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PC review

Turn your PC into an orchestra



Making music on the PC: starts this issue

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Alone in the Dark 2, Kyrandia 2, reviewed this month (Oh, and Larry's back!)

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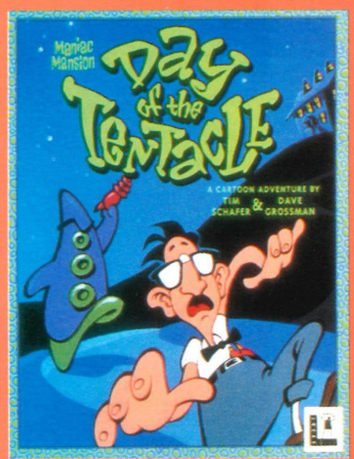

"In short, it's brilliant!"

PC Format 91%.

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PC Review 9/10.

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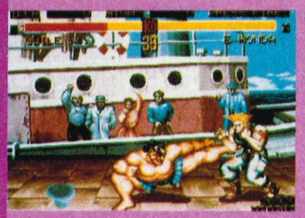

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"As far as mindless violence, addictive gameplay and stunning graphics go, Street Fighter II is the genuine article." **PC Zone 81%.**

"One of the best beat-em ups ever!" **ST Format 91%.**





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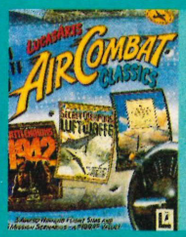

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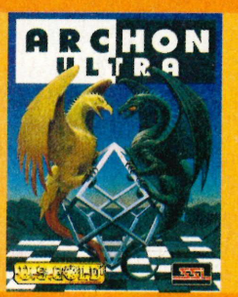

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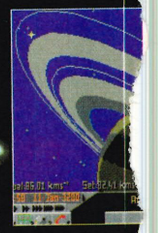
AMIGA

CU AMIGA

97%

"The ultimate in space adventure, Frontier is the single most important step forward for games this decade."

PC ZONE

95%

"Unrivalled classic, nothing comes close."

AMIGA ACTION

93%

"Frontier is probably the best game I have ever played. This offers everything you could want in a game of this type."

DA
BRA
PRES

FRON

E L

THE ONE

96%

KONAMI

only the very best

Available on PC,

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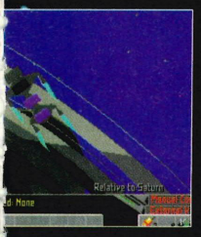
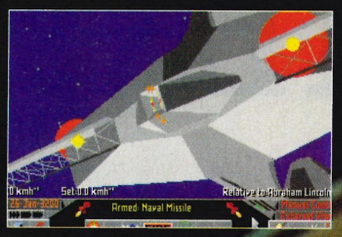


Screen shot



PC Screen shot

VID BEN ENTS

TIER

I T E

I

C & VG

96%

"One of, if not the, biggest games ever, Frontier is a title that will make the rest of your software collection obsolete."

AMIGA FORMAT

90%

"Frontier sucks you in and keeps you hostage. It's a monster."

PC REVIEW

9/10

"The best space game ever."

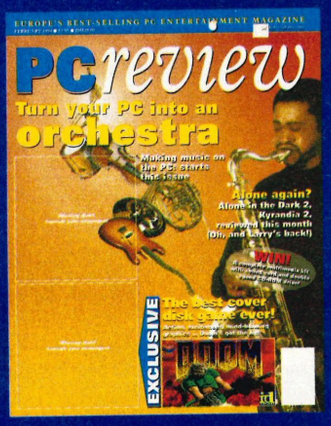
"Like Elite before it, Frontier is a game that rises above its feeble competitors like a colossus and will be talked about in awe for years to come. It's better than you could ever have dreamed it to be."

GAMETEK

mature with time

AMIGA, ATARI ST

by Konami. Distributed by Gametek



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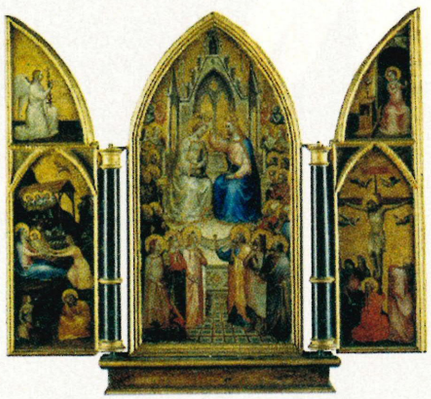

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Win a complete multimedia upgrade kit!

