos.4x4
rec.autos.misc
rec.autos.antique
rec.autos.sport.f1

CD-ROM contacts

100 Years of Motoring
£35 from Koch Media
01252 714340

CD Auto 95
Silver Disc 0039 93 415 3606

The Ferrari Legend and The Porsche Legend
£29.99 each from Ocean
0161 832 6633

The Interactive Guide to Ferrari Road Cars
£29.99 from Global Beach 01734 342966

Media Factor Cars
£29.99 from Andromeda Interactive 01235 529595

It is the Karmann Ghia however, which is notable by its absence from the *Media Factor Cars* CD-ROM, though Minis get several mentions. Of the 1959 Austin Mini the disc says: "The Mini was a 'classless' vehicle bought by film stars, aristocrats, and young and old people from all walks of life. It has a transverse engine and front-wheel drive."

Such interesting minutiae is abundant on *Media Factor Cars*, which covers some 1000 automobiles. Photos of cars from as far back as the 1890s are coupled with bite-sized bits of car trivia. "Henry Ford's Model T was the first car to be assembled on a moving production line. It was also the first car to sell over a million," we're told. You can even hear a T's start-up noise and horn, while there are videos of some 50 cars running full-screen.

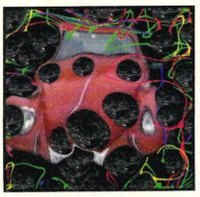
Though it's full of big pictures and dotted with facts, *Media Factor Cars* can't match the sheer volume of information in *CD Auto 95*. This CD-ROM was actually produced in Spain and has the straight dope, as it were, on 2800 different cars. The facts here, rather than being esoterically interesting, are of an empirical type - top speeds, dimensions, fuel efficiency and so on. It follows that the search engine in *CD Auto 95* is very specific. You can, for instance, find all the V8s that can reach 130mph and have airbags.

The final car CD-ROM worth mentioning is *100 Years of Motoring* which was produced with the Beaulieu National Motor Museum in Hampshire. It is a virtual version of the museum with a database tagged on. Two smart features are a history of car advertising and a section on land speed record breakers culminating with Roger Nobel's Thrust II. Overall, though, not much depth.

Of course, the main advantage of things on the Internet over CD-ROMs is currency. For the latest developments and reviews of new cars your best bet is to see a Web site put up by one of the big car magazines. Found under the BBC Television's main site, *Top Gear* magazine on the Web at first appears to be little more than an advert for the dead tree version. Delve deeper, however, and you'll uncover one of its main benefits: Car Chase. This function of helps you pick your ideal car by filling in a form. Rifling through *Top Gear*'s listing of 1700 new cars on the market, it'll instantly pick the ones most suited to you. For us it recommended the new MGF, immediately stating a number to call for a free brochure. Too bad no photos were available.

The American *Car and Driver* magazine has a good site, but only offers tasters of what's in the magazine and is obviously geared to the US market. More satisfying, however, is *Car* magazine's on-line version. They put up real features which means there's more to read than at *Top Gear*'s spot. "As we drive onto the bowl the XJ doesn't feel quite as gruntful as I thought it would. Leslie is obviously taking it easy," says a feature on the Jaguar XJ220S. Elsewhere there's a nifty quiz on four sports cars as well as a listing of the new models of 1996. The site also includes a chat function where you can debate car stuff.

The best place to go for a chat, should you want to get embroiled in raging fires of opinion, is Usenet. The most frequented car newsgroups appear in the *rec.autos* area with hands-on things like antique cars and 'rod-n-custom' being very popular topics. Despite the predominance of American posters, *rec.autos.sport.indy* is equal in popularity to its Formula One equivalent, where the future of David Coulthard and the state of the new Ferrari were hot topics when we lurked. The IndyCar v F1 debate is an interesting one to monitor. "Get lost with your indy cars. Greetings, Peter," writes Peter Daas of the Netherlands to all F1 detractors.



Peculiar artistic renditions of VW Beetles are a hallmark of Marc's '70 VW Bug home page.

For all our Sunday drive meandering around the digital media this certainly isn't all there is no know about cars. We wanted, for instance, to do far more on motorsports like rallying and karting. But that, perhaps, is another feature in itself. ***(GW)***

Star Cars of Yesteryear

The General Lee

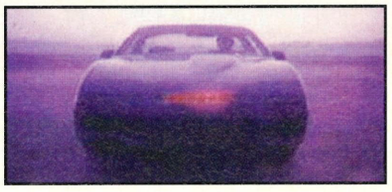
http://www.ghgcorp.com/rbigoness/hazzard.html



"The undisputed star of the show, this car kicked all ass known to man. It was painted bright orange, which – of course – always helped when hiding from the police, and had a big old Confederate flag on the roof." Ray's Dukes of Hazard Web Page is the unbeatable source of info on the General Lee. And do we not miss Daisy Duke?

KITT

http://users.aol.com/ashah70685/home.html



Before hanging out with a silicon-enhanced blonde on a California beach, David Hasslehoff was frequently spotted with this silicon-enhanced talking car on a California highway. KITT, like Herbie below, was able to drive autonomously and certainly outshone Hasslehoff as the star of the show. We miss KITT, but not as much as Daisy.

Herbie the Love Bug

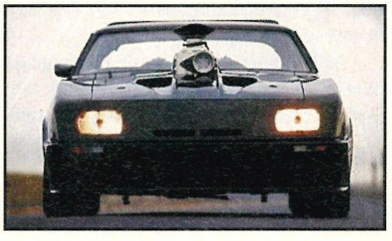
http://www.wieckphoto.com/Auto/AUTO_RELATED/Speciality_Cars/Herbie_Love_Bug_VW



Sorry folks, this isn't the real Herbie, but it is a Volkswagen Beetle two-door sedan just like the Love Bug from the classic Disney films. The actual Herbie could drive by itself, open its own doors and go bananas at will. For film info see the Internet Movie Database at http://www.msstate.edu/Movies/

Mad Max's Interpretor

http://compsoc.lat.oz.au/~steve/madmax.html



The vehicular violence in Mad Max was a great part of this cinematic trilogy. The main car, of course, was the souped-up Ford Interceptor driven by Mel Gibson. Go to the Mad Max Interceptor site and you can download video clips of this restored relic from film history. And hey, the car's the star, not a single shot of Mel Gibson to be seen.

Starsky and Hutch's car

http://www.sepc.sony.com/SSI/TV/SH/starsky.html



"Wherever danger lurked, Detectives Starsky and Hutchinson weren't too far behind. Or maybe they were, but they always caught up in the end, and justice prevailed," says this Starsky and Hutch Web site. Here, for $25 a pop, you can order shirts emblazoned with a picture of their tell-tail white-striped car.

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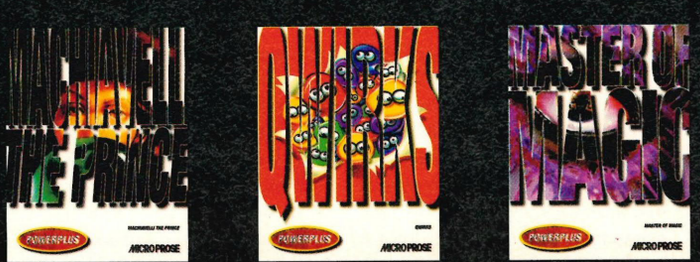
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With Quake now in public testing, you'd think that every new release would be over-shadowed. You'd be wrong. Terra Nova, game of the month, does things id wouldn't dream of. Where Looking Glass has created a believable game world, id has gone for the best graphics engine, multiplayer action and lots of blood and guts. You pays your money you makes your choice. We say get both!

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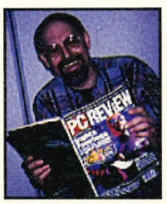
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Screen Scene

Game Design: Master Class



Ezra Sidran is the man many call Mr Wargame. With development credits spanning across the three *Universal Military Simulator* games (the third of which we'll be reviewing next month), he has received numerous awards from the wargaming community, including Developer of the Year, Wargame of the Year and the Software Publishers Association's Educational Game of the Year. He is an avid military historian and wargamer. His computer programs are used worldwide by professional military institutions for educational and training purposes. In an off-guard moment he could tell you a thing or two about the planning of Desert Storm. But this month instead, we asked him to tell us the eight essentials of wargame design...

1. So many choices

The wargame should confront the user with the same choices and opportunities to make decisions that faced the actual commanders during battle. Events should occur logically and never at random.

2. Get real

Wargames are simulations and every effort must be made to model real-world factors accurately. For example, *Risk* is a fun game but it is not a wargame. In the real world you cannot prevent an invasion of South America by positioning an army in West Africa. No really, you can't. Nor can you sell a barracks on the battlefield and immediately build a helicopter with the proceeds as you can in *Command and Conquer*.

3. The truth

The wargame should be historically accurate. Luckily, most wargame designers also have a sincere interest in military history. It takes time to research Order of Battle Tables and find accurate old maps but it can also be one of the most rewarding parts of a project.

4. The reason why

The user needs to understand why a battle was resolved by the computer the way it was. Many programs use the 'fog of war' to hide bad maths or simplistic formulas. I have always allowed the user to view the equations and adjust the variables as they see fit. To accurately model combat you have to crunch an awful lot of numbers. Luckily, that's exactly what computers were designed to do.

5. No omniscience

The computer should never, ever, cheat. One of the more obvious cheats you'll find in wargames is the omniscient artificial intelligence. That curious phenomenon whereby you don't know where the computer's units are, but it knows where the positions of yours are and manoeuvres accordingly.

6. No Gods

And then there's the messianic computer, whereby the computer's units can walk on water, or, in one famous case, can send battalions around the world, while your ships sink if they don't end their turn next to a land square.

7. Play Fair

Finally The too-lucky computer (it stacks the roll of the dice in its favour). In one game I've seen Engineer battalions wipe out Panzer divisions. Yeah, right.

8. Back to school

The wargame should be educational. The user should come away having learned something about the battle itself, as well as the events that led up to it. For example, we were probably all taught at one time that the battle of Crecy (August 26, 1346) was a triumph of the English longbow. But a good wargame of Crecy will teach you why the longbow was so important (because the English were able to strike down the 'flower of French nobility' with long range weapons before the French knights could close for hand to hand combat). This may help the user understand why Edward III decreed in an Act of 1334 that knightly tournaments were henceforth forbidden in England but contests with 'bows and arrows' were encouraged.

Um Bongo Um Bongo...

Hollywood, it seems, thinks Michael Crichton has a pen made of gold. Each celluloid adaptation of his novels packs audiences in across the globe, and his latest adventure epic, *Congo*, is no exception. The plot is a classic mix of adventure clichés, throwing secret diamond mines, industrial espionage and hostile creatures into the melting pot. But despite its banality on paper, it's an entertaining hour-and-a-half on the big screen



The game of the movie Congo is coming. Want to win the video?

And hey, there's a game coming based on the movie too! April 28th sees the release of CIC/Viacom New Media's PC version, *Congo: The Movie – Descent into Zinj*. It's a first-person graphic adventure that takes over where the film ends, blending mind-bending puzzles with all the action from the movie. We'll have a full review next issue, but rather than see our readers thrown in at the deep end, we're offering ten lucky people the chance to win a *Congo* video – not currently in the shops – in exchange for the correct answer to the following question:

Question: What is Um Bongo?

Send your guess, on a postcard, to PC Review, Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW, to reach us by the 25 April 1996. The first ten readers out of the hat will receive a video each.

Six of the best

This month the new PC review team have been playing...

Quake



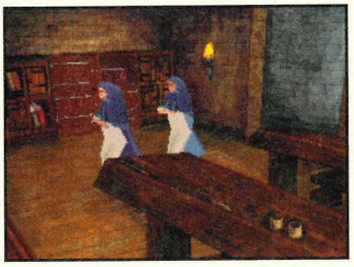
id Software/ GTi
Free public test
See page 24 for more info
It's only the Public Test version, but it's still the best multi-player game ever! And this time we mean it. Three brilliant levels and lots of opportunity to do the damage. Check out our feature starting on page 30.

Actua Soccer



Gremlin Interactive
£34.99
Rated 9
PCR 51
Stunning motion captured players and good playability make this footy game a winner. And coming soon, *Euro 96* using an enhanced version of the engine from Gremlin.

Time Gate



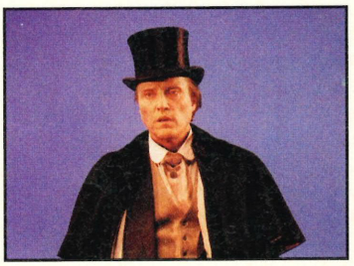
Infogrames
£44.99
Rated 8
PCR 53
We only reviewed it last month and this month we've played it do death to bring you the complete solution. Turn to page 88 for our walkthrough of this moody, atmospheric game.

Terra Nova



VIE
£44.99
Rated 9
PCR 54
It's like someone put *Magic Carpet* and *UFO: Enemy Unknown* into a liquidiser together and turned the dial to 'Better'. Looking Glass Technologies are among the best developers in the world.

Ripper



GameTek
£39.99
Rated: not yet
PCR 55
Hello sir. I've come for your spleen. Lovely with runner beans and a good chianti. No, we haven't reviewed *Ripper* yet, but we have a beta of it in the office and we're digging it. Real horror show!

Descent 2



Interplay
£39.99
Rated 8
PCR 54
Sure it's just like the original. But we like the original. Okay? And what's more we like the Guide Bots, the torches and all the other new touches. But would be buy it again? Hmm.

GALLUP PC CHARTS

TM	LM	TITLE	FROM	ICON
1	-	C&C Covert Operations	Virgin	■
2	3	Commandand Conquer	Virgin	▲
3	2	Encarta 96	Microsoft	▼
4	1	Wing Commander IV	Electronic Arts	▼
5	6	Championship Manager	Domark	▲
6	5	Screamer	Virgin	▼
7	4	Worms	Ocean/ Team 17	▼
8	13	Warcraft 2	Ablac/ Blizzard	▲
9	11	The 7th Guest	Virgin White Label	▲
10	9	Microsoft Flight Sim V5.1	Microsoft	▼
11	7	Terminator: Future Shock	Bethesda/ Virgin	▼
12	10	FIFA Soccer '96	Electronic Arts	▼
13	8	Rebel Assault 2	Virgin	▼
14	12	Rebel Assault	Virgin White Label	▼
15	17	TFX: EF2000	Ocean	▲
16	15	Day of the Tentacle	Virgin White Label	▼
17	14	Destruction Derby	Psygnosis	▼
18	–	Gabriel Knight 2	Sierra	★
19	16	Top Gun	Microprose	▼
20	18	Actua Soccer	Gremlin	▼

PC CD-ROM and HD Full price

1	1	The Lion King	Virgin	■
2	6	Aladdin	Virgin	▲
3	3	Doom 2	Virgin	■
4	7	Autoroute- UK & Ireland	Microsoft	▲
5	5	Sim City 2000	Maxis	■
6	4	Jungle Book	Virgin	▼
7	9	Best of Win Entertainment	Microsoft	▲
8	8	Mavis Beacon 2 (UK edition)	Mindscape	■
9	–	Microsoft Flight Sim V5.1	Microsoft	★
10	2	Worms	Team 17/ Ocean	▼

PC CD-ROM and HD Budget

1	1	X-Wing	Virgin White Label	■
2	2	The Settlers	Blue Byte	■
3	–	Earthseige	Sierra	✪
4	–	Magic Boy	Empire	★
5	8	Easy to Learn Computing	Premier Collection	▲
6	4	Doom	Microstar	▼
7	7	Civilisation	Powerplus	■
8	–	Inca 2	Sierra	✪
9	–	Word Games for Windows	Premier Collection	✪
10	3	Formula 1 Grand Prix	Powerplus	▼

▼ = down ▲ = up ■ = static ★ = re-entry ✪ = new entry

Reviewed next month...

F1-GP2
Microprose, £39.99
Can Geoff Crammond do it again? Is *F1-GP2* going to live up to all the hype and be the best driving game ever? The beta that we've seen suggests he can, but only the final, finished version will tell us for sure.

Gender Wars
SCI, £39.99
Political correctness goes straight out of the window in this *Syndicate* inspired action game. Blokes attack and kill girls and vice versa. Just think yourself lucky they've ditched the gun-in-mouth 'Suck on this' advertising campaign.

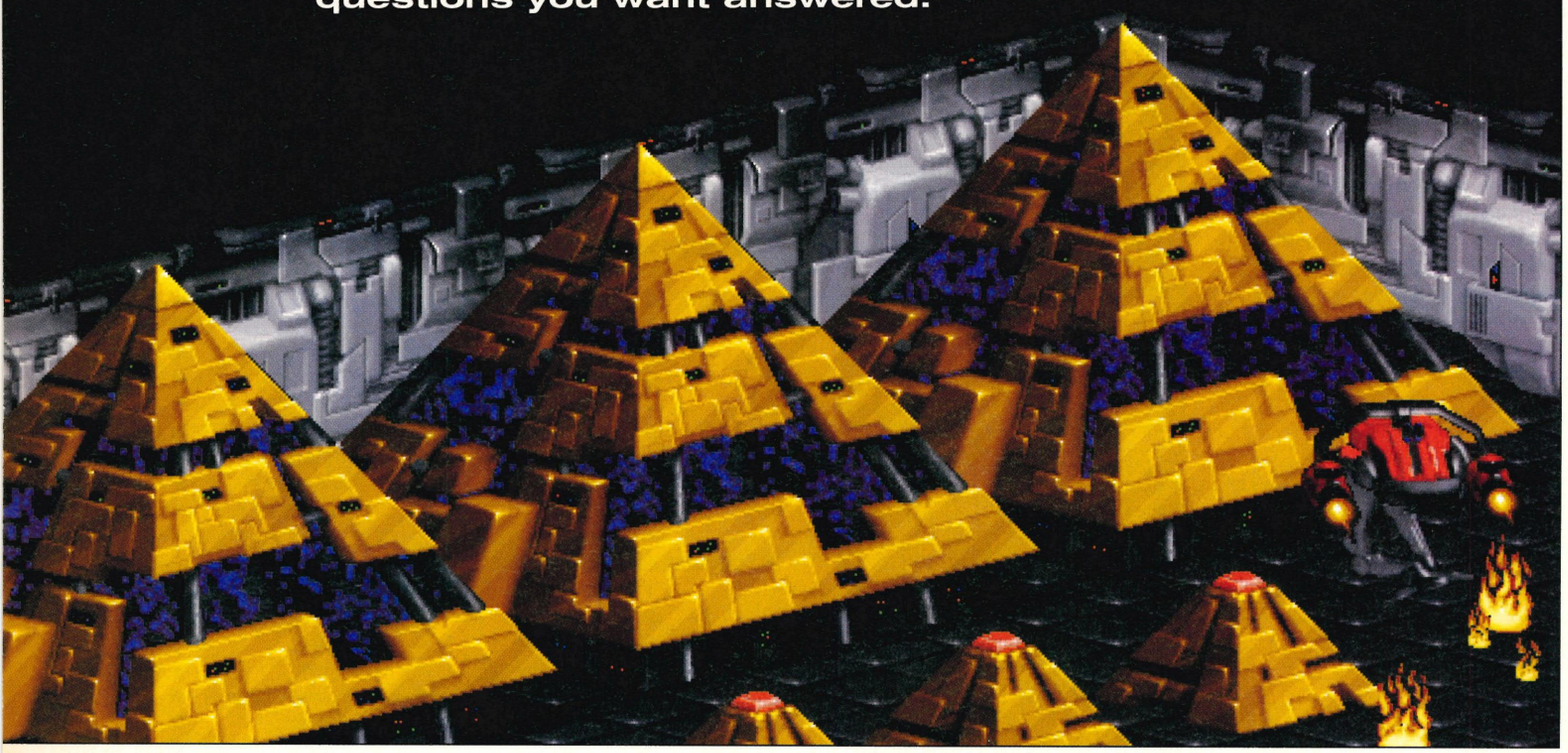
Zork Nemesis
Activision, £40-50
Previewed last month and at time of going to press being finished off by panicing programmers at Activision. Top *Zork* fact: Joe Napolitano, of *X-Files* fame, directed the action sequences.

PBA Bowling
Virgin Interactive, £29.99
A bowling game? For the UK market? Surely a mistake. But Bethesda – makers of *Terminator: Future Shock* – don't make mistakes. Just good games. Maybe they can make a go of a bowling sim!

Boom-bastic

Total Mayhem: in progress

Fun with guns? Domark reckon they've got a Syndicate-beater on their hands. We asked the questions you want answered.



Is that the ED-209 from Robocop over there on the right?

Imitation is, as some wise, probably bearded old man once said, the sincerest form of being a plagiarising fool. The best of ideas – and, sadly, often the worst – are never totally nor utterly safe from the threat of adaptation, until a clone of a clone of a cloney old clone is all that remains to remind a formerly eager, formerly grateful gamesplayer of the formerly brilliant game he formerly looked upon in blind admiration. Sometimes, however, this inspired imitation can lead to shinier, happier planes…

"I'd say that *Total Mayhem* was kind of like a cross between three different games," says Ben Cooley, the producer of US-based Cinematix's latest and, quite possibly, greatest. "I'd say it's closest to *Syndicate*, but it's also similar in some ways to *UFO: Enemy Unknown*, and also to *Crusader: No Remorse*." Similar how? "Well, the gameplay is much like *Syndicate* – using a group of characters to complete a mission in real-time, with full control over their weaponry. The strategic elements of the game are more similar to *UFO: Enemy Unknown* in that there are enemies littered throughout each explorable complex to locate and eliminate. And finally, the graphical style is very, very close to that of *Crusader: No Remorse*, with its large, detailed tiles, and more minor but polished cosmetic touches."

Developer: Cinematix

Publisher: Domark

Contact: 0181 780 2222

Expected Price: £44.99

Expected Release: April

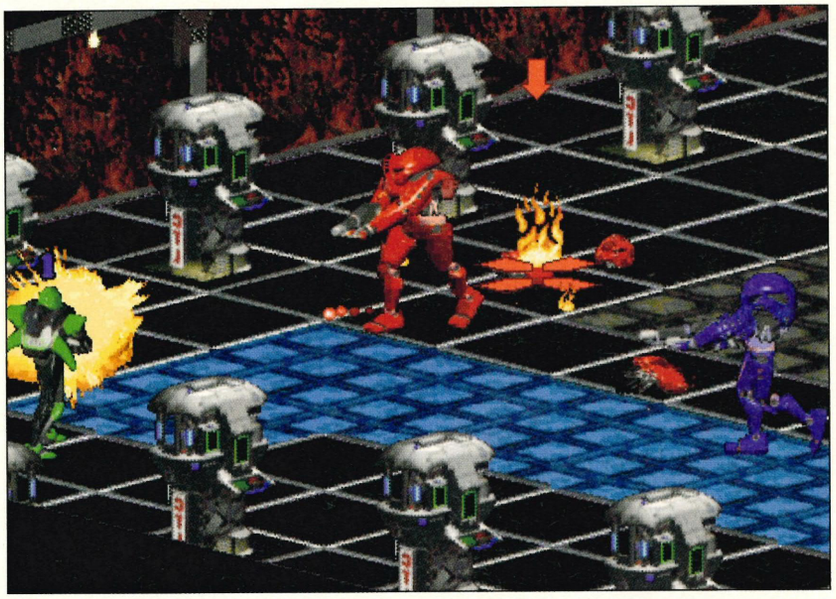
Alone, brave and proud

The storyline will win no prizes from those seeking original narrative twists. You are, predictably enough, a lone, brave, proud crusader thrust into a violent, futuristic world with only courage in your heart, justice on your mind, several tons of stupidly macho high-tech weaponry on your back, and the lyrics to a tinny *Star Spangled Banner* playing repeatedly in your poor, unoffending ears. But, although *The Late Show* would doubtless frown seriously at this flagrant lack of freshness, it's Ben that sums it up in perfect, producer-like logic. "It's not the storyline that counts. It's the gameplay." And *Total Mayhem* would certainly appear to have it.

Originally a shareware project which 'turned out much better than expected', Ben is sure that *Total Mayhem* packs the oh-so vital playability. "I think that we've managed to create a game that operates in a fundamentally different way from any other, and I think that that's something which will appeal to the gamesplayer.

"It's a very satisfying game. Personally, I like to just get right into a game and start blasting away at things. I like to watch things fly apart and be able to see the results of what I've done." So, Ben, tell me about your childhood. "And that's something we've made sure goes into the game."

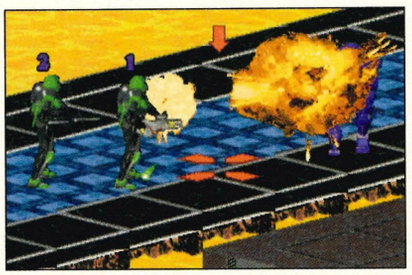
So *Total Mayhem* has the violence. Or, as Ben prefers to put it, the 'destruction'. It's got the selection of 10 different weapons, it's got the transatlantic, ever-so-frantic brand of 3D combat, and it's got a massive 65 different types of enemy. But America, being a land of rainbows and fairy dust where Bambi never dies and bullets are made of mere happy thoughts, has strange, over-protective parental reactions. "We were kind of pressured by our investors," says Ben. "They insisted that there be absolutely no killing in the game. To get around that, we had to turn all the enemies from people to robots. So, like I said, I wouldn't call it violent. More destructive."



Two levels of zoom in the game mean you can get close to the action for precision combat, as seen in this screenshot, or zoom out when you need to move your agents over a distance.



There's no denying the aesthetic similarities between Total Mayhem and Crusader.



Agents one and two take a pasting, but return the violence in kind.



The causeway proves to be a bridge too far for this bird-like robot. Explosions certainly appear to be a strong point of Total Mayhem.



Agent one is caught in an ambush. Were agent two to enter this building the player would get a cut-away view of the action inside it.

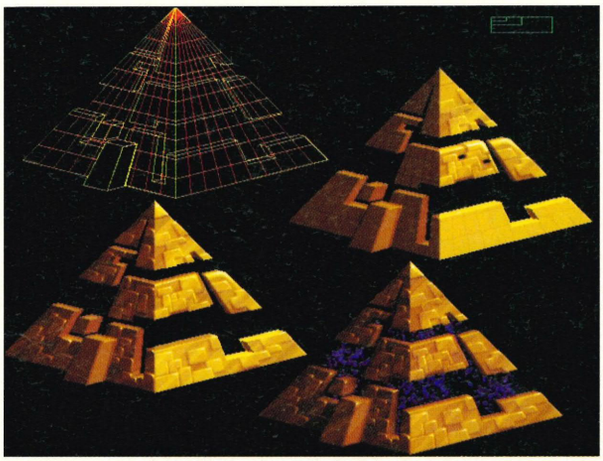
Justice to the game

'Destructive', then, is how we must refer to it. But surely 'destructive' couldn't do justice to a certain section of the game, which, it must be said, looks set to become a major selling point? A section of the game which, according to Ben, constitutes "the biggest difference between *Total Mayhem* and any other game out there." A section called The Deathmatch. "It's everyone against everyone," says Ben. "Up to eight people can play on a network, with the network mode being split up into three different sections." Yes. Multiplayer. "There's the co-operative mode, with the general aim being to simply destroy the enemy. Then there's the Capture The Flag mode, with players split into teams and having to destroy each others' flags or bases. And finally, of course, there's the Deathmatch."

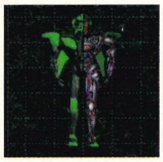
Sounds promising. Even now there's a deficit of decent action games on the PC and with *Total Mayhem*'s blasting action and Deathmatch from the isometric perspective CInematix could be on to a winner. We'll be bringing you the hard word on the finished game too, in next month's review. ***(DW)***

From the drawing board to the rendering screen

We take you behind the scenes with these development sketches and sprite designs. They're coming along very nicely...

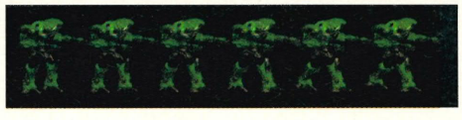


(Left) Pyramids composed of sophisticated meshes. (Below) Modelling the body suits.





(Right and above right) Two examples of the versatility of having robotic rather than humanistic sprites. Walking and talking, and boasting a variety of paint jobs.

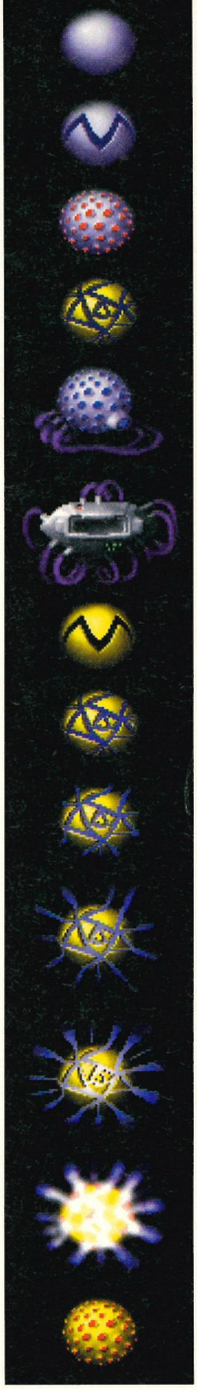


Next Month

We'll be reviewing the finished game and bringing you the exclusive demo on our CD-ROM.

Bits and pieces

The various power-ups and explosions have characters all of their own.





Full motion video sequences and animations develop Bad Mojo's storyline.

Kafka-esque

Bad Mojo: in progress

Have you ever wondered what life is like for the lowlier life forms in your kitchen? Well soon you won't have to because Bad Mojo, the game where you get to be a cockroach, is almost upon us.

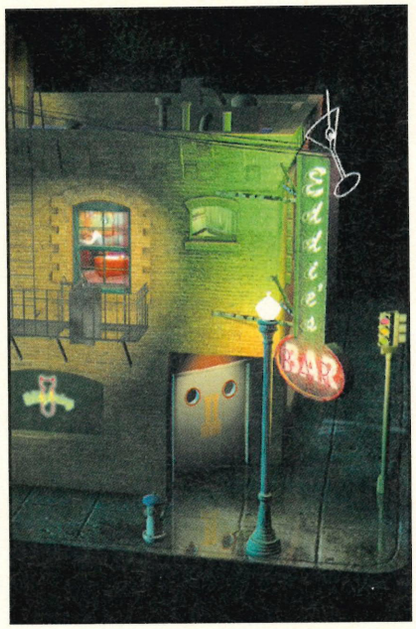
One night the young Drew Huffman lay sleeping. Sleeping, in fact, as he did most nights. But this night was different. Fate had chosen on this particular night to give Drew an inspiring moment.

Suddenly, Drew awoke from his slumber with an excruciating pain in his head. His mother rushed him to hospital where the doctors examined him. After some probing in one of his ears, they removed from it a small cockroach. Little did he realise it at the time, but the disgusting experience of having a crawly insect embedded in his ear would later inspire Drew and his friends to create a computer game.

Bad Mojo is that game and from what we've seen of it we can assure you it's every bit as peculiar as its genesis deep inside Drew Huffman's ear. In *Bad Mojo*, the player takes control of a cockroach, entering a strange world full of giant objects, logic puzzles and life-threatening dangers.

According to Vinny Carrella, art director at Pulse Entertainment, *Bad Mojo* first became a serious project for the company about three years ago. Vinny, Drew and Bill Zettler, who together formed the core of the game's development team, were telling each other tales of insects. They soon concluded that almost everyone has had a roach experience and therefore basing a game on the life of an insect would be a good idea.

"Most people have cockroach stories," says Vinny in the cosy surroundings of *PC Review*'s new office. "We thought, 'Wow! What a really cool way to do something controversial but not really that gross, or that violent or that sexual.' It's kind of disgusting in a playful way. The environment of a cockroach would be so fantastic, so textural, so rich."



The highly detailed settings are based on actual seafront bars in San Francisco.



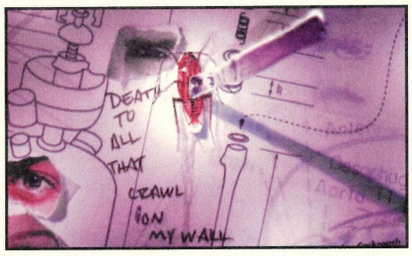
Roger Sams, in roach form, has a beautiful flying experience on the back of a moth.

CD REVIEW



An exclusive playable demo of *Bad Mojo* is on our CD.

Next Month
Full review of the finished game.



Cockroach life in Bad Mojo is nasty, brutish and, if you can't solve the puzzles, short.



A bitter, alienated character, Roger Sams, is turned into a cockroach by a glowing jewel.



Your plight as a cockroach begins in the drains beneath Sams' apartment block.

Bad Influences

It takes more than a cockroach in your ear to come up with the script for a good game. Here is a brief selection of some of the books and films which influenced Vinny Carrella and the team who produced Bad Mojo...

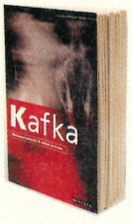


The Fly

The idea of a human becoming an insect was explored in 1958 with Neumann's *The Fly*, where a scientist manages to turn himself into a fly. Jeff Goldblum starred in the 1986 remake.

Franz Kafka's Metamorphosis

Carrella found *Metamorphosis* to be a bland book, but borrowed from it the theme of alienation. Re–arranging the name Gregor Samsa from the book, he came up with Roger Sams, *Bad Mojo*'s main character. The cat in the game is named Franz – after Kafka.





David Lynch

The team at Pulse are fans of David Lynch and looked to *Blue Velvet*, *Eraserhead*, *The Elephant Man* and *Wild at Heart* for ideas on lighting, textures and art direction.

The team at Pulse then tried to get an in-depth understanding of insect life. They brought in entomological consultants and took several species of cockroach as pets. "At one point we were actually crawling on the floor, slithering around just trying to gain the perspective of a roach," explains Vinny. "We went to a hardware store and bought a number of household objects and just played with them and thought, 'How could this come into play?'"

At the same time, Vinny wrote a story for *Bad Mojo*. The tale opens with the main character, Roger Sams, preparing to skip town with a bundle of stolen cash. Just before leaving, he looks at a jewel left to him by his mother and a strange magic in it turns him into a roach. Suddenly, he's in the sewers and his pet cat, Franz, is his deadliest enemy. Other roaches, meanwhile, start talking to him in strange, dream-like riddles conveyed using full motion video.

Being a cockroach with human's consciousness, Roger finds himself able to crawl into the drawers, boxes, nooks and crannies of his neighbours' flats, finding out plenty of secrets about the three major human characters in *Bad Mojo*. But more importantly, he starts to find out more about himself and the meaning of his own life.

We don't want to give it all away, but suffice to say *Bad Mojo* can be played through in several ways and has four different conclusions. In the morally correct ending, Sams' life is fulfilled, while the other endings are sad or negative. "I've never told anyone this before, but the game is really about the importance of family," concludes Vinny Carrella. "It's about the search for yourself and an inner journey." A journey, hopefully, that doesn't end in the cavities of Drew Huffman's ear. ***(GW)***

Developer: Pulse
Publisher: Acclaim
Contact: 0181 344 5000
Expected Price: £39.99
Expected Release: April


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The main menu screen is wonderfully animated. Yes, all this moves.

CD REVIEW

Play our exclusive move-limited demo.

Colonising

Into the Void: in progress

Join the diplomatic corps. Travel through space. Meet bug-eyed beasties and do your best to shaft them. Must be another PC strategy game on the way.

Remember the Vectrex? The games console from the mid eighties with its own built-in vector monitor, that was dead good at wireframe games like *Asteroids* and *Battlezone*? Well, that was invented by a US-based outfit called Western technology, which also happens to own a developer called Adrenalin, which has been designing games for 15 years as a contract development house, turning out various console games and, more recently, *Trivial Pursuit* for Hasbro on the PC. At last however, Adrenalin is to do an original title. It's called *Into the Void*.

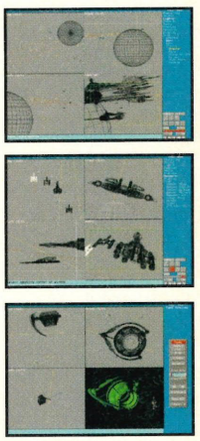
Into The Void is a space strategy sort of game with lots of resource management and empire building. Fans of *Masters of Orion* and *Civilisation* won't be in for any surprises. Adrenalin is co-developing the title with Electric Moo Productions, but we went straight to the top and spoke to producer Chris Longpre. The first thing he was dying to tell us about was the presentation. "We thought that really beautiful graphics were the thing mostly lacking in games of this style. So we put a a lot of effort to make this game beautiful." The presentation certainly bears him out on that issue. The main menu screen is a hive of activity, with loads of animation. Nothing is static. Factories churn out widgets, gun emplacements rotate and fire, and plenty of other things live and breathe.

The other big challenge was an intuitive user interface. As Longpre maintains, "We want the game to be fun to play, without overcomplicating the action". The gameplay is turn-based, with full freedom to take as long as you want planning out your strategy. During your turn you plot your actions, but can alter things mid-turn, for example, changing a ship's destination. The game supports up to ten players, on the same PC or over a network, the Net or e-mail.

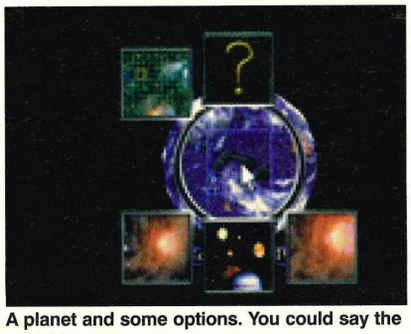
As *Into The Void* isn't a wargame there's more than one way to win. Brute force and elminating all your opponents is an option, but a points system means that you can also triumph through colonisation, diplomacy, production and espionage.

Unusually, you get the option to set the crowdedness of your universe is, but more interestingly, you can choose to play the game as a member of one of six races, each with different qualities. For example, the Mordeans are the warlike aggressor species. Another race, the Kimmer, are a thoughtful and peaceful species, but they breed like rabbits. They get most of their points through colonising. So they could be all by themselves in a corner of the universe populating and colonising and end up winning by force of numbers without seeing any action. Hence, you're expected to play up to the individual races strengths.

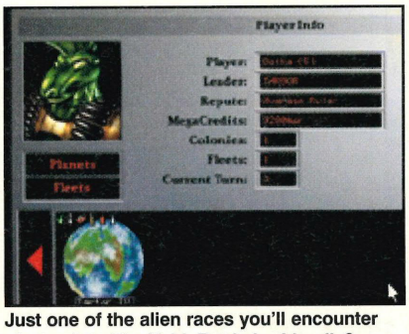
Into the Void has its work cut out coming up against the likes of *Civ 2*. The team at Adrenalin think they've got a winner on their hands. We won't say for sure until we get a finished reviewable copy. ***(JB)***



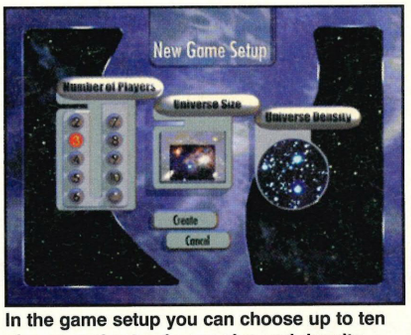
A peek behind the scenes at generating the graphics, using the AutoDesk package *3D Studio.*



A planet and some options. You could say the world is your oyster.



Just one of the alien races you'll encounter playing Into The Void. But is he friendly?



In the game setup you can choose up to ten players and set universe size and density.

Developer: Adrenalin

Publisher: Funsoft

Contact: 0181 748 7565

Price: £34.99

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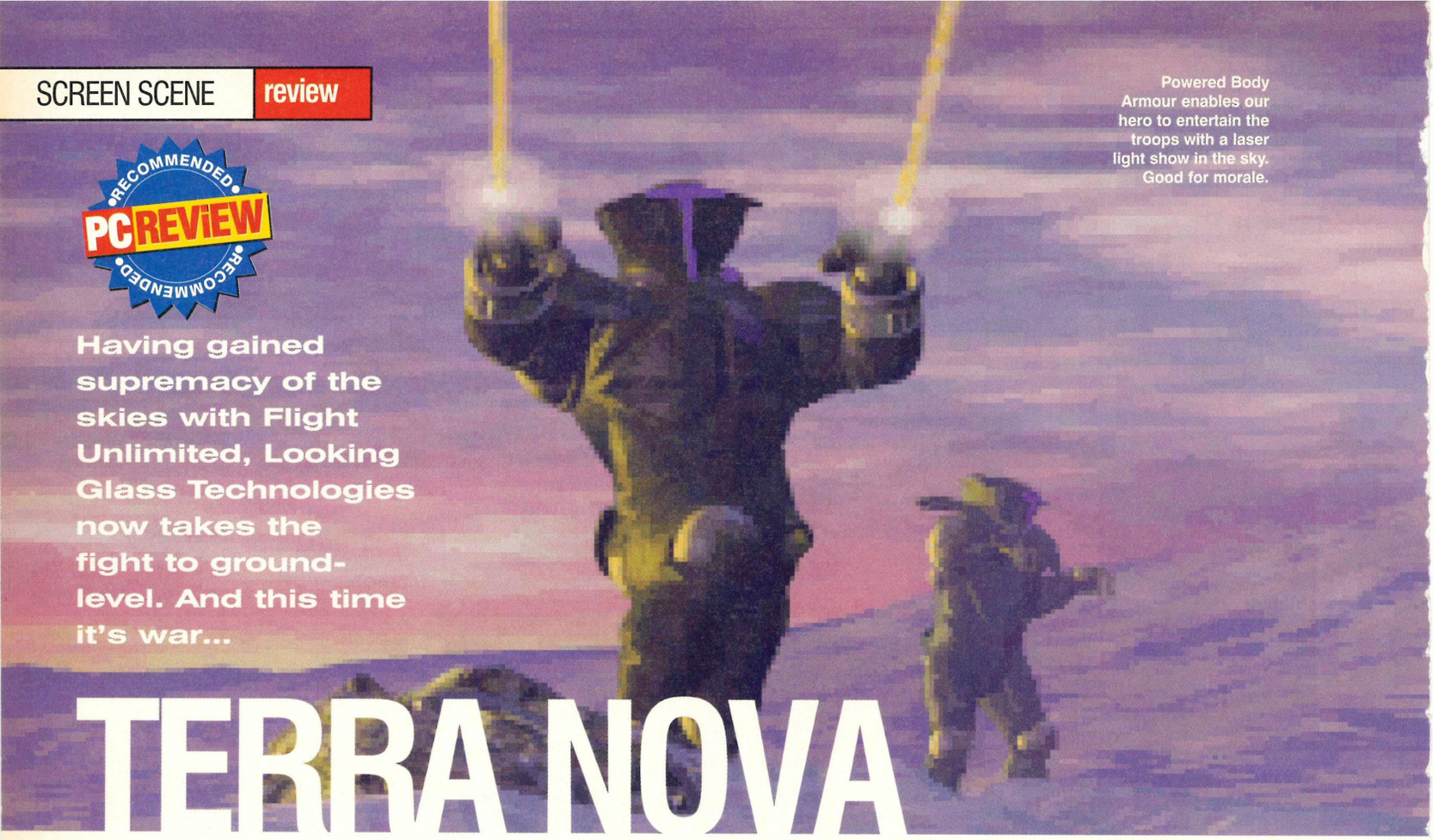
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TERRA NOVA

Strike Force Centauri

CD REVIEW

An exclusive playable demo of *Terra Nova* is on our CD.



The 360-degree view. Handy for keeping an eye out for enemy reinforcements.



Attempting to stop an enemy convoy, these pleasant lands will soon be scorched.



The full-screen viewing mode is the most effective, but the lack of extra data can be inconvenient when facing the bad guys.

Developer: Looking Glass

Publisher: Virgin

Contact: 0171 3682255

Expected Price: £44.99

Minimum system: 486DX, 4Mb RAM, double-speed CD drive, Soundblaster compatible, mouse.

Have you ever stopped to ask yourself what you want from a computer game? What your ultimate dream game would play like? And whether anybody out there would ever turn that dream into reality? Chances are there'd be echoes of *Doom* in there - plenty of cat-and-mouse combat, a first-person viewpoint, lots of running around and loads of firepower to play with. But what about depth?

Fighting against an intelligent enemy rather than cannon fodder would up the challenge, as would the inclusion of friendly troops, capable of acting under their own steam, yet firmly under your command. While you're at it, why not go all out with a 3D environment, putting in weather effects and real landscaping with mountains, valleys, lakes and grassy plains? If you've got a believable world, you might as well set the player believable tasks too, mirroring the sort of fight, rescue and reconnaissance missions which real wars are all about.

Hell, you could even wrap the whole thing up in an epic science fiction story and spread it across several planets. Future technologies could be devised and the story fleshed out with a detailed history of the conflict. Finally, pre-rendered scenes and clips with actors could be added to round it all off. It would be an awesome experience – arcade immediacy, wargame complexity, real world physics and movie-style glossiness. It would be almost like *Command & Conquer* crossed with *Doom*, but better than either. It would be *Terra Nova*, frankly.

This, is what happens when the people behind the legendary *Ultima Underworld*, the much loved *System Shock*, and the unparalleled *Flight Unlimited* turn their attentions to gunplay. Of course, there's a unique 3D system at work here, but that's only part of it. *Terra Nova* is a game which caters for the whims of the player at every turn, and while much has gone into creating a satisfying big picture, it's the myriad of subtle touches which push into the lofty realms of classic gaming.

History and apocalypse

Terra Nova's scenario, while firmly in pulp sci-fi territory, works brilliantly – largely due to the way various bits of history are explained and tied in with the missions and story. While the player begins the game as a squad leader protecting the Centauri clans against pirates, the plot soon gets far more apocalyptic. This time the real bad guys are from Earth. Much care has been taken to invent a near-believable future civilisation. All the hardware and spacecraft have common design aesthetics, and while the transition from corny acting sequences to rendered animation is too obvious, the overall effect is stunning. It's sci-fi scenario with the attention to detail only huge movies like *Alien* or *Blade Runner* benefit from.

But you can't sell a game solely on an embellished storyline. 3D systems are all-important these days, and on this front *Terra Nova* boasts a unique graphics engine. It might look grainy, but this game draws planetscapes in real time. Breathtaking scenery actually stretches off to a realistic horizon and the topography is so detailed it shows all the facets of a real terrain. Add weather effects like rain, fog, lightning, snow and daylight cycles and you've got a 3D

Get in touch with your Powered Body Armour





An early mission has Ap Io and a trooper attempting to take this port and cargo ship.



Weather conditions affect strategies. Snow isn't a problem but lightning is disruptive.



Neat graphical effects make firefights like this amazing to watch. Light sourcing and smoke effects can confuse things in a wonderfully realistic manner.









THIS IS THE END

Frying inside an armoured suit – what a nasty way to leave the game..

world as immersive as it's possible to get without virtual reality hardware. It all moves with impressive speed on a humble 486, even at the top resolution of 300x400 pixels.

This attempt to put real world geography into a game is far more than simple eye-candy. Rather, the environments are integral to the combat and strategies of the game. Objects slide down hills, trees provide cover, and a height advantage makes all the difference when lobbing grenades. Where *Doom* had us sliding around corridors, *Terra Nova* challenges us to use the surroundings like real soldiers would, with the help of some advanced technology, of course.

Very important here is the Powered Battle Armour suit worn by the heroes, Strike Force Centauri. A mixture of offensive and defensive gadgets, the suit armours the entire body, aiding in the use of the weapons attached to it. Naturally, a head-up-display is standard, as are a number of digital vision features including the image zooming and infrared sight options.

Leaping over mountains

The function of the main view and smaller video screens can even be switched at any point, but the most bizarre utility of the suit must be the jump-jet feature. With it, troops can leap mountains, blasting several hundred feet into the air for a few seconds. It adds a whole new dimension to combat, particularly as the enemy can also do the same. The result is something akin to those Chinese martial arts movies where half the fighting takes place mid-air.

In play, *Terra Nova* works on several levels. In simple terms, it's a *Doom* game with lots of very clever knobs, not a million miles from the *Earthsiege* and *Mechwarrior* games. Controlling Ap Io Nikola, the hero of the game, players get dropped onto planet surfaces where they can walk, run, bound, and of course slide left and right in true *Doom*-style. Then things get a little more ambitious. It's possible to temporarily snap the view to the left or right, for instance. Looking up and down is also possible, and then there's that jump jet feature to make use of. But remember to take the effects of gravity into consideration – given that the planets visited in the game have different gravitational forces.

It's possible to play using the most basic of controls, if you can call the *Doom* key movement and mouse-driven point-and-click

Planetfall: How a human becomes an interplanetary killing machine.



Our hero, Ap lo, prepares to be fully encased in his Powered Battle Armour.



Let's hope somebody's got a tin opener at the end of this mission.



The Aliens-esque dropship flies towards the designated insertion point.



Our hero, without flinching at the altitude, prepares to do the parachuting routine...



...unaided by a parachute. No turning back.

control of the Battle Armour Suit basic. Ultimate success, however, relies on mastery of everything. Even the various bits of weaponry are idiosyncratic. And then there's the small matter of controlling other troops. This is handled in in a similar way to the *Wing Commander* games, but with more control and flexibility. Team members can be given movement and combat instructions, or you can dole out more elaborate commands using the map display to direct your minions.

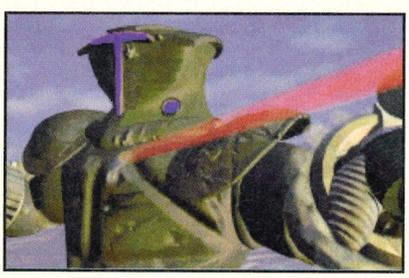
Team members will happily think for themselves, commenting to the player on the current situation, enemies killed, even the weather, while doing a lot of the dirty combat work. But again, real success can only be achieved by giving specific orders, and forming strategies appropriate to the terrain, enemy presence and nature of the mission. Granted, the idea of controlling other troops while in combat is daunting, but thanks to the training levels and the learning curve in the structure of the campaign, giving an attack order to troops while setting a map waypoint and blasting at an enemy pirate, really can become second nature. *Terra Nova* is nothing if not complex, but such ambitious design is its secret weapon. It gradually gets more demanding until you fall into an intuitive routine.

You haven't lived until you've leaped down a mountain side, guns blazing at enemy troops. You haven't tasted fear until you've been cornered in a valley by two legged mechanoids, flanked by hoverships dispatching countless pirate troops. And you don't know the meaning of frustration until you see your dropship fly off amid bursts of lightning, leaving you stranded in a field swarming with enemy troops. Until you experience *Terra Nova*, you won't know how good computer games can really be. ***(MR)***

PCR VERDICT

Not instantly graspable, but Terra Nova is one of the best games created. Play it and believe.

9

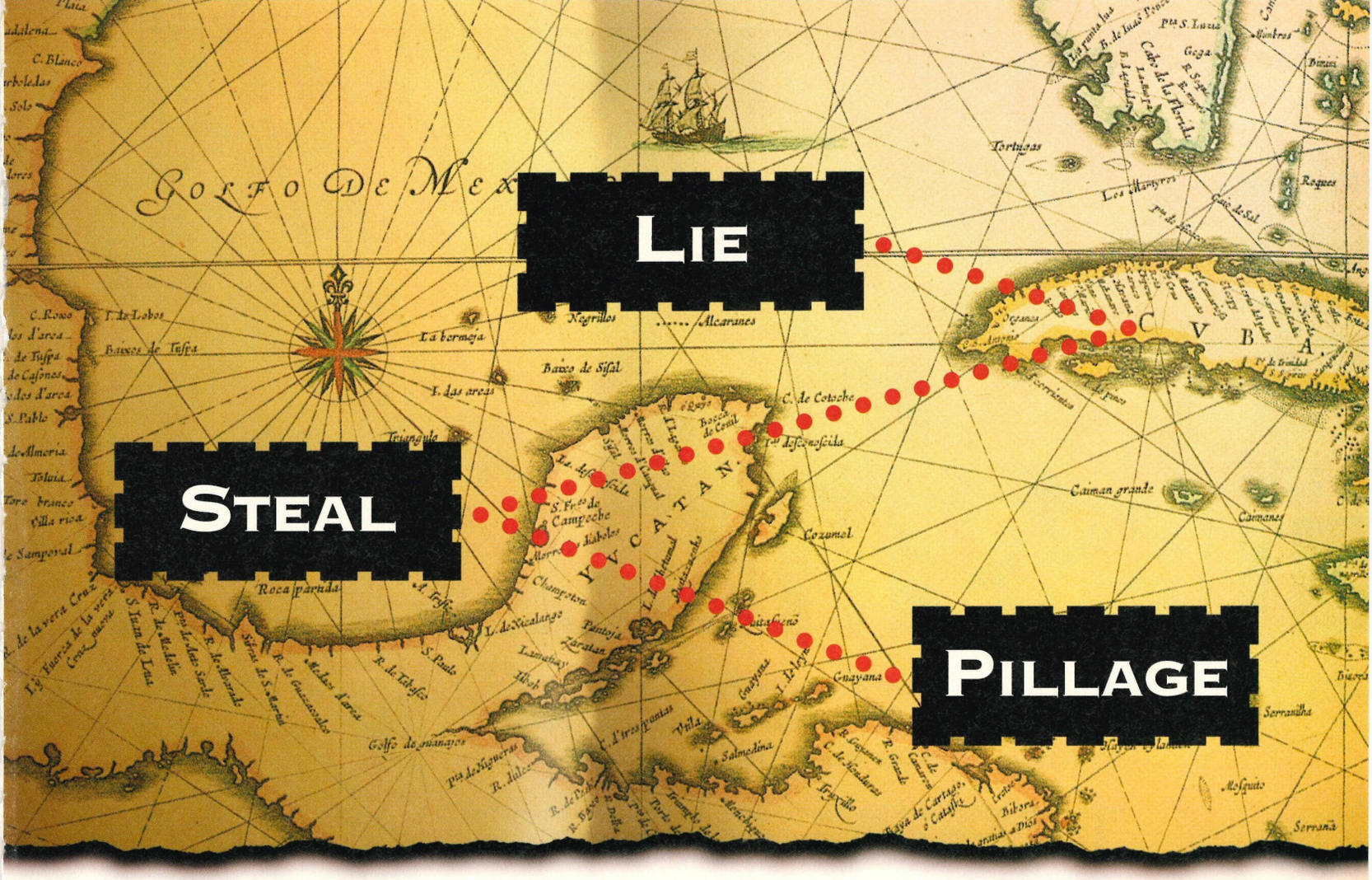




For once, animated sequences like these are backed by a decent game.

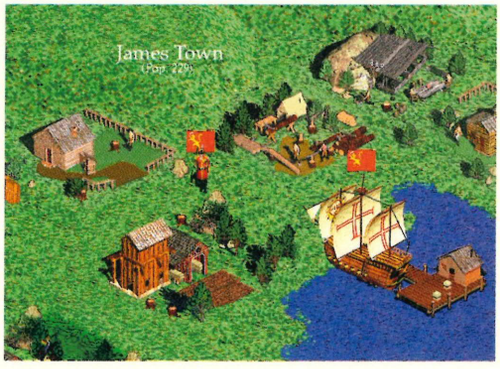


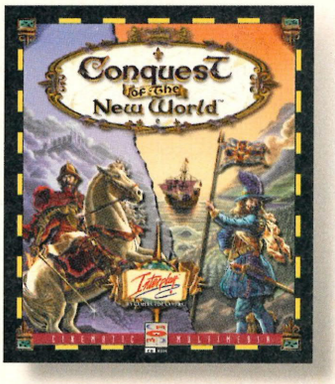
Anyone who's actually seen a planet's surface will not argue with that this vista looks very much like the real thing. Probably.



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"Sid Meier should watch his back"

PC Format - Feb '96

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DESCENT II

Descent 2 is certainly not short on spectacular explosions. Debris flies off and crashes into walls with secondary effects.

The weird and wonderful Descent II arrives, but are there any significant improvements over the original

Turn off every light in the room, strap yourself into a chair, grab the mouse with one hand, a small brown waterproof bag with the other and take a very deep breath. *Descent II* is here and it's very good indeed.

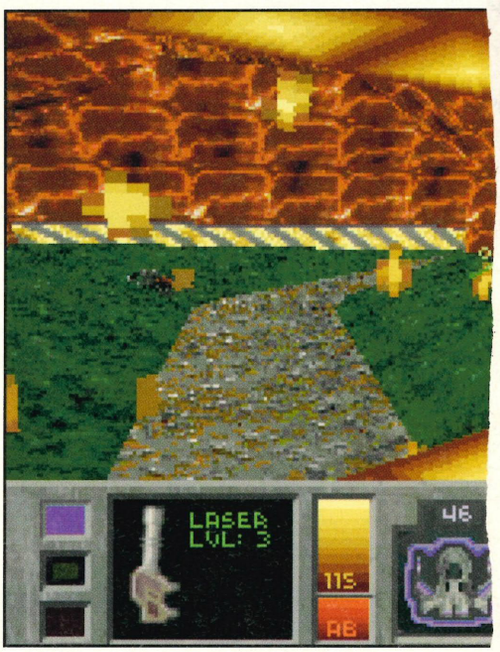
Descent is the most stomach-churning experience in video games. It's the only game in which up ceases to be up, down could be left and, who the hell knows where right is most of the time? Sitting, spinning in your spaceship in the middle of a vast, dimly lit cavern shooting huge plasma bolts into the distance is intense. Add the hordes of sabotaged metallic mining equipment looming out of the darkness and letting off a quick rattle of cannon fire before disappearing and it can become too much to bear.

If you never played *Descent* you're missing out on a unique feeling. If you have you'll know whether it was uniquely good or terrible. *Descent* was one of those games people either raved about and completed or switched off after level one, staggering outside for fresh air. Well, *Descent II* is *Descent* with knobs on, so it's safe to say that if the original didn't convert you this will have you running for cover. In every department it's essentially the same underlying game and although there are differences they are, to put it kindly, subtle.

The entire game has the same, love it or loath it, gorgeous day-glo luminescent atmosphere. The clashing lava ponds, orange energy nodes, bright green ships and phosphorescent white laser bolts combine to provide a distinctively exciting and engrossing environment. Just like the original. It's not much faster than *Descent*, which is surprising given that most sequels achieve a noticeable speed increase. By way of compensation both 640x480 and 800x600 SVGA resolutions are attainable, although you'll need a fast, fast PC to make either worth trying. The cockpit view can be turned on and off, but the best experiences are usually had when these window frames are out of sight.

Sounds play a much more important role in *Descent II* than in most games. The laser fire ringing through the mines is good enough through those free speakers you get with the PC, but strap a decent set of headphones to your lugs and it becomes significantly more immersive. Just like the original. Constant reverberating explosions and pounding rock music hound you as you race through the claustrophobic passages. And the CD music is red book audio encoded so you can listen to it on your Discman and pretend you're playing the game when sitting on the tube. If you really want to.

The control mechanism, which again is just like the original, is as hard to master but is rewarding to use once you get used to the mouse plus keyboard or joystick combo. The lack of an up direction is tricky





This is the Bandit. He's an irritating swine and appears far too regularly.



Access to the various areas is governed by the use of key-cards. The Guide-bot makes finding them easy.



The enemies attack in greater numbers and with more co-ordination as you progress, leading to more missile use.

Developer: Parallax

Publisher: Interplay

Contact: 01628 423666

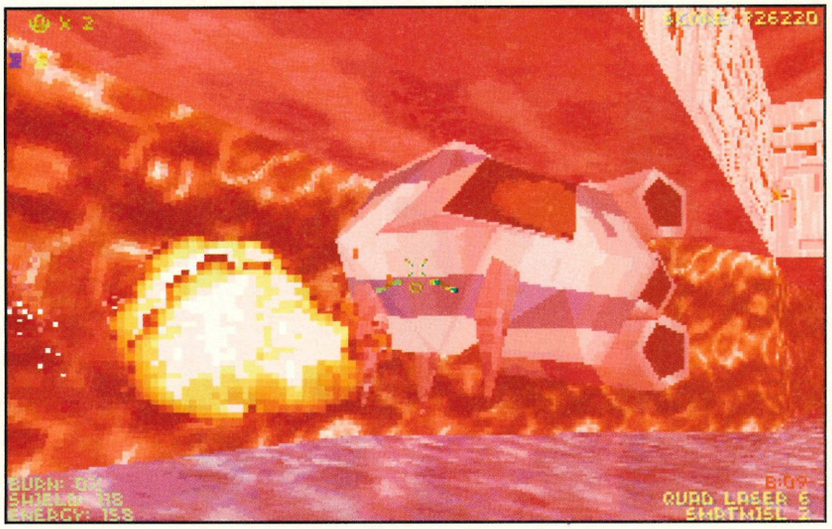
Price: £44.99

Minimum system: 486/66, 8Mb RAM, double speed CD drive, 10MB hard disk, VGA



An enemy probe lies in wait behind the energy grid (above). A homing missile does its job on some unspecified baddie (below).





(Above) Some of the later bigger enemies pack a mighty punch. The bosses in particular can be absurdly hard to destroy.



These energy grids become increasingly important and correspondingly rarer as you venture deeper into the game.

at first but you do eventually become accustomed to the strange feeling. This actually adds enormously to the possible gameplay permutations with secret panels in the ceilings, floors and hidden behind concealed grills. The true 3D engine also enables perfect collision detection, so shots will pass through the gaps in cages but stop if you hit the bars themselves. All these details mounts up to produce one of the most immersive experiences you'll find on a PC. And that's without even plugging in one of the several Make-Me-Chunder VR helmets that are supported.

So what is new? The main new feature has ironically been added to help counter *Descent*'s pivotal attribute, that of disorientation. It's called a Guide-bot and is essentially an immortal little chum that accompanies you through the levels, leading you to the next objective, be it a key, enemy or exit. It works excellently as a nanny, and releasing it from its cage at the beginning of a level is totally optional. On the other hand, it significantly diminishes the strategy side of the game. It's quite annoying when, in that final rush to escape a level after blowing the target reactor, it insists on showing you the exit, thereby depriving you of the adrenaline-pumping experience of having 60 seconds to escape. It's fun getting lost, rediscovering yourself in the maze and carrying on. Hard work, maybe, but that's *Descent*.

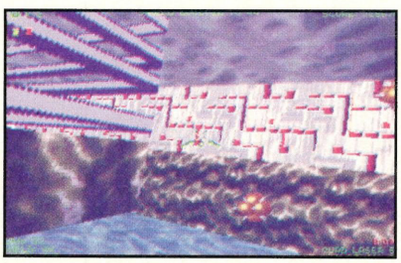
In terms of significant new features, that's about it really. Unless you have access to a network and want to experiment with the new range of options available there. It's now possible to play cooperative capture the flag games and fully customise every ship's attributes to provide a more even challenge, but with *Quake* and *Warcraft II* set to dominate the on-line experience it's unlikely these improvements will make much difference.



Lights can be knocked out to make everything less visible. Now use the powerful headlight to help you see better.

Balanced against new enhancements, there are still some things in the game that should have been changed but weren't. The Automap is one of the coolest looking in any game, but it's completely useless. You just can't tell where you are or where you should be. Having a set number of 'lives' is also pointless when anyone who wants to survive is saving their game every couple of minutes regardless of what's going on.

It's always hard to criticise an excellent game but *Descent II* should have offered more. It keeps the basics that made the original so successful and tweaks them, adding a few little bonuses here and there. Trouble is, not enough has changed. The further you play into it, despite the fact that it's always hugely challenging and enjoyable, you realise that there's nothing dramatically different buried deep under the gameplay shroud. Fans of the original will probably want to play and network gamers seeking a new challenge will certainly be in for a treat, but *Descent II* is certainly not going to win any new converts.



These purple grids are the mine's defence mechanisms. Lethal weaponry takes out any new arrivals early.



This is your Guide-bot. He's your friend but is actually an irritating immortal companion. Leave it locked up.

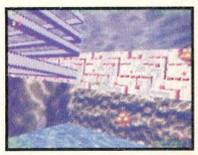
PCR VERDICT

Made of exactly the same stuff as Descent but a touch bigger, better and badder.

8

CD REVIEW

Play the *Descent II* demo with our CD-ROM.









The Automap

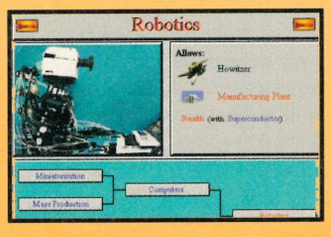
From a distance it's very swish and intricate looking. When you get nearer it becomes very swish and utterly confusing.

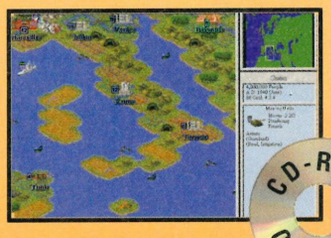
It would be a great game that could be better than Sid Meier's Civilization®

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The equivalent of the plasma rifle in Doom is one of the top multi-player weapons, having a rapid firing rate and huge amounts of ammo.

Re-releasing Heretic today is like Howard Jones attempting to cash in on one last comback tour. But is it forgivable?

HERETIC

Shadow of the Serpent Riders

Step back in time for a moment. To a time when no games were worthy of being called *Doom* clones, when all games ran in VGA – that fabled age of the 486 processor. Although it's only around 18 months ago, it seems as medieval as the setting of *Heretic: Shadow of the Serpent Riders* (*HSSR*).

It's simultaneously exciting and sobering to appreciate the pace of development in the PC games world. When *Heretic* was first released in 1994 it was the final word in PC 3D graphics. It took *Doom*'s superb engine and added head movement, enabling you to look up and down (albeit slightly) and fly around on flat planes. Now, *HSSR*, which is the *Heretic* with a couple of extra levels tacked on, merely demonstrates that what was once the best is now barely adequate.

Taking on the Duke

Up against the likes of *Duke Nukem 3D*, *Terminator: Future Shock* and what currently exists of *Quake*, this re-release of *Heretic* looks dated in all departments. The graphics are blocky, brown and repetitive and the weapons primitive, sitting in the centre of the screen throwing out garish bitmaps at very pixellated enemies. The room designs within the original three of the five levels are mainly angular, unsubtle and offer very little to any self-respecting *Doom*-aphile.

Gameplay failings haunt *HSSR* today as they did when the first shareware levels of the original hit the Net. It isn't long before you realise that Heretic just isn't as fun as many other 3D games. All the elements may be in place on paper but it never matches Doom's sense of bloody mortal combat. The magical weapons lack the gory punch of rocket launchers. The entire graphical armoury lacks the gripping excitement offered by today's contenders to the 3D blaster throne.

But these taste criticisms were levelled at the original *Heretic*. *HSSR*'s new levels incorporate many of the effects that Raven used in the sequel-that-wasn't, *Hexen* but keep the best of those already in *Heretic*. Excellent lighting effects ripple down halls, and larger, deviously complex rooms with flame-throwing minotaurs make the game genuinely scary at times. The enemies look good, but generally lack malevolent, kill-me-quick characteristics. The sound is big, with explosions punctuating the constant mayhem, in the extremely tough higher levels.

Heretic: Shadow of the Serpent Riders builds on what was a fine game, but it's impossible to recommend it unreservedly. Even discounted to £30 it offers less gameplay and longevity than the excellent *Hexen*, *Duke Nukem 3D* or *Terminator: Future Shock*. It's excellent, simple fun but there are better places that your money could go.

PCR VERDICT

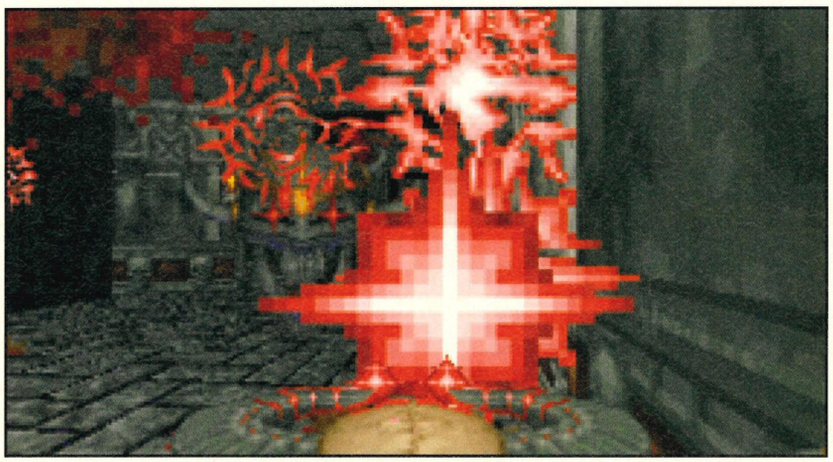
£40 for this a month before the release of Quake is asking a lot. Hexen is a better bet.

7





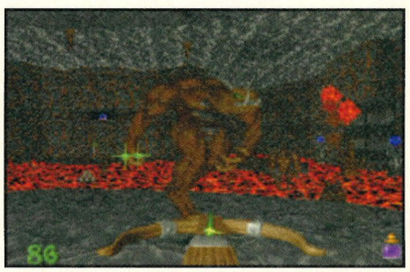
The pace of play varies incredibly between the different settings ranging from the hectic scraps with bosses to the more passive job of downing airborne demons.



HSSR is an extremely challenging game, even on the easier levels. On the toughest you're lucky to progress at all.



Projecting magical energy from your fingertips is fun, but not as awesome as it could be.



Lava shoots from the floor as yet another monster closes in for the kill.

Developer: Raven Software

Publisher: GT Interactive

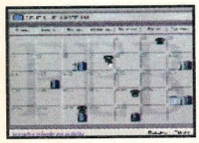
Contact: 0171 2583791

Expected Price: £39.99

Minimum System: 486DX/33, 4Mb RAM, CD drive, Windows 95 or DOS





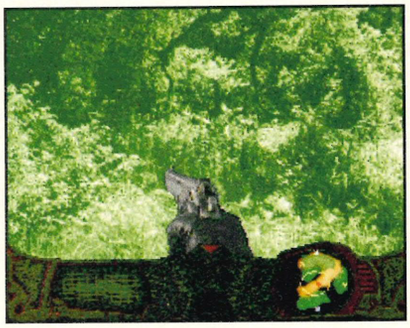


COMPUTER SPY

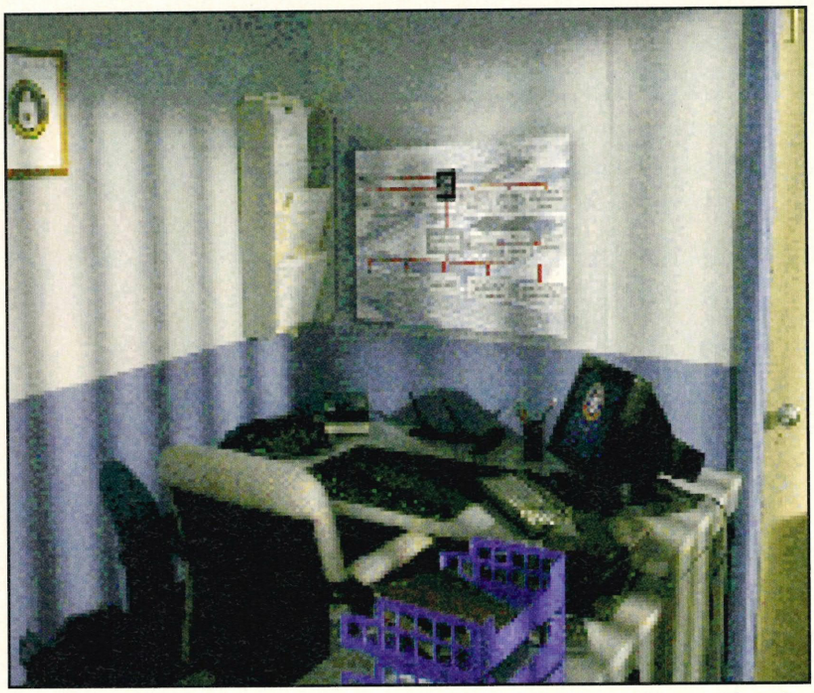
Most of the problems you must solve to complete the game revolve around computer analysis and effective use of your Personal Data Assistant. Here are just some of the different tools at your disposal.



This rather slick bloke is your immediate boss, and he pops up every now and then to give you advice.



Combat isn't a major part of the game, but you do get to shoot some bad guys every now and then.



In real life, working for the CIA isn't quite as glamorous as Hollywood might have us believe, and Spycraft makes an attempt to reflect the harsh realities of government work. For example, this is your 'office'.

SPYCRAFT

This isn't the first game attempting to bring the world's second oldest profession to the PC, but is it the best?

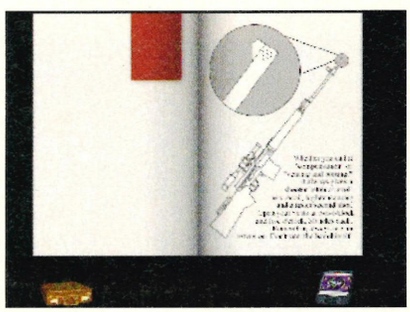
Developed with the help of William Colby, a former director of the CIA, and Oleg Kalugin, a former KGB Major General, *Spycraft* certainly has impressive credentials. The game casts you as a CIA operative investigating the assassination of a candidate for the Russian presidency. The trail of the killer soon leads to a plot against the life of the American president, international conspiracies, traitorous rogue agents, nuclear weapons and other threats to world stability. There's enough here for several more Bond movies.

Although much use is made of full motion video sequences to advance the story and introduce various characters, *Spycraft* is at its heart an adventure game. You move between the various locations available to you, solving problems and uncovering new clues as to the nature of the plot. At all times you have access to a rather high-tech Personal Data Assistant (PDA) – a portable computer through which you receive video-, voice- and E-mail messages alerting you to new discoveries by fellow agents and new orders from the director of the CIA. The PDA also gives you access to a wide range of relevant information, including 'classified' files on many of the game's characters and various pieces of equipment. Finally, if you have access to the Internet and are running it in Windows 95, then you can link the game to your Web browser, allowing you to connect to a *Spycraft* Web site. Here you can chat with other players, receive news updates and so on.

Spycraft is an ambitious attempt to create an involving and challenging investigation game, and has a lot to recommend it. For a start the production values are very high throughout, with smart graphics and effective use of sound. Even the video is well done, with decent acting and, for the most part, realistic characters. The plot itself is intriguing, if a little over the top, and the puzzles are often interesting. And Internet connectivity? Well that's nearly revolutionary.

As a game, however, it doesn't really work. In trying so hard to create an illusion of reality, *Spycraft* actually works against itself. As the plot progresses you find yourself making connections and having ideas, only to be unable to do anything about them – the game's essentially linear format limits you to performing only the tasks you're assigned. To make matters worse, most of the puzzles aren't exactly taxing and many elements of the plot soon become quite obvious, spoiling the effect.

Despite this, *Spycraft* is the still the best spy game yet. If you're content with having an interactive experience rather than playing a game, and especially if you're a fan of techno-thrillers by Tom Clancy and Larry Bond, there's a lot here to enjoy. ***(AB)***



During play you learn all kinds of useful stuff, like how to increase the accuracy of sniper rifles.



Not everything in the world of the modern spy is high-tech – your trusty lockpicks still come in handy.

NEXT MONTH

We'll bring you the playable demo of *Spycraft*.

Developer: Activision Inc

Publisher: Activision

Contact: 0181 742 9400

Expected Price: £44.99

Minimum system: 486DX/66, 8Mb RAM, SVGA, double speed CD drive, Sound Blaster compatible, DOS or Windows 95

PCR VERDICT

Innovative ideas and potentially groundbreaking use of the Net, but not much of a game.

6

Total MAYHEM

Mankind had no future...

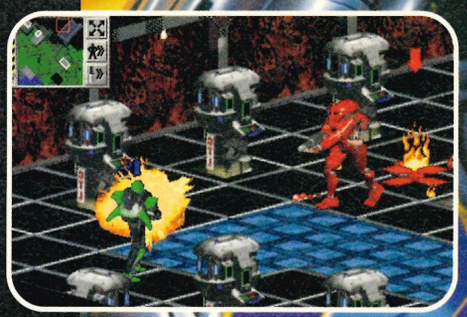
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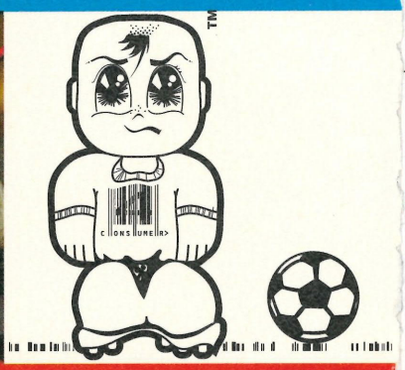


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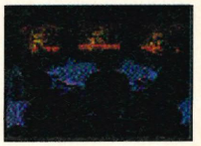


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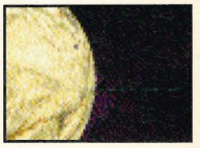


This squat little chap is there to thwart your progress at every junction. Turn sideways and you might miss him he's so flat-looking.

DEFCON 5









The lavish pre-rendered intro lasts for a couple of minutes and sets the story extremely well. It emerges during these sequences that the alien attack has been sponsored by an arms company anxious about the automation process which is being embarked on.

Defcon 5 lands, can't decide what it is, and eventually settles on been a Doom with a subtle personality disorder.

For two years the holy grail in PC gaming has been to combine the action of *Doom* with an intriguing puzzle element. To date no game has really threatened to unlock this secret and *Defcon 5* doesn't either.

There's a war going as aliens attack a defenceless planet for a change. You're a lowly engineer with the task of activating a new alien-repelling system in a mining outpost. As the first alien ship appears over the horizon you can just tell it's going to be one of those days. The sort where you have to dash around an unfamiliar base desperately bringing defence systems on-line before the entire complex is overrun by multi-limbed fiends.

Defcon 5 introduces itself by forcing you to wander through empty corridors in search of Mission Control. At first you appreciate the tactical element – Mission Control is on level six, you have no idea how to reach it, but you'd better do it quickly because of the impending attack. As the time-running-out warnings echo through the dark halls you frantically tap away at the VOS computer wall terminals and try every lift that you come across. It becomes apparent that you have to use the various lifts and trains between levels two and five in a certain sequence to get up to level six. And when you do arrive, the action kicks in as you spend a fun few minutes manually blowing up (like that action-section in *Bioforge*) the invaders before following your next instruction.

At this point it starts going wrong. The tension is replaced by a nihilistic plodding through miles of very similar looking corridor. You realise that the floorplans are square and never as interesting as those in a good action game. The walls are paper thin, the bitmaps are repeated endlessly and although each level is individual, it's only because it's repetitive in a different way.

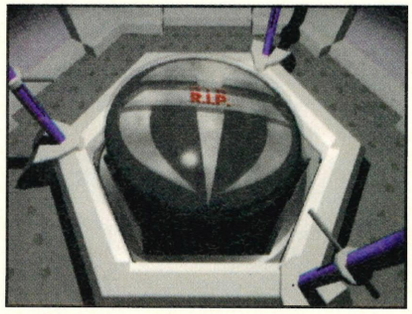
Then the action element begins to desert as well. The aliens have breached the base and have crippled the oxygen system, forcing you to complete your tasks faster and faster. They harass you as you run through corridors and you're never really sure if you've already come this way or that. As for the aliens? Regrettably they're so flat and blocky there's no way you can be frightened by them and soon they're just a lethal irritation as you stomp around getting lost. Their design and implementation is not worthy of a killing game and somehow inappropriate to the strategy side of the experience. Before long your task – to systematically re-arm the base – turns into a tiresome chore.

Defcon 5 had great potential and Millennium should be rewarded for trying this different approach. It falls between two hugely popular and successful genres packed with quality titles and almost succeeds in drawing the best from both. More variety plus better enemies and it could well have worked. *Defcon 6* anyone? ***(CB)***

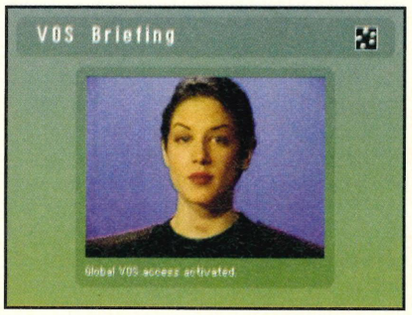
PCR VERDICT

Thought-provoking, entertaining and action packed but all in strictly measured doses.

6



The all too common death sequence that embraces you every few hundred steps, especially after the aliens have moved in.



The VOS terminal is your guide to the base and its functions. Its first task is to guide you to Mission Control.



The control panel (top left) monitors your status in true Aliens style. Start panicing when the Oxygen indicator begins to fall.

Developer: Millennium

Publisher: GT Interactive

Contact: 0171 258 3791

Price: £39.99

Minimum System: 486/33, 8Mb RAM, SVGA, double speed CD drive

Origin have another bash at redefining the interactive movie genre. But this time the Kilrathi have been replaced by a more human enemy.



Anyone not instantly recognisable, has a very high chance of being blown away. Just like the good old Star Trek days!

WING COMMANDER IV

The Price of Freedom







The deep space dog-fighting may be what will keep space cadets coming back for more, but it's the Hollywood clout which provides the initial appeal, with the likes of Mark Hamill. The real acting muscle is provided by the arch droog himself, Malcolm McDowell. From British 60s movie icon to video game bit-parts – it's a funny old world.

Developer: Origin

Publisher: Electronic Arts

Contact: 01753 549442

Expected Price: £44.99

Minimum system: DX4/75, 8MB, double speed CD drive, 30Mb hard disk space, SVGA

By rights this is what gamers of the world should have got last time. *Wing Commander III* was ambitious for sure, but dogged by appalling loading delays, dull planet-based missions, and a rather naive use of movie footage. In retrospect it was easy to see the third episode of the *Wing* saga as a faltering step into world of film, and as something simply too plodding on all but the most outlandishly powerful PCs.

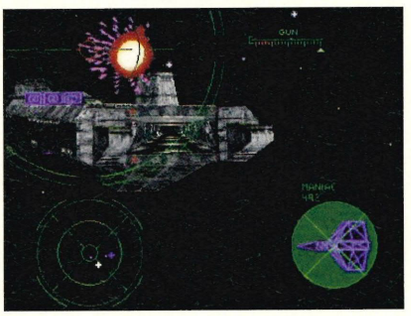
The re-return of Skywalker

Wing Commander IV then, is what happens when lessons are learned. This one displays more confidence in its use of actors and sets, expands the plot intrigue, and even gives us fully detailed planets to fly over. And crucially, the interval since the last episode has provided time for Pentiums to become the near-standard. Now almost anyone can have a guiding hand in the small screen exploits of Skywalker himself, Mark Hamill. Indeed, there's even a degree of interaction in the movie sequences this time, with the occasional spot of multiple-choice answering to muck about with.

There may be several million dollars up there in the scenes featuring Hamill, Malcolm McDowell, John Rhys-Davies (*Raiders of the Lost Ark*) and Tom Wilson (*Back To The Future*), but inevitably it's the space sequences which make or break the game. Origin haven't been idle in this department. The SVGA graphics appear to have gained speed, new ship designs are used this time around, and even the cockpit view of yore has been dumped in favour of a more clinical, useful head-up-display. Combat is a more rounded experience, too



The best visuals are provided by external views but gamers will usually employ the cockpit view-point.



The bona fide, fully interactive bit. Bizarrely, it looks less attractive than the cockpit view of Wing Commander III.

and real dogfighting strategies are often essential to survival. The improvement in the ground-based missions is more cosmetic than anything else, but at least they actually look part of the same game. And while the *Wing Commander* plots of old were utterly flimsy affairs, the post-war, hero against human enemy scenario employed here actually offers some depth, ensuring that all the between mission faffing about actually does draw us into the story to some extent.

Twiddling before space flight

So, *Wing Commander IV* gets a lot of things dead right. But it's not always enough. "The price of freedom is eternal vigilance," the heroes of *Wing Commander IV* continually remind us. 'The price of freedom is interminable loading' might have been a rather more accurate description – for while the mission loading times have been almost halved since *WCIII*, there's still a minute's thumb-twiddling before any space flight takes place (and that's on a damn fast machine). Even once inside the cockpit, loading often interrupts gameplay. For a game so graceful in so many aspects, such inadequacies are hard to ignore.

Viewed purely in gaming terms, *Wing Commander IV* is nothing short of marvellous – the combat is great, the story epic, and the acting impressive (if heavy on cliché). In its use of Hollywood techniques it demonstrates that video games are growing up. If you've got the hardware power, then its an experience you shouldn't miss. But this marriage of gameplay and spectacle can't go on for ever. Movies are for watching. Games are for playing. Anything else will always involve some degree of compromise. ***(MR)***

PCR VERDICT

An accomplished and playable Wing Commander game – but for how long will this formula survive?

7

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Just as Mechwarrior 2 surpassed the robotic might of Earthsiege, so this sequel reclaims the title of Ultimate Stomping Robot game for Sierra.

EARTHSIEGE 2

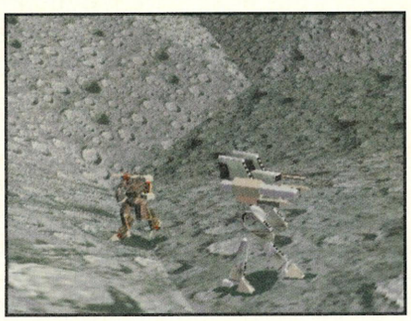
Tramping around in a million tonne two-legged crate of metal. It's the only way to travel.

Skyforce

CD REVIEW

Feel the fury with the *Earthseige 2* demo.

Real life is fine and dandy, and simulations are all well and good, but the best computer games have always been about escapism. Well, that and violence. A science fiction scenario usually looms large too, so it was no surprise when Activision released *Mechwarrior* some years ago. Sadly the concept was the best thing about it, but then Sierra used the same idea for *Earthsiege* – that of having gigantic walking war droids fighting similarly-designed enemies – and presented it as a visually arresting pseudo simulation. Since then Activision refined the concept yet further with the smooth *Mechwarrior 2*. Now, just when it seems the genre can't really be taken any further, along comes this.



The robots do a pretty good job of following the lay of the land too – feet actually appear to touch the ground.

Developer: Dynamix

Publisher: Sierra

Contact: 01734 303322

Expected Price: £44.99

Minimum system: 486DX2, 8Mb RAM, double speed CD drive, 30Mb hard disk space, SVGA

Earthsiege 2. And now it really does seem the genre has found its pinnacle.

Earthsiege 2 presents future war the way it's supposed to be fought. Players strap themselves into the all-too-convincing Herc units (big war robots) and take to a variety of terrains, attempting to blast the computerised Cybrids off the face of, well, whatever planet you're on. Airborne missions also appear this time thanks to the Skimmer Herc, a welcome gaming addition rather than some half-baked gimmick.

Plot-wise the man versus machine palaver is nothing special, and the sketchy mission briefing and video sequences are similarly cheesy, but that's of little consequence. With this game, action is all.

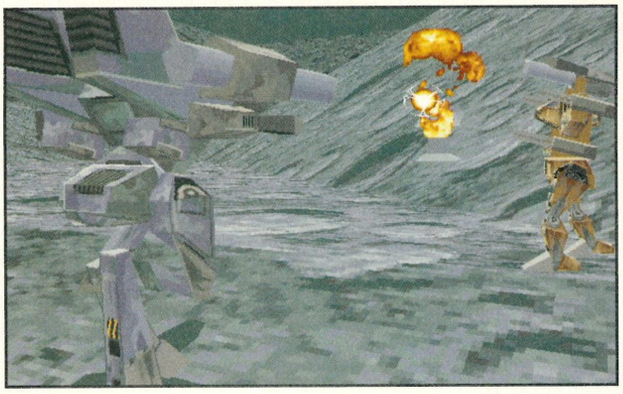
Bristling with cannons

Immersion is the key here. It's all to easy to believe that you really are sat inside some hulking war robot, guns and laser cannons bristling all over its bulk, two massive hydraulic legs guiding the thing over any manner of terrain. Digital readouts, various video selection systems,and an intuitive head-up-display all make controlling the metal beast as convincing yet simple as possible. It doesn't take too long before moving in one direction while swivelling the turret in another becomes second nature, which is just as well given that the difficulty level shoots up after the simple intro missions. Meanwhile, several female voice samples complete the feeling of near-reality, ensuring players know just when they're about to bite the dust.

It's the graphics which really drop you right in the thick of the action, though. It's good in VGA mode, but it's on a Pentium in SVGA that *Earthsiege 2* grabs the eyeballs by the optic nerves and refuses to let go. Landscapes roll off to a horizon made of moody textures and strategically-important slopes. The robots themselves are a sight to behold, powerful legs propelling them around as their turrets swivel and spew fire.

The sound doesn't harm that feeling of polish either – in addition to that groovy female voice there's all manner of whirrs and bangs to accompany the movement of Hercs, not to mention the kind of explosive sounds that really bring destruction to life. The majestic animation and sonic finery is enough to convince you that such machines could exist, while more than passable intelligence routines ensure that they act the part. Similarly, the team members who escort you on missions display good self-preservation instincts. This isn't a simple shoot-'em-up by any means.

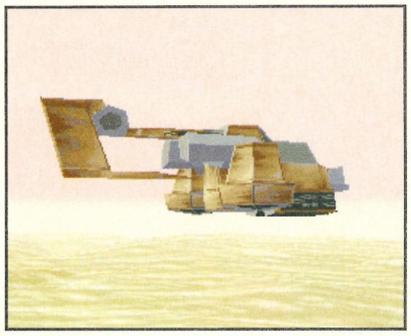
The missions are predictable – attacks, reconnaissance, escorts and so on – but they're implemented with great care, and it



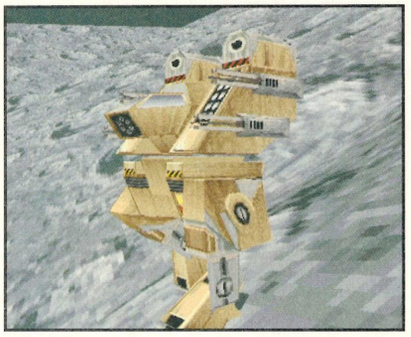
It's shots like these that make you proud to own a Pentium. Just look at the wealth of detail in this scene, but VGA mode is no slouch either.



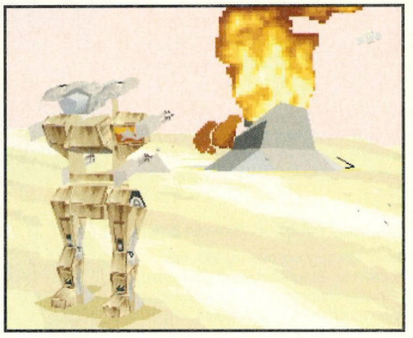
The extra detail afforded by the SVGA modes gives much improved cockpit vision in Earthsiege 2. And the explosions look even better.



Getting airborne with the skimmer adds a new angle to the game.



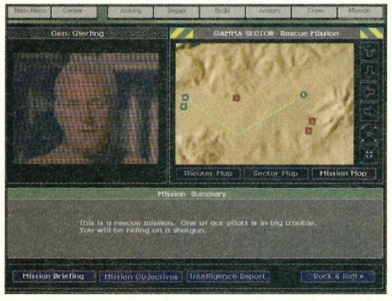
Gawk at the light sourcing and textures in external view mode.



Out in the scorching sun, our heroic HERC takes out another pesky Cybrid installation.

You were built to kill

Heading out on a mission takes preparation. Here's how you oil-up your Herc before hitting the battle front...



BRIEFING
Listen carefully to what this man has to say, he may not be a great actor, but the information he imparts is vital.



ARMING
Then there's the small matter of kitting out the HERC of your choice. None of this technology exists, but that doesn't make it any less fun.



CREW
And then there's a crew to pick - no Herc pilot is an island unto himself, after all. And so off we trudge to war.

soon becomes apparent that gung-ho-ness is rarely the answer. Real strategies are called for if the surprisingly cunning Cybrids are to be defeated. Thankfully, though there's plenty of opportunity for good old-fashioned all-guns-blazing heroics too. 50 full missions plus the ten training levels are incorporated. Play *Earthsiege 2* and you're in for a long, though utterly compelling ride.

Important topographics

The importance of the game's terrain topography can't be stressed enough. Remember that the original *Earthsiege* was a resolutely flat affair and Activision's *Mechwarrior 2* was also geographically simplistic, with very little ground texturing or detail. Instead here we have the sort of ground detail associated with the latest flight sims, albeit with all the excitement which comes from playing out ground based battles. Height matters, and hills and valleys can be crucial to success.

If there's a fault with *Earthsiege 2* it's simply that it's not *Terra Nova*. While the polygonal robot creations have the edge over *Terra Nova*'s sprite-based inhabitants, it's easy to feel just a little limited in this game world, despite the addition of the flying Herc. *Terra Nova*'s missions feel like slices of a real soldier's life, something that's given further credence by the unbeatable landscaping system. In comparison this game feels too single-minded, and lacking in subtlety. But then this isn't attempting to be a simulation of a soldier's life, it's a chance to play with very big guns, so the relentless action-based angle is only to be expected.

Earthsiege 2 is proof that Sierra is pushing the 3D game style as much as anyone. The mixture of texturing, animation and sheer detail here would have been inconceivable a year ago, and yet gameplay hasn't been sacrificed – it's been greatly enhanced since the original.

While tramping around in a metal crate, blasting at other metal crates seems like a dubious game recipe, it does tap into our imaginations better than most other sci-fi ideas. It's certainly more fullfilling than the battles in the *Wing Commander* games. When all's said and done, there's nothing like tramping around in a million tonne killing machine. It's the only way to travel. ***(MR)***

PCR VERDICT

Not as fulfilling as Terra Nova, but Earthsiege 2 is a robotic masterpiece nonetheless.