COVER DISKS



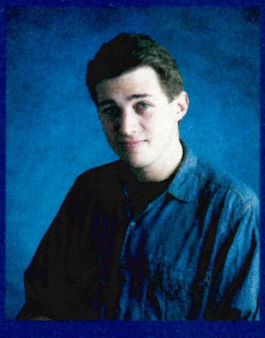
PAGE 8

THE TEAM



CHRISTINA ERSKINE

"The is the strangest game I've come across in months," declared the editor after playing Unnatural Selection from Maxis, a game of genetic engineering and a lot of frantic reproduction. Read the review on page 72 for the juicy details!



DEAN EVANS

Dean has been immersed in the in-depth and detailed Flight Sim Toolkit, in which our resident flight sim expert could indulge his passion for aeribatics and far-fetched airborne scenarios. For light relief, he turned to the latest Leisure Suit Larry, Sierra's one-joke wonder.



CAL JONES

It's been hard to prise Cal away from Alone in the Dark 2 this month, although after a week's solid zombie-killing and desperate battle, the end sequence scrolled up and the closing credits rolled, leaving our intrepid adventuress time to get to grips with Kyrandia 2.

COVER DISKS

This month, we bring you the cover disk game of the decade — Doom. Doom is an adult-oriented action adventure ; it's grim, fast, violent and stunningly atmospheric. And you get 5Mb of it!

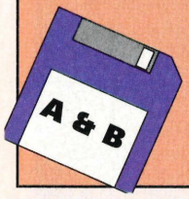
And then for something completely different, there's a playable demo of Cakewalk Pro, the powerful music sequencer, to go with our music series, which begins this issue on page 32. On 5.25" disks, we have Battle — from Bullfrog, and Mother of All Battles, an addictive shareware game.



Warning: Doom contains scenes of extreme violence. It is not suitable for younger children or the faint hearted.

DOOM

3.5" disks only



On disk A and disk B



Doom is the hottest thing to hit the PC screen in the past year and a half. It's an unashamedly gory rampage through a nightmare 3D world with an unparalleled combination of action, atmosphere and graphics.

This exclusive cover disk contains the entire first volume of the shareware version, with eight complete, playable levels and four difficulty levels. The idea of the game is pure and simple survival. You have to fight and think your way through the maze of location, traps and hidden rooms while avoiding — or wiping out — everyone in your path. A terrifyingly good game.

How to start

Please note that to install Doom from the cover disk, you should type Install [Enter], not PCR [Enter] as you would normally expect. When the installation program prompts you for disk 2, insert cover disk B.

Then log on to the directory in which you've installed Doom and type DOOM [Enter].

How to play

It couldn't be easier. The basic controls are;

arrow key up	move forward
arrow key down	move backwards
arrow key left	turn left
arrow key right	turn right
CTRL key	fire
ALT + arrow keys	move sideways
SPACEBAR	open doors, press buttons, flip switches
Number keys, 2-7	select weapon, if available
TAB	select automap
+	enlarge screen window
-	shrink screen window

How to quit

Press Esc, then use the arrow keys to cycle the skull to the Quit option. Press Enter, then Y when prompted.

Hardware needed

A minimum of a 386 PC with VGA and 4Mb of RAM. The PC needs to be configured with this line in your Config.sys:

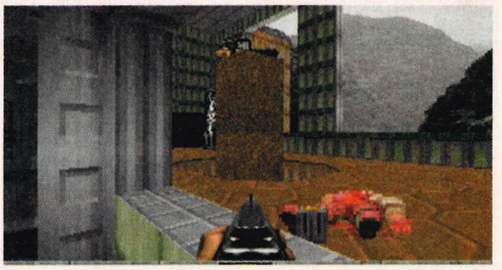
DEVICE=C:\DOS\EMM386.EXE 4096

Hints and tips

Use the easiest setting to get familiarised with the controls, then switch to one of the harder levels to play the game properly. 'Hurt me plenty' is a good balanced setting, but 'Ultra Violence' is real tough – but by far the best.

To make it through in one piece, you need to approach Doom with a mix of speed and caution. Sneaking round corners slowly is always a wise move. Try to back-pedal rapidly and fire





like crazy if you run in to too much trouble. On the other hand, you do need to conserve ammo, particularly with the more powerful weapons. You can use the toxic bins as bombs. Shoot them to take out any nearby opposition. But don't fire the rocket launcher or shoot a bin at close range — the blast will get you too, and you'll look a right charlie. Oh and you'll be dead.