8

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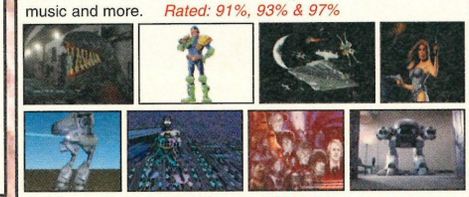


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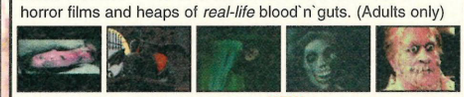


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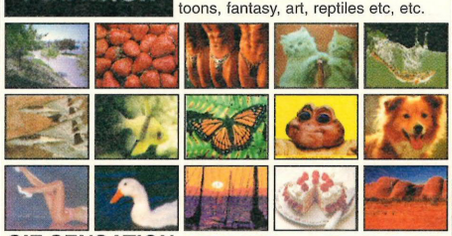
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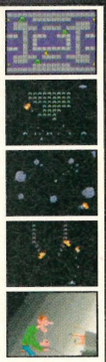
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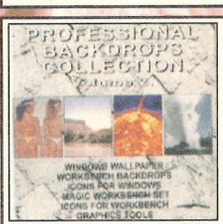
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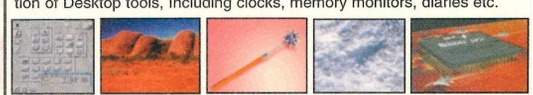


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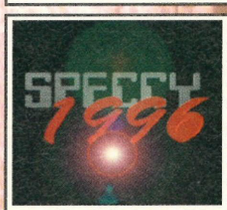




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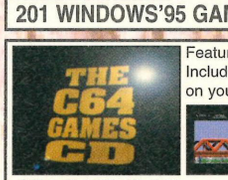
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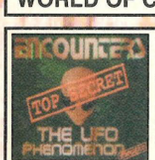
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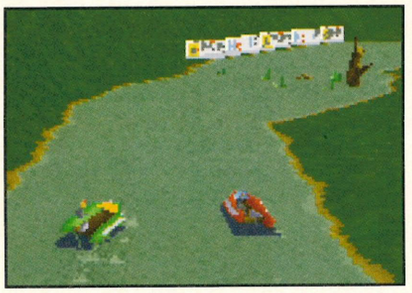
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Racing JCB Diggers and dumper trucks around quarries is just one of thrills on offer.



For some reason, snow in Big Red Racing is never white. Blue or purple, but not white.



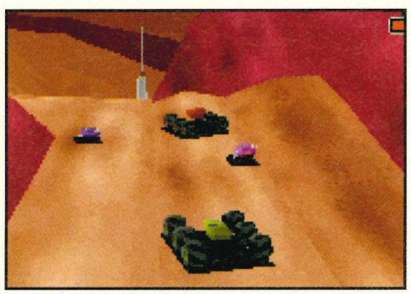
Of all the vehicles on offer, the boats are perhaps the most fun, and have the best feel.

BIG RED RACING

Domark's latest is a racing game alright. Nobody's exactly sure quite what's big and red about it, though.

Computer racing games tend to fall into one of two categories. In one camp sit the serious simulations, like Papyrus' *NASCAR Racing* and Microprose's *Formula One Grand Prix 2*, bristling with complexity and depth. In the other are the arcade games, like *Micro Machines*. These are a much more varied bunch, some of which even have aspersions to join the serious simulation boys. *Big Red Racing* is not, however, one of these.

Rather than concentrating on realism or depth, *Big Red Racing* goes for simplicity and fun. The game offers a range of tracks running over different sorts of terrain and with varying in levels of difficulty. There also a number of kinds of vehicle to race against. As well as the traditional cars, there are trucks, helicopters, boats, snow-mobiles and even a couple of futuristic vehicles. Each course offers a choice of two vehicles and these differ in their characteristics.



Several of the harder races take place on other planets – Mars, Venus, or the Moon.

Avoid the immovable objects

The controls are a simple matter of accelerate, brake, steering and speed boosts (nitros). Your vehicle can be damaged by crashes and collisions with other drivers or large immovable objects like buildings and trees, and if you take too much damage you're out of the race. Other than that, anything goes.

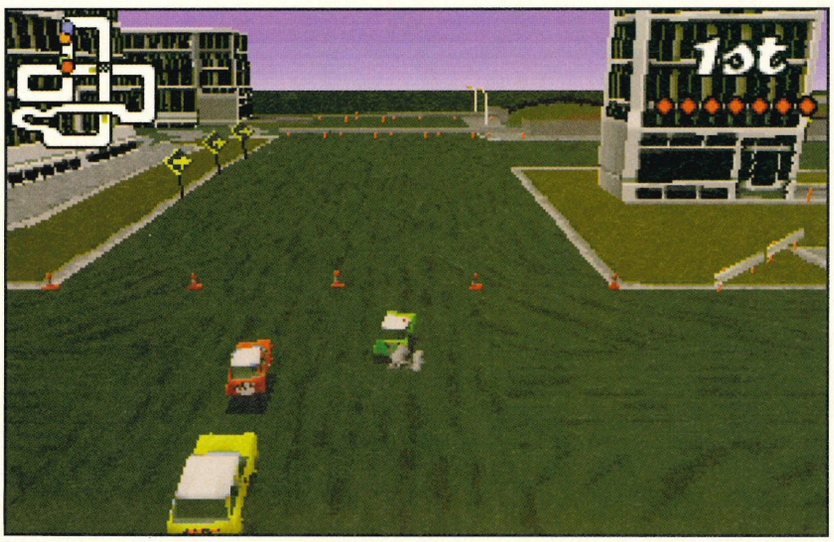
Graphically, *Big Red Racing* is easy on the eyes, making use of an effective 3D engine that zooms along at respectable pace, and comes complete with texture mapping, gourad shading and a variety of views. The sound is slightly less impressive, but there's only so much potential offered by racing games anyway. The wacky American commentator can get annoying at times.

What does make this game stand out slightly is the variety on offer, and the challenge posed by the computer drivers. With so many different tracks and vehicles, there's a lot to play around with. Even though the game has a limited structure, helicopters are still quite a bit different to speed boats or VW Beetles, which helps prevent things getting too repetitive too quickly. Likewise, although the other drivers aren't too much trouble on the easier circuits, on the harder courses they become a force to be reckoned with, ramming you off the road, blocking your attempts to overtake and generally being a real pain.

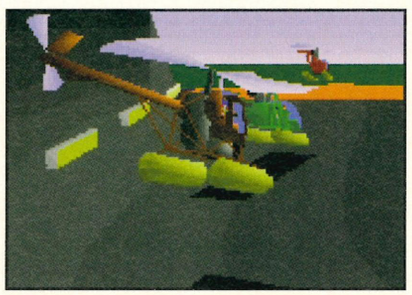
It's nice to play the odd 'brainless' game every now and then, if only as a break from the large number of PC games that require intense concentration and effort. *Big Red Racing* is a no-brainer. One of those games that you're unlikely to spend more than half an hour at a time playing, but to which you'll find yourself coming back to surprisingly often. ***(cB)***



The numerous vehicle options are meant to provide a variety of racing challenges.



Many of the courses in Big Red Racing have jumps for you to negotiate. The difficulty is not getting airborne, but making sure that you have right speed to avoid a crash on landing.



The helicopters are by far the hardest vehicles to control, and winning a race is a real challenge, requiring perfect cornering.

PCR VERDICT

Simple and fun to play. Surprisingly challenging this is a neat little arcade racing game.

7

Developer: Big Red Software

Publisher: Domark

Contact: 0181 7802222

Price: £44.99

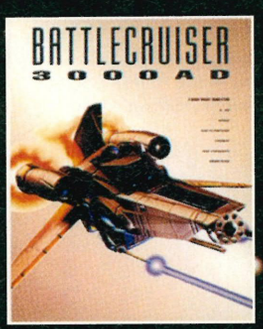
Minimum System: 486DX2, 8Mb RAM, CD drive, DOS or Windows 95

BATTLECRUISER 3000AD

'Battlecruiser 3000AD is here and it's fair to say it's better than Elite in every department.'

94%

PC ATTACK



'It's far more simple to get into than say Frontier Elite II and to be honest it's more rewarding at the end of the day.'

9/10

PC REVIEW

LIFT OFF

MAY·96



THE FINAL COUNTDOWN

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AVAILABLE ON PC CD-ROM

CREATED BY TAKE 2 INTERACTIVE SOFTWARE

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One of the less murky-looking locations is Flake Town's Main Street where Granny sits on the porch babysitting.



A clear and simple icon-based inventory is always at hand.



Behind Thidney the Lizard is a parrot. And, yes, the Monty Python joke is in there.

KINGDOM O' MAGIC

SCi sets its sights high and tries to usurp LucasArts as kings of comedy point 'n' click adventuring.

From the beginning, it's clear that this game desperately wants to be funny. Now, there's nothing wrong or even unusual in this. The story-based nature of adventures lends itself to humour and previous examples, like LucasArts' *Sam 'n' Max*, were outstanding. However, the humour in *Kingdom O' Magic* is so unrelentingly overbearing as to make playing the game an exasperating experience.

The characters and the storylines are all shot through with a blend of Monty Python and Terry Pratchett inspired gags. It's a post-modern pastiche of the fantasy adventure and a good third of the jokes are about the way point 'n' clicks work. Now, this can be amusing but most of the time it's simply tedious and every time it knocks the genre you're one step nearer to turning off.

Technically, *Kingdom O' Magic* is efficient, using a mouse control system with everything directed by icons that appear as the pointer moves around the screen. Object manipulation is simple, if limited, and talking to other characters takes place via a multiple choice interface.

You're given a choice of two chortlesome characters to play, either Thidney the Lizard or Shah-Ron, a young female magician. Thidney's the more physical one whilst Shah-Ron has to rely on spell-casting to get out of trouble. After selecting a character, you can take your pick of three different quests – the Traditional Quest, the Bizarre And Slightly Twisted Quest and the Magnificent 7-11 Quest. The quests play in different ways for each character which adds to long term appeal of the game.

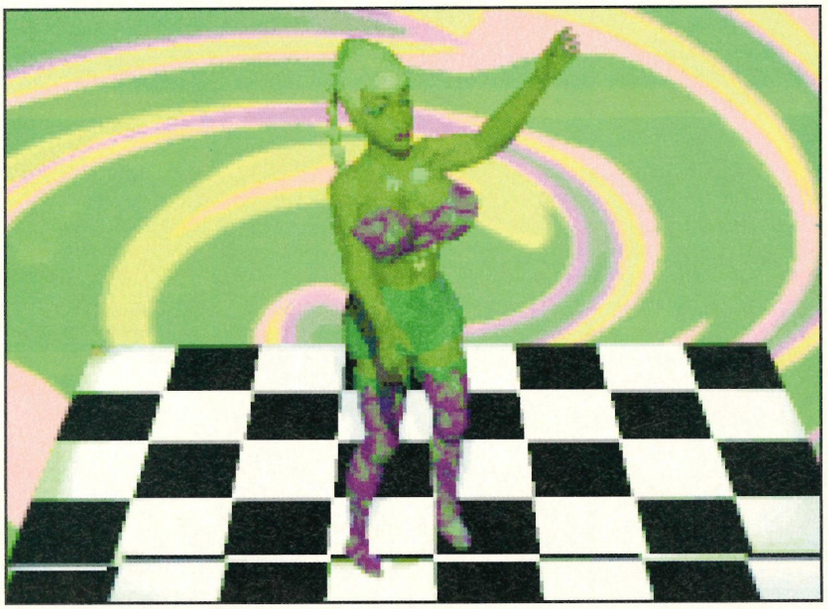
The puzzles that lead you through each quest are well-graded and tailored to the gag-filled style of *Kingdom O' Magic*. Early tasks include buying a 70s outfit to get you into a disco and sporting a bad wig to get the attention of a camp hairdresser. As the game progresses, you get to explore more of the Kingdom and are rewarded with more locations, new characters and, inevitably, more cheesy excuses for jokes.

As for the graphics, the rendered backgrounds and characters give things a smart sheen and the many cut scenes are generally well put together. However, they aren't enough to rescue what is essentially a standard point 'n' click adventure, with no strong story, little innovation and an overdose of clever-clever humour, from instant mediocrity. ***(CB)***

PCR VERDICT

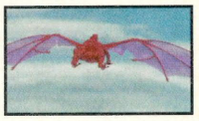
Jokey adventure thinks it's funnier than it really is. The gameplay is nothing special.

5



If the student humour of the game seems vaguely familiar that's because it was co-written by Fergus McNeill who was behind the Spectrum games, The Boggit and Bored Of The Rings.




Accompanying the intro fly through of Flake Town the hep sounds of Perez Prado's Guaglione, the music from the man-waiting-for-pint Guinness ad.

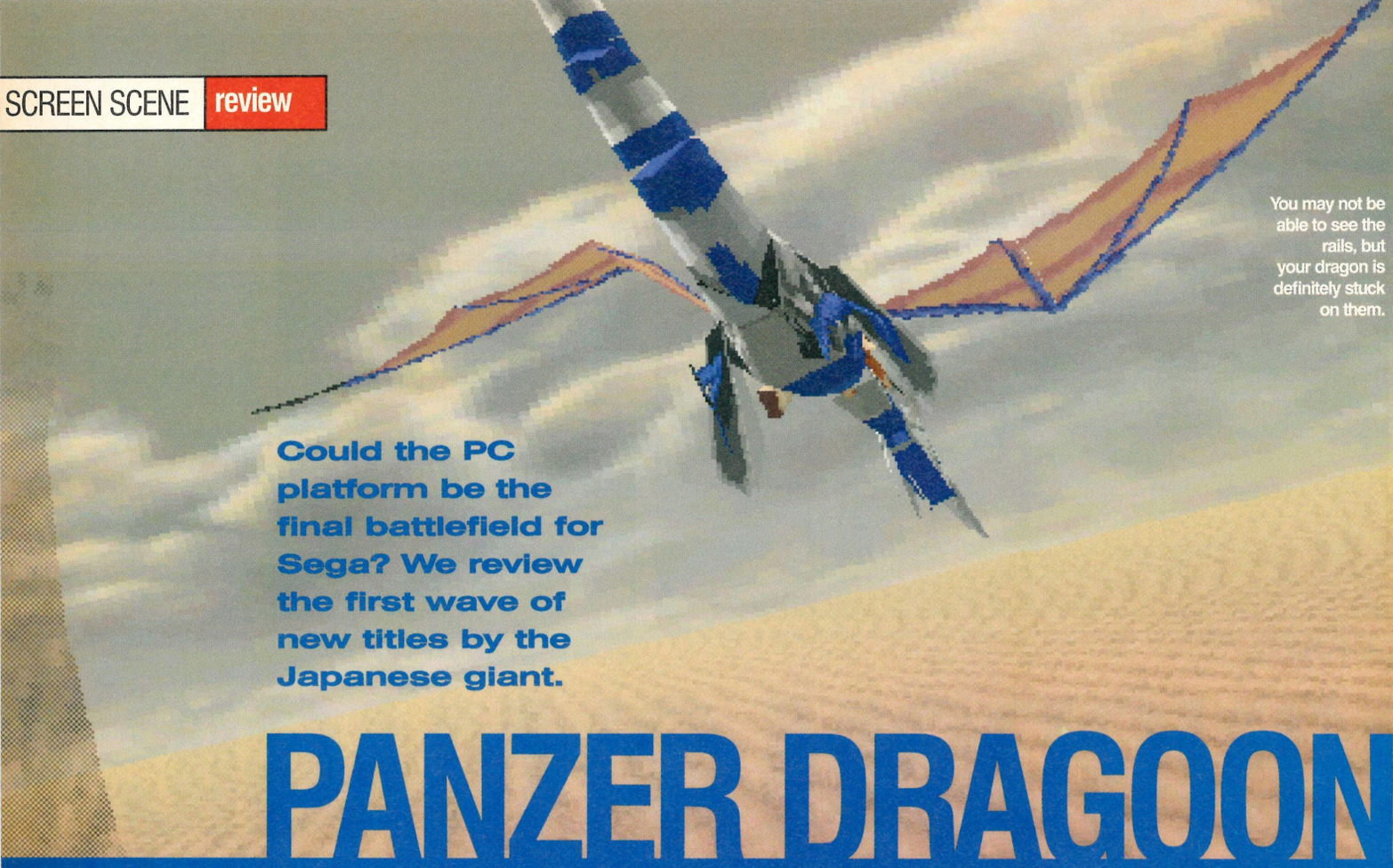
Developer: In house

Publisher: SCi

Contact: 0171 5853308

Expected Price: £39.99

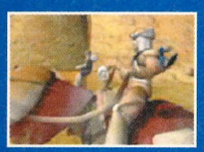
Minimum System: 486DX33, 2Mb RAM, double speed CD drive, DOS or Win 95



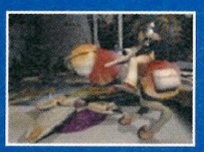
You may not be able to see the rails, but your dragon is definitely stuck on them.

Could the PC platform be the final battlefield for Sega? We review the first wave of new titles by the Japanese giant.

PANZER DRAGOON









The impressive rendered bits, as usual, belie a lack of gameplay. But this is especially the case with Panzer Dragoon.

The first thing you should know about *Panzer Dragoon* is that you need the Diamond Edge 3D accelerator card to play it. The second thing you should know, is that if you're planning to buy one of these pricey cards just for *Panzer Dragoon* then you're bound to end up wondering just what this game offers that could justify the extra hardware.

The rendered intros, possibly? No. The intro sequence is a standard example of cinematic graphics.. There are plenty of better intros around that don't need extra hardware. And you know it's overdone when the intro lasts longer than playing the first level.

Presentation aside, *Panzer Dragoon* is a shoot-'em-up on rails, along the lines of *Rebel Assault* and *Alien Odyssey*. And, it suffers from exactly the same problems. In other words, very little gameplay, limited freedom and even more limited longevity.

The pre-rendered levels mean that the game steers you along. Your only task is to fire, though on the later levels, you'll find that you have to use the rotation keys to fire behind or to the side. Technically the game is less impressive than the likes of *Terminator: Future Shock* or *Magic Carpet*. In those you have complete freedom of movement in a 3D environment.

The fact that *Magic Carpet* is far cheaper than Panzer Dragoon, doesn't require extra hardware and offers a more sophisticated gaming experience should give you some indication of how far behind *Panzer Dragoon* actually is. The gameplay can be distilled down to you holding down the fire button until all the targets are locked, then letting go to see them all vaporised. You don't even get to steer your dragon.

Let's face it, *Panzer Dragoon* is not going to tempt people to buy a Diamond Edge card, but the potential of future games like the best-selling Saturn game *Sega Rally* might. With the frustrating point, click and kill gameplay and no freedom of movement, *Panzer Dragoon* is a severely constrained game. It's far too slow and lacks the kind of action that might raise its to a level above the latest PC games – ones that don't require extra hardware. Not the best Saturn game to choose for conversion. But if *Sega Rally* were to come along, then it might be worth buying a new graphics accelerator card. ***(LE)***

PCR VERDICT

Lacks real gameplay and is far too linear to have any kind of long term appeal or justify the cost.

5

Developer: Sega

Publisher: Diamond

Contact: 01252 303333

Price: £220 (bundled with card)

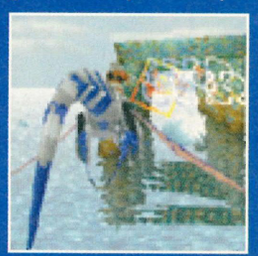
Minimum System: P60, 8Mb RAM, double speed CD drive, 10 Mb hard disk, SVGA, Windows 95 or 3.1



The lost city which looks so impressive from a distance becomes a mess of pixels up close . Go through the black door to advance.



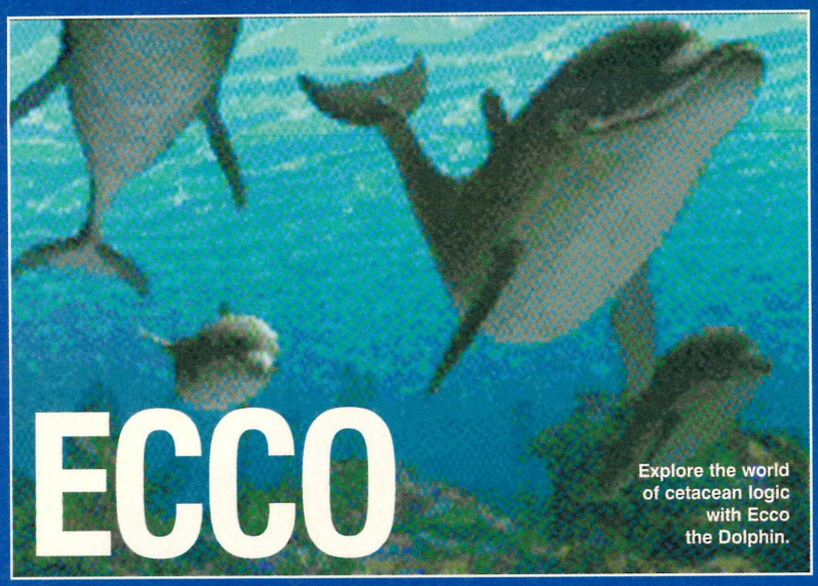
This end-of-stage boss is a prime example of how you must rotate to get in as many shots as possible.



You know where to aim before an enemy appears.



The underground caverns: no textures on the ceiling and not much to shoot.



ECCO

Explore the world of cetacean logic with Ecco the Dolphin.



He's moving upwards but thinking laterally.



A puzzle on the edge of a reef cave.

PCR VERDICT

A mellow affair short on substance and longevity.

7

Ecco the Dolphin is easily the best game in the current batch of Sega releases. An amazing fact when you consider that it is nearly three years old and is up against the 'next generation' Saturn releases. While it may lack the visual appeal of games like *Panzer Dragoon*, it more than makes up for this in terms of pure gameplay.

Exploration and lateral thinking are the keys to success here. Exploration so that you can find your way through the oceans and reefs, and lateral thinking so that you can get to grips with the puzzles. Thankfully these puzzles are in-keeping with the general theme of the game. Dolphins don't have pockets or hands so there's no picking up object A, using it with object B to get result C. Instead you have to tackle puzzles which revolve around actions such as nudging boulders into spaces and locating air pockets to allow you to navigate mazes.

You may wonder why *Ecco* needs a Pentium to run when it once ran quite happily on a 16-Bit Mega Drive. Basically *Ecco* is now the complete game, rather than the cut-down version that had to be drastically reduced to allow it to squeeze onto a Mega Drive cartridge. The graphics have been vastly improved with more textures under water and smoother animation all round.

Ecco the Dolphin is a very soothing game to play. You never get irate with the puzzles because firstly, they aren't obscure or illogical and, secondly, the graphics and sound mix to give you a mellow playing environment. However, just like the console version *Ecco* is a pretty linear affair and not the most taxing game ever. Ho hum. Dolphins may be smart, but they live pretty simple lives. ***(LE)***

Developer: Novatrode

Publisher: Sega

Contact: 0181 995 3399

Expected Price: £29.99

Minimum System: P60, 8Mb RAM, double speed CD drive, 10 Mb hard disk, SVGA, Windows 95 or 3.1



Crates with danger signs do have a use but don't try and kick them.

PCR VERDICT

An inferior beat-'em-up that has no long term appeal.

4

COMIX ZONE

Games that starts off with a comic artist being sucked into his own graphic novel can only really go one place from there. Down. That's the basis of *Comix Zone* and the action is about as weak as the story. It's a flat, uninspiring 2D beat-'em-up that barely deserves a swing at most of the other fighting games around.

The important elements of any beat-'em-up that wants to be taken seriously are attention to detail in the gameplay and lots of variety in both player and computer opponent moves. *Comix Zone* lacks both of these. At one stage, alas, all you have to do is execute one move repeatedly to get past a series of opponents. That kind of mistake is just plain unacceptable in any game. The lack of variety in the moves is appalling. Of the few that are on offer, you only need a couple to get past just about any opponent, and that includes the end of level bosses.

Having the action set in a comic book is a smart enough idea and the way that the player can switch between picture boxes when fights are over is original and aids continuity. But as a beat-'em-up *Comix Zone* is sadly lacking when compared to recent releases like *Mortal Kombat 3*. It holds some longevity and appeal for youngsters who will relate to the comic style artwork but experienced players will find themselves disillusioned very quickly. Unless you have young children, we recommend you steer well clear of Comix Zone. ***(LE)***



You will find your exit from certain stages blocked by either crates, switches or piles of barrels like these. This is a good time to use your high kick to take them all out at once.

Developer: Novatrode

Publisher: Sega

Contact: 0181 995 3399

Expected Price: £29.99

Minimum System: P60, 8Mb RAM, double speed CD drive, 10 Mb hard disk, SVGA, Windows 95 or 3.1

QUAKE

In this month's PC Gamer, how to get hold of an early demo of Quake, and how to get the most out of it.



TERRA NOVA

First review of the excellent new shoot-'em-up from Looking Glass Technologies

PC GAMER

ON SALE NOW

TOP GUN



Fly an F-14 without worrying about its complex systems.

It launched Tom Cruise to super-stardom, but does Top Gun make a great game?

At first glance, basing a game on the movie *Top Gun* might seem a curious step. After all, the film has certainly had its day. Hasn't Microprose missed the boat somewhat?

On the other hand, *Top Gun* is still one of the only films to feature exciting modern air-to-air combat, and the structure of the film – starting at the Top Gun School and progressing to actual combat missions – is reproduced in this game.

A couple of years ago Spectrum Holobyte realised that, although its *Falcon* flight sims were a huge success, lots of gamers were put off by their complexity. Developed alongside *Falcon 4*, *Top Gun* was intended to appeal to gamers who weren't necessarily flight sim fans. The plan was to use the training school concept to introduce more realism, rather than throwing players in at the deep end. At its heart then, *Top Gun* was a great idea. Unfortunately, in the finished game, it doesn't quite work.

Top Gun: Fire At Will casts you as the hot-shot pilot, Maverick. As in the film, it begins with you going to the Top Gun School. It's structured in a similar manner to *Wing Commander III* and *IV* (reviewed on page 64), video clips between missions develop the plot and introduce characters you meet at the school. Eventually you graduate, and go into combat against a band of blagards with non-specific foreign accents who have stolen some Russian jets.

Graphically the game is impressive but slow. The missions themselves are action-orientated with the F-14's complex systems ignored, allowing you to concentrate on shooting down the opposition. You don't even have to land the plane, you can let the autopilot do it, or just end the mission after meeting your objectives. The constant radio chatter between you, your RIO (co-pilot) and the other planes creates an effective, if somewhat gung-ho, atmosphere.

So far so good. The problems lie in the structure and pace of the missions. Although not as complex as many flight sims, *Top Gun* still assumes too much and offers little help to newcomers. Likewise, the training gets too complex too quickly, whilst not being realistic enough for real flight sim fans.

Where *Top Gun* scores highly, however, is in multiplayer mode. The game supports modem, serial and network links, with these that balance of realism and simplicity works well. Whether flying head-to-head or as teams, fighting real opponents is immense fun, and there are enough options to keep things interesting for a long time. ***(CB)***

PCR VERDICT

It tries to appeal to everyone, and ends up suffering for it. Redeemed by multiplayer mode.

7

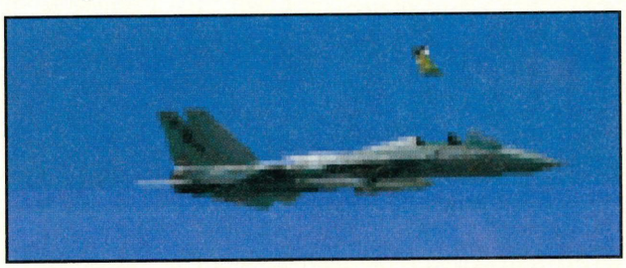


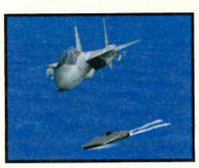






The full motion video sequences are effective, as long as you don't mind that macho American gung-ho, Gulf War atmosphere...









As these four shots demonstrate, Top Gun's in-game graphics are stunning – but you'll need a good Pentium to take advantage of them.



Although all the instruments work and it looks a bit complicated, you don't actually have to worry about most of them when playing. Phew.

Developer: Spectrum Holobyte

Publisher: Microprose

Contact: 01454 326532

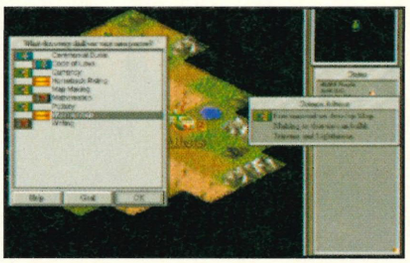
Expected Price: £44.99

Minimum System: 486DX266, 8Mb RAM, SVGA, double speed CD drive, DOS or Windows 95

In the beginning



1 Playing the Greeks, you begin with two cities. Once you've built them, you lose the Settlers who did the work, so you have to start training more. It all takes time, but from tiny acorns, great big military powers grow.



2 Of course, those ancient worshippers of Zeus and Apollo need training. If you want a decent army, that won't get sand kicked in its face, then you need to learn the Warrior Code. At the expense of luxuries and religion, however.



3 The sign of a healthy nation is a complex trade system. Once you have enough cities, and once they are far enough apart, you can begin trading, using caravans of camels. Needless to say, they hog the middle lane.

Developer: Sid Meier

Publisher: Microprose

Contact: 01454 893893

Expected Price: £45

Minimum System: 486, 4Mb RAM, SVGA, Windows 95 or 3.1, double speed CD drive

The original *Civilization* introduced the world to the genius of Sid Meier. With its detail and vast, sprawling play area, players were able to build an entire nation from the ground up, from the discovery of the wheel all the way to the first moon landing. The sequel is essentially the same, only more involving and detailed.

The first thing that you'll notice are the graphics. Where once the world was flat and blocky, now it's textured and isometric, with hills that rise up and trees that look real. Unless you've seen the first game, it's hard to appreciate just how much better this is, especially as the whole thing runs in Windows 95, with fully scalable windows and slick SVGA. The difference is not just cosmetic either. The isometric view not only makes the whole thing feel more real, but the 3D-look playing pieces make every battle a joy to play and to behold.

Not only does the map look better, but the menu graphics have been improved as well. Whenever you have any dealings with rival nations, a screen pops up describing their manner (how they feel about you), and what they want to say. It used to be that you had to stare at a dull and blocky picture of your enemies, but with the new, improved *Civilization*, you get nothing less than a fully animated, 3D rendered model. The Japanese bloke is the best. He just stands there, running his fingers along the edge of his Katana blade and looking incredibly menacing.

Building an empire to Apollo

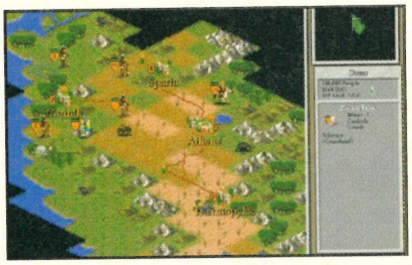
As we said, the basic idea is the same as before. Expand your empire until you either colonise the planet, or until your civilisation builds the Apollo Project – a space station with little gold wings. Every time you make a

CIVILIZATION II

A booming cannon. A ten gun salute. A fanfare and a great roll of drums. The best game in the world just got better.



The culmination of thousands of years of development is the Apollo project.



4 Once you've built the cities, you must build roads to connect them. Eventually, these will become railroads and motorways, but for now, the Greeks have little use for British Rail. Then again, modern Britain has little use for it either.



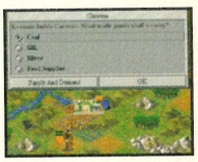
5 You now have seven major cities, with troops ready to break out towars the East to meet the other nations and trade with them. Or maybe just beat them up, slaughter their livestock, burn their homes and steal their gold etcetera.



6 The Greeks make contact with the Japanese and sign a peace treaty. The Japanese are naive, trusting types, and before they know it, troops and catapults will be banging very loudly on the doors of Kyoto.









The interface is one of the most intuitive you're ever likely to come across in a game of this type. Nobody ever said that Civilization II was easy, but with these clear and detailed menus, you'll be up and running in no time. Point. Click. Conquer. Rule. It's that simple.

new discovery, through either blind luck or scientific ability, you get to access a display detailing your achievements, and if you manage to build one of the Wonders Of The World, you're rewarded with a video. For example, building The Pyramids gets you a *Lawrence of Arabia*-style movie, lingering on desert sunsets and the majesty of these great tombs. It's touches like this that really give you the feeling that this game is special and not all gameplay and brain-work.

Backstabbing no longer encouraged

There are a number of gameplay improvements also. One of the problems with the first game was that you could break your treaties with impunity, repeatedly double-crossing your 'friends' until their lands were yours. Now, especially on the harder levels, they get wise to unsavoury tactics and quickly lose their patience. It's still possible on the easier settings to make deals before snatching a city, but even this has its limits, which makes for a far more involved, and far more realistic experience.

Getting your civilisation off the ground is still the same as ever: use Settlers to build the city, and then build an irrigation system for the land. Once you have an empire, though, you have to start using your head and stop being a cruel despot. Here you must suit the government to the needs of the people, or the people will destroy everything you've built. The proportion of production allocated to scientific advancement is also limited by the type and style of government. Despots may be powerful, they tend to concentrate on the military over the scientific, which means you have little chance of winning the game and launching the Apollo Project if you take the megalomania route.

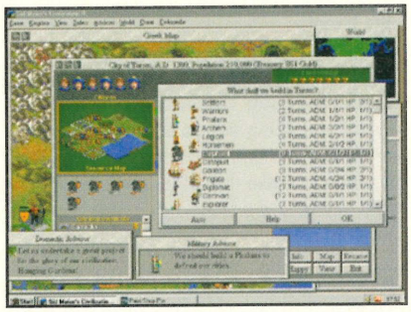
Routine production methods have also been tweaked. It used to be that, having invested years of production in, for example, building a temple, you could cancel the order and use the production points to switch directly to something totally unrelated, such as military elephants. Now, there's a 50% penalty, so you must think carefully about your long-term plans before you start ordering luxuries.

As you might have guessed, Sid Meier's latest creation is pretty compelling. It's complex, absorbing, detailed, exciting, imaginative and utterly addictive. It's not much different from *Civilisation*, but then *Doom II* wasn't that unlike *Doom*, and that was one of the best PC games ever. The graphics are better, the gameplay has been improved and, hey, it even plays you little tunes to keep you happy. *Civilization II* is a classic in every sense of the word. ***(CB)***

PCR VERDICT

Even better the second time around. Civilization II is compelling, deep and wonderful.

9



Elephants are the first things you need after irrigation. You will be advised as to the wisdom of your leadership.



These rendered sequences only work for those with 16Mb RAM, but they do add immeasurably to the atmosphere.



The new, improved, isometric map looks great and make playing the game that much more pleasurable, as do the little graphics for the pieces. Build lots of elephants if you want to expand your empire.

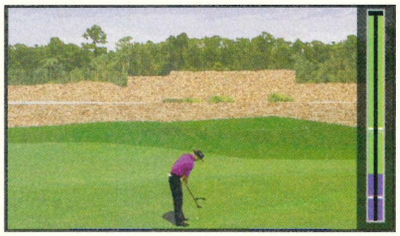
Greg Norman Ultimate Challenge Golf

Greg Norman is a golfing personality with a distinctive taste in hats, his own private golf course, and now, his very own simulation.

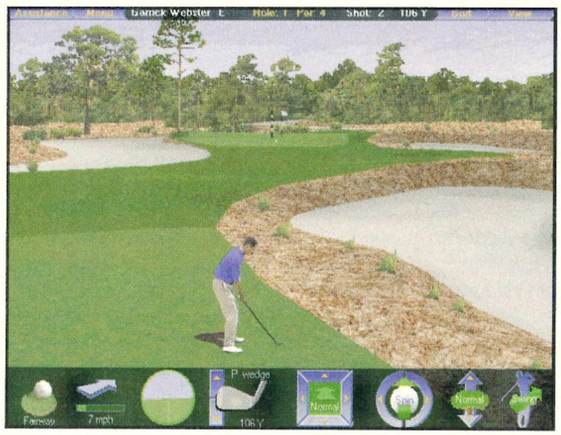
Once again it's time for tee, and on this occasion we've got good old Greg Norman and his trusty cowboy hat for company. Whereas the likes of *Links* and *PGA Tour Golf* do their best to bring the grassy fragrance of the world's finest courses to your nostrils, *Ultimate Challenge Golf* goes for the personalised approach, and gives swingers the chance to play a round on Greg's very own full-size home course. That must be some kind of back garden.

The main selling point appears to be the fact that golfers can use real strategies to achieve realistic results. Pitch a Faldo against some 10 year-old and the kid won't have a chance. Whether that would be the case is debatable. Certainly this is a comprehensive game if you like selecting what type of golf ball to use, or offsetting a precise wind measurement with the right amount of spin, height control and aim. But, while an arcade mode offers a more regular swing-o-meter, there's a real-time element to the control that feels absent.

Coupled with the occasional bout of rather suspect ball behaviour and serious delays while views are drawn, and Greg's offer to play in his back garden looks less inviting. And while some of the photo-realistic detail is genuinely lovely there's a disappointing simplicity to some of the course detail, making the more stylised efforts of Core's recent *Virtua Golf* title or the trusty splendour of *PGA Tour* more preferable. Close, but not the ultimate challenge it might have been. ***(MR)***



The arcade mode's swing-o-meter lacks the right real-time feel.



Make adjustements to the various controls and the sim swings the club for you.

Publisher: Grolier

Contact: 00 331 47 45 94 95

Price: £44.99

Minimum system: 486DX, 8MB RAM, SVGA graphics, 44Mb hard disk, CD drive, mouse

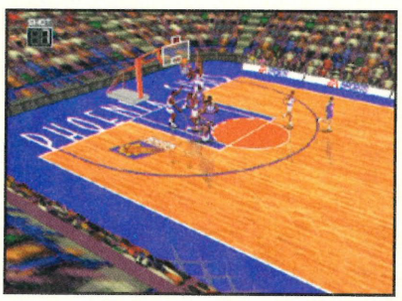
PCR VERDICT

Big on detail, big on Greg Norman and big on colourful views, but short on playability.

6

NBA Live 96

EA Sport continue to reinterpret every team game under the sun with their Virtual Stadium Technology. But is basketball a suitable case?

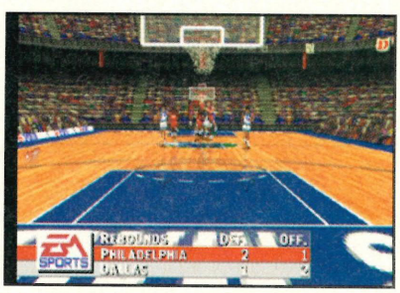


A crowd gathers around the hoop to create a confusing mess of bodies.

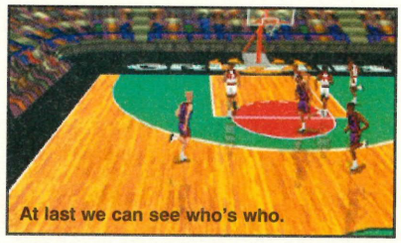
The PC has been graced by countless basketball simulations in the past, but aside from the joystick based *NBA Jam Tournament Edition*, they've all fumbled it something rotten. After several official NBA licensed attempts and a superficially similar Michael Jordan game some years back, Electronic Arts have finally got their act together, bringing the game to life with the Virtual Stadium system which works so well in their recent football and hockey releases. You'll laugh, you'll cry, you'll believe that white men can jump. Yes.

Except, *NBA Live 96* isn't quite the winning proposition you might expect for a number of reasons. Certainly there's no faulting the range of official teams, statistics and options. And to criticize the presentation would be sacrilege – anything which features glossy menus, funky songs and video clips of real NBA matches is obviously no slouch. Instead, the problem lies with the integration of basketball in the Virtual Stadium system. For one, it's already looking dated. Even in SVGA mode the players tend to look blocky and sparsely animated. Worse still, this lack of player detail makes it damn hard to suss out what's happening much of the time. Remember that basketball is a game where players are often crowded around the ball. The ensuing on-screen mass of pixels is often quite off-putting.

And yet it plays a mean game of basketball. The controls, while simple, are effective (the direction and height of throws are handled automatically), and there's just about enough scope for strategy and refinement of those three point field goals to give the game longevity. The excellent visual and audio effects also do a fine job of pulling you right into the action. Maybe it's time to make that Stadium just a little bit less virtual and a touch more believable, though. ***(MR)***



It's basketball as viewed from a pole supporting the hoop. Not very helpful.



At last we can see who's who.

Publisher: Electronic Arts

Contact: 01753 549442

Price: £44.99

Minimum system: 486/50, 8Mb RAM, 16Mb RAM, 10MB hard disk, double speed CD-ROM

PCR VERDICT

As a simulation this works – but if you want a game, then stick with NBA Jam's arcade action.

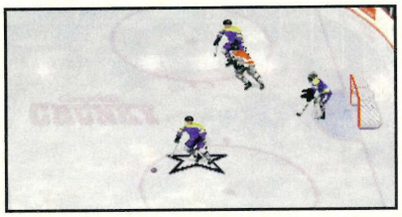
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Wayne Gretzky and the NHLPA All-Stars

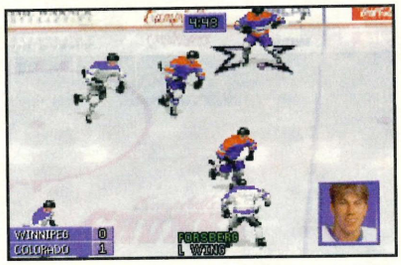
Another big ice hockey name comes in from the cold and onto the video screen. And this one has brought all its friends.

Mister Gretzky, we are informed, began playing ice hockey at the age of four and now holds 61 various NHL records, along with the rather suspect name of 'The Great One'. This is a man who cuts lots of ice, and so, the theory goes, does this game. Hell, it's even got a real NHLPA licence to boot.

In terms of PC-based ice hockey, Electronic Arts have the only two notable titles, namely *NHL Hockey 95*, and *NHL Hockey 96* – the latter featuring that ubiquitous Virtual Stadium system. *Wayne Gretzky* lacks any such graphical frills, opting instead for a firmly low resolution above-

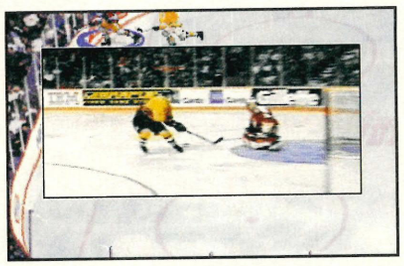


A three-on-three option offers a more frantic, vicious game. The VGA graphics may be blocky, the animation is good.



side view of the action. In an attempt to capture the dynamics of the sport there's an option to zoom in and out, but the result of zooming in is usually just greater blockiness and less idea of what's going elsewhere. Not good.

This is no king of presentation, then, despite the inclusion of copious clips of grainy video footage and numerous appearances of old Wayne. Where it does make some kind of a comeback is in terms of playability. There's very little to ice hockey, let's be honest – games generally consist of skidding around, fighting, passing and shooting. The fighting here is disastrously handled, but actual player control is just about as good as *NHL*



(Right) The live player is signified by a star. (Above) Some events trigger video clips.

Hockey 96, and the subtleties afforded by using a four button joypad make real strategies a viable option.

Think of *Wayne Gretzky And The NHLPA All-Stars* as the heads down approach to ice hockey. It ain't pretty, and aside from a few user-definables, there's precious little fanfare. But peak behind the complacency and there beats the heart of a good, solid sports sim. If only that was enough in today's harsh world. ***(MR)***

PCR VERDICT

Perfectly playable but limited in terms of presentation. Certainly adequate for arcade action.

6

Publisher: Time Warner

Contact: 0171 3914300

Price: £39.99

Minimum system: 486DX, 4Mb RAM, SVGA, 9Mb hard disk, double speed CD drive.

Ian Botham's International Cricket

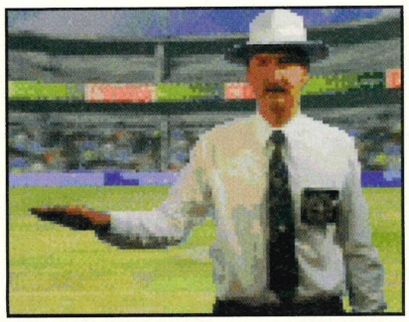
At last, you can have living legend and one-time cricket hero Ian Botham right in your home. The horror. The horror.

The last bastion of strictly in the field sporting, cricket is the one game which has always utterly failed to translate to the computer screen. Previous attempts to give PC gamers hit and run larks can be counted on, well, one finger. So, *Ian Botham's International Cricket* is already out in the lead before the match has even begun. Go Beefy, go!

Developed by Australia's Beam Software, this green and pleasant sim is nothing if not pacey. Little video snippets pop up at every opportunity (thankfully there is an option to switch them off), and the controls are so simple even a member of England's current line-up could perform well. Obviously the choice of teams is rather limited, this being a national teams only game, but it is possible to dive right into a quick game or play a full test if you've got lots of time to kill.

Bowling affords a fair amount of control, with extra subtlety provided by the way a final button press requires precise timing. Fielding is pretty much as you'd expect, while batting, sadly, is a rather less skillful affair. Or rather, the art of directing the ball is. The simplistic movement and swing controls failing to duplicate the real thing. It's this element which ultimately makes *Ian Botham's International Cricket* more of a quick arcade blast than a detailed simulation.

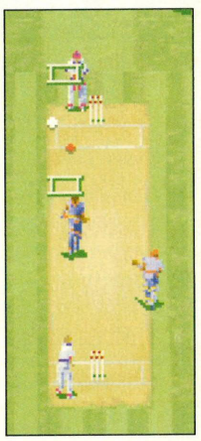
It's a shame, because that edgy shall-we-go-for-one-more-run-or-not side to cricket is captured perfectly. And it even manages to offer a more exciting, immediate spectacle than the real thing. Even the dodgy bits with the commentator hamming and iffy crowd sequences can't take the fun aspect from the game. The PC has a decent cricket simulation at last, then. But there's still room for that perfect all-rounder. ***(MR)***



When the bowling get's tight, the umpire pops up in a video clip to make the call.



Yes. That is a duck. And who is it says that cricket's changing too fast? Faster we way.



It's all here. Wicketts. Crease. Stumps. Nicely mowed grass.

PCR VERDICT

The first ever decent cricket game to appear for the PC. It has plenty of gameplay options.

7

Developer: Beam Software

Publisher: Mirage

Contact: 01260299909

Price: £34.99

Minimum system: 486DX, 8Mb RAM, 2.5Mb hard disk, Mouse or Joystick, CD-ROM drive

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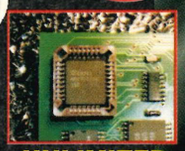
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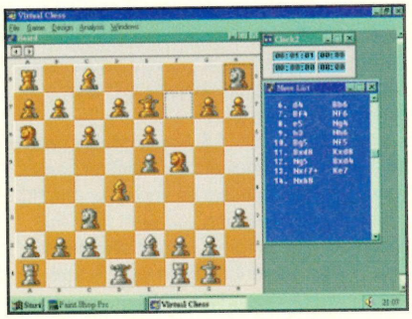
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VIRTUAL CHESS

CD REVIEW

Exclusive demo of *Virtual Chess* for Win 95 on our CD.



Should a 3D virtual chess board fail to impress, you can always play in 2D.



You can rotate the board to all sorts of funny angles, not all of which are playable.

Nobody really needs to see a chess board in 3D, do they? And very, very few people are good enough to appreciate just how powerful programs like *Virtual Chess* really are. Most players can't even beat freeware chess programs, let alone commercial ones which have spent five years in development.

Beyond this proviso, however, *Virtual Chess*, newly released for Windows 95, is certainly the game to get if you're a chess brain – or aspire to being one. It has in it a number of features to help you improve your game. You can, for instance, access move lists from 46,000 Grandmaster matches and print out boards and movelogs whenever you want. This might sound dull, but is handy for correspondence games and, if you're that into it, chess club fanzines.

Another key improvement over the DOS version released last year is the new ELO 1200 skill level. With this, Titus has introduced 'artificial stupidity' to the program. So, if you're playing badly, the chess engine will let up the pressure a bit and make a few mediocre moves rather than going for the kill. Then again, if you improve your play, *Virtual Chess* will begin to match your increasing deftness.

Even using this, however, chances are you'll get a whipping. But to improve your play, there are several features in Virtual Chess to take advantage of. Firstly, there is the Hint function which tells you your next best move. Furthermore, from any position you can ask the PC to seek out the fastest route to check mate for you. Analysing the advice of these options should assist you in learning some tactics.

And, anyway, if you get bored of losing to your PC, you can always fiddle around with the fully rotatable 3D chessboard and its three different sets of pieces. The only thing missing, it seems, is the option to play from the perspective of one of the pieces. ***(GW)***

PCR VERDICT

Only useful if you really want to improve your chess, otherwise stick to freeware.

7





Check out the standard and Aztec chess boards.

Developer: Titus

Publisher: Titus

Contact: 0171 700 2119

Price: £44.99

Minimum system: 486, 4Mb RAM, CD drive, Windows 95, mouse

VIRTUAL SNOOKER

CD REVIEW

Try *Virtual Snooker* for yourself with our CD-ROM.

Virtual Pool was a phenomenal game. It boasted the most playable engine in the genre's history and promised to remarkably improve your skills at the real table. *Virtual Snooker* makes use of the very same engine and again brags that it can make you a finer player.

Appropriately, if you have a knowledge of snooker, you'll find adapting to this game will take about fifteen minutes. For inexperienced players, playing in practise mode enables you to utilise the tracking facility. Using this for a few frames will help you learn the angles of the table, and when to apply side and stun.

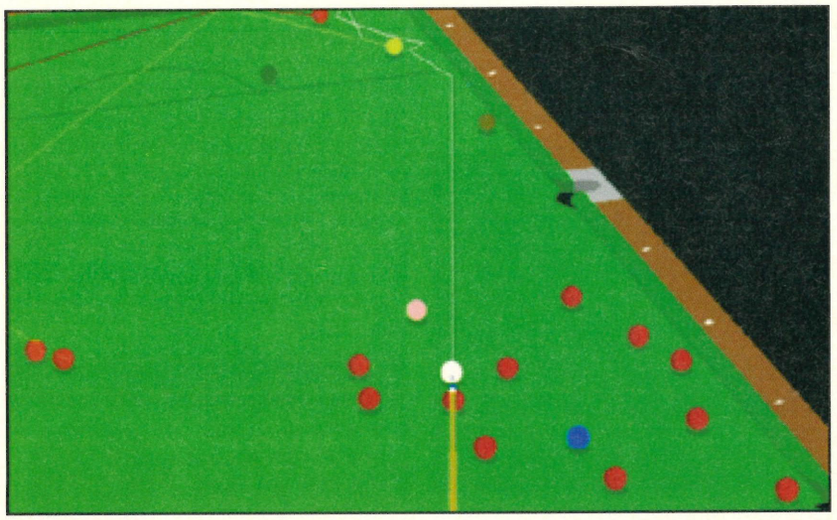
Equally simple are the controls. To strike a ball you merely line up cue, ball and pocket and using your mouse and [S] on the keyboard, hit the ball. The power of your shot depends on how you jerk the mouse.

Running at 29 fps, Virtual Snooker is incredibly smooth. Ten computer players offer a significant challenge and although the game's virtually identical to *Virtual Pool*, it gains a lead over its stablemate by offering a more tactical gaming experience. The video footage acts as a school for beginners, but even for the accomplished player this offers so much challenge you may never beat Steve Davis. It's tough at the top. ***(CB)***

PCR VERDICT

An impressive game that will keep you potting balls for months on end. Better than Pool.

9



To aim a shot you waggle the mouse around until you've lined up your cue stick, cue ball and the spot you're aiming at. The table is also fully rotational so you can play from any angle.



Virtual Snooker brings the table and the physics, you bring the waistcoat.

Developer: Celeris Inc

Publisher: Imterplay

Contact: 01628 423666

Price: £29.99

Minimum System: P75, 8Mb RAM, double speed CD drive, VGA

Earthworm Jim 1 & 2

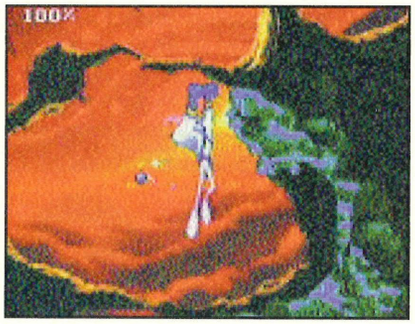
CD REVIEW



Jim 1 and *Jim 2*. Hey, the whole gang's on the CD.



You'll have to lift pigs and cows in various sections of each level, then drop them onto scales in order for you to finish the section.



Hanging on for dear life is something you'll get used to in Jim's adventures as he searches for passwords to crack the code.

Jim is easily the biggest platform character since Sonic. Now with two multi-format games and even a hit cartoon TV series under his belt, he's showing the world that even being an invertebrate needn't hold you back. You could say Jim's a spineless wonder.

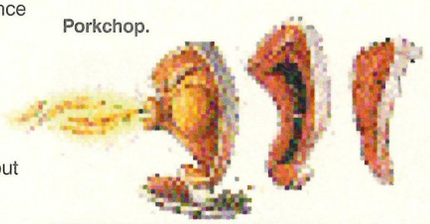
Although Activision released the first *Jim* game for Windows 95, this package from Funsoft features both games at a reasonable price. *Earthworm Jim 1 & 2* comes complete with loads of new features exclusive to the PC. A cartoon introduction prepares you for the madcap antics you can expect, and once you're into the game you'll quickly realise this is no ordinary platformer.

Earthworm Jim's first outing has him tackling rabid dogs, angry crows and his arch-nemesis Psycrow as he fights to save Princess. What's bizarre about the first instalment is the use of animals to add character to the game. Expect to find Bob the Goldfish rearing his pouting head or hamsters that devour cats. All of this makes *Earthworm Jim 1* diverse and humorous throughout. The only weapons to save you from being torched alive are a laser gun and your trusty whip.

In the second game, you'll have the same weapons, with the addition of the snot pack. This enables you to swing to hard-to-reach places to get extra lives or ammo. The vast sprawling levels ooze with the weird and wonderful. Nowhere is this more noticeable than with the exploding dogs and on the inflatable head level.

Earthworm Jim 1 & 2 as a double pack is top value for money at £30. Platform games often struggle to make an impact on the PC, but this has everything you want from the genre. It's challenging, entertaining and is sufficiently different on each level to hold your interest throughout. ***(CB)***

Porkchop.



PCR VERDICT

A colourful mix of challenging gameplay, psychedelic views and humour.

8

Developer: Shiny
Publisher: Funsoft
Contact: 0181 7487565
Expected Price: £29.99
Minimum System: 486 DX2/66, 4Mb RAM, double speed CD drive, VGA, Soundblaster, DOS

Abuse

CD REVIEW



An updated version of the *Abuse* demo is on our CD.

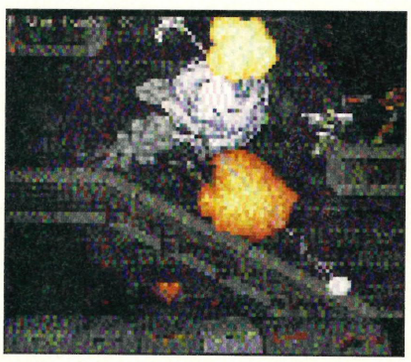
The title sums up this game perfectly. *Abuse* is what you'll face throughout its mammoth levels. Co-written by Dave Taylor of id software, Abuse calls on you to blast your way through a labyrinth of corridors and annihilate the frenzied ants which burst out every dark corner. Making for doubly hard gaming, they attack (like real ants) in vast numbers, and if you're not carrying the right weapon, you can say goodbye to your measly life.

Apart from the immense danger you'll face at every turn, a few minutes need to be set aside to master the somewhat odd controls. You control the character of the resistance fighter, Nick Vrenna, using the direction keys, whilst aiming and firing is executed via the mouse.

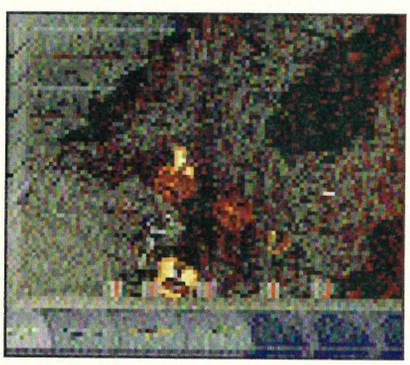
After the success of the shareware version, the game was snapped up by Electronic Arts which now distributes the full version. And what a game it is. Making *Abuse* even more of an outstanding example of the platform genre is its open-ended nature. The game engine features a built-in Lisp interpreter allowing you to modify, extend and re-design the levels. You can add your own features to the game such as hidden areas or, if you're completely crazy, a few thousand more ants.

With modifications implemented for the full version, you can expect to hear tortured squeals as you fry the ants blocking your route and a hair-raising soundtrack, designed to add atmosphere – which it does. But the funkiest aspect has to be the multi-player Deathmatch. Here you can link up and play over a network. And for those who've tried this with *Doom*, *Hexen* or (pant pant) *Quake*, you'll know what great fun it is.

Abuse is a corker of a game: it's atmospheric, guarantees surprises around every corner and will have you jumping out of your skin as the ants leap out. And with that Lisp editor thrown in, *Abuse* has a life beyond your completion of all its platform levels. ***(CB)***



The 'ants' in Abuse bare a curious resemblance to Giger's Aliens, and die in a hideously explosive way.



You'll not often be able to see the ports from which the ants emerge. So, weapons at the ready at all times.

PCR VERDICT

It follows a tried and tested format, but you ant seen nothing til you've played this game.

8

Developer: CrackDotCom
Publisher: Electronic Arts
Contact: 01753 549442
Expected Price: £45
Minimum System: 486, 4Mb RAM, double speed CD drive, VGA, Soundblaster, mouse

"The Internet was invented by a man called Irving.

By mistake."



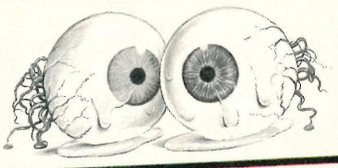
.net reveals the true history of the Internet and shows you how to get on-line.

Plus Uri Geller, Anita Roddick, Internet widows and the on-line spy society.

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EXCLUSIVE WHAT THE FOOTMAN



Human meat in burgers

an unpalatable truth

By DOMINIC HAYWARD.

Allegations that body parts are to be used as burger ingredients have been described as 'a matter for grave concern' by the Standing Committee for Food Standards.

Moist

That such an august body as the all-party committee should publicly voice its worry tacitly admits that the government is taking the issue very seriously. The as yet unnamed corporation's intention to add human protein to its menu puts 'Salmonella and BSE in the Mickey Mouse league', a cabinet source said yesterday.

Limbo

Leaked information from the corporation's internal planning department includes references to the best human cuts to take for tenderness and flavour; and details quality control systems to ensure that articles such as teeth, hair, heart pacemakers and prosthetics do not enter the mincing process. The corporation is evidently very quality-minded.

Imelda Marcos

The company is also concerned that its customers will not be keen to eat 'intelligent meat'. Vigorous testing for intelligence is to be therefore carried out before human protein harvesting takes place. No IQ level is detailed, but the burger manufacturers are apparently confident that the sample ingredients will fail their tests.

It is interesting to note that the Minnesota Institute for Statistical Studies [MISS] has calculated the odds on a random sample of all humankind producing a latter-day Albert Einstein at around 300 billion-to-one. *The Human Lottery is coming soon.*

FULL STORY: Page



The Orion Burger Corporation,
Protein House, Armageddon Street,
Orion Constellation,
OR1654903 41556900D

Represented on Earth by U.S. Gold Ltd.
Branches throughout the Known Universe.

Value for money

Budgets

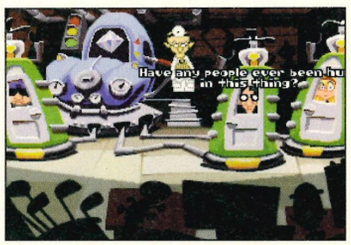
Our pick of the latest budget-priced games. This month we've got some seriously big games... at tiny prices.

Day of the Tentacle

White Label £12.99

One of the funniest and most enthralling games you'll ever play. It's as as gag-packed as *Sam'n'Max* and as playable as *Full Throttle*, but takes twice as long to complete. The VGA graphics look chunky, but who cares about that when a giant purple tentacle is threatening the world?

PCR Verdict 9/10



Zany animated antics from LucasArts.

Terminal Velocity

Kixx £12.99

You won't find a better shoot-'em-up than this, especially at such a knock-down price. Yes, it's the full game you're getting, with all the blistering speed and blasting action you can handle. We've played it to death, here at *PC Review*, and we're confident you'll be hooked too.

PCR Verdict 8/10



Terminal Velocity. You can't go faster.

System Shock

EA Classics £11.99

Dubbed the thinking man's *Doom*, Origin's *System Shock* has an impressive 3D engine – no surprise when you realise it was created by Looking Glass, who also made *Terra Nova*. Lots of puzzles here so if you want to save Earth, you'll have to use brains and brawn.

PCR Verdict 8/10



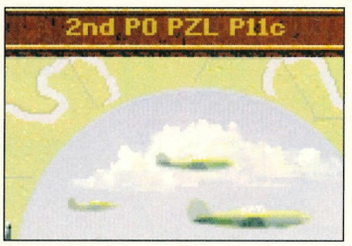
Great 3D action in System Shock.

Panzer General

Ergo Software £10

Don't switch channels! This may be a hex-based wargame, but it's one of the best around. Command your World War II forces in a desperate bid to, well, you know the story. The action is compulsive, and the tactical aspects will keep you mere millimeters from your monitor.

PCR Verdict 7/10



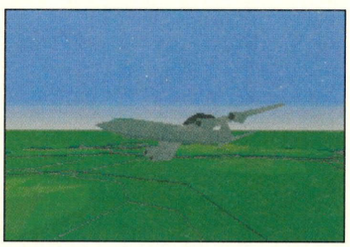
A compulsive strategic wargame.

Tornado

Action Replay £4.99

An awesomely detailed flight-sim, with enough realism to last a life-time. If it's instant action you're after, then give it a miss, but if you really want to know what it's like to fly Britain's best low-level bomber, then you'll be in heaven with this game. Just don't expect too many frills.

PCR Verdict 7/10



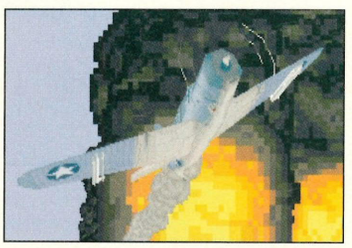
Tornado – a top flight sim in its day.

1942 Pacific Air War

Powerplus £16.99

Currently available as part of the Electronic Arts Essential Selection (along with *Fleet Defender* and *Wings of Glory*), it's still a bargain at this price. It's full-on dog fighting all the way, with great explosions and brilliantly detailed and texture-mapped planes. Super stuff.

PCR Verdict 7/10



Bellowing, smokey explosions here.

Raptor

Kixx £9.99

Old-school vertical-scrolling shoot-'em-up with more levels than you'll probably ever need to playever. Originally released as a shareware game, *Raptor* is arguably the best game of its kind on the PC. If we're lucky, Apogee may do a follow up with SVGA graphics.

PCR Verdict 7/10



Scrolling arcade shooting. It's Raptor.

Wing Commander Armada

EA Classics £11.99

Pretty good as a two-player game, but severely lacking in originality. If you've got *Wing Commander II*, then you've already got Armada. It has the same sort of missions and the same type of graphics. We'd only recommend it for collectors who simply must have everything.

PCR Verdict 5/10



Wing Armada. A collector's item.

Compilations

When you want heaps of games at a good price, you've got to go with a compilation. These are the latest and best.

Power, Corruption and Lies

Virgin £34.99

This has to be one of the greatest compilations ever for strategy fans. Firstly, you get *UFO: Enemy Unknown*, which will consume your days with its superbly balanced mix of turn-based resource mangement and military strategy.

Then There's *Dune II*, which is basically the orginal game behind the superb *Command and Conquer*. It will devour your nights with little blokes that say "Roger that" and "Yes, sir" whenever you click on them, and the frantic combination of waging a war whilst trying to earn a crust from the Spice Mines.

And finally, if that wasn't enough there's the point-and-click adventure antics of *Beneath A Steel Sky*, and the naval strategy of Fleet Defender. Quality and value. Buy it.

PCR Verdict 8/10



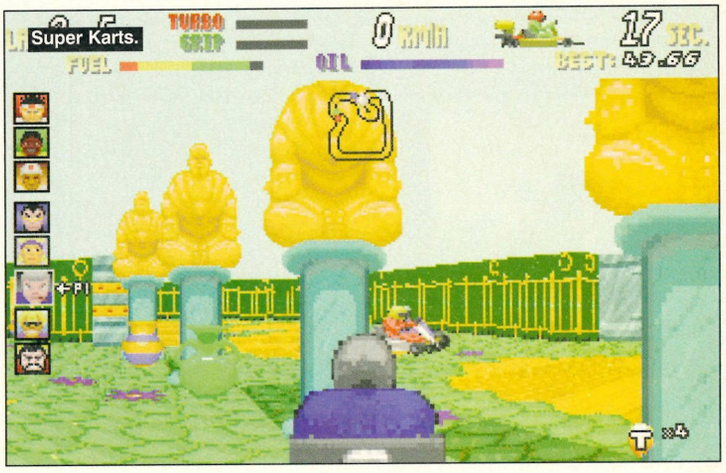
White Lines

Virgin £29.99

Another tremendous batch from Virgin. This one's got the original *Super Karts*, *Indycar* (including expansion pack), and *Micro Machines*. If you feel the need to screech about at ridiculous 70's cop-show speeds, buy this.

Why? Because *Super Karts* is the PC's best answer to *Mario Kart* on the Nintendo, with it's colourful arcade charm. *Indycar* is the only racing game ever to come close to the original *F1GP*, with realistic handling and genuine tracks. *Micro Machines* needs no introduction. It's simply the most fun you can have on your PC without loading something that rhymes with 'boom'. You're getting each one of these games for a tenner, and each one is worth twice that. How could you possibly miss it?

PCR Verdict 8/10



Perfect Sport

Instant Access £20

For your money, you get *Jack Nicklaus Signature Edition* golf and *On The Ball World Cup*, both of which were pretty good in their day. The golf game, you may remember, was the first to let you design your own holes, and the designer software is included in this pack.

It's not amazingly easy to use, but once you get the hang of it you can design the most devious and water-logged courses you can think of. *On The Ball*, though, is a bit dull. It doesn't mean to be, it just sort of ends up that way, hamstrung by pointless statistics and uneccessary details about the players. Management games are always tricky to get right, and this one is pretty far off the mark, making personalities more important than strategies.

PCR Verdict 6/10

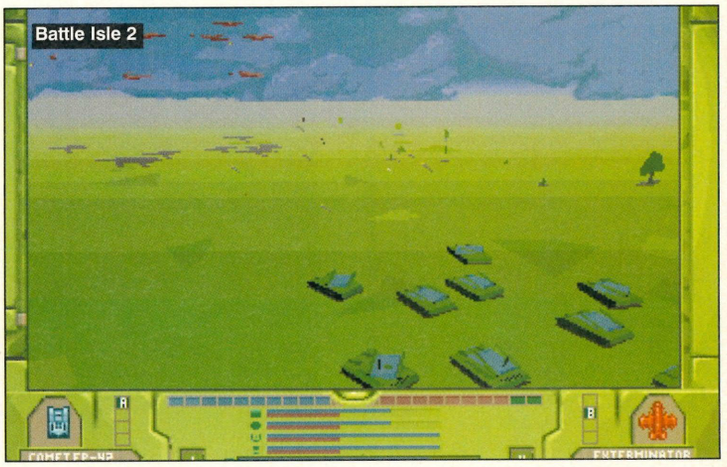


Perfect Strategy

Instant Access £20

Another reasonable collection from the Perfect range. This time, you've got *Battle Isle 2*, *The Patrician* and *Titan's Legacy*. The first one is great, while the last two are a little below par. *Battle Isle 2* is seen by many as the definitive hex-based wargame, combining superb 3D sequences with fraught futuristic battles – and don't worry if hex games aren't your thing, Blue Byte has made it extremely accessible. *The Patrician* isn't up to much, though. You get to do lots of trading, building up your power base and stockpiling your cash, all in 13th Century Germany. Not quite a recipe for fun. *Titan's Legacy* is a a data disk for getting more out of *Battle Isle 2* – juts an upgrade, then. At £20 for *Battle Isle 2* and the upgrade it isn't bad, but forget *The Patrician*.

PCR Verdict 7/10



Play to win

Is that harmless game you're playing slowly filling you with self-loathing, nagging at your subconscious and invading your iife?

Firestorm: Thunderhawk 2

PCR 53, Score: 6

If the task of ridding the world of its crackpot dictators in your heavily armoured and ridiculously armed helicopter is proving troublesome, please allow us to aid your globe-trotting, death-wielding antics by supplying the following level codes.



Choppers and missiles are the key ingredients in Firestorm.



High tailing it over the fields to your next destination.

South America
1) TNH3GUG7EBDUSBI
2) K3HB0V5FEFDQ4O2
3) NVHB0V83EFD649A
4) O3HN0V4BEJD249A

Stealth Down
1) 6JHP0VV7AQDESEQ
2) 9FHP0VTRAUDA4BA
3) RRHP0VTFAUDM5JI

Panama Canal
1) TFHL0FUFMUCE5MQ
2) UJHH0EKFNI2CA5TI
3) J7GT0EMRM2CM472

Central America
1) IJGT0UNNI2AE5IQ
2) NFGT0UI3I6AA49A
3) OJG90UMVI6AM542

Eastern Europe
1) A7G90APRVAEE5TI
2) CBGT0E9JVEEA4UI
3) 4UG85EUJVIEM5RA

Canyon
1) F3GGS99RRSME5PI
2) HNGOS94JR0MA5UI
3) 2RGGQGRUR0MM4EQ

Gulf 2
1) AJHJ0V4B6JDE4SI
2) F7HB0VVN6JDA4SI
3) HBHN0VVB6NDM4U2
4) 77HP0VRF6RDI432

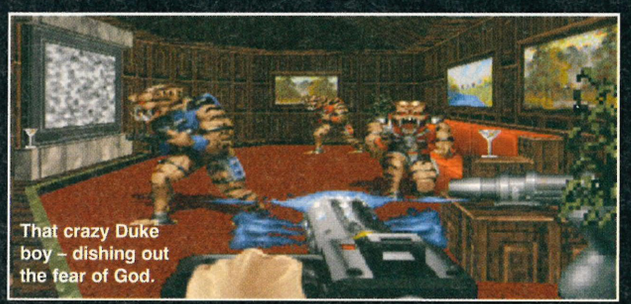
South China
1) I7GGS1NJ3IME44A
2) PBGOSIPU3MMA5SQ
3) AUGKS1BB3QMM53I

Duke Nukem 3D

PCR 53, Score: 9

Despite being Duke Nukem, the world's hardest man, you may encounter more than a spot of bother once you get deep into the bowels of this splat-o-rama. Just PAUSE the game and apply these key presses whenever the fancy takes you.

DNKROZ: The ultimate cheat. God Mode.
DNCORNHOLIO: God Mode. The Great Cornholio.
DNSTUFF: Get all the weapons, ammo and key cards.
DNITEMS: Just the items and key cards this time.
DNHYPER: Super strength and speed boost.
DNSCOTTY*xy*: Be beamed to other levels, where *x* is the episode and *y* is the level.
DNVIEW: Alternative chase plane view.
DNCASHMAN: Throw money about when you press the space bar.
DNCLIP: Walk through walls (only works on version 1.1 we're afraid).



That crazy Duke boy – dishing out the fear of God.

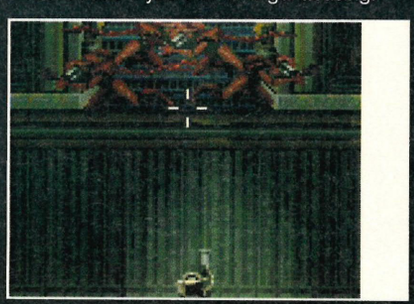
Abuse

Reviewed page 82

Quite what possessed them to name such a great game '*Abuse*' is beyond us. Anyway, here's a God-mode cheat.

Start the game in DOS typing in: ABUSE -EDIT. Wait for the game to start and the instant it does (minus your character you'll notice) press SHIFT and Z together.

Now hit TAB to make yourself appear and begin the game as normal, but with one important difference. You are now totally impervious to enemy fire. Indeed, indestructible if you will. Now get abusing!



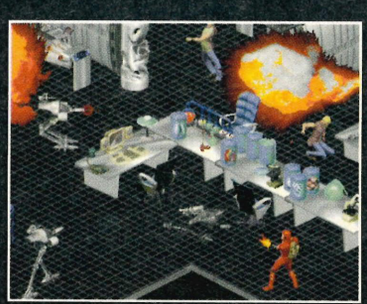
The fighter prepares to get abusive in the early stages of Abuse.

Crusader: No Remorse

PCR 50, Score: 8

After the prisoners have been wiped out by the large rotating guns, go back to the cells and to the cell on the far right. There's a teleporter in there, cunningly hidden by the wall, obscured because of that isometric view.

Have a bit of a poke about. Once you find it you'll be magically transported to a new secret level which is chock full of nice things.



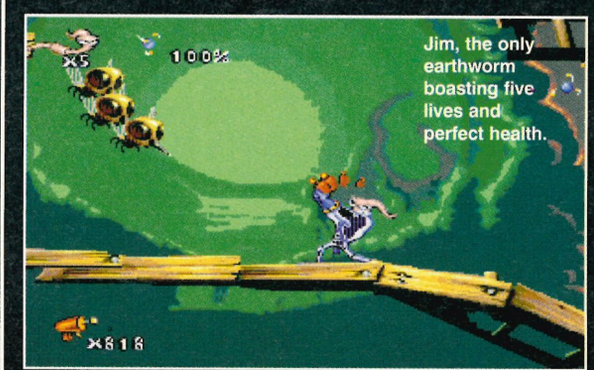
Find the secret level in Crusader.

Earthworm Jim

PCR 53, Score: 9

The mighty worm packs even more power if you exploit these secret code cheats. Just type away during play.

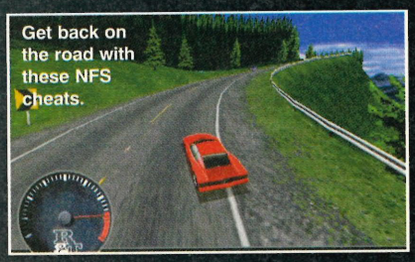
ITSAWONDERFUL: An extra life.
POPQUIZHOTSHOT: 1000 bullets.
ONANDONANDON: Infinite continues.
SLAUGHTERHOUSE: Instant access to first five levels from the file menu.
HATMAN: Transforms Jim into a hat-stand.
IDDQD and IDKFA: Shows you the credits..



Jim, the only earthworm boasting five lives and perfect health.

The Need for Speed

PCR 49, Score: 7



Get back on the road with these NFS cheats.

Most of us will never get our hands on a blood-red Testarossa, or a banana-yellow Dodge Viper, so in the meantime EA's *The Need For Speed* will just have to do. But take solace from the fact that you can now supercharge those supercars with the following supercodes.

When typing in your name at the beginning of the game enter one of the following. Then, while playing the game, enter one of these codes to cheat.

EAC WARP: Pushes the pace of the game up to light-speed.

EAC POWR: Super power and acceleration boost enabled

EAC RALY: Gives TNFS a rally flavour by changing the road surface on some tracks to slippery gravel

Destruction Derby

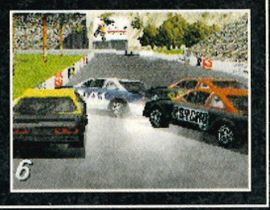
PCR 44, Score: 9

Are you a terrible driver? Well, don't fret. This invincibility cheat for *Destruction Derby* means that you can smash the living daylights out of every car on the track and still cross the line with a just-waxed sheen to your paint work.

For the invincibility you crave begin a championship race and enter your name as !DAMAGE!. Exit and begin a practice race. Suddenly you're driving a tank.

Also, to gain access to the secret Ruined Monetary track do as above, but this time enter your name as REFLECT!. Now go to Practice Race and select the new track.

Finally, entering NPLAYERS as your name allows you to set the number of fellow racers you're up against in each practice race. Cool.



Being invincible in Destruction Derby. Now that really is what we call cheating. But fun too.

Terminator: Future Shock

PCR 52, Score: 8

***Terminator: Future Shock*, eh? It's got the lot, hasn't it? Including the following cheats. To activate them press ALT and the # key during the game. The game will then acknowledge your new found power and ask you to enter a code. Do as it says. Simply type in any of the following.**

FIREPOWER: Help yourself to all the weapons.
BANDAID: In a bad way? This'll sort you out.
TURBO: Speeds the game up.
SUPERUZI: Supercharges your Uzi.
GARBLE: Allows you to see the code you're typing instead of all those '****' asterixes.
NEXTMISSION: Instant level completion.
ICANTSEE: See in the dark with this handy image enhancer.
COUNTERS: Shown your position, the map number and the number of objectives left.

And just out of interest...
VERSION: Prints the version number. Useful? No.
HELLO: Prints "HELLO?". Useful? Hell no.
WHOAMI: Just in case you forget your name.



It's Los Angeles and as a logical extension of this statement you must shoot things with an Uzi.

Full Throttle

PCF 44, Score: 9

Yes, it is a bit of an oldie, but when this handy cheat came to our notice we just couldn't resist passing it on. It could make being knocked off your bike by a bloke with a spiked club a thing of the past.

You know the old mine road? The one with the crazed bikers on it? They're out to do you mischief and no mistake. Especially that strumpet with the chainsaw. Well, now you can instantly win every fight you're daft enough to get involved in by pressing LEFT, SHIFT and V together. You might have to do it a few times during the fighting bits, but you'll get there in the end.

Rebel Assualt II

PCR 53, Score: 9

Despite being nearly twenty years old, the *Star Wars* spin-off machine just keeps churning it out. It's latest creation? *Rebel Assault 2*, which features lots of lovely level codes. Whatever next? *Rebel Assault 3*? Yes, probably.

	Beginner	Novice	Standard	Expert
The Corellian Star	Jabba	Ewoks	Bantha	Anakin
Mining Tunnels	Endor	Chewie	Katana	Kenobi
The Asteroid Field	Lachton	Dankin	Dengar	Fortuna
Interceptor Attack	Borsk	Noghri	Pellaeon	Modon
The Mining Facility	Kroyties	Chamma	Ithull	Ommin
TIE Training	Auril	Bogga	Stenness	Rekkon
Flight to Imdaar	Kampl	Incom	Myrkr	Shazeen
The Mine Field	Ferrier	Kothlis	Churba	Kiirium
Speeder Bikes	Galia	Krath	Artoo	Gundark
Aboard the Terror	Denaril	Siosk	Satal	Dianoga
The Sewer	Sadow	Adegan	Lobue	Atuarre
Star Destroyer	Onderon	Amanoa	Deneba	Essada
TIE Attack	Aleema	Ambria	Sturm	Paploo
Imdaar Alpha	Cathar	Sylvar	Crado	Nash
Finale	Dominus	Miraluka	Carrack	Pestage

They're practicing their lines for Rebel Assault 3.



Time Gate

Complete Solution

Defeating the evil Wolfram and rescuing Juliette is not easy. But if you get stuck take advantage of these comprehensive tips.

1 THE MUSEUM

Take everything that's not nailed down. When the alarm goes, stay close to the furniture and sneak out of the door. Use the screwdriver from the toolbox to open the door and the CO2 fire extinguisher to put out the alarm control box. Use the magnetic card on the case to the left and load your catapult before driving it through into the next room and shoot the red button to turn off the beams.



Keep your head down. Be sure you crawl around those beams.



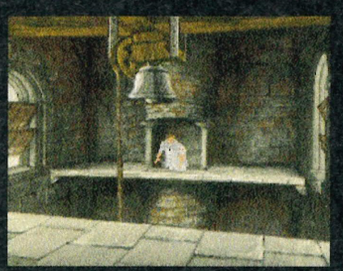
Your remote controlled catapult can go where you cannot.

2 THE CELLS

Throw your the lute to your cell mate. Push the guard at him. Ignore the blind man upstairs and take the key from the hearth. Open the door and get the skin and crook. Mind the sheep. Extinguish the fire with the bucket of water and climb the chimney. Deaden the bell with the pelt and crook the rope to swing across. Turn left on the beams and drop down to steal the old man's frock.



Go on, give him a shove. Your mate'll lute him to death.



Climb the chimney and swing on the bell rope.

3 THE KNIGHT'S SONG

Take the book and hologram from the safe. Push the cross to open a secret door. At the second from last desk use the book. Use the stiletto to get the gem. Now use the stuff on the side table to make ink. Stand in front of the white paper and use the quill to copy the 'Knight's Song'. Quickly return the 'Knight's Song' and box to the safe. Put on the monk's frock and push the torch on the wall.



Don't forget the box. You'll find it on top of the cupboard.



Stick right behind him in monkly fashion. Don't let him get away.

4 THE HOSPITAL

Smash the wooden pot to get the key, which opens the nearby door. Study the book to learn how to make a sleeping potion with the ingredients you'll find on the shelves. You'll find a leather cutter in the tannery and two loaves of bread in the bakery. Use your potion on one of them and give it to the Old Templar. Use then your leather cutter on all the statues to release the gems.



A beginner's guide to potion making. Part one.



Give the crazy old geezer your mouldy bread.

5 THE MORTUARY

Take the gold heart from the corpse and use it on the statue. The other statue will come to life, use your gems on it. You're captured! Again! Turn the wheel by pressing right and burn the rope. Fight the guard and loot the table then swap the two torches. Take the first left and show your ring to the Old Templar. Ahem. Once he's dead take his stuff and use the leather bag and red stone to dazzle Wolfram. Your ring opens the door. Wear your robe and go out.



Don't worry, you get your gems back later.



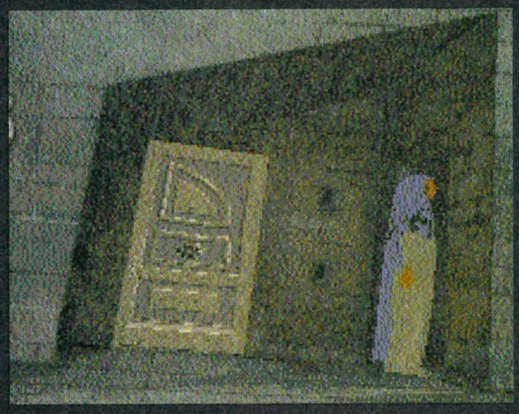
A tap to the right and the rope's alight.

6 THE REFECTORY

Grab the plates and carry them through to the kitchen opposite. Fight the monk and use the emerald and onyx on the two tombs to get the key. Unlock the kitchen door and go outside. The green ghoul can be defeated with the small wooden cross. Take his tooth and use the amethyst and opal on the two tombs outside. The ghoul's tooth will open the tower door. Once inside push the statue to your left to open a door.



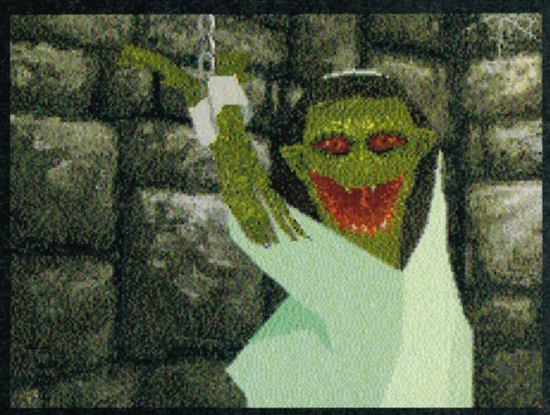
Make like a waitress and take those plates to the kitchen.



The statue opens a secret door. Just give it a push.

7 THE CELLS (Again)

Turn left, go through the torture room and find your old cell. Beware, that's not Juliette! Run back through the door to escape her. Head back through the Old Templar's cell and back into the library. Outside fight the guard by the door, go through and push picture number seven. Now fight the Black Knight and head upstairs. Use the first weight you find then one of your diamonds on the tomb and be captured yet again.



Oh dear. Don't fancy yours much.



Captured! Again! This is becoming a habit.

8 THE ABBEY

Run forwards as soon as you can and take the mace and horn from the table. Use the horn and be transformed! Fight the fat bloke then go to the small chapel at the front of the church and push the cross to open the door. Fight beardy fella on the roof and push him to his doom. Now push the unlit torch by the double doors to open them. Use the small wooden cross on the statue and push the miniature font.



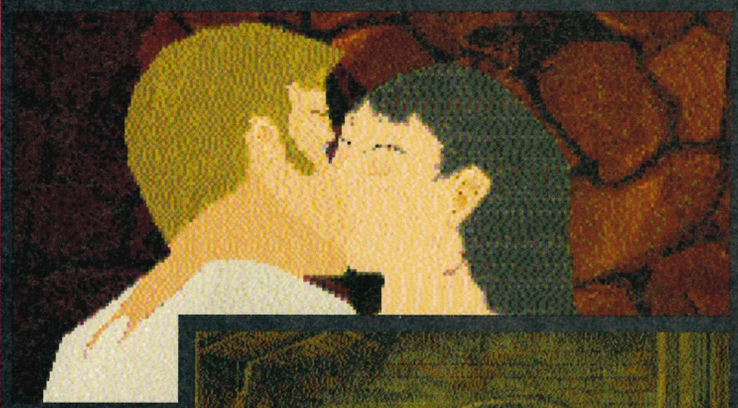
'Be off, Fat Bloke, for I am Golden Eagle Man and I can breakdance.'



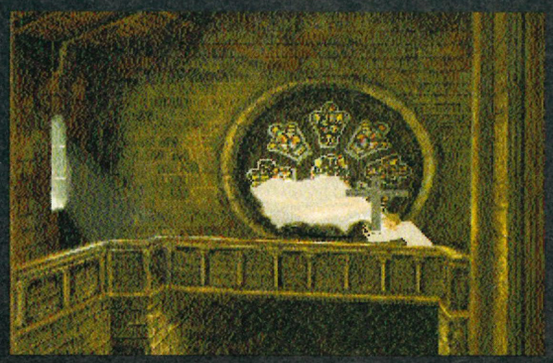
Another secret switch opens another secret door.

9 WOLFRAM'S LAIR

Enter Wolfram's Lair and take everything you can find. Follow the instructions in the book to make a potion. Use the burning torch from the stove on the deadly pentacle and the potion on the statue's closed book. Go through and use the rope on the bucket, the bucket on the well and the water on Juliette. Enjoy a snog then grab the seal and go back to the Abbey. Return to the balcony once more and push the cross by the stained glass window onto the symbol on the floor. Juliette will return your glove, use the seal on it, then use the glove to be spirited back to the present. That's it.



There'll be plenty of time for that later. Put her down!



A rush, a push and Wolfram's a goner.

The 11th Hour

The 11th Hour may be an improvement on the puzzle 'n' spook spectacle that was The 7th Guest, but those puzzles remain as hard as ever. Not to worry, these solutions will get you halfway through the game and next month we'll take you the rest of the way.

1 THE CHESS PUZZLE



Black is B, White is W. Start by moving the Black on square 1 (B1) over to square 8 like in chess, then continue with the following moves..

B8 to 7	B2 to 7	B6 to 1	B6 to 10
B7 to 2	B7 to 8	B1 to 8	B2 to 7
B3 to 8	B8 to 1	B8 to 7	B7 to 8
B8 to 7	W3 to 8	W10 to 6	B8 to 1
W6 to 1	W8 to 7	W6 to 1	B1 to 6
W1 to 8	W7 to 2	W1 to 8	W9 to 2
W8 to 3	W2 to 9	W8 to 3	W2 to 7
B7 to 8	B1 to 8	B7 to 8	W7 to 8
B8 to 1	B8 to 7	B8 to 1	W8 to 3
B1 to 6	B7 to 2	B1 to 6	

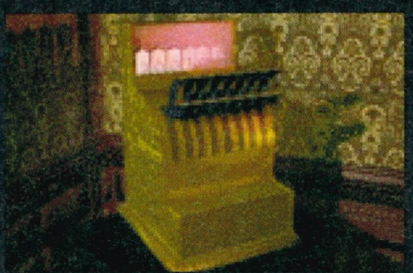
2 THE BOOK PUZZLE



To get all the red books and all the green books together number the books 1 to 8 from the left then:

Move books 2 and 3.
Move books 3 and 4.
Move books 6 and 7.
And finally, move books 1 and 2.

3 CASH REGISTER PUZZLE



What you're supposed to try and do here is to make both sides of the register equal 81, half of 162. To balance it, if you will.

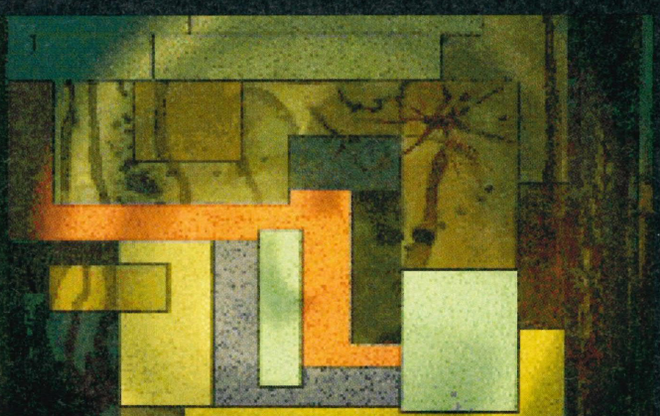
Press 25 and the right-most 5, 10 and 10 on the top row. Lastly, press the right-most 10, 10, 1 and 10 on the bottom row.

4 MOUSE MAZE PUZZLE



Unfortunately there's no set way of doing this as it's different every time. You're trying to move the mouse to the hole on the right. Position the piece outside the game at the end of a line of your choice. The pieces in that line are shuffled over one space and the one pushed off the end is the next one that must be placed. After each go you get to drive the mouse to where you want too, then Stauf has a turn. There's nothing for it here but to stick at it and practice. Sorry.

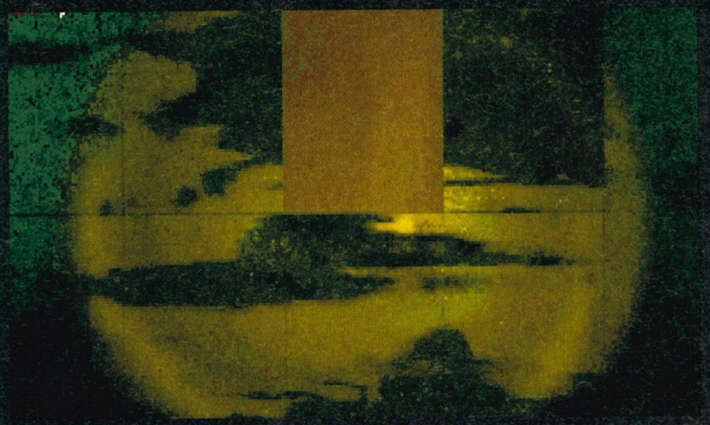
5 MODERN ART PUZZLE



The aim of this rather artistic and abstract looking puzzle is to colour in the last square on the painting. Each time you pick a shape it changes colour along with all those adjacent to it. You have a turn then Stauf has a turn. Stauf's pieces are grey.

Again, there's no set way of doing this one but a good first move is to go for that L-shaped blue piece in the lower centre of the painting.

6 THE MIRROR PUZZLE



Ah, this one brings back memories. It's simply one of those sliding shapes puzzles, made trickier by the fact that the picture is very obscure and your torch light makes the shapes at the sides indistinguishable.

All you can do here is try to memorise the original design of the puzzle (you can reset it by clicking on the bottom). Note which of the shapes has been removed, as this is where the empty space must go at the end.

7 THE SPIDER PUZZLE



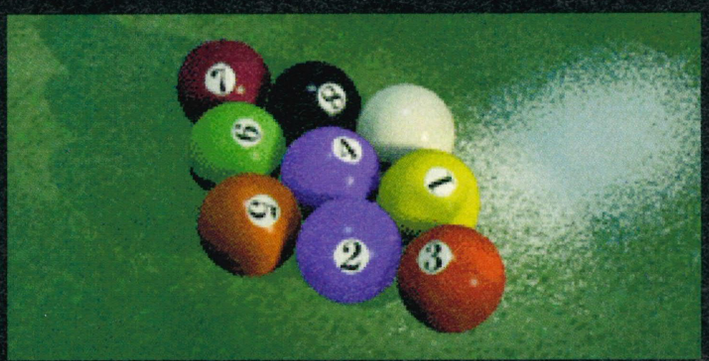
As with the chess puzzle, your objective is to swap the positions of the pieces. This time it's the brown and white spiders that can be slid on their rails that must be inter-changed.

Starting with the top-most spider-free point, number the points one to eight going clockwise around edge of the circle. Now move the spiders at the following points to their new homes. So four to seven means move the spider at point four over to point seven.

Off you go, and remember, there's no need to get stuck on the Web. Good luck.

4 to 7
6 to 1
1 to 4
8 to 3
3 to 6
6 to 1
2 to 5
5 to 8
8 to 3
3 to 6
7 to 2
2 to 5
5 to 8
4 to 7
7 to 2
1 to 4

8 POOL TABLE PUZZLE



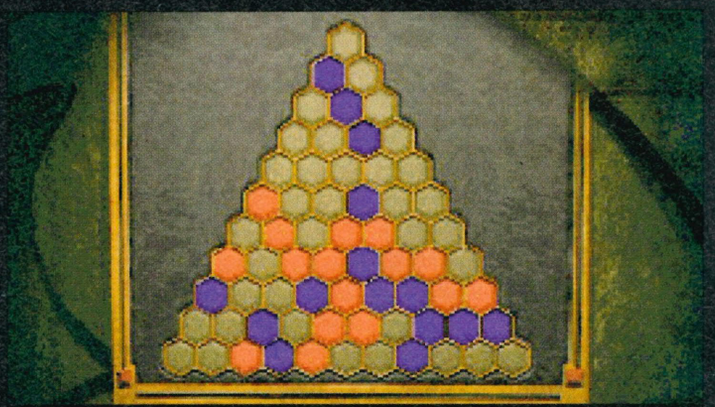
The white balls reveal their number when you click on them. You must click from one to nine in sequence without making a mistake. It's simply a matter of learning the balls positions and be solved eventually through trial and error.

Or you could cheat and number the balls thus:

1 2 3
4 5 6
7 8 9

Then click them in this order: 6, 8, 9, 5, 7, 4, 1, 2, 3

9 HEXAGON PUZZLE



You've got to build a Blockbusters-style line across the triangle that touches all three sides here. There's no set way of doing it but if you're too methodical Stauf will beat you every time. It seems better to dot your pieces about at random for a while to confuse him then link them all together. It's not that hard and you should get there quite quickly.

6 THE RIDDLES SOLVED

More irritating than any of the puzzles in The 11th Hour are the its riddles. Some of them are so obscure you haven't a hope of getting them. Here's a quick rundown of what the riddles in the first half of the game mean.

WINTER COAT WORN FOR A MIXER: Winter coat is an anagram of tonic water, which you'll find in the Library on the fireplace.

ARTSY EXCITED LECHER: It's the painting of the half man half goat in the Gallery. Go through the hall's Grandfather clock to get there. It's a half man half beast thing, an 'artsy excited lecher' if you will.

ROLLING ROCK, BOTTLE CAP: Rock is an anagram of cork. It's the cork in the champagne bottle in Brian Dutton's room.

A HEART ATTACK...: Attack the word 'Heart'. It's an anagram of Earth, the globe in the library, to you.

BATTLEGROUND: Ground is the past tense of grind. It's the Ground Tablet in the Lab, next to the medicine bottle on the table.

BARS DETER CUCKOO BIRD: Bars deter is an anagram of redbreast. It's the Robin in the painting opposite the Grandfather clock.

MODERN ART FLOURISHES...: It's the modern art on the floor under the sunflower picture in the Gallery.

SKEDADDLED: Sked is an 'addled' version of desk. It's the desk you find in the library.

PART OF THE BODY EXAMINED...: Torso is a body part in 'DocTOR'S Office'. It's the body statue in the Gallery.

LIBERATION FOR AN AFFECTIONATE PUPPY...: An affectionate puppy is a licker. Licker is liquor. It's that champagne bottle again. Not good.

ANIMAL SULLIED STREET: Street is an anagram of setter. An animal setter is the Irish in the painting in the Games Room to the left of the chess board.

JFCR VX QCTF...: A very bizarre code. Suffice to say it's the Grandfather clock in the hall again. How exactly do you get Grandfather clock from 'Jfcr vx qctf'?

ZU GOTDY OD MPY...: Again, a nonsense code. It's the razor on the side of the bath in the bathroom. Zu Gotdy od mpy. What does it mean? It means this razor. Somehow.

FRUIT LOOP ON A STOVE: A range is a stove. 'O' is a loop. 'O' plus range is orange. Like in the painting in the Dining Room.

DREAMS ABOUND OF ARMING...: A bad dream is a nightmare. Fuselli's Nightmare is the painting in Ed Knox's room over the fireplace.

A DISTANT ANCIENT CASTLE...: It's talking about Hamlet and Teagarden is an anagram of Great Dane, just like the painting to the left of the fireplace in the library.

A MAN HORSE ON THE FLY...: A man horse is a Centaur, which is in the chapel to the left of the lab door.

PUT AN OLIVE IN A STEIN...: London subway is tube. Fool is boob(?). Boob tube is the television in Brian Dutton's room. Ah, the 'boob tube', that much-used slang expression for the telly.



Hello. I'm Garrick Webster and I'm the Deputy Editor and multimedia boy here at PC Review. Allow me to explain our policy on multimedia. We've decided to keep this section focused tightly on CD-ROMs with interesting, fun and intelligent content for adult users.

We hope you enjoy this month's line-up. Be sure to look at our flight discs head-to-head, and our in-depth review of A Jack Kerouac ROMnibus. But for starters, let's check out the Flagtower series...
Garrick Webster



Look out animal lovers! Go straight to page 98 to read our review of ABC Wide World of Animals.

Contents

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World of Flight 100
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War sucks. But not for the First Information Group. In fact, war is the staple material of the company's latest discs.



British WWI Generals Douglas Haig(left) and Edmund Allenby both experienced combat in colonial wars



Marshall Zhukov is one of only two communist leaders on Great Generals. Here, a map shows the Eastern front.

Great Generals of the 20th Century

What is it that makes the life of a great general interesting? Controlling resources and manpower, planning tactics? Winning battles and being decorated? Or is it the ability to suppress emotions as troops and civilians are maimed and killed through your decisions?

As *Great Generals of the 20th Century* illustrates in its deadpan, authoritative way, it is all these things and more. "The story begins in 1914 with the War that would end all wars," says the US anchorman-inspired narrator, without irony, during the introduction. Covering 15 generals in all, the disc starts with Haig, a British general of WWI, runs through the likes of Rommel, Montgomery and Eisenhower, finishing on Schwarzkopf.

Masterfully orchestrated multimedia montages form the bulk of the disc. A narrator's voice conveys the key facts, supported by video and photographic images that continually appear and disappear as the story unfolds. The section devoted to Patton, for instance, opens with a panoramic photo of the beachhead at Normandy. Soon, a picture of Patton himself fades in and the narrator's deep, newsreader voice sets the tone: "July 6, 1944, Lieutenant-General George S. Patton arrives in Normandy to command the US third army in a break-out from the beachhead area to start the big push across France and the Low Countries towards Germany."

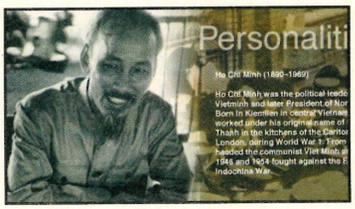
Pictures fade in and out, and the influence of the old newsreels and war documentaries on this disc becomes obvious. The narrator talks with gravity, but never pauses for detail. His voice strides past trivialities, concentrating instead on the broader picture – in Patton's case it's the Normandy invasion. "On July 18, British troops run up against solid German defences. But with German reserves committed to the defence of Caen, American troops to the West, commanded by Lieutenant-General Omar Bradley, are able to break through the German defences for the first time."

Who was Omar Bradley?

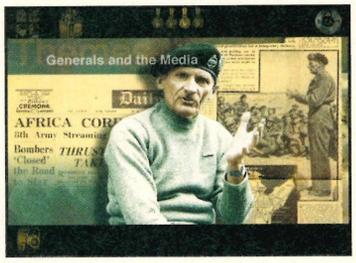
While you might enjoy listening and watching passively, there is plenty of detail available if needed. As the story on each general proceeds, icons flash at the bottom of the screen indicating jump-off points for further information. If you didn't know who Omar Bradley was, you can click the Personalities icon to read that Omar Nelson Bradley (1893-1981) was born in Clark Missouri and commissioned as a lieutenant in the US Army in 1914.



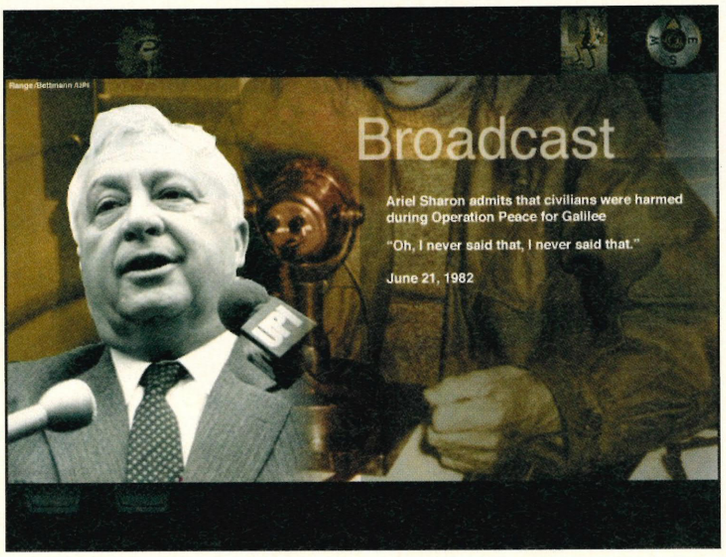
Is there the slightest possibility that either or both of these mortal enemies is insane? Just look at their eyes.



Drop out of the section on Vo Nguyen Giap, who fought the French in Vietnam, and you'll meet Ho Chi Minh.



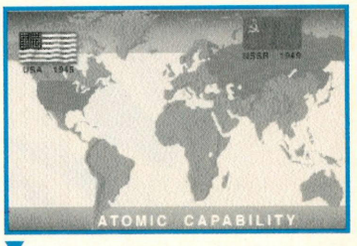
The Generals in the Media chapter tells us of Montgomery's no-nonsense image gained by wearing a sweater.



Major-General Ariel Sharon, Israeli commander during the Six Day War, denies ordering the shelling of Arab civilians, and also denies saying that no innocents were harmed.



The use of atom bombs in 1945 changed the nature of warfare fundamentally, says the disc.



"This contributed to a mutual climate of fear between the democratic West and the...



...communist East - the Cold War. But war has not ceased because of the new technology."

Likewise, if you were wondering what it was like in General Patton's army, you can use the On the Battlefield icon. An actor's voice takes over retelling the experience of Private DJ Willis: "We received our first heavy artillery shelling by the enemy forces. It seemed to me that it would never end as barrage after barrage of shells fell on our lines. Everywhere an inferno of flame..." Meanwhile, in the photo montage, soldiers are seen hiding in destroyed buildings.

Pop back to the main thread, and a video shows armoured cars zipping through French towns as Patton's slightly psychotic visage fades in once again. More icons continuously appear to embellish upon more details skipped by the narrator. Sub-topics include Dispatches, where you get to hear recordings of radio actual wartime broadcasts, and Battle Visuals, which explains tactics with annotated maps.

Short on colour photos

Despite the emphasis on authoritative, newsreel-like presentation with opportunities to step aside into parallel details, *Great Generals* has a bland feel, partially due to a prevailing shortage of colour pictures. Although the disc is thorough, its style is too steely - too much like its subject matter. The personalities section is very factual, but doesn't say much about the real characters of the generals – their idiosyncrasies and foibles are hardly discussed. The moral issues arising from being a general are only summarily dealt with. There's also little comparison between the generals. The motivation of Giap, who fought for Vietnamese freedom, was not the same as that of Normal Schwarzkopf, who defended America's petroleum supply.

Like any good CD-ROM, *Great Generals of the 20th Century* is full of well-selected material and has a fitting style of presentation. It's easy to feel comfortable with the narrator's impassive delivery. But this lack of passion makes it a touch boring and despite the chances to find more precise details, you often find the sideshows and jump-off points are equally dull and devoid of character. ***(GW)***

PCR VERDICT

Clear presentation with lots of photos, recordings and clips. It gets dull in places and is prone to over-simplification.

7

Developer: First Information Group

Publisher: First Information Group

Contact: 0171 393 3000

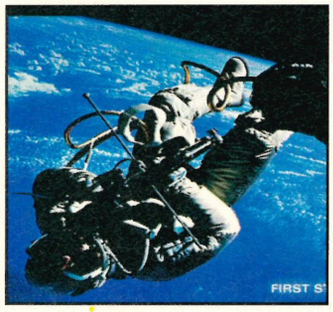
Price: £29.99

Minimum system: 486SX/33, 8Mb, double speed CD drive, 4Mb hard disk space, Windows 3.1 or 95

On other fronts

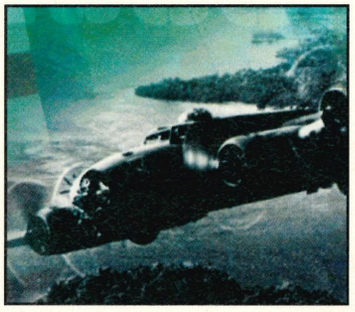
The Flagtower catalogue spans, in great detail, all the major conflicts of the Century. There are four further titles in the Flagtower series, all of which are presented in the same style and have similar features.

The Space Race



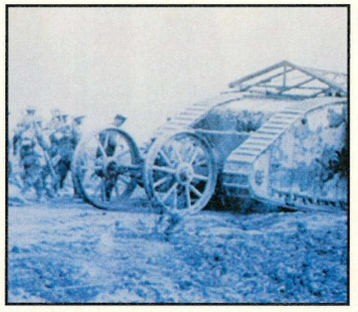
Not war but Cold War instead. *The Space Race* disc is the least aggressive and most futuristic in the Flagtower range. £29.99

War in the Pacific



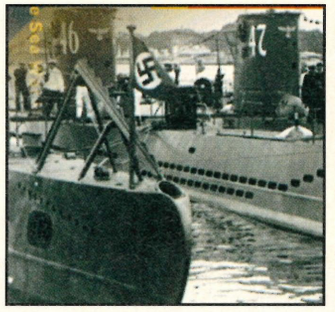
Whereas Europe required an invasion, air power was decisive over the Pacific. All this and more is imparted in *War in the Pacific*. £29.99

World War I



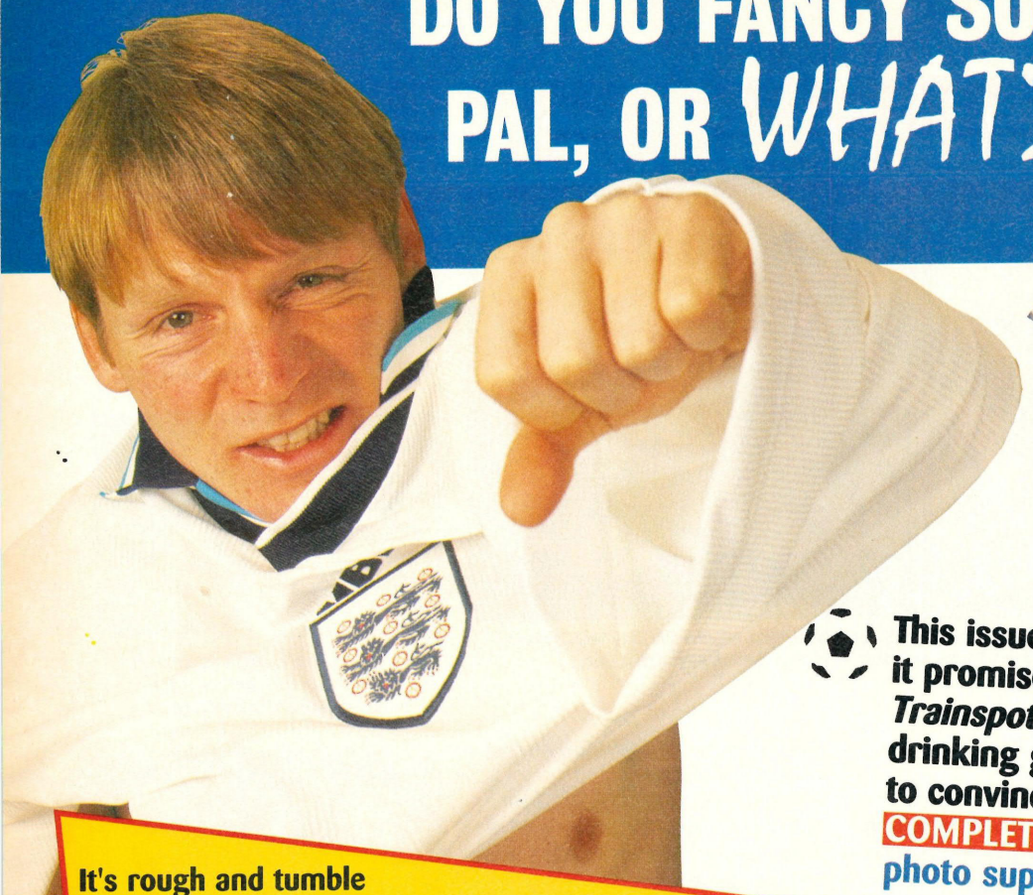
Tanks first appeared during WWI and were very slow. Likewise, the *World War I* disc in the Flagtower series is also rather sluggish. £29.99

World War II



A double-disc set, *World War II* has more information than the other titles in the range, and has an interview with Prof Norman Stone. £39.99

DO YOU FANCY SOME, PAL, OR *WHAT?*





This issue of *Total Football* is so hard it promises to make Begbie out of *Trainspotting* look like a shandy drinking girl, and if THAT'S not enough to convince you, we'll chuck in a **COMPLETELY FREE** stonking FA Cup photo supplement for good measure.

It's rough and tumble all the way in the May edition of *Total Football*, as *Stuart 'Psycho' Pearce* heads a line-up of the game's toughest players in our special Hard Man Issue. Joining him are the likes of *Julian Dicks*, *Tommy Smith*, *Norman Hunter* and – yes – *Vinnie Jones* as *Total Football* celebrates everything that makes Football a MAN's game, as opposed to flouncy ponce sports like cricket and hockey. And yachting.

We'll be bringing you **EXCLUSIVE** interviews with *Dicks*, *Pearce*, *Hunter* and *Smith*, along with the definitive guide to the world's hardest players, history's toughest tackles, and lots of other punchy (geddit?) stuff.

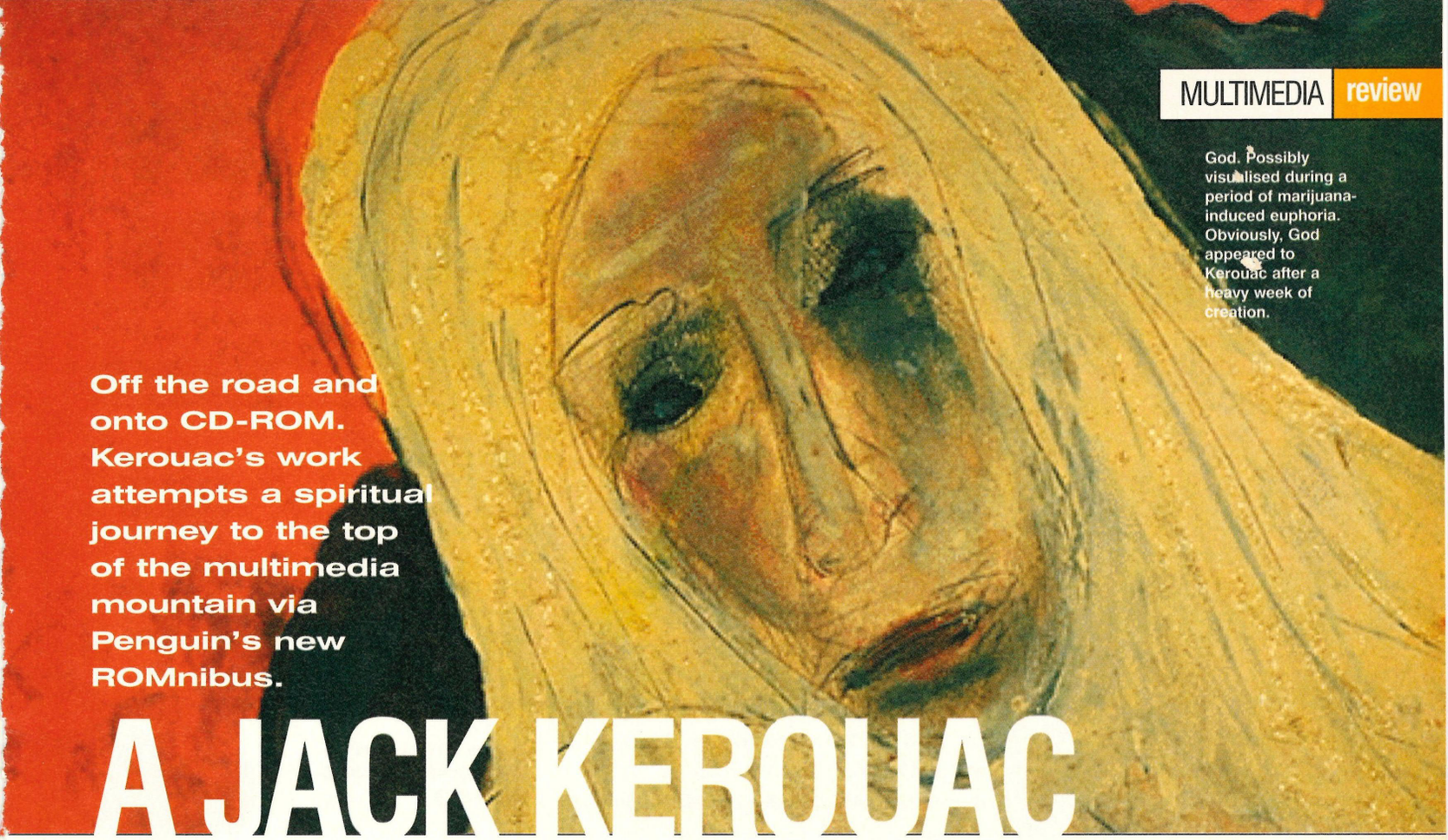


TOTAL FOOTBALL

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TOTAL FOOTBALL'S SPECIAL HARD MAN ISSUE ON SALE THURSDAY APRIL 18.

BUY IT OR WE WILL KICK YOUR RIBS OFF.



God. Possibly visualised during a period of marijuana-induced euphoria. Obviously, God appeared to Kerouac after a heavy week of creation.

Off the road and onto CD-ROM. Kerouac's work attempts a spiritual journey to the top of the multimedia mountain via Penguin's new ROMnibus.

A JACK KEROUAC ROMnibus

For prospective students of truth, a CD-ROM on the life and work of the Bodhisattva of the Beat Generation, Jack Kerouac, is a major release. Now on that great highway in the sky, the spokesperson for youths interested in turning on, tuning in and dropping out, might see the information explosion as a logical progression from ideas of personal liberation that he propounded in the 50s and 60s. Whether you are a disciple or a dilettante of Kerouac, this CD-ROM offers a sizable array of biographical details, photos, audio and video clips, plus an entire annotated text of *The Dharma Bums*, allowing you to be as spontaneous in exploring his work as he was in writing it.

Arranged into seven categories, ranging from a gallery of Kerouac's artwork to video interviews with friends and contemporaries, the ROMnibus is an examination of this modern icon. Everything but a tap-furnished kitchen receptacle is included: notebook entries, family snaps, extracts from novel drafts (including *On the Road*). Most of this is annotated, indexed and magnifiable. Other useful items include the Sampler containing readings from his work, a superb Timeline chronicling Kerouac's life in conjunction with contemporary events, and a category centred on Kerouac's relationships with other Beat figures like Neal Cassady and Gary Snyder. All of this was compiled with the help of Ann Charters, a world authority on the Beats. However, it is *The Dharma Bums*, a tale of the search for Buddhist enlightenment in the Sierras, that forms the core of the disc. The entire text of it is hyper-linked to comprehensive notes.

As far as navigation is concerned, the point and click interface is simple and effective. However, should you get stuck, a click on the little Buddha (no relation to Keanu Reeves) will point you in the right direction.

Now, this might sound like the perfect reference tool, but the problem with this release, especially for anyone new to Kerouac, is the price. For this money you can buy *Encarta 96*, a far weightier product enabling you to explore literary history far more broadly, though admittedly in less depth. Or, you could buy Ann Charters' excellent anthology of Beat writing, and a couple of Kerouac's paperbacks instead.

As a companion piece, *A Jack Kerouac ROMnibus* will certainly appeal to the specialist and, for the layman, forms a useful introduction to one of the most enigmatic figures in contemporary literature. It's a pity that its price will exclude many from considering the purchase. ***(JT)***



The seven pillars of wisdom, junction of destinies, otherwise known as a main interface. Beyond this screen lies a veritable cornucopia of audio-visual information.









BODHISSATVA
This is a Buddhist term of reverence meaning great wise being.

Developer: Mind in Motion

Publisher: Penguin

Contact: 0171 4163000

Expected Price: £49.99

Minimum system: 486, 8Mb, double speed CD drive, Windows, SVGA, 2Mb disk space

PCR VERDICT

A wealth of detail, stylishly delivered, but with questionable longevity. Pricey.

6

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With a hop, skip and a jump, Notting Hill Multimedia have entered that mad multimedia race with an ideal run-up to the Olympics.

INTERNATIONAL Athletics

Floodlights and pacy music welcome you to the virtual stadium, a central feature of *International Athletics*. Move down the halls, go into the medical suite or locker rooms on the way, until you find yourself taking part in the games (more on them later). But if this sounds too energetic, you can take the Spectator approach instead.

As a spectator, you'll see short biographies (about 100 words with a photo) of two dozen athletics stars. It's all pleasant enough, but hardly gets the heart pumping. The Commentators section is more fun. In a studio, you can pick from topics like training and men vs women, asking one of four empty chairs for its comments. These are labelled athlete, official, coach and media. Sometimes you'll be rewarded with a video clip or sound bite. Other times, due to an apparent bug in your interview technique (or the software), you get nothing and have to leave the room, re-enter, and try again. Talking of bugs, a single click of the mouse often seems to have the effect of three or four clicks, making use of *International Athletics* extremely awkward.

The multimedia pinnacle of the title is back downstairs in the virtual locker room. Pick a locker and a sportsperson appears in miniature video form nestling among talcs, shower gels and isotonic drinks. You can hear the sporting philosophy of Sally Gunnell, or meet a Kenyan marathon man. Newspaper articles pinned to the locker doors, meanwhile, change into video clips of sporting history.

By contrast, the database section is a murky, text-based world of dark brown, black and gold. Though crammed full of facts, it's got no multimedia in it. Unless you have your monitor on full brightness, it's hard to leave as you can't see the Exit icon.

Last place on the track must go to the so-called games. Meant to be based on sports like hurdles, running and javelin, they all boil down to clicking on lit sections of the screen. Add to this the animated athletes which look more like arthritic marionettes, and the embarrassment of is completed.

There's a lot of useful information in this disc, and some interesting trivia. It's just a shame that most of it resides in the dark and dingy database, which is quite the most unattractive and unappealing place you're ever likely to see on your monitor. ***(MRR)***

PCR VERDICT

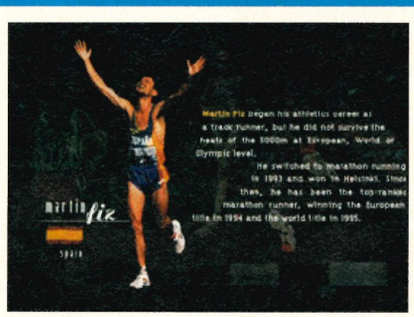
Good content. A valiant effort from a new UK developer that has all gone horribly wrong.

3

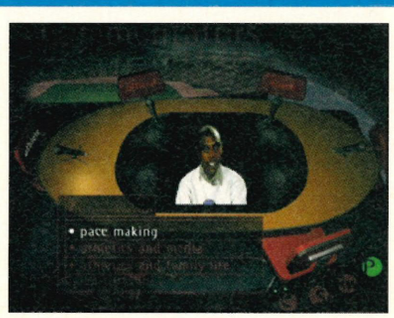
The triple worlds of International Athletics



Athlete
As an athlete you can explore the virtual stadium, stopping in the biomedical suite to learn about injuries and how to avoid them.



Spectator
If spectating is your bag, this section has mini-biogs on two dozen track and field stars. Here's marathon man, Martin Fiz of Spain.



Commentator
The interviewees are so virtual you can only see their chairs. But click questions and you'll get videos or sound clip answers anyway.



Here's Britain's very own Sally Gunnell, resplendent inside her locker. How are such short legs so good at hurdling?



The database is a dark and ugly place. All the facts are here, but they're presented in utterly tedious scrolling text boxes.



The games are a disgrace. Point at a segment when it lights up and click before it goes out while arthritic crash test dummies run about in the centre.

EXPERT SPEAKS

According to Neil Wilson, athletics "cannot be regarded as one sport, but a collection of diverse sports which share the same arena by historical accident". That 'accident' was the first Olympic games, and Mr Wilson, in case you're wondering, is an athletics correspondent for the Daily Mail. As it happens, he's also the general editor of Notting Hill's International Athletics disc.

Developer: Notting Hill

Publisher: Notting Hill

Contact: 0171 229 0591

Expected Price: £39.95

Minimum System: 486, 8Mb RAM, double speed CD drive, SVGA



The banded gecko of Mexico is agile and speedy. When attacked, it runs away rapidly - often leaving its tail behind to distract the predator.

Just another multimedia menagerie, or does this CD-ROM offer something new to the animal enthusiast?

ABC Wide World of Animals

When a new animals disc appears boasting information on 700 species, you needn't necessarily be impressed. Lions and tigers and bears - how dull.

The broad range of creatures appearing on the *ABC World Reference: Wide World of Animals* might, however, raise an eyebrow or two. The people behind this disc, ABC television and Creative Wonders, have done a great job to ensure that some pretty weird critters are detailed. Creatures, in fact, that very few people have ever heard of.

For instance, did you know that an olm is an amphibian living in the underground streams of the former Yugoslavia? Were you aware of the agouti, a herbivorous rodent of the Brazilian rainforest? And hey, what about that dunlin, a tundra bird feeding on insects, molluscs and worms?

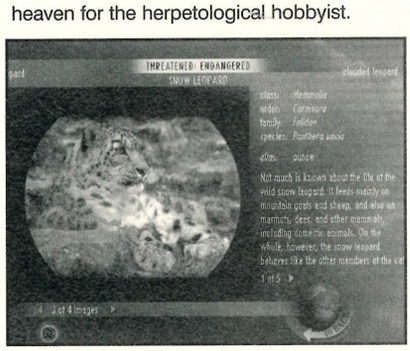
Of course, it's no bad thing that plenty of little-known animal wonders are present on the disc. This means even a fairly informed amateur naturalist will be able to learn something from it, which is not always the case with wildlife discs. It's just a shame they decided to exclude invertebrates – no bees, crabs or snails are to be seen.

Taking the reptile route

Still, the way *Wide World of Animals* works is quite interesting. Start the disc and, after a video montage intro, instead of seeing animals you get a 3D globe (a feature repurposed from Creative Wonders' geography title, 3D Atlas). Select, for instance, 'gecko, tokay' from index to the right, and you'll instantly see on the globe that this reptile's range is across southern Asia and down to Borneo. So the globe does have a purpose.

Click the small picture of the gecko that has appeared, and your screen turns into one devoted to that animal. A photo of it can be expanded to fill the screen, while text on the right details its breeding and feeding habits. "It is one of the loudest and noisiest lizards; it's 'to-kay' can be heard from a distance of a hundred yards," we're told.

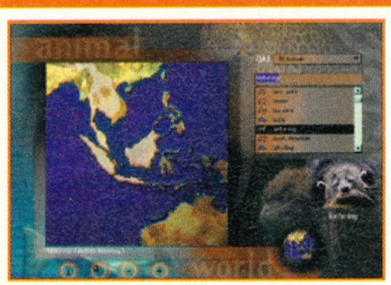
The text, in an ugly font, is basic but fact-packed, with plenty of words hyperlinked to a glossary. From any creature's screen, there are lots of new things to do. Clicking on the classification words like 'gekkonidae' will take you to the Taxatree, where you can trace the evolutionary relatives of any animal. Going back from our gecko to the order 'reptilia', we can go down the branch to the tuatara, soon to find a screen about this last surviving species in the order 'rhynchocephalia'. Pedantic stuff, yes, but heaven for the herpetological hobbyist.



The endangered status of each species appears across the top of the screen.

Enter the zoo...

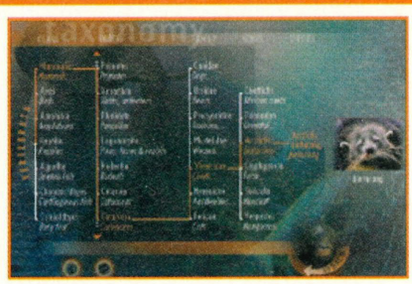
A key feature of ABC Wide World of Animals is the inclusion of so many odd species. Scroll down the index and you'll soon find one you've never heard of.



1 Choosing 'binturong' from the index we instantly see on the globe that this strange animal is found in Southeast Asia. If we click on a small photo of this animal...



2 ...we're transported to the data screen about it. A sound clip of the binturong's squeaky voice plays, but there's no video with this one. The picture can be blown up to fill the screen.



3 Clicking the class, order or family words on the main binturong screen calls up the Taxatree where you can explore the animals according to their scienfic classification.



In the Timelapse section you can watch an animation of the great eel migration across the 3D globe. The eels begin life and end their lives in the Sargasso Sea, but live in rivers in Europe.

For many beasties on *Wide World of Animals*, several photos are available and a number come with video and/or sound clips. Elsewhere there are the 13 Bioramas, scenes of habitats like rainforest, coral reef and savanna. Cut-outs of animals are seen, almost fitting into the 360-degree scrollable scenery. These are somewhat deceptive, however, as you'll find animals from different continents side-by-side. You'd never see Australian emus and African zebras together in the wild. With each Biorama comes more text explaining the habitat and its importance within the global biosphere, plus links to all the animals appearing within that biome.

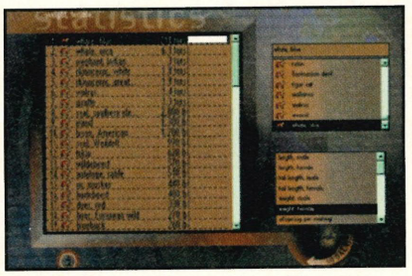
Vagueness necessitated

Going from specific species to the larger matter of habitats, the next step is to study even broader issues. Doing this, however, *Wide World of Animals* necessarily becomes more vague. The video stories seem more an excuse to bung in ABC documentary footage than to say anything new or interesting. "How does a frog survive in the desert?" asks the narrator of the Extreme Environments video. "By digging down under it," comes her rhetorical response. The video shows a frog in a hole.

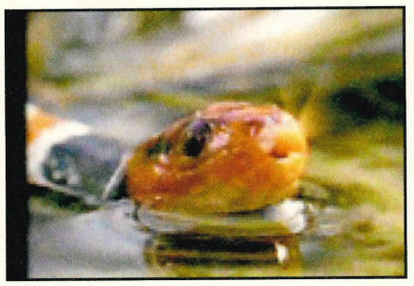
Nonetheless, the video quality is good, and occasionally the clips show amazing things happening. In the Food video, an odd Amazonian arawana fish leaps out of the water to catch a spider. Curiously, however, the links beneath don't offer a route to the file on this fish.

The realm of pointlessness is explored further in the Climate section where global weather is discussed. Pick Precipitation and the narrator says: "All animals are affected by precipitation." She goes on to explain the relationship between the level of precipitation in an area and the amount of life it can support. Following this justification of the Precipitation feature, you can watch a simple animation of the weather changes around the world over 12 months.

Despite a few vague and sometimes inaccurate inclusions, *Wide World of Animals* is definitely stronger than most of the other animals discs out there. The absence of invertebrates is a shame, but it does have more information on more species than Microsoft's *Dangerous Creatures*. And, it certainly offers numerous ways to work through the info The Taxatree will be fascinating to anyone interested in classification or evolution, while those with more general interests can simply browse using the Bioramas, link buttons, hypertext and even the video bits. It's too bad some of the sections are so simplistic, but if you want an animal disc with some intelligent content, this is a good choice. ***(GW)***



The animal stats screen. Who is biggest, smallest or most prolific?

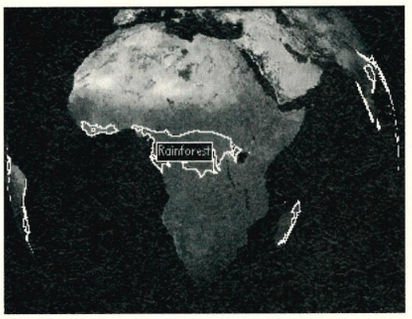


The video clips last about two minutes each and tend to state the obvious.

PCR VERDICT

Some facile features, but a good variety of creatures and much interesting data about them.

8



Point and click over any region of the globe, and it tells you the biome of that place.

CD REVIEW

Try the demo of *Wide World of Animals* on our CD.

PCR Quiz

Can you name any of the strange creatures which we found on *Wide World of Animals*? If you get stuck, the answers are printed below.











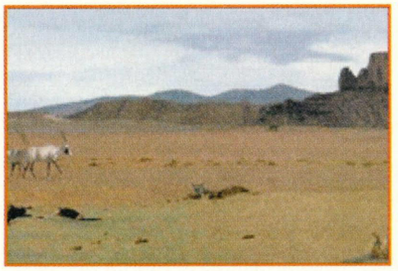
1. pygmy marmoset
2. asian horned toad
3. laughing kookaburra
4. stinkpot turtle
5. regal angelfish



4 You can, of course, make new selections in class, order family, and genus to find another species to learn about. The 'suricata' (meerkat) genus is not too far off from that of the binturong.



5 Having clicked the meerkat link from the Taxatree, we can hear its hoot, see three photos of it and read that: "All the meerkats in a colony deposit their droppings in the same place."



6 The meerkat is a desert mammal and clicking on this biome in the text takes us instantly to the desert Biorama, where we can see aardwolves hiding and oryxes striding. More links...

Developer: Creative Wonders

Publisher: Electronic Arts

Contact: 01753 5494422

Expected Price: £39.99

Minimum System: 486, 8Mb RAM, double speed CD drive, Windows 3.1 or 95, 2Mb hard disk space



The main menu screen. From here you can choose a route through the maze of available information. Either pick a topic to explore or take a guided tour.

Interactive edutainment is now the name of the game. Microsoft's new CD-ROM presents the history of military and civil aviation.

WORLD OF FLIGHT



The timelines are next to useless. The information isn't linked to the the relevant screens.



All set for a tour with the airline pilot? Captain Donald keeps up a running commentary.



Match the pilots to their aircraft and you'll see a video clip of Amelia Earhart, lost over the Pacific.

Developer: Microsoft
Publisher: Microsoft
Contact: 01734 270000
Expected price: £29.99
Minimum system: 486DX, 8Mb, double speed CD drive, Win 3.1 or 95, SVGA, all major soundcards

Were the Wings Series a newspaper, it would be the *Times* or the *Guardian. Microsoft World of Flight,* on the other hand, would be a *Beano.* Aimed at a younger market, this is an educational introduction to the history, people and theories of aviation. It is part of the Exploration Series, which also includes *Microsoft Dogs, Ancient Lands and Dangerous Creatures.*

The history of human flight begins with the first balloons of the Montgolfier Brothers and stretches right up to the latest Stealth technology. Generally, the print is large and interspersed with plenty of cut-out images and animations. You can click on highlighted words for a spoken pronunciation – in this UK version, words are pronounced with an English accent.

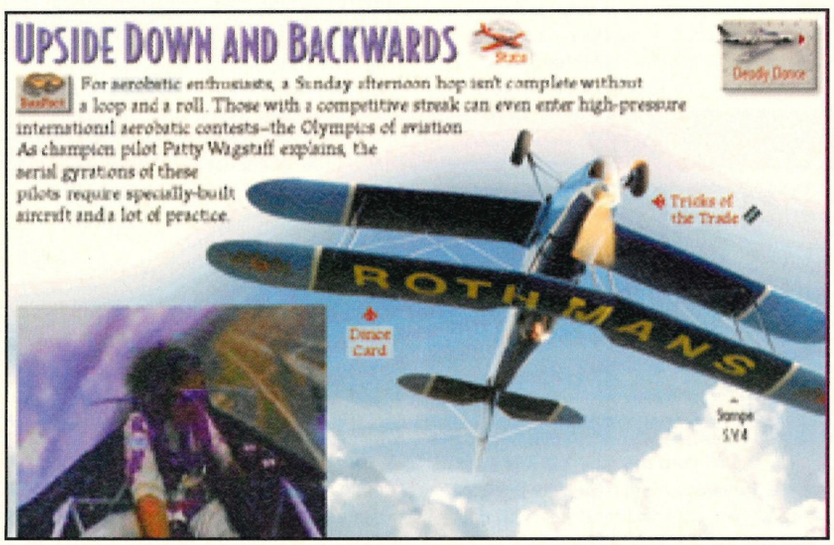
The contents screen contains the five main option boxes: Guides, Index, At War, At Work and Flying Machines. This screen, like many others, is regularly invaded by flying cartoon characters. Initially amusing, these soon become irritating and there seems to be no way of exorcising them.

The guides aid children in navigating the programme, with each exploring different avenues of interest. Donald the airline pilot, for instance, presents the development of airliners, air routes and all things civil. Meanwhile, Jake the fighter pilot heads for Mach 1, pulling Gs as he goes. The women in aviation history are also recorded – Sarah tells us about Hanna Reich, famous Luftwaffe test pilot, and there's some gut-wrenching, cockpit aerobatics footage of Patty Wagstaff.

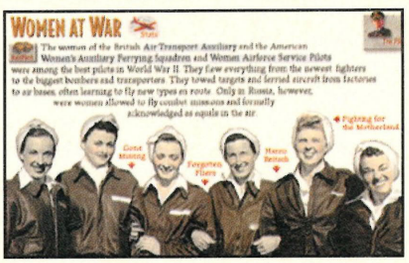
Confusingly, each screen leads off in several directions. As with the other Microsoft Home discs, there's the idea link button in the top-right corner. Using this, though, you can become lost among incongruous, barely related and out-of-context facts. As in the *Wings* series, a Go Back button ensures a speedy return to the straight and narrow. Simple games include matching the inventor to the aeroplane and identifying the ground controller's hand signal.

Good quality video footage is abundant and, while the narration is very American, it's pretty clear. Loading times between screens were sometimes longer than expected, and with Windows 3.1, driver compatibility problems are a potential hazard.

When you consider the volume of information in it, *World of Flight* is a remarkably comprehensive disc. Although it isn't very in-depth, but nothing important is omitted. Educational, but with limited long term appeal. ***(RJ)***



The video clips can add an extra dimension to some topics. This footage of aerobatics, filmed from inside the cockpit, is an excellent example.



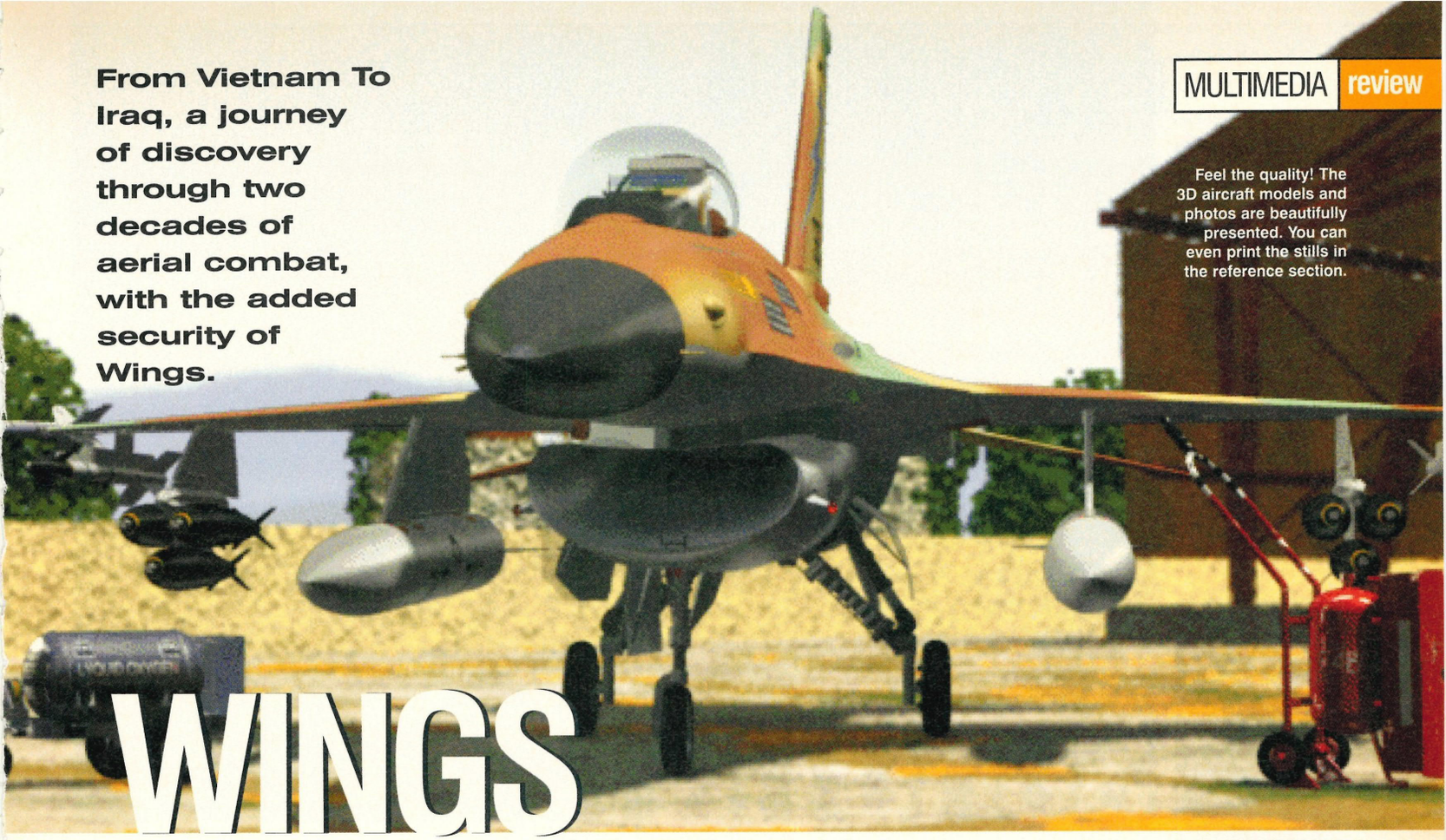
Many women pilots died during WW2, among them British transport pilots.

PCR VERDICT

Lots of facts presented in a clear, concise way. Lightweight but fun.

7

From Vietnam To Iraq, a journey of discovery through two decades of aerial combat, with the added security of Wings.



Feel the quality! The 3D aircraft models and photos are beautifully presented. You can even print the stills in the reference section.

WINGS

Saigon to the Persian Gulf

This is the third title in the Wings series, a trilogy charting the development of military aircraft and aviation history from World War 2 to the Gulf War. It's fast and includes plenty of video footage, but otherwise this title differs little in layout from the previous two.

The navigator panel has a set of buttons on the left, and a display screen opposite. Click on options you want displayed on the screen, and click again to activate it. You can return at any time to your previous or starting location without fear of getting lost. It's intuitive, well-designed and easy-to-use.

The several sections cover various aspects of military aviation. You can tour airbases and study combat tactics, examine multimedia war reports and timelines, and take to the air with three built-in flight sims. A reference library comprises details, photos and selective video clips of over 500 aircraft.

Some aircraft can be examined in 3D from various angles. These images are beautifully rendered and zooming in reveals detail down to the last nut and bolt. Background sound effects, such as radio chatter, add to the realism. You can even explore a real Hercules cockpit with every visible control and dial explained as the cursor passes over it. The VR airbase tours have several start locations, from which you can turn around, zoom in and out and highlight anything.

The War Reports section is especially well-presented. Among others, the Arab-Israeli conflicts are chronicled through animated slide shows. During the narrative, new windows appear with more information. Thanks to the Discovery Channel's huge TV documentary library, the material is of a very high standard. Aircraft stills are crisp and clear and soundtracks fit the video clips.

Wings: Saigon to the Gulf is a well-researched and thoroughly documented history of military aviation. In fact, it's hard to imagine a book presenting so much information in such an accessible way. ***(RJ)***

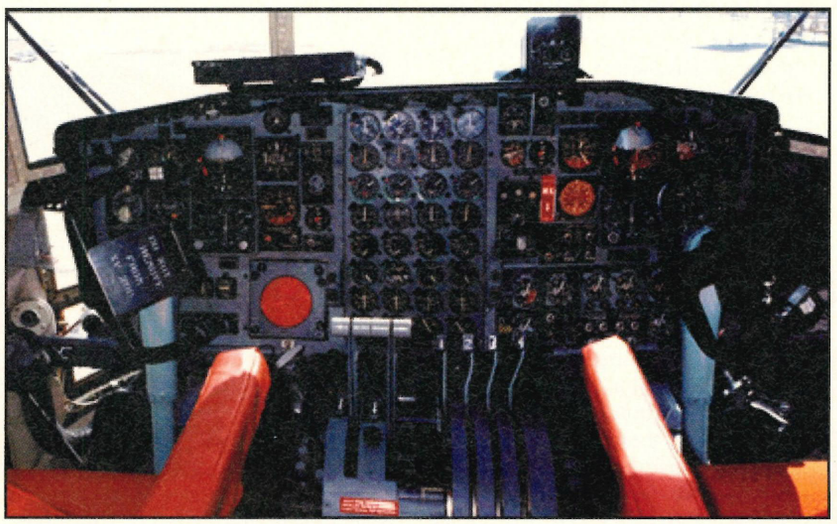
PCR VERDICT

A stylish historical document and extensive reference book rolled into one. Recommended.

8



There are three flight sims – fancy an SU27 flanker, an A10 Warthog or an A4 Skyhawk?



Inside the cockpit of an Israeli Hercules transport vehicle. As the mouse pointer roves around the screen, all the knobs and dials are explained.





The Wings Series

The other two titles in the Wings series share the same basic layout. *Midway to Hiroshima* covers WW2, with *Korea to Vietnam* bringing us up to just before the fall of Saigon. Both CDs are of a similarly high standard, but quality does not come cheap: the set of three will set you back over £100.

Developer: Maris

Publisher: Discovery Channel

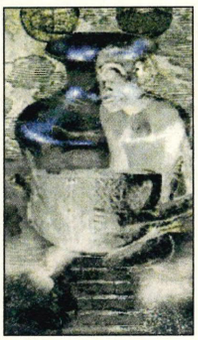
Contact: 0171 488 1566

Expected Price: £39.99

Minimum system: 486, 8Mb RAM, double speed CD-drive, Win 3.1 or 95, SVGA, Sound-Blaster compatible



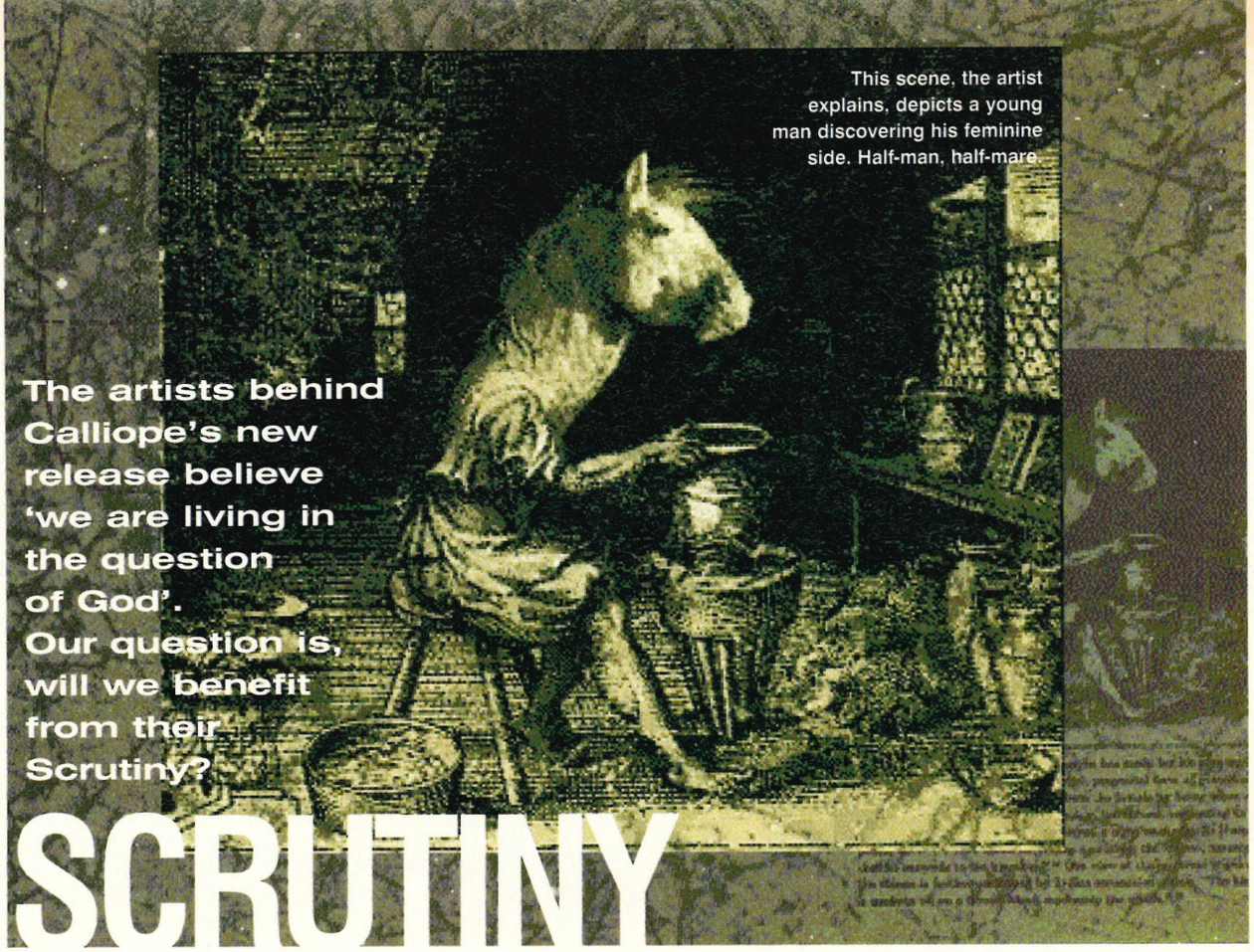
Here we find our twelve scenes and sub-scenes in merry orbit. As you can see, we are about to enter Progeny by way of a crescent moon.



Incredible as it seems, this disc won a major prize at the Milia multimedia festival in Cannes.



In the section called WhoHoWhy? we are presented with the beaming faces of the artists themselves. Why, why, why, oh why?



This scene, the artist explains, depicts a young man discovering his feminine side. Half-man, half-mare.

The artists behind Calliope's new release believe 'we are living in the question of God'. Our question is, will we benefit from their Scrutiny?

SCRUTINY in the Great Round

Developer: Calliope

Publisher: Macmillan Interactive

Contact: 0171 881 8000

Expected Price: £39.99

Minimum System: 486/33, 8Mb RAM, SVGA, double speed CD drive; Windows 3.1 or 95, 8-bit sound card or better

Life, if you don't know already, is about circularity – the cycles of the planets, the changing of the seasons, birth and rebirth, endless re-runs of *Fawlty Towers*…

Scrutiny in the Great Round, a piece of interactive art based around 'people's experiences of time and the passing of life,' is artist Tennessee Rice Dixon's digital adaptation of her arty book by the same title. Described by Tennessee and her collaborators, Jim Gasperini and Charlie Morrow, as a 'feature-length, multi-level, fully scored, interactive collage of images, sound and poetry,' *Scrutiny* enables the user to interact on a very basic level with twelve scenes, each of which has a number of secondary sub-scenes. The work is apparently linked by the main themes of Progeny, Parturition, Nesting, Pregnancy, Conception, Reunion, Concupiscence, Romance, Confrontation, Egression, Recollection and Zygotes.

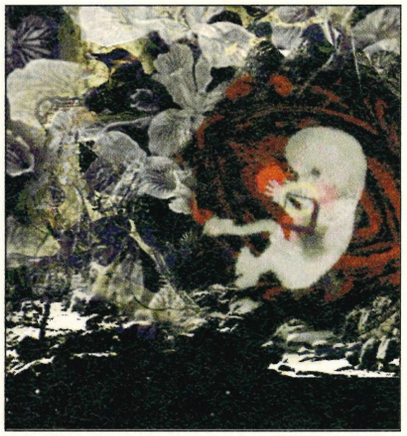
Essentially, user interaction consists of moving a cursor around the screen, waiting for it to turn into a moon, sun, spiral or fish. Clicking when the cursor changes kicks off an animated sequence. Should you become tired of dragging the wacky cursor from pillar to post, however, there is also the option to put these sequences into a looping state of perpetual motion.

As far as the quality of the animation is concerned, it largely revolves around the morphing of human figures, animals and plants. However, though the animations are slightly impressive, they fail to involve viewers and are – when coupled with sounds of ticking clocks, laughing children and heart beats – often very humorous.

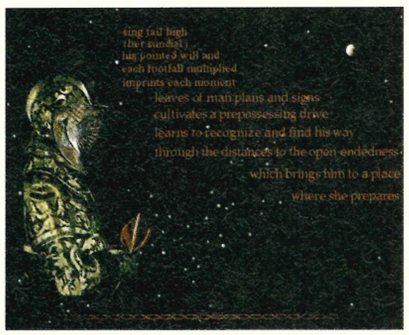
To scrutinise (excuse the pun) one scene in particular, upon clicking within a lovely floral background we are first presented with what can only be described as a revolving womb. This is quickly followed by its contents, a growing foetus spinning towards the user like the space station from *2001*. Other magic moments include the introductory merging of a fish and a bird of unknown specification, and a poor boy with a horse's head who is quizzically described by Tennessee Rice Dixon as being 'a man going out and going in – finding the more feminine aspect of himself.'

If there is one saving grace in *Scrutiny* it is the section entitled WhoHoWhy?, where the artists attempt to outline their rationale, inspirations and methodology. Listening to their earnest justifications, exercises in back-slapping and allusions to philosophers such as Immanuel Kant compounds conclusions made while exploring the main part of the program – that the work is too self-conscious and offers little to the general public. The poetry is unintentionally funny, the images are clichéd, and the overriding idea, to draw upon their own themes, is recycled.

Life, if you don't know already, is about circularity. We therefore suggest you circumvent this one if you can. ***(JT)***



The incredible revolving womb. Scrutiny's animation is effective but no longer very interesting after the first viewing.



At £39.99 this is certainly not free-verse. Here's an example of you and your personal computer might share some intimate poetic moments together.

PCR VERDICT

A self-concious, over-intellectualised aesthetic cliché with little to offer short or long term.

2



April issue on sale NOW



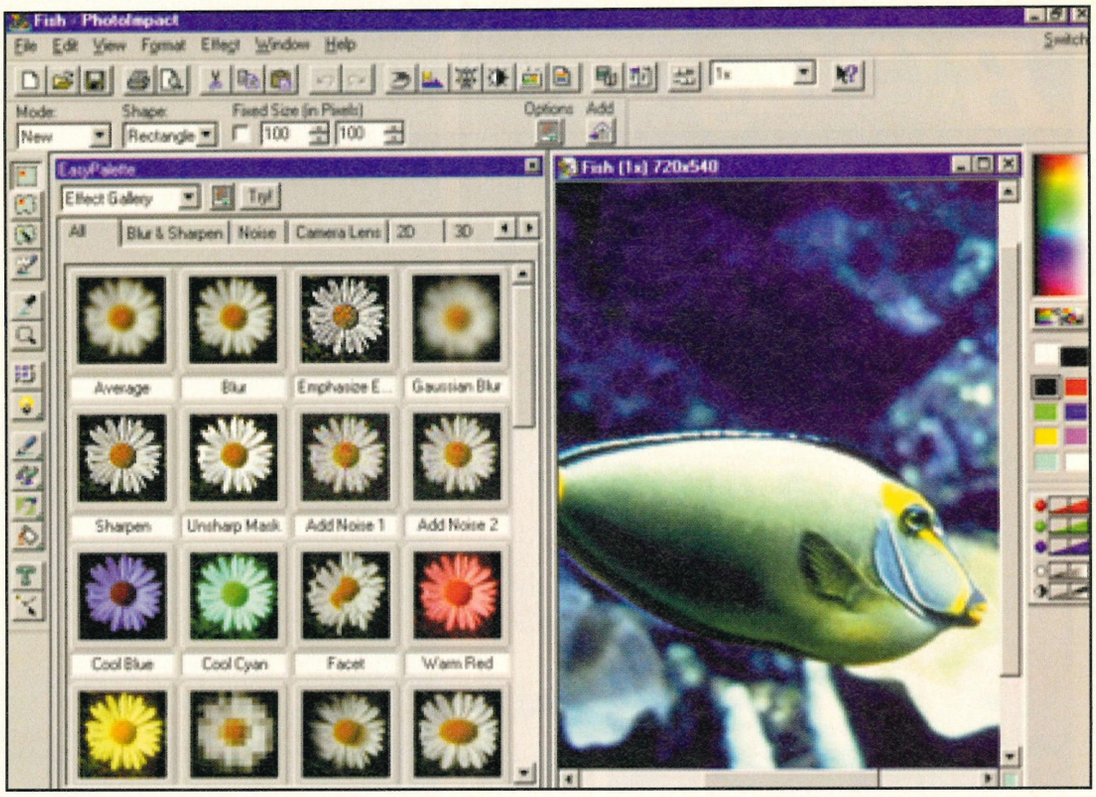
Welcome to Get Serious. Here, we cover the practical things that you can do with your PC. Firstly, Get Serious deals with graphics, DTP, sound and music creativity. Secondly, though the Internet is anything but serious in its content, the software required to use it is sophisticated, so we'll be covering Net software here as well. And finally, there's kit – hardware that makes your PC better, faster, or just more fun, will be reviewed here.

This month we review the latest photo-editing package, four Windows 95 add-ons, the two top audio software releases and a DTP suite. And to round it off, we put five removable storage drives to test. Go straight to page 110 to read about your unlimited data storage options.

I'm Mat Broomfield, the new technical editor here at PC Review and will be bringing you the very best in 'serious' software and hardware from now on. Enjoy.

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PhotoImpact is beautifully designed to provide you with an easy-to-use and accessible interface.

PhotoImpact

It seems like every month a new photo editing package comes out. This is the latest.

Apart from the games industry, its doubtful whether any other area of computing is so thoroughly saturated with competitive software as the graphics market. There's always the odd package that doesn't cut the mustard, but most are quite good, and you can't help but ask what would entice any company to develop yet another one. They must be either mad, or believe they really do have something new to offer in order to enter this marketplace.

There are four ways that a new program can out do the competition. It can be cheaper, it can have more features, it can provide newer features or it can be better designed. Remarkably, *PhotoImpact* competes on just about all these fronts.

Instead of merely following where others have lead, Ulead has decided to forge its own path, designing a new user-interface and coming up with many innovative new features. Very little attention is given to manual retouching and drawing tools, which leaves the program to concentrate specifically on the core job of image enhancement.

Colours in balance

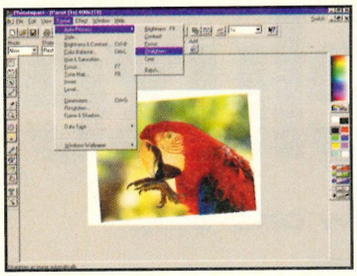
There are numerous image processing and filtering tools, in *PhotoImpact*, many of which are duplicated in every other image enhancement program going. Options like contrast, brightness and colour balancing are fundamental. Here, however, they're presented in a refreshing way. For instance, if you open the Style requester, you can apply colour balancing styles which simulate such things as a warm glow, a cloudy day, reflected forest green and so on. You can set these parameters manually, or you can preview many alternatives in a short space of time.

In addition to that, a number of common tasks, such as adjusting focus or deskewing, have been automated. You can even use a point and click system to set up multi-process batch files, in order to repeat often used command sequences time and again with little more than a single mouse click.

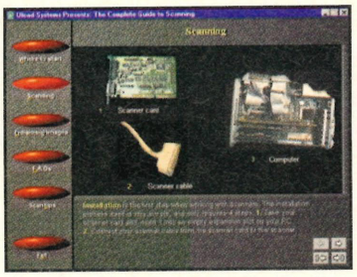
Although you'll rarely need it, the program has an eye-catching option called Frame & Shadow. As its name suggests, it puts a frame around the selected area and then adds a drop shadow. The frame may be coloured using one of dozens of gorgeous patterns, which fall into two categories; esoteric or natural world. The end result is very attractive, and it saves time too.

Spectacular effects

PhotoImpact also has four 'magic' processes: Kaleidoscope, Lighting, Turn Page and Gradient. These are highly editable tools that you can use to create spectacular effects in next to no time. We've see gradient fill editors before, but none is quite like this. You choose from a huge selection of basic gradient fills, then apply well over a dozen user-defined parameters to it to ensure that your fill patterns are wholly unique. The Kaleidoscope option is very similar to the innovative Terrazo



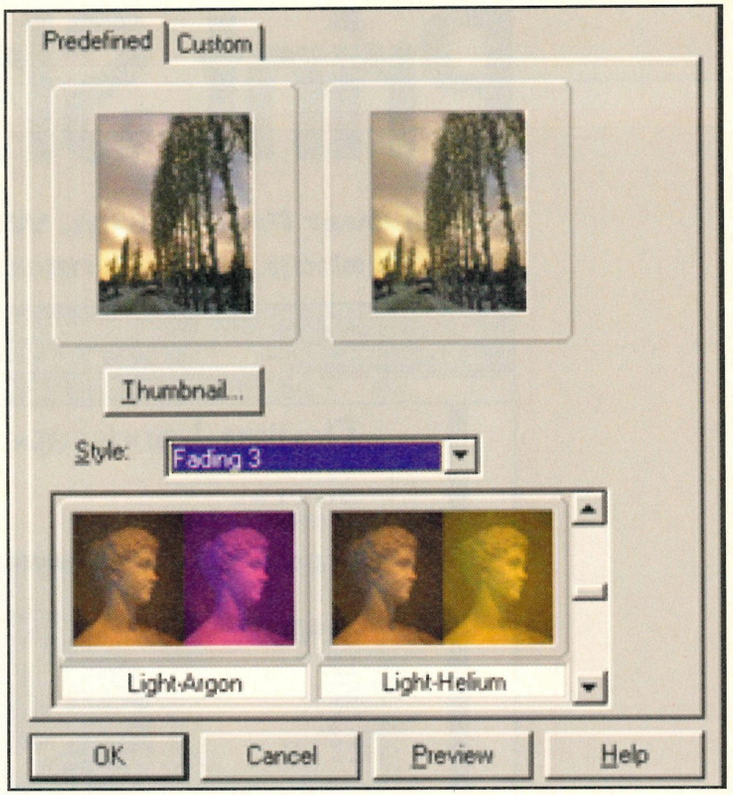
Straighten is just one of five auto-processes available.



This multimedia tutorial will explain the process of scanning images.



Also included is Album, a comprehensive image database and cataloguing program that's as good as many stand-alone applications.



You can use the Style requester to quickly choose and apply dozens of colourisation schemes and lighting effects.

feature in Corel's *Photo Paint*, and it can be used to generate a variety of mirroring effects.

In addition to the main program, *PhotoImpact* comes with many well designed supplementary programs. Album is a fully featured catalogue and database, and is perhaps, the most complete program of its type, greatly exceeding the abilities of some stand-alone programs like *Media Centre*. It comes with templates so that you can build catalogues of family photos, professional work, film images, personnel records and much more. Not only is it extremely fast, especially when it comes to printing catalogues, but it can potentially store a large amount of info about each picture.

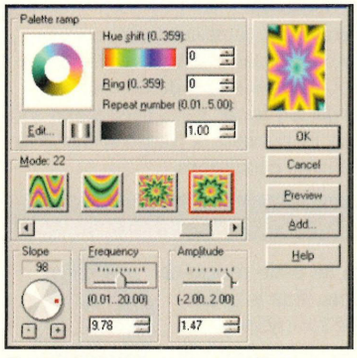
The Explorer in *PhotoImpace* is an image-oriented version of the standard Windows 95 Explorer. The Explorer window is split into two halves, one of which shows the file icons as normal, whilst the other shows larger thumbnails of any images that may be in the current directory. If you click on a file, a compact viewer will be used to display it promptly. Explorer isn't a fantastic program in itself, but it's one more handy tool for people who use their computer for graphics work.

Invaluable tutorial

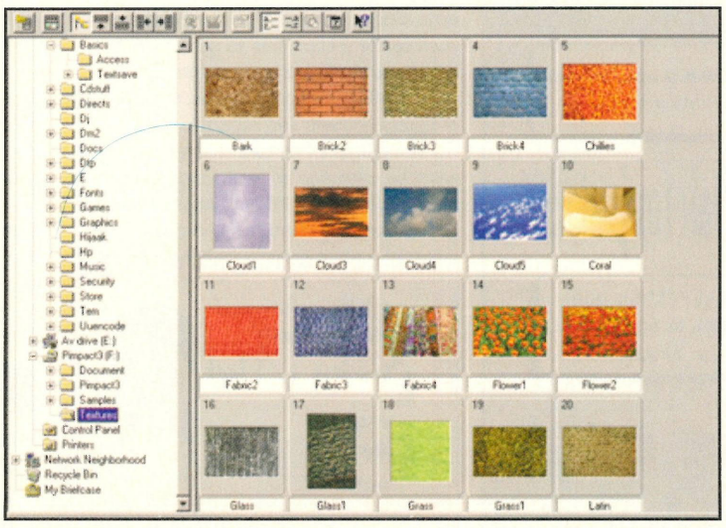
There are also two multimedia tutorials, known as Tours. The first of these merely guides you through *PhotoImpact*, a tour which is largely redundant because the program's so easy to use. The second is absolutely invaluable if you're lucky enough to own a scanner as it provides comprehensive information on the various aspects of scanning, and enhancing the subsequent images. This vital area is often ignored by graphics programs and scanner manufacturers alike, so Ulead have correctly identify an area of confusion that needed to be addressed.

Incidentally, *PhotoImpact* is OLE2 compliant, which makes it perfect if you need to incorporate graphics within your documents. You can have to hand, the full power of the program whilst you use your word processor or any other application.

Despite the number of programs competing for attention, *PhotoImpact* has much to offer users of all experience levels. It's not exactly a budget purchase, but it's inexpensive considering the power of the main program, and the selection of additional programs included. ***(DB)***



Bet you've never seen a gradient designer with quite so many options.



This is the Ulead version of Explorer. It simplifies the business of searching for images using these slide-like thumbnails.

PCR VERDICT

Surprisingly well designed, PhotoImpact adds a new selection tools to your graphics arsenal.

9



Frame & Shadow is a crowd-please, but it's the not so flashy functions that you'll really appreciate.

Developer: Ulead

Publisher: Bit UK

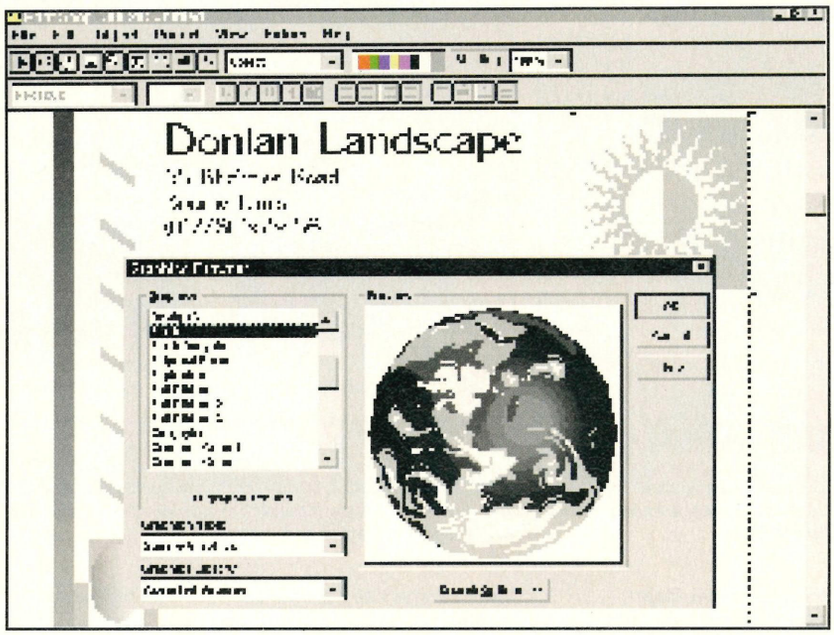
Contact: 01420 83811

Price: £135

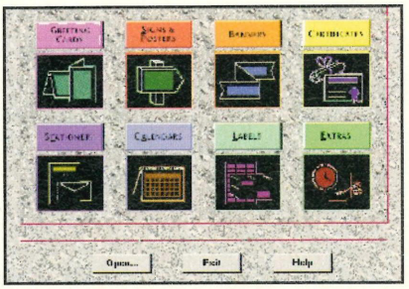
Minimum system: 486, 8Mb RAM, Windows 95, CD drive, 30 Mb hard disk space, VGA

Print Shop Deluxe

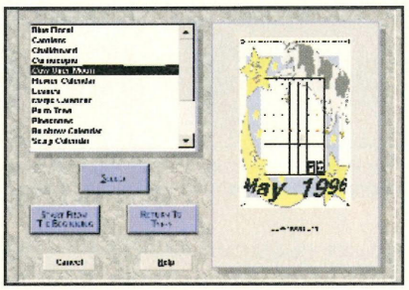
Move over Prontaprint. With Broderbund's new one-stop design shop, all you need is a PC and a printer.



You can change any of the graphics in the ready-made designs, and even work in black and white if you don't have a colour printer.



The eight categories conceal hundreds more, from menus to Mother's Day cards.



Print Shop contains lots of bright, cheerful designs you can adapt for your own use.

Many of today's DTP packages have step by step 'wizards' that take you through every stage of document design, and it's easy to see why. Most users don't want all the paraphernalia of desktop publishing proper – they want documents quickly and easily, without any fuss. That's where *Print Shop Deluxe* comes in. Thanks to its push-button interface, a well-designed poster or birthday card is only ever a few mouse clicks away.

This version represents a major update for the grand old man of do-it-yourself DTP. Where the DOS version used function keys for selection, the new version of *Print Shop* needs only a mouse and the patience to browse through a massive CD library of clipart, fonts and borders. You can design greeting cards, signs and posters, banners, certificates, stationery, calendars and labels.

The range of ready-made designs is staggering, with at least 100 or so in each case. Some look out of place, though – such as the menus and 'to do' lists in the letterhead section. Some designs have a definite transatlantic flavour, but there's plenty of European-flavoured clipart, too.

Print Shop's Interface is simple, and you won't be confused by toolbars or icons in the drop-down menus. The selection procedure consists of easy-to-understand dialog, with colourful buttons and previews. Just click on a button and see if you like the result.

Let's say you want to design a certificate. You can either 'Select A Ready Made' or 'Start From The Beginning'. The former has designs for the following: Achievement, Business, Sports, Clubs, School, or All Themes. 'Start From The Beginning' and you choose from landscape or portrait formats, and select a background style. A list of 60 certificate designs offers a full-screen template for each, with shaded areas which you click on to specify colour, font and shape of text, or choose a graphic from the library of over 4,500 different pictures.

You can can import images in PhotoCD format, or add clipart in WMF, TIFF or BMP format. Text can be squeezed, warped and so on, and you can search graphics using the keyword database.

There are no compliment slips, screen redraws can be slow and the zoom isn't very flexible, but on the whole, document design doesn't get any easier. If you need speed and simplicity, for business or pleasure, *Print Shop Deluxe* makes good sense.



Don't dial the phone number; we made it up. This, however, is what Print Shop can do.



The rewards come quick and easy with Print Shop Deluxe. This took 12.5 minutes.

NEXT MONTH

Our CD-ROM will feature a world exclusive working demo of Print Shop Deluxe.

Developer: Broderbund

Publisher: Broderbund

Contact: 01429 890873

Expected price: £39.99

Minimum system: 386DX, 8Mb RAM, Windows 3.1 or 95, 256 colours, CD drive

PCR VERDICT

With its wide range of effects, this is great value for money when compared with a full DTP package.

8

Windows 95 add-ons

The recent Windows 96 show may have been quiet, but PC Review still managed to ferret out the most innovative software on offer.

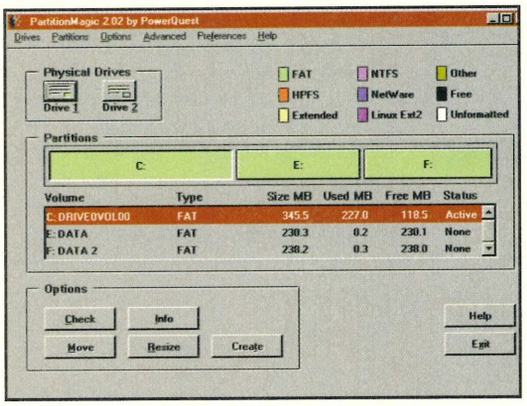
Partition Magic

Hard drives are like motorways: no matter how much space there is, demand always outgrows availability. You can stretch the capacity of your drive by over 140% by using the right software. *Stacker* or *Double Space* can give 100% more space. *Partition Magic* can add more on top.

Using a system called Partitioning, it decreases the amount of wastage inherent in a drive's operating system. The larger the drive, the more waste. Clusters are responsible for the waste.

Partition Magic enables you to divide your drive into smaller chunks (or partitions), with smaller, less wasteful clusters. Better yet, you don't need to reformat your drive to do it, and you can hide your partitions as a security feature. You can also alter which partition your system boots from, enabling you to set up true dual-boot operating systems on one drive.

The program is surprisingly stable and effective, especially on big drives. Good news if you need space.



You can use Partition Magic to up the capacity of a *Stacked* drive.

Score: 8/10

Developer: PowerQuest Corporation

Supplier: Informglobal

Contact: 07000 463676

Expected Price: £52.87

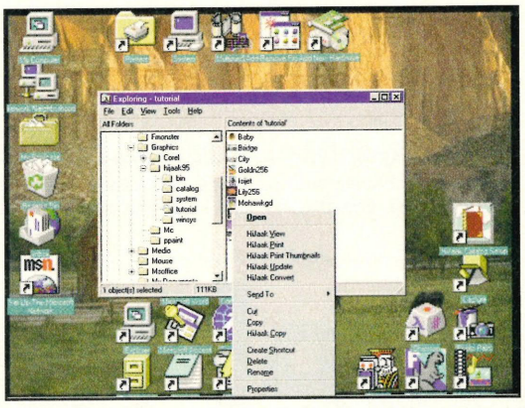
Minimum system: 386, 4Mb RAM, DOS 5, 4.5Mb hard disk space, VGA

Hijaak 95

Here's a program that claims to optimise Windows 95 for graphics use. What it actually does is it converts those little file icons that you see in Explorer and elsewhere, into thumbnails that show the image to be opened. When using a file requester, it also gives you extra options so that you can preview graphics, convert them between dozens of formats, print individual images or catalogues, or create your own customised, detailed search engine.

The most useful part is the image thumbnail feature, but this takes ages to generate, even when it runs in the background. Worse still, it significantly slows down the business of browsing directories. As for image conversion, it supports a very comprehensive selection of formats.

HiJaak 95 is good for minor graphics work. However serious graphics users will find this utility unexciting, as it offers virtually no improvements over existing programs.



It's hard to see a market for HiJaak 95's range of graphics features.

Score: 4/10

Developer: Quarterdeck

Supplier: Quarterdeck

Contact: 01245 496699

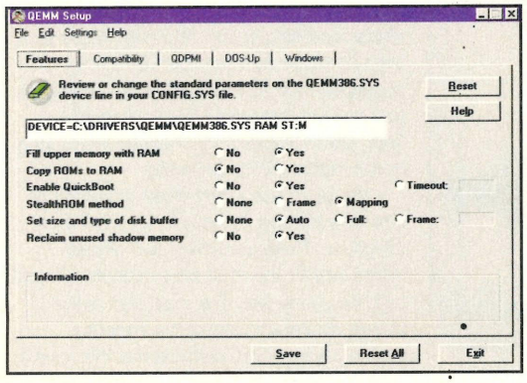
Expected Price: £49.99

Minimum system: 386 8Mb RAM, CD drive, Windows 95, 12Mb hard disk space, SVGA

QEMM 8

Memory is an important resource to manage, and Windows 95 users have been left out in the cold as far as memory managers go. There have been a couple of RAM compressors to increase extended memory, but nothing to improve conventional memory. *QEMM* does just that. It partly works by moving TSRs and drivers into upper memory areas, much like *Memmaker*. However, *QEMM 8* goes far beyond that, utilising extended memory too, but fooling the system into thinking that TSRs are still only being loaded into upper RAM. Suffice to say that this results in spectacular improvements.

Like previous versions, it's easy to use, and can generate massive RAM gains, although its super-powerful Stealth Mode seems more quirky than it used to be. As compensation, Quarterdeck has also bundled its popular Windows RAM multiplier MagnaRAM too. This uses *Stacker*-style compression to increase extended RAM and improve your Windows performance.



Windows 95 gets the same memory tricks 3.1 enjoyed.

Score: 7/10

Developer: Quarterdeck

Supplier: Quarterdeck

Contact: 01245 496699

Expected Price: £79.99

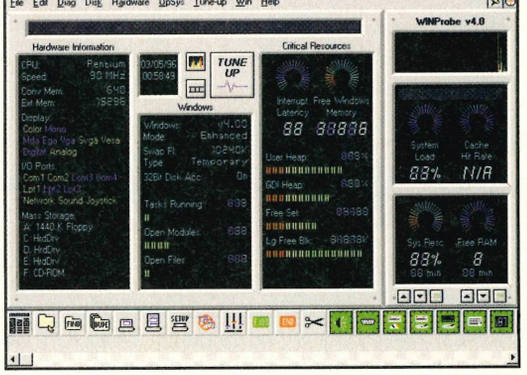
Minimum system: 386, 1.25Mb RAM, 4.5Mb hard disk space, EGA

WinProbe 4

Quarterdeck has recently acquired Landmark along with the firm's range of diagnostic programs, including *WinProbe*. This program gives you detailed information about your computer's performance, listing everything from system resources to CD-ROM drive speed.

The main screen is laid out like a dashboard detailing frequently needed information. If you click the Tune Up button, you'll find there are numerous help sections to advise about specific performance bottlenecks, suggesting techniques for clearing them. These are categorised so that you can concentrate on areas like memory, system resources or processing speed. In addition it has a range of dedicated editors, including *INI Expert*, which tweak your PC for top performance.

Bundled with WinProbe, is *CD Certify Pro*, the industry standard for CD-ROM drive benchmarking. Also included is *Cleansweep 1.0*, one of the best housekeeping programs around.



WinProbe: a flexible and powerful tool.

Score: 8/10

Developer: Quarterdeck

Supplier: Quarterdeck

Contact: 01245 496699

Price: £49.99

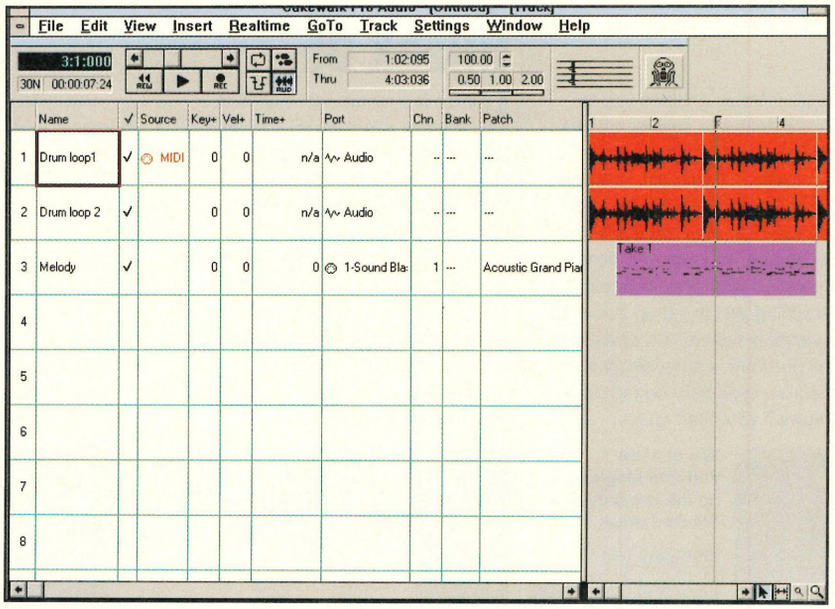
Minimum system: 386, 2Mb RAM, Windows 3.1, CD drive, 2.2Mb hard disk space, VGA

Cakewalk Pro Audio 4.0

Oranges aren't the only fruit, and Cubase isn't the only pro sequencer. We peel a tasty American alternative.

CD REVIEW

Try out the demo of *Cakewalk* on our CD-ROM.



Cakewalk Pro Audio has undergone numerous changes. The addition of sampled audio support is the main one, but there are aesthetic improvements too.

It's funny how you can get used to thinking that your view of the world is the only one. Here in Europe, we're used to hearing Steinberg's *Cubase* range referred to in almost reverent terms, as if Steinberg was the only company catering to the professional sequencer market. In America, they play second fiddle to Cakewalk, a maker of products that compete with everything Steinberg has to offer.

Cubasis Audio was one of the first sequencers to combine MIDI and audio sequencing. It's taken a while, but now Cakewalk has released their version inspiringly titled *Cakewalk Pro Audio 4*.

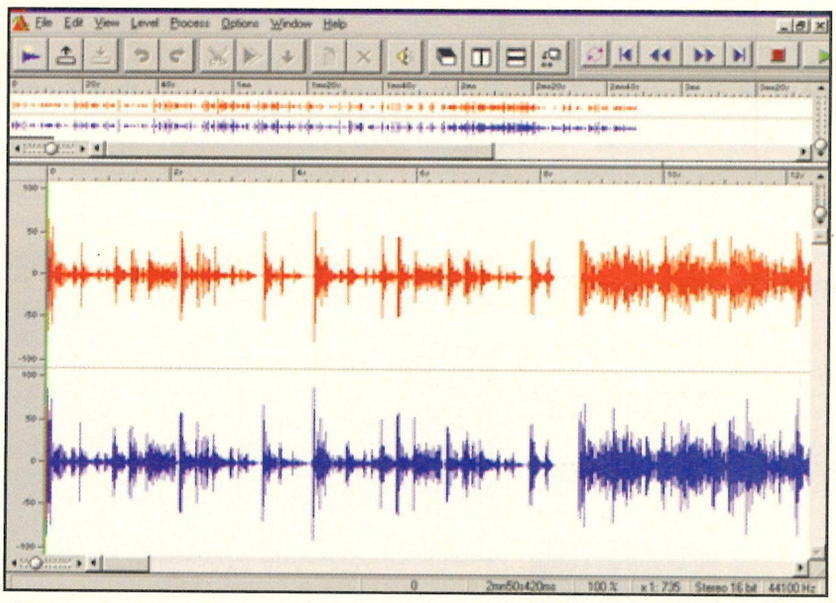
One of the first things you'll notice is that Cakewalk has totally overhauled the user-interface. There's a nice blue background and gone is the dreadful clip window. It's been replaced with something suspiciously similar to the *Cubase* Arrange window. In this window you'll see sections of music represented as rectangles. The length of a rectangle denotes the duration of the clip, whilst its horizontal position indicates when it starts playing. This approach is much more

WaveLab

You don't need to be an acoustic engineer to do professional quality sound sampling. Wavelab, we have found, has many pro functions but is much cheaper than a full-on studio.

CD REVIEW

The demo of *Wavelab* is on our CD-ROM this month.



Wavelab displays both the full samples in the top bars, while zooming in on the waveforms of the currently selected sections which take up most of the screen.

There isn't much choice when it comes to high-end PC sampling programs, so it's a pleasure to see a new one hit the scene. It's an even greater joy to discover that it's published by Steinberg, a company with a gilt-edge reputation in the sequencer market. *WaveLab*, however, has far fewer features than the competition, and Steinberg is not experienced in this field.

The first thing to establish, is that *WaveLab* doesn't turn your hard drive into a digital recording studio. You can record and even combine samples, but you can't sequence them together in the same way as you can with programs like *Samplitude* or *SAW*. Given that fact, you may be wondering how it merits a £300 price tag.

WaveLab has a very clean, comfortable look about it and it's easy to tell what most things do. There are one or two hidden extras, but for the most part, everything's laid bare for you to see. The main part of the screen displays a view of the currently selected wave form, whilst above that runs a

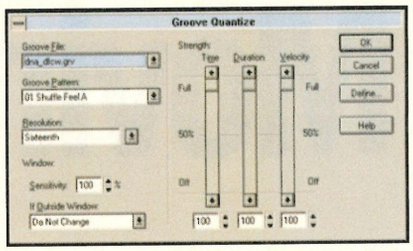
logical, and is commonly used because it instantly imparts so much information. It's particularly useful now in the days of samples which are also represented as rectangles with additional information displayed regarding their recording levels.

Of course, the ability to handle samples is a major step forward as it enables you to incorporate real sounds that are impossible to duplicate with a MIDI instrument. Complicated drum loops, special effects and vocals are just a few examples. Audio data can be incorporated in one of two ways. You can record it live, or insert it as a wave file. If you choose the latter option, you simply select a channel and instead of assigning a MIDI device to it, just specify whether the sample is playing from the left or right channel of your digital audio card. If you have a duplex sampling card, you can actually replay one sample whilst recording another on a different channel. The Turtle Beach and Miro cards are well suited to this.

If you decide to record samples, you can do so within *Cakewalk Pro Audio*. But don't expect a top-notch sampling package, this feature is really only included for the sake of completeness. Before we leave the subject of sampling, one very good feature is the program's ability to apply quantisation to samples, or to derive quantisation settings from a sample. In other words, if you record a complex jazz sample, the program can automatically extract its timings to add a more human rhythm to your MIDI data.

As for its sequencing abilities, there's not a lot to say. For the home and semi-pro user, both *Cubase* and *Cakewalk* became quite adequate a version or two ago. Each update has merely added more twiddly features that you might use once in the program's lifetime. Suffice to say, *Cakewalk* has a well-deserved excellent reputation, and the redesigned user-interface only streamlines and simplifies the process of sequencing. It's nice to see support for Yamaha's new XG format, which enables you to squeeze the very last squeak of power from your flashy audio card.

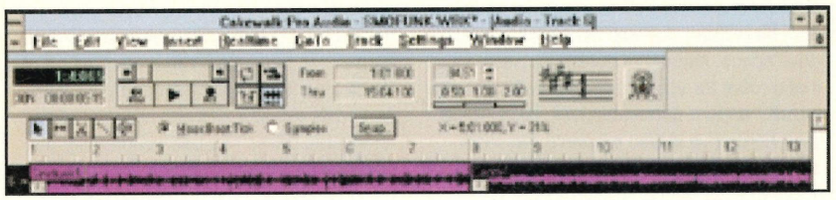
Cakewalk also provides comprehensive scoring abilities, and although it's not really designed as a step-time tool, it has the friendliest notation entry interface of all non-



The program can add quantisation to audio samples or it can derive timing from them, with which to quantise your MIDI data.

dedicated programs. Whereas *Cubase Score* places the creation of commercial quality sheet music high on the list of priorities, *Cakewalk Audio* omits all the clever symbols, and adopts a cleaner look. Ultimately, it's designed to record live music, and its ability to print (albeit simple) sheet music just adds another dimension of functionality.

Cakewalk Pro Audio is gorgeous.and many will prefer it to *Cubasis Audio*. In the end, it's down to personal preference and which interface most appeals to you. Either way, you can't go wrong. ***(MB)***



Take precise control over which samples you use in the sample overview mode.

PCR VERDICT

A streamlined and functional program that integrates MIDI and sample sequencing.

8

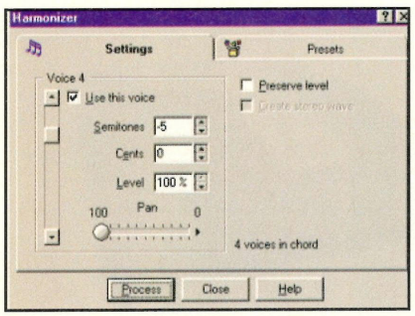
Developer: Cakewalk

Supplier: Et Cetera

Contact: 01706 228039

Price: £339

Minimum system: 386DX/33, 8MB RAM CD drive (for Deluxe version), Windows 3.1, 8MB hard disk space, MIDI card or instrument



A dedicated hardware harmoniser will cost you £500. It's just another feature in Wavelab.

smaller strip showing the complete sample. You can alter the magnification level of either view and, unusually, you can also change the magnification of each axis independently. This is particularly useful when you want to emphasise the graduations in a wave form. It's just a shame there's no freehand waveform editor in *Wavelab* enabling you to capitalise on the feature.

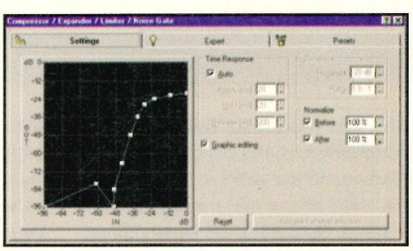
One thing you'll notice as you alter magnification levels, or scroll around the sample, is how fast the screen update is. This is thanks to the fact that *WaveLab* is written entirely using optimised 32-bit code. This is particularly impressive when you consider that it's possible to edit or move around the display whilst a sample is actually playing

It's not just the code that's been optimised either. The user-interface is extremely ergonomic, enabling you to navigate it with the greatest of ease. Steinberg is a world leader when it comes to functional interface design. There's a simple tape recorder-style transport mechanism for controlling playback and recording of samples. By default, this is a floating toolbar, but a single click consigns it to the tool strip at the top of the screen.

The process of sampling is quick and easy, as you would expect. The only limitation on the amount of sound that you can record, is the size of your hard disk. But recording is only the beginning of the story – even the most primitive sampler lets you do that. It's the range of support features that really counts.

WaveLab certainly doesn't have any of the gimmicky effects found in rival programs, but it does include many of the functions that pros won't be able to live without. Time stretching and pitch changing are two crucial features if you're creating audio to fit a specific amount of time. From a musical perspective, the Harmonize and Chorus features enable you to add body and richness to your sounds, and the power of these options is quite wonderful. If you have a more technical grounding, you'll doubtless appreciate the Equaliser function which you can use to enhance or suppress certain audio frequencies.

The program is ideal for people who need to use a sampler on a regular basis and don't want to get bogged down by unnecessary features. ***(MB)***

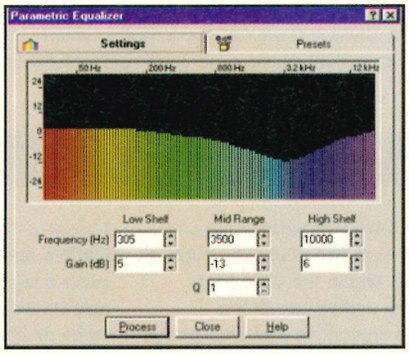


The Dynamic requester is where all you pros out there can find features like compressors, limiters, expanders and noise gates.

PCR VERDICT

WaveLab is a joy to use. It's easy to learn and can produce good, high-quality results.

8



Audiophiles will lap up features such as this parametric equaliser. You can select from numerous defaults or create new settings.

Developer: Steinberg

Publisher: Harman Audio

Contact: 0181 207 5050

Expected Price: £299

Minimum system: 486SX, 8Mb RAM, CD drive, Windows 95, 20MB hard disk space, 16-bit sound card, VGA

Moving Memories:

Need to save a big file? These drives start at under £200 for 100Mb and make the floppy disk look like a pale shadow.

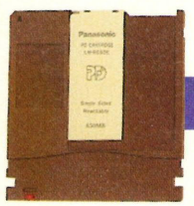


No matter how big a hard drive your PC is packing, you will never have enough storage space. Get into the realms of hard drive sound recording, video editing and serious image editing and any spare megabytes soon evaporate. The 1Gb drive that seemed more than adequate last year is suddenly packed with huge files.

The answer is removable storage, high-capacity disks capable of taking 100Mb or more on board. They are ideal for storing samples and graphics. If you need more room, you just buy another disk, so your hard drive capacity is effectively limitless.

You can also install games and applications directly on to the disks rather than have them chewing up valuable hard drive space. Instead of deleting a game to make room for your latest purchase, you can install it on to a removable disk. Backing up your hard drive is also a breeze. No more stacks of floppies or slow tape drives, and you can copy across whole directories. Transferring big files between PCs is also made easier – wave goodbye to piles of numbered floppies with a fragmented compressed file spread across them.

The latest generation of removable drives are fast – even the slowest drive matches a CD-ROM drive while some rival hard drives for speed. The capacities on offer range from 100Mb to a whopping 650Mb. And while the size and performance of the removable drives has been improving, the cost has also been dropping. You can upgrade your PC with a drive using disks seventy times more capacious than a floppy for under £200. Interested? Read on. ***(CL)***



SYQUEST EZ DRIVE

SyQuest is no stranger to the removable disk market and is currently the top dog. The EZ Drive moves on from the older 5.25-inch format to 3.5-inch disks. Each one packs in an impressive 135Mb.

The drive works in much the same way as a traditional hard drive except the disks aren't held in a vacuum. This helps account for its turn of speed – the EZ Drive easily leaves the competition standing. The access time is on a par with a hard drive, which makes running applications directly from the disk feasible. You can treat the EZ Drive as an extension to your hard drive, or simply as a mass storage device.

The drive itself is sturdy and well-finished. It makes its connection to your PC via a SCSI interface, so you'll need a suitable card first. There is also a version that connects via the parallel port for £233.83 and an internal IDE version for £193.88. The parallel port version is slower but more portable, while the internal IDE version is easier to set up, but of course not portable at all.

The SyQuest is a clear winner. It's fast, good value for money and well-made. In fact it's hard to find anything to grumble about, a good sign if ever there was one.

The EZ Drive performs as well as it looks and we think it looks very good indeed. It's also caries a reasonable price tag.



Supplier: SyQuest

Contact: 0131 3392022

Drive: £210.33

Disks: £17.04

PCR VERDICT

Fast, well-made and affordable, EZ Drive is everything you could want from removable storage.

9

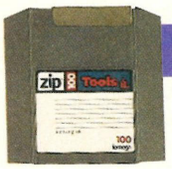
Glossary

Phase-change: **A CD drive that writes data using a high power laser to heat and alter the structure of a layer of chemicals within the disk. It's a clever technique which makes use of the different properties of crystalline and amorphous materials, but the writing speed is low. A standard strength laser reads the data back.**

Access time: **The time it takes for the drive to reach a specific location on the disk. This can make a big difference to the drive's responsiveness. Hard drives can manage access times of under 10ms. SyQuest's EZ Drive comes close to this, but the other removable media drives have substantially slower access times.**

MiniDisc: **Sony's new optical disc format. It uses a higher-than-normal power laser on a magnetic layer in the disk to make it lose its magnetic cohesion. The data is then written much as it is by a normal hard drive. The different magnetic polarities twist reflected light and the data can be read back by a normal laser.**

Storage Round-up



ZIP DRIVE

The Zip Drive looks and works much like a traditional floppy drive, except that each disk stores a decidedly more useful 100Mb of data. The interface uses the parallel port, which is not the fastest of routes, but does make it easy to use the drive on other PCs. It also makes setting up the drive easy and avoids the sometimes harrowing business of purchasing and installing a SCSI interface.

Zip drives use the Bernoulli effect, an aerodynamic phenomenon which makes the disk flex away from the head. It is spun very fast, and the tiny read/write head is positioned close to it.

The performance is passable but wins no medals. The low transfer rates make applications run directly from the disk somewhat sluggish. Compared to a tape drive, it is still useful, though – at the very least you can go straight to the file you need, rather than working all the way down a back-up tape. There is also a SCSI version for the same cost which addresses the performance issue but is less readily portable.

The Zip Drive sold well in America. It offers 100Mb 3.5-inch disks, so it's easy to see why it's so popular. These days, however, it has some stiffer competition to contend with.



The drive itself is blue which is a bit of a shock in the normally staid world of PC peripherals. It's also stylish and the lightness makes it easy to carry around, although it also gives away the rather flimsy construction. The disks aren't especially good value on a per megabyte basis, but they aren't as massive an investment as the PD Drive's optical disks.

The Zip Drive is neither one thing or the other. The slow speed is tiresome and the 100Mb capacity makes it less than ideal for storing the really big stuff. On the other hand it is the cheapest removable drive available and 100Mb disks are not to be sneezed at.

PCR VERDICT

Wallet and pocket friendly, Iomega's Zip Drive is easy to set up but sluggish in operation.

7

Supplier: Iomega
Contact: 0800 973194
Drive: £175.08
Disks: £17.57



PANASONIC PD DRIVE

The PD Drive is physically the biggest in the test and at a whopping 650Mb per disk offers the largest capacity, too. The drive is a clever combination of a standard quad-speed CD-ROM and a phase-change optical disk drive. It automatically switches between them depending on the disk you insert. Win95's Explorer offers you two extra drive letters, one for each type of disk.

The drive slots into a spare 5.25-inch drive bay and connects via SCSI-2. If you already have a suitable interface card you can save yourself £58.75 on the deal. The phase-change operation means it writes data slowly, making regular saves from an application tiresome. Copying really big files calls for an extended tea break, but reading speeds are on a par with CD-ROM.

It looks like an ordinary CD-ROM drive from the outside, but the PD Drive can do the one thing you've always wished your CD-ROM drive could do: write 650Mb of data on to a removable disk.



As a direct extension to your hard drive the PD is too slow. It's more suited to backing up your hard drive and comes into its own with big files such as video clips and sampled music. At under £50 the disks are cheap on a per megabyte basis.

The PD drive is on the expensive side and the performance is only mediocre. The real strength is in those massive disks – you can do a lot with 650Mb.

PCR VERDICT

A winner on the capacity front, but expensive and too slow to stand in for your hard drive.

6

Supplier: Panasonic
Contact: 01344 853913
Drive: £527.58
Disks: £45.83

SCSI: Small Computer Systems Interface, a standard bus for transferring data. You can run up to seven peripherals off a SCSI interface, including scanners, CD-ROM drives and back-up devices. Each device is simply connected to the preceding one. It's fast but can be tricky to set up and you'll need to invest in a SCSI card.

Parallel Port: One of the standard sockets on the back of your PC, it was originally intended to connect to printers and transfers data in parallel, 16 bits at a time. It's not quick but just about every PC has one, making it easy to connect devices. Pass-through parallel port connectors enable you to carry on using your printer.

Transfer Rate: The volume of data a drive or other system can transfer in a second. Obviously the more bits you can shift, the merrier, especially if you want to run programs directly from the drive. Hard drives currently have figures running into megabytes; removable media devices manage 100–500Kb/s.



SONY MDH-10

Sony's new baby uses a extension of the MiniDisc format initially developed for recording music. The discs themselves are only 2.5 inches across, making them wonderfully portable. Each one stores 140Mb which is handy enough. The drive itself is small and beautifully built and finished. It has been designed for portability and looks much like a Walkman.

The MDH-10 also plays standard audio MDs and comes complete with headphones with built-in remote control. Power is supplied by normal batteries, a rechargeable battery pack or an adaptor. Power consumption is prodigious and writing a disc's worth of data will all but drain a set.

The drive connects to your PC via a SCSI interface and needs a special cable due to the tiny socket on the drive itself. You'll also need a suitable interface on your PC before you start. There is an optional PCMCIA interface for £175.08 for use with portable PCs.

The performance is disappointing – it's certainly no speedster and is roughly equivalent to a single-speed CD-ROM drive. This is passable for saving files but makes running applications or games directly from the drive tediously slow. An internal version is also in the pipeline.

As it stands the performance is too poor and the price too high. It's one for the man who must have everything or wants to play audio MDs while he works in the park.

Supplier: Sony
Contact: 0181 7600500
Drive: £586.33
Discs: £17.63



The Sony MDH-10 looks very flashy next to your portable. When it comes to performance thing start to go astray, because it's just too slow. It's also remarkably expensive.

PCR VERDICT

Very portable but expensive and slow, Sony's MDH-10 is for the 'money is no object' brigade.

4

Test Results

We put the drives through the hoop by hooking them up to a P133 test PC and using Win95 Explorer move some hefty graphics files about. This gives a direct indication of performance in everyday use rather than an academic figure from a benchmark program. The EZ Drive managed a data transfer rate of about half that of the host PC's hard drives – impressive stuff. The PD Drive's performance depends on whether it's reading or writing, the latter being terribly slow. The Zip Drive's parallel port connection made it impossible to test its access time, but it's certainly under 100ms.

	Writing speed Kb/second	Reading speed Kb/second	Access time ms	Cost of disks pence/Mb
EZ Drive	475	515	11	12.6
Zip Drive	149	90	N/A	17.57
PD Drive	63	441	164	7.05
MDH-10	111	142	251	12.6

Conclusion

Four different drives, four different approaches.

The Sony is strictly for the portable user. It's slow and expensive and despite impressive looks and build quality it's otherwise distinctly unimpressive. The Zip drive is cheap and simple to set up and use, but again the performance is ponderous and the disks are expensive per megabyte.

For sheer capacity the PD Drive is a winner, albeit an expensive one. The slow writing speed otherwise limits its usefulness. This leaves the EZ Drive as the pick of the bunch. It's excellent value, has a turn of speed that leaves the others eating dust and is built to a high standard. It may not be the ideal drive for the road but otherwise it's a superb piece of kit.

It's not all cut and dried yet though. The spring will see the launch of two new drives. Iomega's Jazz drive uses similar technology to the SyQuest EZ Drive and packs 1Gb on a disk. Not to be outdone SyQuest has a 1.3Gb version of the EZ Drive. These two are bigger than many a PC's hard drive and up the stakes considerably. They will both retail for around £400 and are very tempting if you can stretch that bit further.



Iomega's Jazz drive packs a mammoth 1Gb on to each disk and performance is on a par with many hard drives.

Turnpike

Why clutter your computer with dozens of separate Internet access programs when only one will do? Turnpike gives you a concise answer.

One of the prohibitive things about using the Net is the fact that you need so many applications just to explore its diverse areas. WWW surfing requires a Web browser; posting to Usenet demands a news reader; and FTP and Telnet sites require different programs again. The whole situation is very confusing for beginners who really need an integrated solution. Netscape is heading in that direction, but *Turnpike* is already there.

This program divides your Internet use into two categories: Online and Offline. Online covers the kind of stuff where there's a constant real-time dialogue between you and another computer, be it on the Web, or a Telnet or FTP site. Offline covers the kind of activities where a live interactive response is not required like mail processing and news group updates.

The Online side is handled by a program called *Turnpike Online*. This connects to your Net service provider using a basic Winsock shell. At the top of the screen are buttons enabling you to access additional online programs once the Winsock connection has been made. If you prefer your own software for using a particular aspect of the Net, you can do so, but part of *Turnpike* is a full version of Netscape *Navigator 1.22*. Simply click the WWW button and the program is there ready to use. This is handy as so much of the Web has become customised for Netscape-compatible browsers.

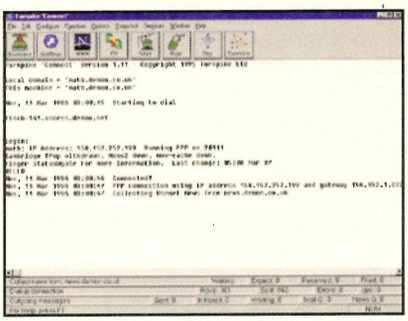
For many users, Netscape will be the most useful section of the program. More adventurous or experienced users, however, will derive even greater benefits from *Turnpike*'s Telnet and FTP programs. There are alternative browsers available for these, but *Turnpike* has an elegant Windows interface. If you access FTP sites often, you'll find the program's session option essential because it enables you to keep the settings required to log on to particular sites. The entire process can be reduced to a single mouse selection.

Finally, *Turnpike Offline* enables you to automate mail and news collection, saving some money on your phone bill compared to real-time programs like *Agent*. The only trouble is, news collection becomes so easy you may increase the number of groups to which you subscribe, thus counterbalancing that saving. The program uses what it calls News-Stands to organise the groups you're interested in. Each News-Stand can contain several groups so a family could set up one stand for each individual. Unfortunately, the actual process of managing individual news items and threads is quite unwieldy compared to *Agent*, and many users prefer not to use this feature of the program. ***(MB)***

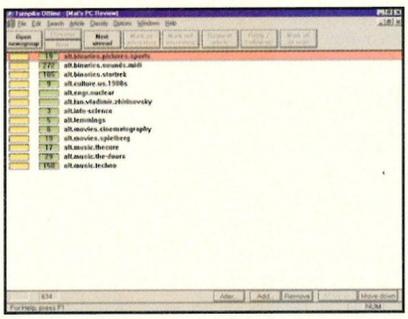
PCR VERDICT

It eliminates the need for multiple Internet access programs greatly simplifying the whole process.

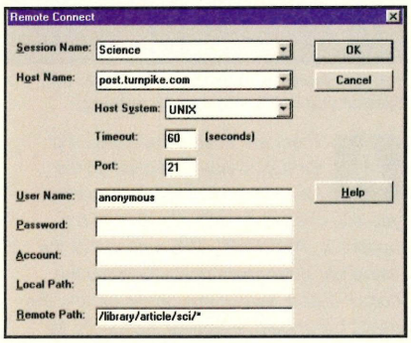
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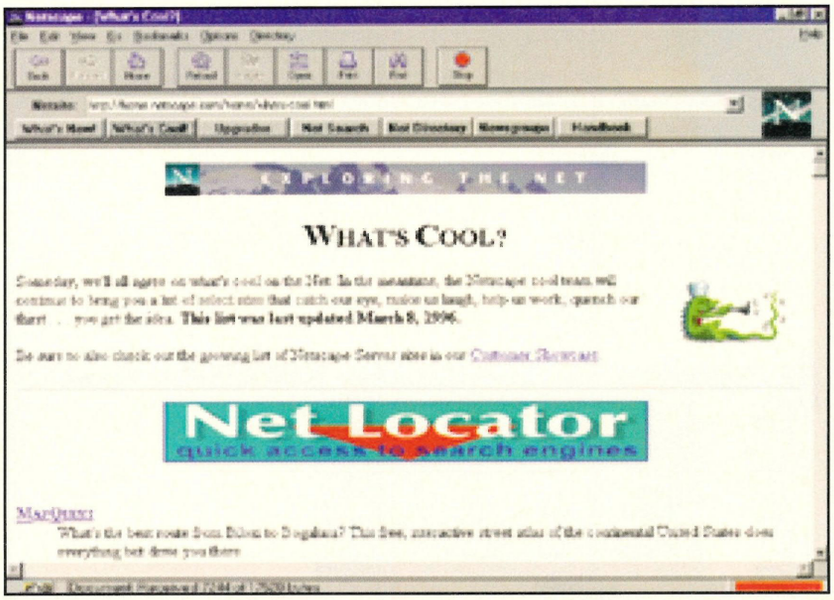
Turnpike integrates all the main programs you need to use the various areas of the Internet.



The news reader is powerful and accessible, but rather cumbersome and uninformative.



By setting up a session, you can log into FTP sites by making a single menu selection.



You'll find that the program includes a full registered version of Netscape Navigator 1.22. Navigator is probably the most widely used Web browsers there is.

Developer: Turnpike ltd

Publisher: Turnpike ltd

Contact: 01306 740606

Price: £49.95

Minimum system: 386, 8Mb RAM, Windows 3.1, Modem, 5.5MB hard disk space

Q&A

Yes. It's a new, improved look for the Helpline pages and a new technical editor to answer your questions. Mat Broomfield promises to be gentle with you... It's his first time too.

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YOUR HELPLINE FOR TECHNICAL PROBLEMS

Windows

Missing Fonts

Q I use a program called *Font Monster* to catalogue and print TrueType fonts. After recently upgrading to Windows 95, *Font Monster* doesn't work anymore. I've searched the System directory and can't even find any TrueType fonts, although I can still access them from my Windows 95 software. What's happening? Can I persuade Font Monster to work again?

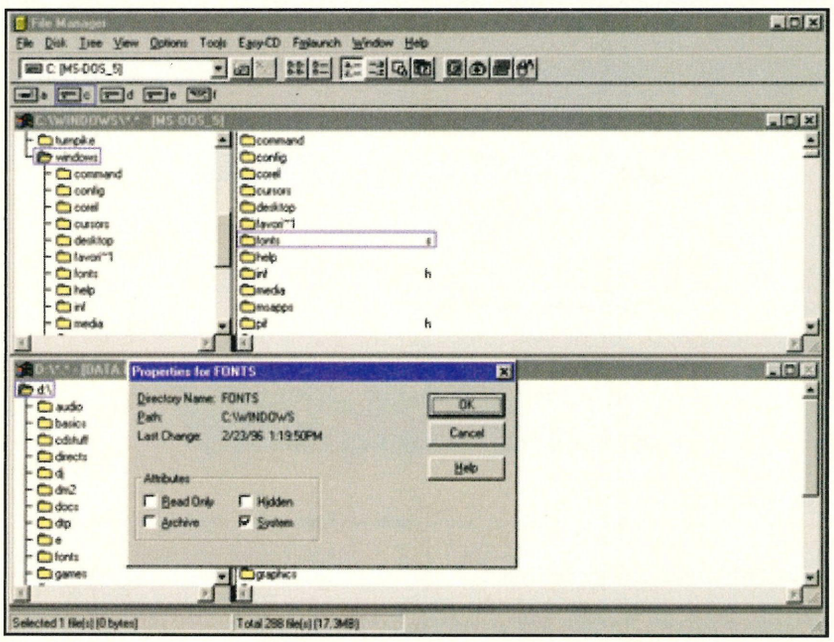
A *Windows 95 stores fonts differently from earlier versions. For starters, they've been tucked into their own directory to save cluttering up your hard drive. This directory has its System attribute set, which means that it doesn't show up using* Font Monster. *To fix it, load File Manager (winfile.exe in the Windows directory). Using File Manager, select 'By file type' from the 'View' menu, then click the check box labelled 'Show Hidden/System Files' and click 'OK'. Now go to the Windows directory, and you'll see that the Fonts directory is visible within it. Select that directory and choose 'Properties' from the "File" menu. Now, unselect the "System' attribute (and the 'Hidden' one too if it's selected), and* Font Monster *will work again.*

Tricky Bios

Q I've bought a 1.2 Gb Seagate EIDE hard drive but my BIOS doesn't support more than 540 megs on an IDE controller. The drive comes with a program that patches the BIOS. It worked at first, but since I re-installed Windows, I can only access 540 megs. I don't think I've done anything different, so why won't it work properly?

A *The only thing I can think of, is that you have 32-bit disk accessing switched on. The Seagate patch program doesn't like it if you do. Go into the Control Panel and check whether or not it's switched on in the Virtual Memory requester.*

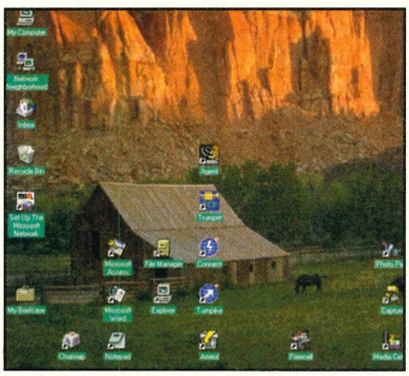
You can double check by running MSD from DOS (exit Windows then type MSD). If it says that you have a 1.2Gb drive, then you know it must be a Windows problem. If it doesn't, then check what the BIOS says about your drive size. It should correctly identify the size of the drive regardless of its ability to access it all. If it too, only identifies a 540 meg unit, I think you should have a word with Seagate directly.



Switch off the Font directory's System attribute so you can find it with pre-Win95 programs.

Disappearing menu bar

Q Help! My Windows 95 menu bar has completely disappeared. I've tried adjusting the vertical size and position on my monitor, but it doesn't solve the problem. I'm sure it's something really obvious, but can't figure it out.



You can resize or reposition the menu bar. Careful you don't reduce it to nothing!

A *There are three possibilities. For starters, if you right-click on the menu bar, then select Properties, you can change its defaults. One of the options is 'Auto Hide'. This means that the menu bar disappears until you move the cursor over it. Switch this option off and the menu bar should re-appear. Secondly, by clicking and dragging, you can reposition the menu bar on any of the four edges of the screen. Could you have accidentally moved*

Hardware

it? Finally if you click on the edge of the menu bar, you can resize it. Perhaps you've inadvertently reduced it to nothing. Move the cursor to the edge of the screen. If it changes into a double arrow a few millimetres from the edge, simply click and drag to expand the menu to a visible size.

Dual Booting Windows

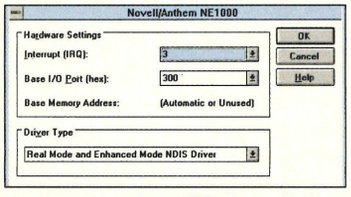
Q I have Windows 3.1 on my computer and would like to upgrade. However, there are currently no Windows 95 drivers for some of my hardware components. Is it possible to keep my current installation but install Windows 95 on another drive?

Yes you can do that. In fact, you can install Windows 95 in any drive or directory you like by simply specifying an alternate one during installation. This will leave your current versions of DOS and Windows unharmed. However, the system will automatically load Win95 whenever you turn your computer on, so if you want to use your old operating system, interrupt the boot process by pressing [F8] when the words 'Starting Windows 95' appear on the screen. From there, you can choose from a variety of options; select number 8 – Load previous version of DOS, then type Win to revert to Windows 3.1 once DOS has loaded. Beware, anything installed on a dual boot machine, will need to be installed fully through both versions of Windows.

Out of IRQs

A I'm trying to install an NE1000 network card in my machine, but it will only work with a few alternate IRQ ports. I thought I might use the IRQ allocated to COM2, but the trouble is, whenever I try to select it in my Workgroups network setup, it tells me that the port is in use by the COM port. What can I do?

Just because the setup warns you that the IRQ is used by COM2 doesn't mean you can't still assign it to your network card. So long as you don't use COM 2, you won't get a conflict. Or, you could always reallocate the IRQ that the COM port uses. Simply open the Windows Control Panel then double click the Ports icon. Now you select any free IRQ you like for ports.



You can often share IRQs between hardware components, if both items aren't active at the same time.

Tricky Tower

Q I have a tower case with a seven-slot motherboard, and try as I might, I just can't use all seven slots. When I put a card in every slot a variety of faults appear ranging from an inability to boot the machine, to odd diagnostics results. Sometimes my PC seems to run fine for while, then crashes after a couple of hours. The trouble is, no card combination seems to be responsible. I'm tearing my hair out. Please help before I go completely bald!

A Assuming you've eliminated IRQ and DMA clashes as the source of your trouble, the next thing is to check that all leads, chips and boards are firmly seated. Make sure that you don't inadvertently bend the motherboard thus unseating one board as you plug in another. Next, you might try a different motherboard if you have access to one. You might also try phoning board manufacturers to ensure that there are no known clashes between bits of hardware. This sometimes happens, particularly with network cards and SCSI controllers.

It's a sad fact that many PC components are neither as well made nor as well checked as they ought to be. Mass production and poor design can cause lots of trouble, and even years of testing is not always enough to iron out all the faults as Windows 95 shows. Ultimately, it's possible that you'll never get all of your bits working together; RF interference, power supply drain or motherboard load can all prove fatal, and you may never be able to determine which is which.

MIDI keyboard cock-up

Q I have an SB16 sound card which works fine, however when I connect my MIDI keyboard up to it, I just can't get it to read the keyboard. I was hoping to use the keyboard as a controller. Is the sound card faulty, or is it the keyboard?

A It's almost certainly neither. Creative Labs cards have been known to cause trouble with external MIDI devices, be they controller keyboards or synths. I've dealt with dozens of such enquiries, and I can say that without exception, it's always been the cable at fault. Whether Creative use non-standard wiring, or their sound cards are simply less tolerant of imperfect leads I'm not sure, but if you purchase a lead directly from them, your problems will almost certainly disappear.

No CD drivers

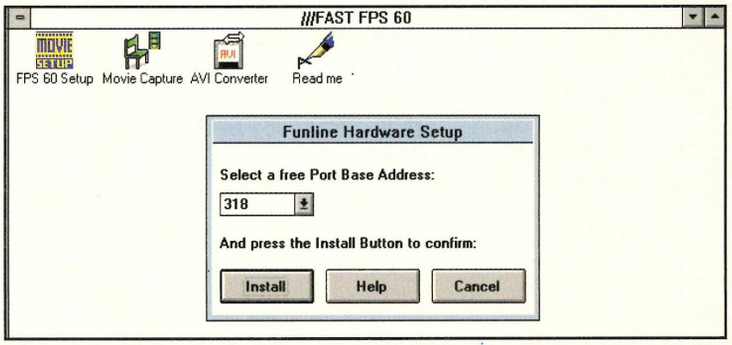
Q I recently bought an Aztec CD drive. Unfortunately, it's not supported under Windows 95. What do I do? This is an emergency.

A Easy peasy! From Windows, select 'Restart the Computer in MS-DOS Mode' from the Shut Down menu. Now simply install the CD-ROM as normal following the manufacturer's instructions. They will tell you how to install the drive from DOS, and once that's done, just reboot, and voila – one CD drive.

Capture Confusion

Q I have a Fast FP/S 60 video capture card. I installed it on my 486 and it worked fine. But, then when I formatted the hard drive, re-installed DOS, Windows and the card's software exactly as before, the card stopped working properly. Any idea why?

A Video capture cards can be tricky to set up at the best of times, and the FP/S 60 is a toughy. It's lovely once you get it going, but that can be no easy business. One thing that all of these cards have in common is a need for an I/O port address, so checking for potential clashes should be your first task. Most video capture cards require you to provide a range of free memory addresses if you have 16 megs of RAM or more. Do this by using the exclusion switch on your EMM386 command in the config.sys file. It will usually take the form DEVICE=EMM386.EXE X D000-D009 or something similar. Refer to your capture card's user manual to determine the exact address range that needs to be excluded.



Almost all video capture cards require a spare I/O port, but finding one is not always as easy as it should be.

No joy joysticks

Q I played TFX on my friend's computer and liked it so much that I bought the game myself. But it just doesn't feel the same on my computer. We both have 486/DX2 machines. I have a Competition Pro joystick and my friend has a Gravis. I know his stick is more expensive, but surely that shouldn't affect the way the game feels to play?

A In fact, your friend's stick might affect the game's performance. You see, he has an analogue stick whereas you have a digital one. Your stick is only capable of sending an on or off signal whereas his can detect how far the handle is tilted, which enables gradual movement changes. An analogue stick is ideally suited to flight sims and driving games whereas your digital one is better for platformers and beat-'em-ups.

Safe refills

Q I have a Canon bubble jet printer, and I was wondering whether or not it's safe to refill the ink cartridges. Canon say I shouldn't, but then they would say that as they charge £20 for black refill!

A You never got the same longevity or performance from refilled cartridges, but then they're probably 75 per cent cheaper. Bubble jets use highly researched ink formulations which refill companies don't seem able to duplicate. If your printer uses an all-in-one head and ink cartridge system try a refill. But if the heads are a fixed part of the printer mechanism, think more carefully as you risk damaging the printer.

Mixed bag

Quirky Quark

Q **I use *QuarkXPress 3.1* and since I've changed to Windows 95, I can't print full screen images anymore. Is it a problem with the Windows 95 Postscript driver or Quark itself?**

A *I believe the problem lies with the program. Quark Systems have just released a Windows 95 upgrade which is free to registered users. You can get it by phoning them on 01483 454397. It supposedly fixes this problem and a few others.*



The new version of Quark fixes a few Win95 problems.

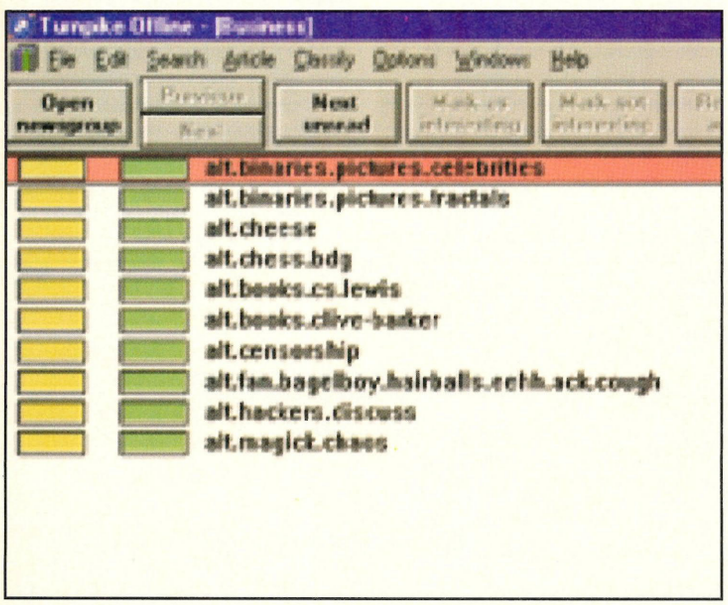
Strange Demons

Q **I've had an Internet account with Demon for many months now, and I particularly enjoy the news groups. More and more frequently of late, I've found great trouble downloading files, especially multi-parters. Some nights I can barely download anything at all. To make matters worse, Demon's help-line is always engaged.**

A *If you're having trouble, the first thing to look at, is your modem. Does the connection hang up occasionally? Can you successfully connect to other services and bulletin boards? If so, you might like to try dialling into Demon on a different line. There are dozens to choose from. Alternately, a different time of day might be an idea.*

Of course, it's worth remembering that just because Demon subscribes to all the news groups, on the network of computers that supplies them, only needs one break, possibly even one computer that doesn't subscribe to them all, and you'll start missing files. There has been some extra turmoil over the Net during February, but things are settling down now.

As for their tech support department, remember that the company has grown at a phenomenal rate, which means that they have many more technical enquiries than they can ever deal with. Weekends are even worse. Grin and bear it, or change to a less popular, less comprehensive provider.



Newsgroup file messages can disappear at many stages along their journey – it's not necessarily your provider's fault if they're not available.

FTP explained

Q **I come across FTP URLs while browsing the Net, yet I can never log onto them with my Web browser. What are they, and how do I access them?**

A *FTP stands for File Transfer Protocol and it describes one of the Internet's data formats. It also describes special sites which act like networked hard drives. In other words you can peruse the drive and transfer files, just like you would with a drive inside your own computer. There are a couple of Windows programs for accessing FTP sites. Both Turnpike and Netscape include FTP handlers, so you can access the files directly from within those programs. Don't forget though, not all FTP sites are fully or even partially open to the public, so don't be surprised if an electronic doorman occasionally refuses you admission!.*

Paint Effects Don't Work

Q **I've been using Photo Paint and have encountered a strange problem. When I load one of their demo TIF images, or even one of my own JPEGs, all of the special effects work fine. However, when I load a GIF, the effects no longer work and are ghosted. I can find no reference to this phenomena in the manual. Have I discovered a bug? You'd think a big company like the maker of Photo Paint would test all its software more thoroughly before releasing it!**

A *Hold on there Bald Eagle, don't go jumping to conclusions! In fact, the fault lies with you, not the program. Many of the effects can only be performed on images that have a 24-bit palette, due to the way they work. Both TIF and JPEG formats come in 24-bit versions, whereas GIF is a proprietary format developed by CompuServe for easy-to-send colour images over the Internet. This format only stores a 8-bit (256 colour) palettes, so if you want to use* Photo Paint*'s special effects functions upon your GIF images, you should first convert it into one of the 24-bit colour graphics formats, then things will work fine again. If you want to save the image as a GIF, you'll need to reconvert it back down to 256 colours before you save, and this will inevitably reduce the quality of the saved image.*

Upgrade or replace

Q **I have a US Robotics Courier HST modem which is upgradeable to 28,800 baud for around £100. However, it doesn't do faxes. Alternately, I can buy a new unbranded 28,800 fax modem for £160 from my local computer shop. What should I do?**

A *Fax modems are very useful, but if you want to receive faxes, your computer has to be switched on – obvious I know, but it may put you off using it whilst you're out. Also you have to ask yourself, do you really need fax capability? How did you survive before?*

Apart from its speed, I would say that the most important feature for a modem is compatibility with your software and other modems. If you're buying an unbranded unit, I'd be extremely wary. Compatibility and reliability are the two areas that the Courier scores best on.

If you desperately need to fax, buy a branded unit, if you don't, the Courier upgrade is a bargain!

Stunted sampling

Q **I use *Samplitude* to record sound samples, and although it's a direct-to-hard disk recording program, I still find that the samples stutter when I replay them. What's the problem?**

A *There are a number of possible problems. Perhaps your hard drive is too slow to cope with the demands you're placing*

DOS

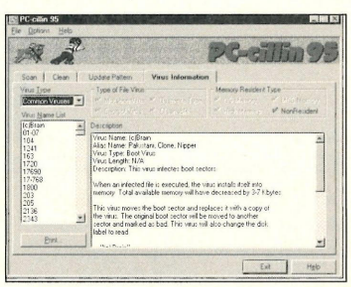
upon it, especially if you're recording high rate stereo samples? If it is fast enough, maybe your computer system is overloaded – do you have a low spec machine, or perhaps you're running other programs in the background?

If that doesn't help, perhaps you can alter Samplitude's *built-in caching. By increasing the buffers, you might improve the situation. Another reader wrote in and mentioned that you can improve the performance of your hard drive across the board by turning buffering off if you're using Windows 95. To do that, go to the Control Panel, open the System icon and click on the Performance tab, then on the File System Button. Finally, drag the Read-Ahead Optimization slider all the way to the left.*

Fear of viruses

Q I have an Internet account, and I often see interesting files on the Web or in news groups. However, I've heard so much about viruses, and the damage they can do, I've not had the courage to download anything yet. How does everyone else cope? Is it just pot luck, or are there positive steps I can take to protect myself?

A *You've touched upon a very real and distressing threat, but like so many things, the reality isn't quite as terrifying as the media picture of it. It's true that there are dozens, probably even hundreds, of viruses floating about out there on the Net, but they're only as powerful as you allow them to be. They don't become active just because you download them. You have to do something with them, and usually this means running an executable file. Sometimes it can be a more innocuous process, like loading a file into a word processor. However, my rule of thumb when downloading unknown executable files, is to keep them on my hard drive unused for a week. In that time, other Internet users will usually have discovered and announced a problem if it's a virus. Viruses are much less common on the Web, but you should still take precautions. If downloading drivers, try to restrict yourself to manufacturer's Web sites, rather than chancing it with data from unknown providers.*



PC-Cillin is an excellent virus killer program for Internet users.

Memories are made of this

Q **I've just installed an AWE32 and suddenly I'm getting Out of Memory errors with a few of my programs running in Windows 3.1. I've got 16 megs of physical RAM with 20 megs of virtual RAM. What is going wrong?**

A *Just because you have a lot of memory, there's no guarantee that you have enough of the right type. Unfortunately, early PC architecture has left a constraining memory legacy which means that all programs have to operate in 640k or less. Your 16 megs can be used to store data which is accessed as needed, but the core program has to fit into 640k. This is called conventional memory. The easiest way to increase the amount of conventional memory is to run a program such as Memmaker, which is supplied with DOS 6.2. Simply go to DOS and type 'Memmaker' then press return and follow the on-screen prompts. If you play games which require a lot of conventional RAM, you might consider investing in QEMM, which gives you far more to play with.*

Rem-ember this

Q **Sometimes, whilst browsing through the autoexec.bat and config.sys files, I come across a REM command. It usually seems to appear after I've added new bits of hardware. What does the command do?**

A *REM is short for REMark, and as it's name indicates, it denotes that the text that follows it on that line is only a personal comment and is not to be acted upon by the command interpreter. If you look at any .INI file in the Windows directory, you may come across lines preceded by a semi-colon (;). This has exactly the same effect as a REM statement. They're frequently added after installing new hardware to prevent previous hardware commands from being executed and possibly conflicting. REMs are used as labels so you can see what changes have been made.*

Clever config

Q **I read that if you press [F8] while the computer boots, you can step through the config.sys and autoexec.bat files one line at a time. When exactly am I supposed to press the key because**

```
C:\>mem

Memory Type        Total   =    Used   +    Free
----------------  --------  --------  --------
Conventional         636K      108K      528K
Upper                  0K        0K        0K
Reserved               0K        0K        0K
Extended (XMS)    15,360K    2,436K   12,924K
----------------  --------  --------  --------
Total memory      15,996K    2,544K   13,452K

Total under 1 MB     636K      108K      528K

Largest executable program size       528K (540,640 bytes)
Largest free upper memory block         0K       (0 bytes)
MS-DOS is resident in the high memory area.

C:\>
```

(Above) It's not enough to have loads of RAM: you'll need conventional memory to load programs successfully.

if I press it too early, my computer beeps at me like crazy and sometimes locks up. If I get it too late, the computer just starts up as normal. I can't believe it's really that hit and miss!

A *You're right, it isn't hit and miss at all. Assuming you're using MSDOS, the correct time to press the [F8] key is when the words "Starting MS-DOS…" appear on the screen. If you press [F5] instead, the computer will skip the files altogether which is useful when you need a clean machine for memory or system intensive applications.*

Here's a tip for power users. If you add a question mark after a command in the config.sys file, the computer will ask whether or not it is to be executed, regardless of whether you press [F8] or not. For example: DOS?=UMB or DEVICE?=C:\WINDOWS\SMARTDRV.EXE.

Keyboard layout

Q **I've had my computer for a couple of years and I finally got around to upgrading it to DOS 6.22. Now the shortcut keys which let me access my BIOS no longer work. What can I do to get them back?**

A *The keyboard layout is stored in a file called keyboard.sys which works in conjunction with the keyb.com file. When you upgrade your DOS, this is overwritten along with the other DOS files. If you have the original DOS disks to hand, you can probably fix things by simply recopying the command across from installation disk 1 to the DOS directory of your computer (the Windows\Command sub-directory if you're running Windows 95). It's probably a good idea to make a copy of the original file first, just in case there's a version conflict. If there is, just replace the copied file to restore your system.*

Ghost DOS

Q **Even when I've just reformatted my hard drive, the computer reports that there's a previous version of DOS still active. It's infuriating because I can't re-install from my DOS disks. Apparently I need an upgrade version. Why does the computer think there's a previous version of DOS on the machine even though the hard drive is completely blank.**

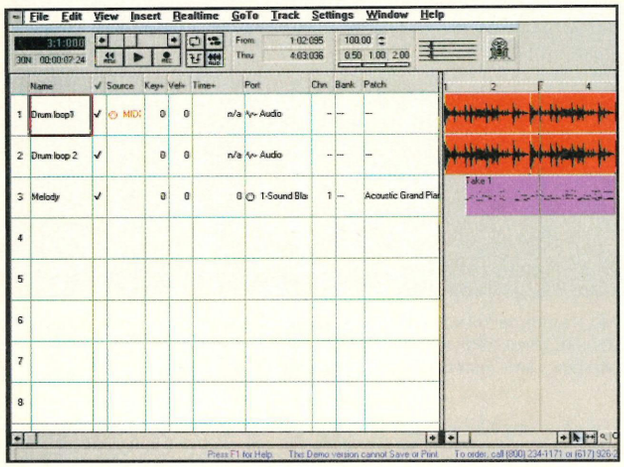
A *You may solve the problem using a special switch to the FDISK command. However, the switch can permanently wreck some drives. If you already know how to use it safely, you'll know the correct command. If not, we'd be inviting disaster to give it out as a cure-all.*

```
Notepad - CONFIG.SYS
File  Edit  Search  Help
DEVICE=C:\WINDOWS\SMARTDRV.EXE /DOUBLE_BUFFER
DEVICE=C:\DOS\HIMEM.SYS
DEVICE?=C:\DOS\EMM386.EXE NOEMS
BUFFERS=15,0
FILES=40
DOS=UMB
LASTDRIVE?=Z
FCBS=4,0
DEVICEHIGH? /L:1,10848 =C:\DRIVERS\SB16\DRV\CSP.SYS /UNIT=0 /BLASTER=A:220
DEVICEHIGH? /L:1,26928 =C:\DRIVERS\SB16\DRV\CTSB16.SYS /UNIT=0 /BLASTER=A:220 I:5 D:1 H:5
DEVICEHIGH? /L:1,10416 =C:\DRIVERS\SB16\DRV\CTMMSYS.SYS
DEVICEHIGH? /L:1,1204B =C:\DOS\SETUER.EXE
DOS=HIGH
REM ** FILES=30
SHELL=C:\DOS\COMMAND.COM C:\DOS\  /p
DEVICEHIGH /L:1,4560 =C:\WINDOWS\IFSHLP.SYS
STACKS=9,256
DEVICE = C:\CDD\MCD.SYS  /D:MP_CDROM
```

Use REM or a semi-colon (;) to annotate your batch files.

Getting to grips with...

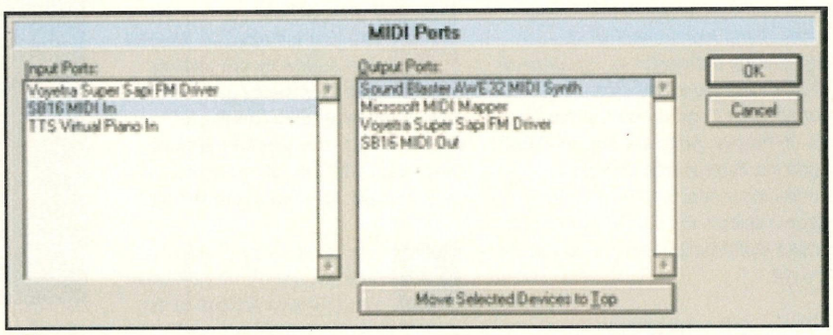
Cakewalk Pro Audio



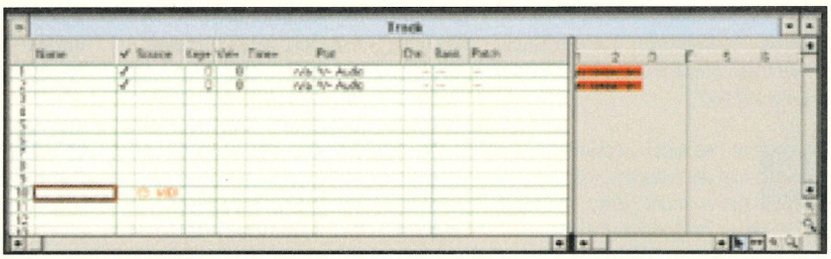
A sequencer is the musical equivalent of a word processor, in that it enables you to enter and edit music. However there's one big difference: you can enter music by playing it on your MIDI keyboard, rather than having to type it in note by note.

On this month's CD Review you'll find a demo version of *Cakewalk Pro Audio,* the superb American sequencer. The program not only helps you record MIDI music, but also enables you to record and incorporate sound samples. This new version combines a sleek and well-designed interface with powerful and flexible editing tools. Whether you're a professional musician or a total novice, you'll find that *Cakewalk Pro Audio* caters to your requirements. Beginners can record simple single-track MIDI performances, whereas experts can use all 256 tracks, complete with stereo samples, to create a musical piece de resistance.

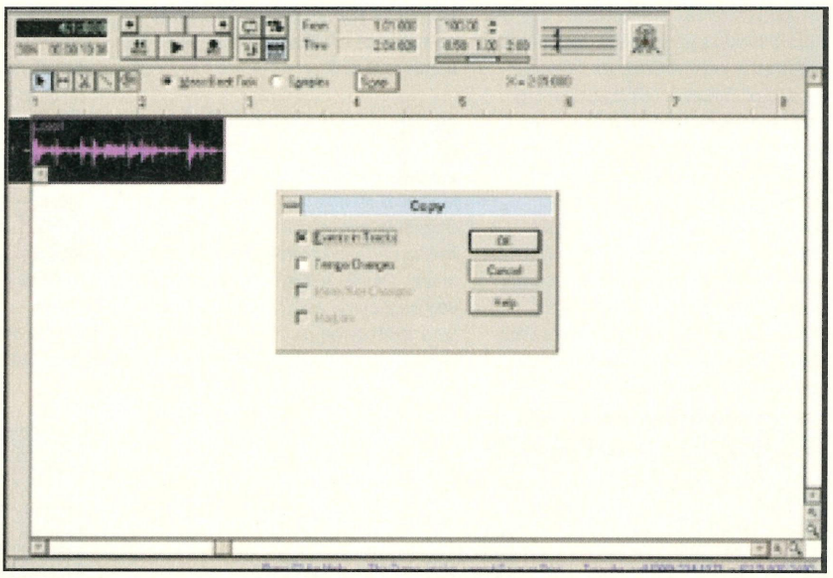
To use the program you'll need at least an MPC3 sound card, or a MIDI interface with a suitable MIDI instrument attached. To complete the tutorial you'll need a sound card capable of recording samples, and a MIDI instrument or controller. You'll also need a pre-recorded drum loop sample, although any sample will do at a push. The purpose of this tutorial is to give you a whistle-stop tour of both the program's most commonly used features and sequencing and sampling in general. The demo version is fully functional except for the save and print features, which have been disabled. *(MB)*



1 Before you can do anything, you'll need to install the program. Once it's installed, you'll be asked whether or not the program should hunt for and assign your sound card. Click Yes, then shut down and restart Windows to install the program fully. Go to the *Cakewalk Pro Audio* window and double-click the Demo icon to load the program. Go to the Settings menu and select MIDI Devices to configure the MIDI part of the program. Select the MIDI In and Out devices you wish to use and click OK.



2 We're going to load a drum loop which will form the backbone of our song. Click in the Name column beside the number one to select the first track. Now select Wave File from the Insert menu and select your pre-recorded drum loop. Click OK to load the sample. You'll see it appear as a red bar in the Clip pane to the left of the screen. Move the cursor into the Clip window and press the right mouse button. In the menu that appears choose View options, then select Clip Contents and click OK. The red bar now shows a miniature representation of the sample it holds.



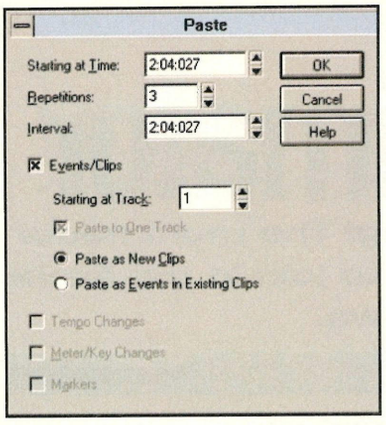
3 Ensure your drum channel is selected and choose New|Audio from the View menu. You are taken to a dedicated editor where you can alter the sample. Start by clicking one of the two magnifying glasses by the horizontal scroll bar to alter the horizontal magnification. Keep clicking until your sample fills about a quarter of the screen's width. Now click on the sample to select it and choose Copy from the Edit menu. Ignore all the options and click OK to copy the sample into memory.

CD REVIEW

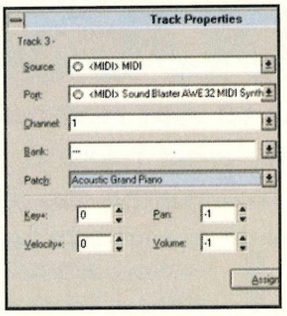


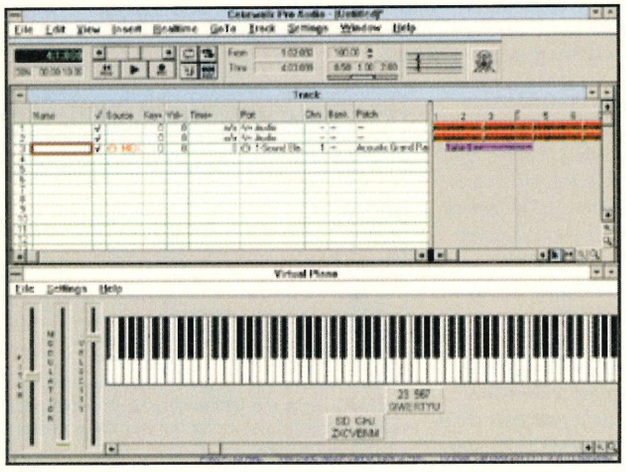
A save-disabled demo of *Cakewalk* is on our CD.

4 Now we're going to re-paste the sample lots of times to form the bass part of our song. Select Paste from the Edit menu. The interval value represents the space allowed for each sample. The program works it out from the sample's duration. Copy the number in the Interval requester to the Starting Time requester. The first copy of the sample will be pasted where original sample ends. Set the number of repetitions to three, then click OK. If you used a stereo drum sample, repeat steps 3 and 4 for track two (the other half of the sample).

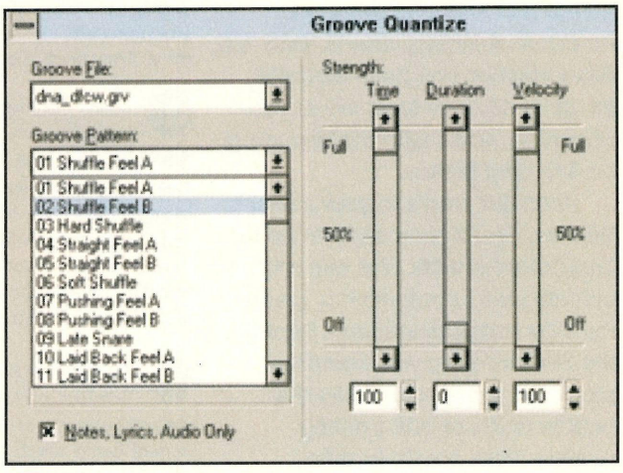


5 Return to the main editing screen, then select track three. We're going to record some MIDI music now. Double click the Chn column to assign a MIDI channel to your recording. In the window that opens, you can specify both the MIDI channel and the instrument (patch) that will be used, as well as the actual MIDI port. Choose settings appropriate for your card or instrument, then click OK. By this stage your MIDI controller keyboard should be plugged into your computer.

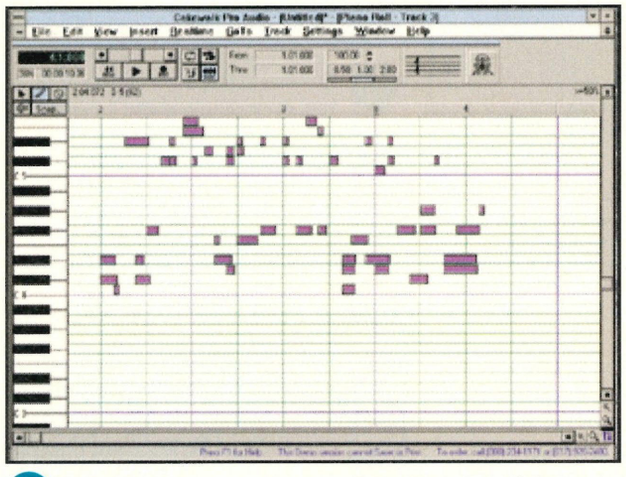




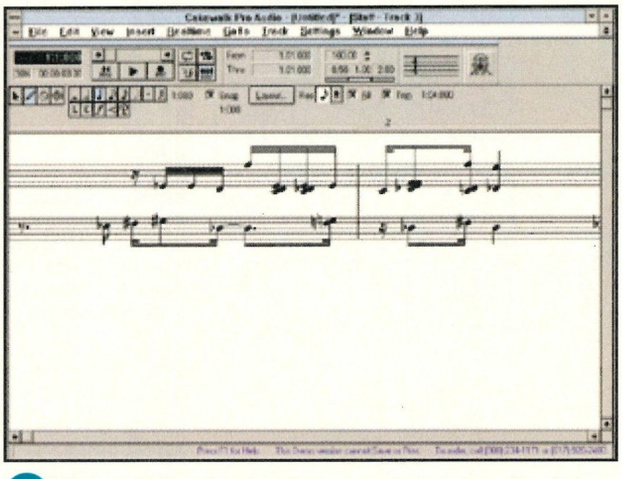
6 Go to the Settings menu and choose Metronome. Set the count-in to one and select Use PC Speaker. Click OK to return to the Edit screen. Now go to the transport controller at the top of the screen and click the Rewind button to ensure you start recording from the beginning of the song. There'll be a four-beat count in, then the tune begins and you can start playing. Press [Space] to stop recording. Your MIDI data appears as a pink rectangle. If you're not entirely happy with your performance, select it, delete it, and keep recording until you're satisfied with your track.



7 We're going to quantise the music. Quantising can correct the timing of badly performed music and alter the feel of decent recordings. Select the data you've just recorded by clicking on it in the Clip window. Choose Groove Quantise from the Edit menu and select the dna_dfcw.grv Groove File. You can now choose from a range of groove patterns. Choose the one that best fits the music you've just recorded, then click OK to apply it. If the effect isn't pronounced enough, go back to the Groove requester and decrease the resolution to an eighth or even a quarter note.



8 Let's just take a moment to look at the Piano Roll. Click the Track Name column of the MIDI track you've just recorded, then choose New|Piano Roll from the View menu. You may need to scroll the display, but you should be looking at the piano roll which contains lots of pink rectangles. Each one represents a note – the wider it is, the longer the duration. Its vertical position represents its pitch, while its horizontal position tells you when it starts playing. The Piano Roll is like a magnified version of the Clip window in which you can edit your music on a note-by-note basis.



9 To round off, we'll look at the program's Notation editor. Select New|Staff from the View menu. The display switches to reveal a single track of music in conventional notation. You can use the arrow cursor to reposition the notes; the pencil enables you to add new ones. This is where non-musicians can enter entire tunes, one track at a time… if you have the patience!

That's the end of our lightning tour around *Cakewalk Pro Audio*. We've only just scratched the surface, so feel free to explore further.

Getting to grips with...

AutoDesk Animator Studio

If you want to get noticed, get moving! The multimedia explosion is everywhere, and here's your chance to join in the excitement with AutoDesk Animator Studio for Windows.

CD REVIEW

Have a go at *AutoDesk Animator* with our CD-ROM













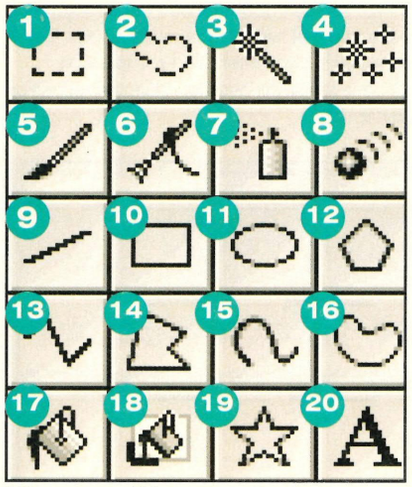


Twist and shout, spin us all about. These frames are taken from the first of our three example animations. Follow the step-by-step instructions (right) to create a sequence and animate the *PC REViEW* logo. You could do the same thing with any other logo or your name.

This month's CD Review contains a fully-working version of the 2D animation, sound and scripting program *AutoDesk Animator Studio.* Only the Save function has been disabled, so all its creative tools are at your fingertips, along with a tremendous on-line help feature.

Animator works in your current Windows configuration right up to TrueColour modes. You can add soundtracks to animations, create multi-format presentations through the Scriptor program, compose your own sequences using the built-in tools, or edit existing movies. Here are three quick tutorials to help guide you around the basics of *Animator. (PL)*

The tool palette explained...



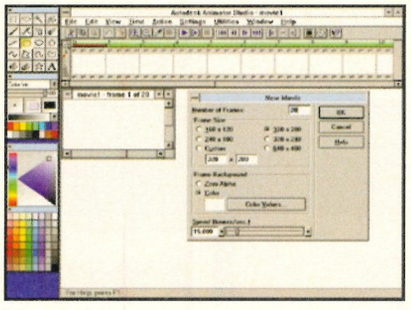
1 Marquee	Makes a rectangular selection.
2 Lasso	Makes a freehand selection.
3 Magic Wand	Selection by similar adjacent pixels.
4 Separator	Selects all pixels of a particular colour.
5 Paintbrush	Draws freehand strokes.
6 Airbrush	Simulates a real airbrush.
7 Spray	Paint with current brush and ink.
8 Sprite	Paints on a movie with a sprite.
9 Line	Draws a single straight line.
10 Rectangle	Draws a rectangle or square.
11 Ellipse	Draws an ellipse (oval) or circle.
12 Polyline	Draws connected straight-lines.
13 Polygon	Draws a free form closed polygon.
14 Curve	Draws a spline curve.
15 Closed Curve	Draws a closed spline curve.
16 Star	Draws a star with definable points.
17 Polygon	Draws a regular polygon.
18 Text	Text in selected font, size, and style.
19 Flood Fill	Fills an area with the current ink.
20 Edge Fill	Fills the edge of area with current ink.

Starting from scratch

Animator has all the tools you need to create an animation from scratch – here's how it's done. You'll learn how to create a sequence, animate text and objects and change the properties of a moving item during a sequence.

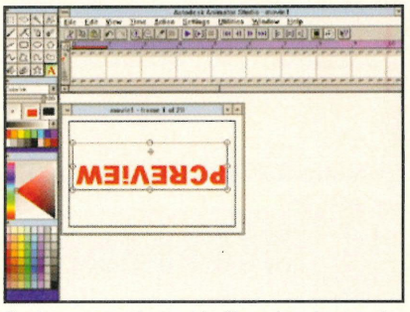
1 Select File|New from the pull-down menu to open up the New Movie requester. Choose a resolution of 320 x 200 and a length of 20 frames, using the default background colour, then click on OK. Select Time Mode from the toolbar controls (click the clock-face icon). If it's not currently selected, choose Colour Ink as the ink type, and a foreground colour of red.

2 Click on frame one. Left-click on the Text Tool, and drag out a letter-box-shaped rectangle on the enlarged view of the current frame, which is displayed below the film strip. Enter the words 'PC REViEW' as shown, at around 40pt. Scroll along the film strip display, find the final frame and click on it. Now it becomes the enlarged frame. You should see your text in the same position as in the first frame.



When you create a new movie you can specify the number of frames, resolution and background colour. Movie length and screen size may be restricted by your PC's memory and graphics capabilities.

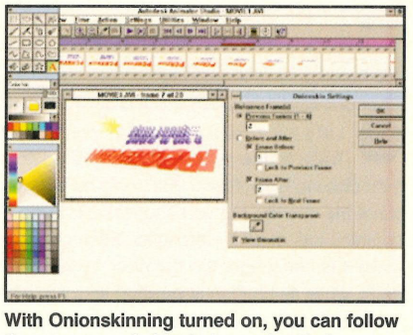
3 Go back to the first frame by selecting it from the strip. Select Flip Horizontal from the Action pull-down menu, then Flip Vertical. If your text isn't centred, use the mouse on the centre control node to position it correctly. The text is now upside down and back to front at the beginning of the sequence. Check on the motion you just programmed by clicking on Action|Preview motion to see a wire frame run-through of the animation, which ends with the upside-down text the right way up. Click on Action|Render (or simply press the Return key) to render the sequence. The first element of your movie is now complete.



On frame one, the text is flipped and rotated, ready to be animated into an upright position on the last frame.

4 For the next set of movements, choose a yellow colour, select the Star shape from the drawing tools, and set the Ink Strength slider to 23 per cent. This makes the image semi-transparent. Make sure you're on frame one, then draw a small star in the top left of the screen. Go to the last frame, move the star above the 'i' on the text, and set the ink slider to 100 per cent. Flip the star horizontally and vertically as you did with the text, preview the sequence and Render.

5 Go back to frame one. Select blue from the palette and add the final text in a smaller size than the main item (try 19pt). Place it at the top right of the frame and Flip Vertically. Go to the last frame, change the colour to black and move the object to the bottom left. Select Stretch from the Action menu and re-size the text so it will grow over the sequence. Render the animation, play it and enjoy it to the full.

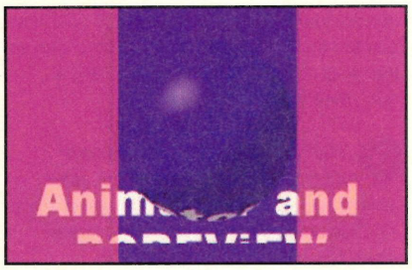


With Onionskinning turned on, you can follow the progress of objects by seeing their position in sequential frames. In effect, you look into the future or past of your movie.

Better than scratch

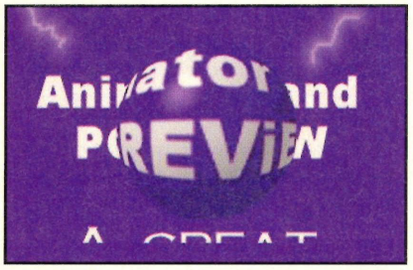
Move transparent shapes, scroll text under a magnifying glass and add flashes of lightning with our second tutorial, which introduces time slicing and masks.

1 Set up a new 30-frame movie and select blue as the background colour before you close the New requester. Make sure frame one is the active frame. Activate Time mode (click the clock face, remember?). Double-click on the Text tool, and ensure Align Centre is checked on the requester. Click on the Time Action tab and select Scroll as the titling effect, Up as the direction and Scroll by Pixel.



The opening curtain effect is produced by drawing semi-transparent rectangles which glide towards the edges of the screen. This sequence requires eight frames.

2 Choose white as the foreground colour, click the Text tool and drag out a rectangle to almost the full size of the frame. Type in four or five lines of large text. Note the current text frame size is shown as a grey rectangle, so you can gauge how much text is 'off-screen' and available for scrolling. Render the sequence. When it is played back, the text will scroll up the screen throughout the animation.



The magnifying lens effect is added using the *KPT* Glass Lens Soft filter. The scrolling text bulges towards the viewer as it passes underneath the lens.

3 To add the magnifying glass effect, choose Filter Ink from the Ink type menu. Go to the Settings pull-down menu, and activate the Ink Properties requester. Browse to your installation directory and find the KPT sub-directory. Choose Glass Lens Soft from the KPT (*Kai's Power Tools*) 2.0 filters, then close the requester.

4 Ensure the ink value is 100 per cent, then use the filled-oval drawing tool to draw out a lens shape in the middle of frame one. Render the sequence and play it back to see the amazing effect as the scrolling text is now refracted through the bulging glass lens. To add opening curtains to the beginning of the sequence, set the end of the current Time sequence to frame eight by clicking and dragging the marker indicating the last frame leftward to frame eight (you'll find the marker on on the purple-pink film-strip-style Time bar).

5 Go to frame one. Select Colour Ink from Ink type, choose red as foreground colour, and set the ink value to 50 per cent. Enlarge the current frame view by clicking on the Maximise button at top right of the frame view window. This enables you to create shapes which overlap the current image.

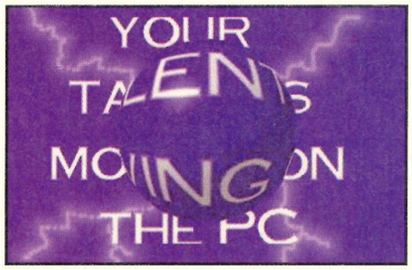
6 Using the filled rectangle tool, draw a shape which half covers the left of the frame. Go to frame eight and move the shape horizontally leftward off the image. Render this portion. Remember, the process will work over only the first eight frames because we've shifted the end marker from frame 30. Repeat this process, but with the rectangle on the right-hand side of the image. After Rendering, click and drag the end marker from frame eight back to frame 30. It's time to add the lightning.

7 First we have to protect parts of the image we do not want the lightning to appear on, so a Mask is needed. Go to frame eight and set this as the start of the time sequence. (Tip: if you right-click in the Time bar, you can access quick menu selections to help with this feature.)

8 Select Mask Ink from the Inks type and use the filled oval to draw out a shape to cover the lens bulge. This is the portion of the animation we are protecting. Use the oval's editing handles to position the mask accurately, and then Render. The Mask can be turned on or off by clicking on the toolbar Mask icon.

9 For the thunderbolt, call up the Brush requester by double-clicking on the brush tool. Select a wide one, but alter its profile so the 'point' is thin and the outer edges are wide and semi-transparent. One of the pre-built shapes shown at the bottom of the requester fits the bill nicely. Make frame seven the new starting frame of the sequence by dragging the sequence start marker rightward (as you did in reverse to create a new end point).

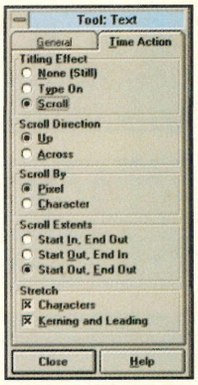
10 With frame seven active and Ink Colour set to white, with a value of around 55 per cent, hold down the Shift key and use the Paintbrush to draw lightning streaks. Holding the Shift key allows you to let go of the mouse button, but still add lines which will be incorporated into the length of the animation. This way you can draw multiple forks. Render the effect. Add more lightning coming from different points along the top of the frame from frame seven and render. Because the Mask is defined, the new drawings leave the magnified text intact, making it appear the lightning is in the background. Ka-boom! At 25 frames per second, you only need another 134,970 frames to make a 90-minute movie.



A Mask has been added to protect the central lens, enabling us to add lightning 'behind' it. All you need now is a few cymbal clashes, a good hearty drum-roll and a voice-over from James Earl Jones.



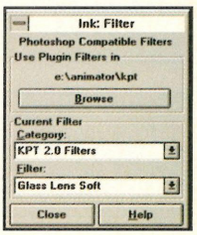
Coming to a cinema near you: *PC REVIEW III*. Watch the editor commission a feature! Gasp as the art ed lays it out! Look away in horror as the prod ed writes another caption! Perhaps not.



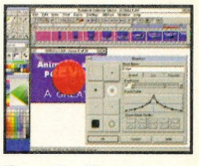
In the Text tool's Time Action requester, set the Titling effect to scroll on a pixel basis. This will move text up the screen as the animation progresses.



The text editing box shows how much of your input is off the screen, ready to scroll. The change of font and size is achieved by highlighting the text and altering its attributes from the pull-down menus.



The first time you use the Filter Ink requester, Browse to the directory where you installed Animator, find the KPT sub-directory and click on a plug-in. The program will know where to look next time you use an effect.



From the Brush requester, select a large brush with the peaked profile as show here for glowing lightning. Note the Ink value is set to 50 per cent, so the flashes are semi-transparent and the background shows through.



Getting into space

This lengthy animation uses images included with this month's CD Review. You'll find them all in the /grabs directory on the CD-ROM. If you don't have enough memory to complete the project in one go, you can try each stage independently to learn more about the power offered by Animator.















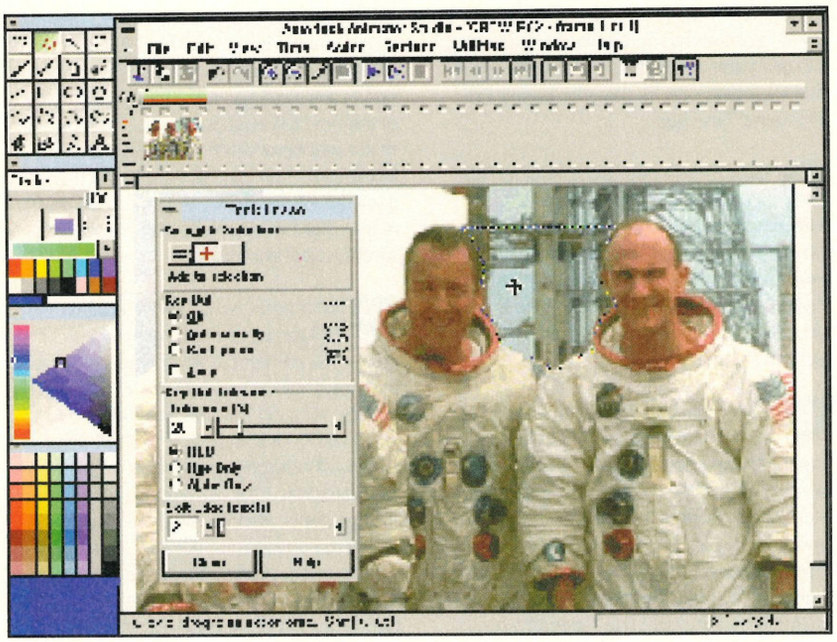






They stood, they smiled, they blasted off atop the Saturn V – and then it all went to worms. Space travel is no walk in the park.

All Images courtesy of NASA.



Use the Lasso tool to trim the background from the image of the astronauts. Note that the + sign is highlighted, indicating that you can add to the current selection.

1 Open the Crew.pcx image. Select white as the background colour, Colour Ink at 100 per cent, and use the Lasso cut tool to trace the background around the heads of the astronauts bit by bit. Press the [Del] key to remove your defined portions, which should include the sky and gantries. Use the Magnify tool to zoom in on tricky areas.

2 To create the starfield image, go to File|New, select white as the background colour and accept the size of 320 x 219 (which is the same as the crew picture). Make sure there is a '1' in the frames box. Double-click on the brush tool to access the Properties requester, then choose a size of 41 pixels, and the pointy profile (bottom right) to give a sharp dot fading to transparency.

3 Using a mixture of blues and the painting tool, dab a number of stars around the new frame. Selecting a one-pixel brush, add several more dots at random. Use [Ctrl][A] to select the entire frame and [Ctrl][C] to copy it. Click on the Crew picture to activate it.

Now you're going to create a mask. Begin by using the Magic Wand tool on the white background which you cleared previously. If you find parts of the selection seep into areas you don't want, use the single-pixel brush and a grey colour to seal off the open areas on the image and try the wand again.

4 The entire white background should now be selected. Invert the selection by pressing the tilde (~) key. From the Ink selection panel, choose Mask Ink, and press [Ctrl][I] to apply it. The trio of men should now be tinged red, showing they're protected from any painting actions. Press [Ctrl][D] to deselect the selected area.

5 Choose a movie length of 15 frames from the Settings menu. Click on the Time mode icon, then click on the Mask button to toggle protection on. From the Edit pull-down, select Paste and the image of your star field will appear behind the red astronauts. Click on the last frame to activate it, and Maximise the image. Choose Action|Stretch, and drag out the ghost-frame surrounding the starfield image to around twice its original size. Now Render, and the stars will expand during the animation.

6 Minimise the current animation frame to reveal the stars picture, which you can close. Load in the CD image Moon.pcx. Select and copy it using [Ctrl][A] and [Ctrl][C], then click on frame 11 of your sequence. Drag the Time bar start point from the top of frame one to frame 11. Click on the Mask tool to turn it off. Paste the moon image, and with Colour Ink selected in the ink type box, set the ink value to 11 per cent. Click on frame 15, and set the ink value to 100 per cent. Render, and the partially-transparent image of the moon will be drawn over the end of the sequence until it becomes the only image on frame 15.

7 With frame 15 (the last frame) selected, add more frames to the animation. To do this, select the Settings|Movie Length requester and increase the frame count to 22. This adds a further seven images to the sequence. The new frames are based on the current active frame – the moon picture.

8 Close the Moon image, and load in the CD file Title.pcx, which has the Apollo XIII text on it. Select the whole image as before, copy it, and move back to the animation sequence. Slide the Time bar to begin at frame 15, and select 15 as the current frame. Paste the title image selection, and set the Colour Ink value to zero. Click on frame 22, and set the ink value to 66 per cent, then Render the sequence.

9 With frame 22, showing the lunar surface, as the current frame, add another eight frames as you did earlier (Step 7). Close the title image, and load in the small one called Miniship.pcx. The background is already white, so select the Magic Wand tool and click it on the background at the top left. You will find that a small portion in the lower right corner is not selected. To overcome this, double-click the Magic Wand tool icon and set the properties to the plus (+) symbol. This will add to the current selection, so click anywhere in the unselected portion.

10 Now invert the selection by pressing [~] and copy the lunar module image. Click on a frame from the animation, select and maximise frame 23, slide the start of the Time bar to frame 23 and paste the lander image. Move it out of the frame at top left, and select Action|Stretch. Using the mouse and looking at the readout at the bottom right of the screen, shrink the image to 20 per cent. Activate frame 30 and move the ghosted image box bottom right out of frame, stretching it to 200 per cent. Render the sequence. It will show the craft flying towards the viewer, then going out of shot.

11 Select frame 30 and add 15 more frames based on it. Select red as the foreground colour, click on the text tool, and draw out a box on frame 30 slightly above the main image text. Type in the text so it just fills the shape of the box. Select a colour ink value of 25 per cent, and slide the start of the Time bar to frame 30. Click on the last frame and change the ink value to 100 per cent and render.

12 Congratulations. Sit back and enjoy the fruits of your labour… and start planning your next animation. Now you've mastered the basics, the only limits are your imagination and your patience.

The Apollo 13 thing has been done before, so don't bother rendering another 134,955 frames. Incidentally, the rocket sequences in Ron Howard's movie were produced on a computer. You can achieve anything if you get really serious.

CD REVIEW

Fully working demo of *Dream On 3D* on the disc.

54

Getting to grips with...

Dream On 3D

Experience the fascination of creating your own 3D universe with Dream On 3D.

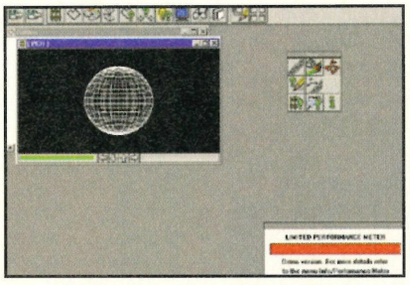
It's not a rendering package. *Dream On 3D* makes no pretence of being such unwieldy software. What you've got here basically, is a toy, and best of all it's priced as a toy. For under £40 you can possess your very own Genesis creation tool.

Whilst this may make *Dream On 3D* sound less than ideal, if you take that stance you're missing the point. This great program allows you to play in a true 3D environment without all the hassle of knowing about light sources and texture maps, for example. A playground for the mind, *Dream On 3D* empowers you to create your own fantasies and then visit them.

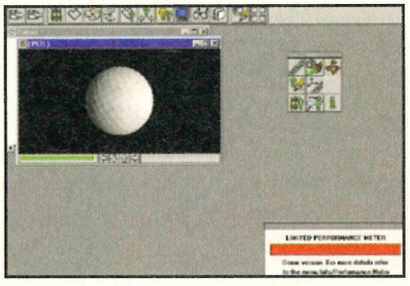
By providing you with instant accessibility *Dream On 3D* removes the most intimidating layer found in 3D rendering packages. Rather than having to repeatedly go through a design-render-tweak cycle you can see what's going on in real time. You can immerse yourself in your newly created world instantly to see how things are going. This allows you to make changes to your creation on the fly, resulting in the possibility of seamlessly altering your work as you develop it.

The removal of the high-powered and processor intensive options of 'real' rendering packages makes *Dream On 3D* much more responsive than anything else you'll encounter in the field. Keeping the number of high-end options available at a low price leaves your PC more time to do other things. The most important 'other thing' *Dream On 3D* does with this free time is to provide you with real-time updating of your projects.

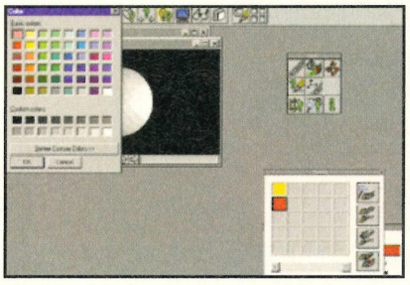
Your first experience of *Dream On 3D* may leave you a little confused and bewildered. The program does its upmost to only let you have the options relevant at any one time. Everything you see is icon driven. Without a manual this can prove hard going. Luckily the online help is excellent so you should be able to manage. Whenever you position your mouse over an icon a friendly little explanation of the function appears at the bottom of the screen making things even easier. Dive in, experience real 3D right now.



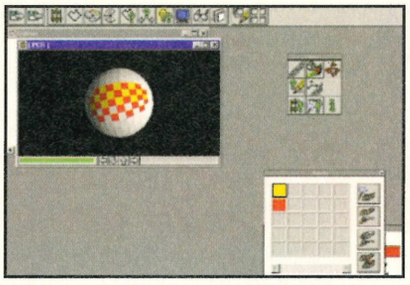
1 Click Outline. Move the Outlines toolbox away from the Outline. Click Object Generation. Click the sphere. Type PCR into the Name edit box. Click OK. A sphere!



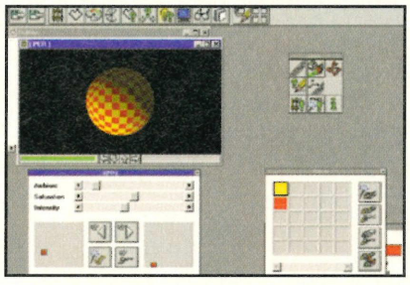
2 Click the Display modes icon Views. Click Drawing mode for solid shading. Move the mouse over the PCR window. Right click and move the mouse. The ball moves around.



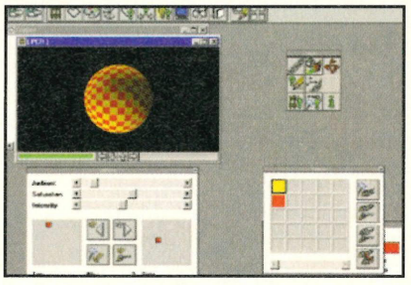
3 Click the Palette tool. Click the top icon in the new toolbox that appears. Click Yellow and OK. Repeat selecting Red. Now you can put paint on the ball you've made..



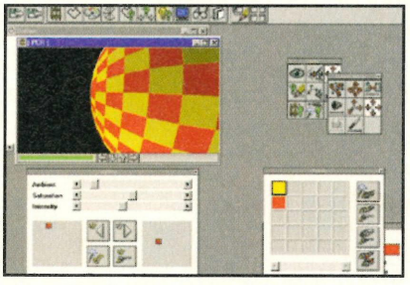
4 Colouring the ball is simple. Just plop the colours you want onto the polygons of the sphere. Click on the polygons that make up the ball and they are coloured.



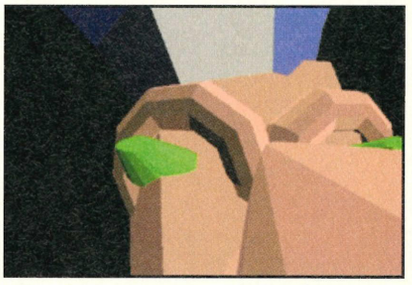
5 Click the lighting tool. The two red blobs in the lighting toolbox represent the current position of the single default light. Move these and the light source moves.



6 Click Create new light, this is the only one available at this time. Move the light. You can alter its strength using the slider bars. Tweak other lights using the video-style icons.



7 Click Function groups in the Views toolbox. Click Observer. A right click and drag now lets you zoom in and out. Click the current action icon. Save now.



8 Select Open from the File menu. Load POPEYE.D from the SCENES directory. Click the View tool. Select Popeye and OK. Explore the other scenes we've bought.



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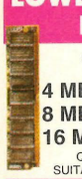
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The Mail The Mail The Mail

Looking for Print Artist? Hacking Command and Conquer? Want to save the trees? Enjoy shareware? Crave a digital dog? What a mixture of topics we have in amongst our letters page this month...

Seeking Print Artist

I'm trying to track down a program called *Print Artist 2*. It appeared as demo on *PC Review*'s cover CD-ROM a few months ago and it's just the ticket for our community centre. Ideal for all our poster needs – except of course the demo won't print. You creditted Maxis with the demo, but they don't know who's shipping the full version. Can you help?
Gary Robertson, Aberdeen

We've had loads of letters about *Print Artist*. There was a lot of confusion over this software – it was designed by a US company called Pixellite Inc, under an affiliate relationship with Maxis. Just before the product was due to ship, Pixellite got into financial difficulties and was bought by Sierra On-Line. *Print Artist 1* and *2* are lost in space right now, but the developers are now up to version *3*, which Sierra is planning to release on May 15th for a low, low introductory price – they're being pretty cagey at the moment, but expect it to be much less than £50. We'll be reviewing *Print Artist 3* next month.

Slapped wrists

I've heard that there's a program that lets me hack into *Command and Conquer* missions and create my own. Have you heard of it and if so where can I get it?
Justin Smith, Southampton

The level editors in question are far from legitimate. Whereas Id always encouraged users to design their own levels for *Doom*, Westwood Studios are far from pleased that hackers have been let loose on their game – particularly as the *Command and Conquer* mission discs only shipped this month. We suggest you steer clear of any such software – there's no telling what it could do to your setup, saved games or installed code on your hard disk.



The new missions discs for Command and Conquer are coming out, but don't use the bootleg mission editor that's floating around the Net.

Paperless society?

As many of your readers may have noticed the current trend among the big software houses is to use on-line manuals in place of the genuine paper objects.

While having numerous advantages, such as search features, no need to use up valuable shelf space, the on-line manuals do have a number of disadvantages. For instance they can take up quite a bit of hard disk space and sometimes you have to juggle between the application you're using and the on-line help each time you wish to use its advice.

But one of the most serious and probably most overlooked problems is that of piracy. One of the traditional deterrents from using pirated software was always the lack of manuals and technical help.

With on-line help this is now not the case. So for the cost of 10 floppies you can have a brand new piece of software complete with all its manuals. Has this point been overlooked by the softies themselves or will they use it to charge more for their products with the new argument of increased loss of revenue through piracy?
Nick Carn, Bognor Regis

We're sure companies don't count on piracy as an excuse to put prices up. It's not a chicken and egg situation. As a rule software houses will generally do whatever they can to make piracy harder rather than easier. While we agree that manuals have a good tactile feel and appear to add lots of value, ultimately we support the software houses' moves to put manuals into digital format and supplying them with the software rather than printing them on paper. After all it's saving forests and giving you faster access to your information in the bargain.

Sunny and Share

Shareware. Well, where shall I begin? After eight long Atari ST years steadfastly following the author's instructions to the letter, I can count on two fingers the number of times I got support after parting with the asking fee for a shareware product. Even a certain Atari-endorsed club fanzine shouldered aside two years of my begging before I received what I had paid for. So what about the PC world? A breath of fresh air. Latest upgrades/ drivers uploaded for FTP by the masses, FAQ Web pages and sensible all functioning active demos limited by time period, so you can save those first awkward steps toward your masterpiece, then just load them into the full version.

I'd almost totally given up on shareware. Shouldn't support should be both ways? It used to be 'you pays your money, you takes your chance'. Now? I pays my money.
Kenneth Magras, via the Internet

Yup. We at *PC Review* think shareware is great too. Registering your versions isn't really down to generosity and honesty any more, it's down to whether you actually want to get the most out of your programs.

Woof.

I really liked the *Dogz* demo on last month's issue and I want to know where I can get hold of the finished version. Is it available in the UK yet?
Thomas Sperling, Kent

Distribution's just been fixed via Mindscape (tel 01444 246333). We'll be reviewing the final version next month.

Anybody out there?

From next month our letter of the month will recieve a cool £50 – so if you've got a burning issue you want to get off your chest, make a buck while you're at it! Alternatively just write in with any question you want answered. If you wrote to the old *PC Review* address then don't hold your breath waiting for the letter to be printed as we've moved! Write to us at The Mail, PC Review, Future Publishing, 30 Monmouth Street, Bath, Avon, BA1 2BW. Or send the editor an e-mail on jbinns@futurenet.co.uk.



Dogz. One of the only things keeping us sane this month.

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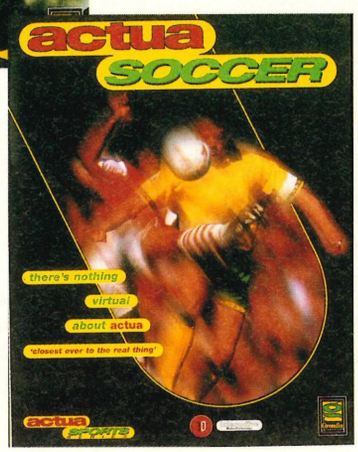
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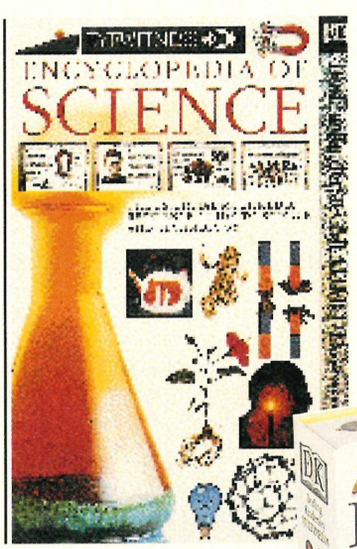
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Speed kills. But in Fatal Racing it could be all that saves your life as you race and jump in this mad driving game.



Actua Soccer

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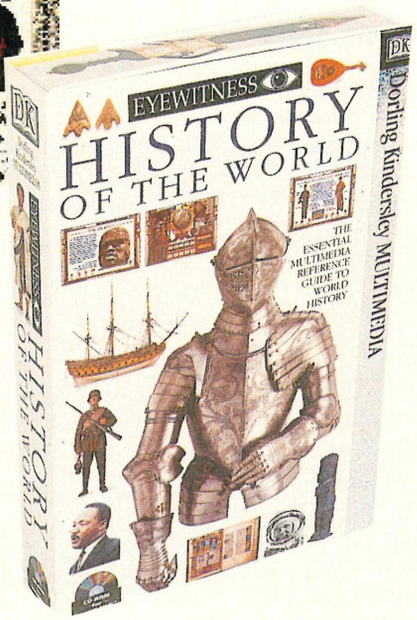


Science

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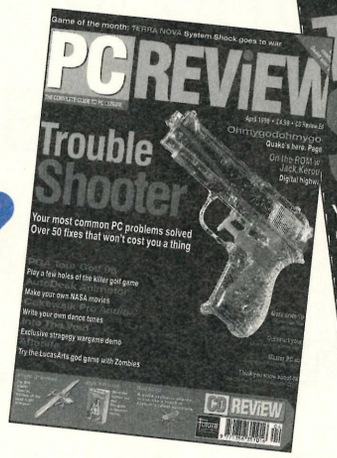
History

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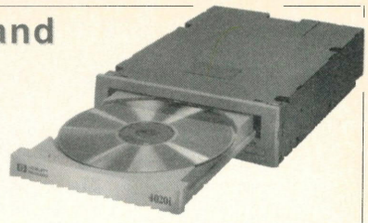
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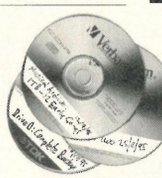
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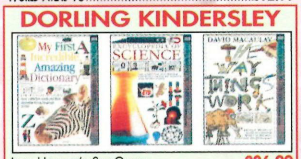
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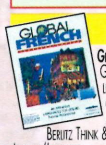
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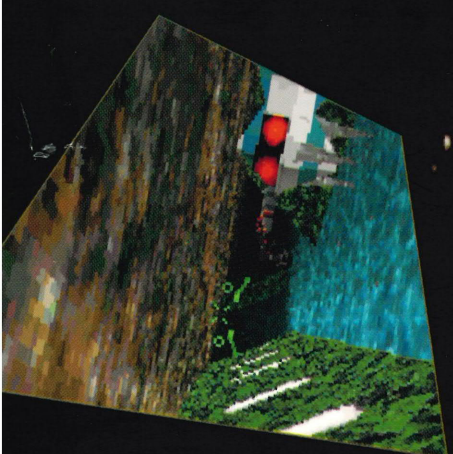
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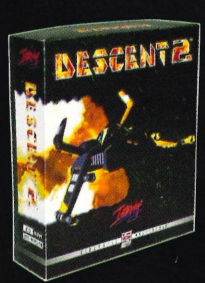
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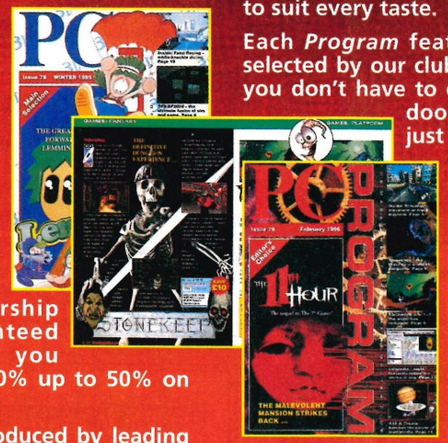
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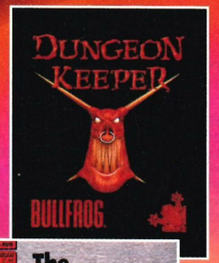
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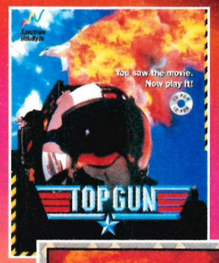
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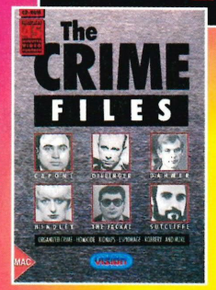
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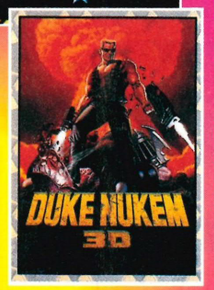
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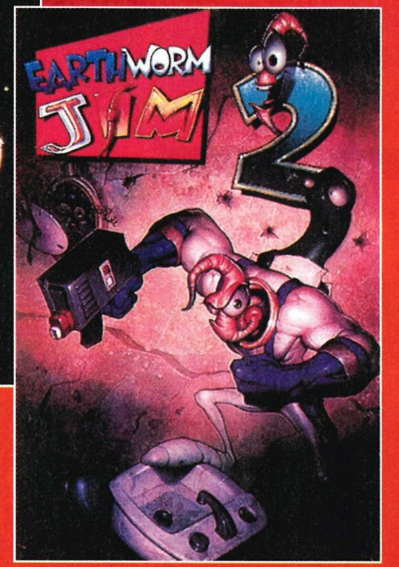
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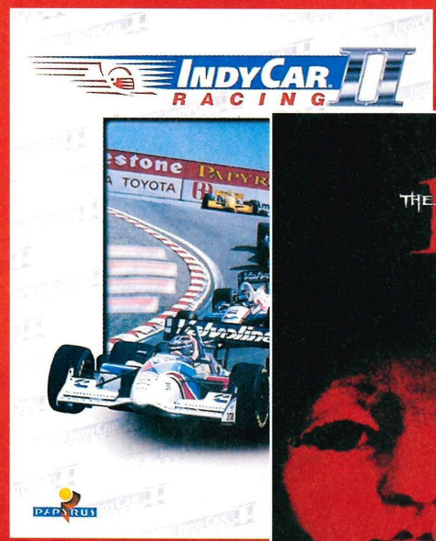
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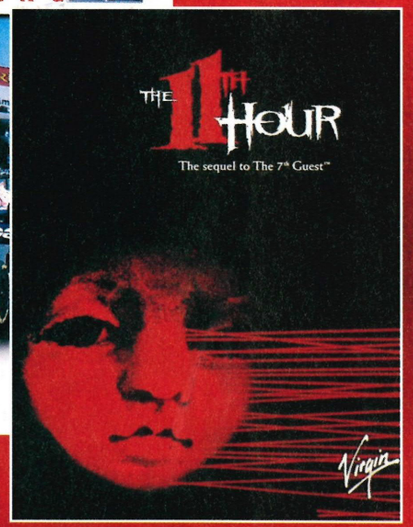






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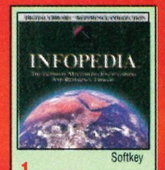




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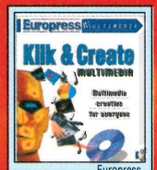
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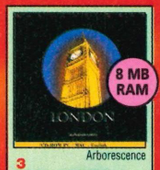
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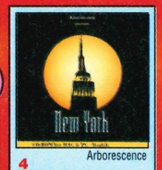
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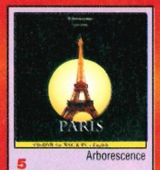
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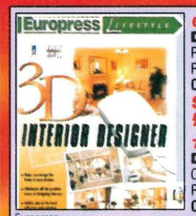
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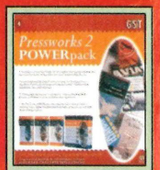
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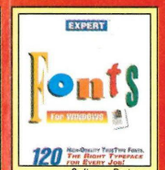
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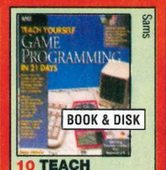
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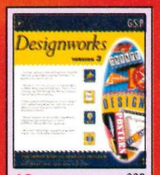
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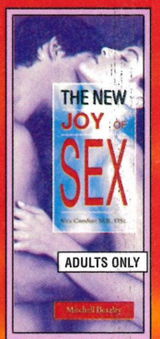
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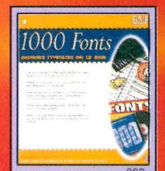
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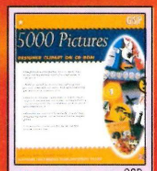
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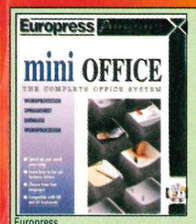
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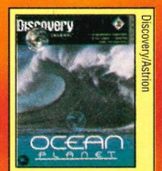
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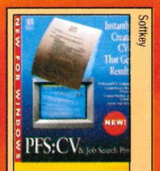
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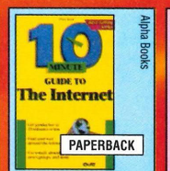
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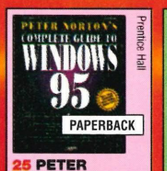
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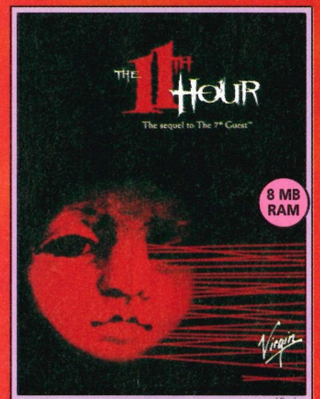
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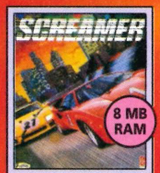
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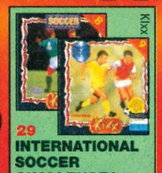
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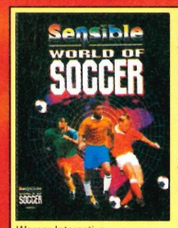
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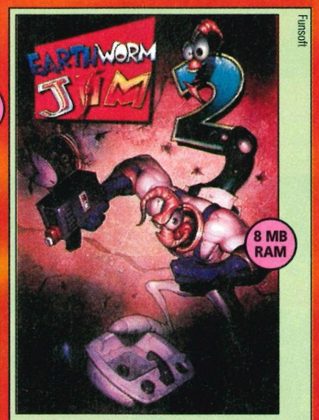
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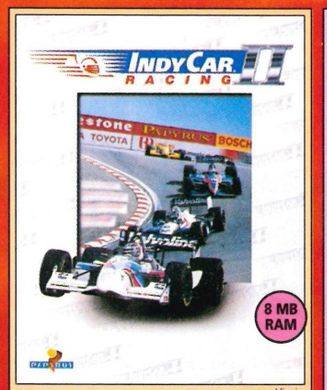
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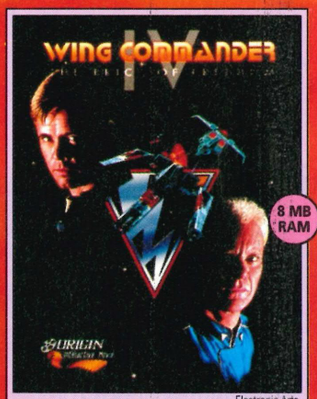
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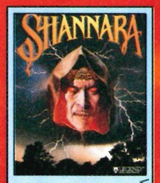
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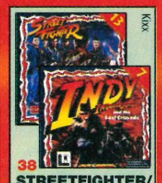
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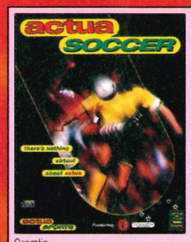
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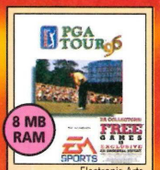
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