Try and get the uglies caught in a crossfire. They'll turn on each other and finish the job off for you. And if you see movement on a walkway or window, shoot. It dosen't matter what level they're on, you can still nail 'em. Use the Alt key to move sideways across a doorway to straffe the bad guys then get back under cover.

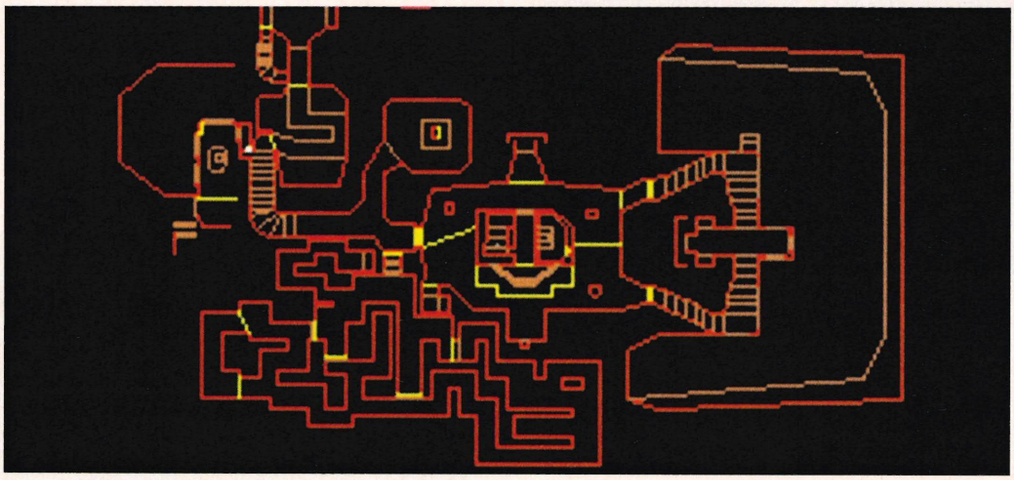
Keep an eye out for unusual wall markings — this may indicate a hidden room, and you may be lucky enough to find the fabulously violent chainsaw. Don't forget to use the automap to mark important locations, because the levels are big and it's easy to get lost.

What else? Save your game often and read the 'readme' file. This contains all the background info you really need to get started, the details for registering for the full version of Doom, and the following two shareware chapters. Simply type README at the the command prompt for the directory in which you've installed Doom, then follow the on-screen instructions.

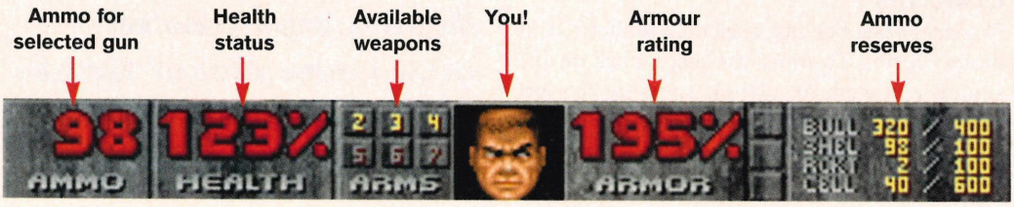
The Automap

Doom is a very large game, and to find your way through you'll need to make good use of the built-in automap.

F	toggles follow mode
+	zoom in
-	zoom out
Arrow keys	move around
M	mark spot



The status bar



Competition WIN!

This is your chance to win not just a copy of the complete registered version of DOOM (worth £35), but also two other major action adventures from the same stable — Blake Stone 3D, and the sequel to the shareware classic, Duke Nukem 2.

First prize winner

- A copy of Doom, Blake Stone 3D and Duke Nukem 2!
- Three second prize winners will receive a copy of Doom
- Three third prize winners will win a copy of Blake Stone 3D
- Three fourth prize winners will snap up a copy of Duke Nukem 2

All you have to do is answer these simple questions:
A) Which programming team wrote Doom?
B) Who distributes Doom in the UK?

Name.....
.....

Address.....
.....
.....
.....

Tel.....

Answers
A.....
B.....

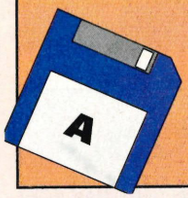
Send your entry to PC Review, Doom Competition, 30-32 Farringdon lane, London EC1R 3AU

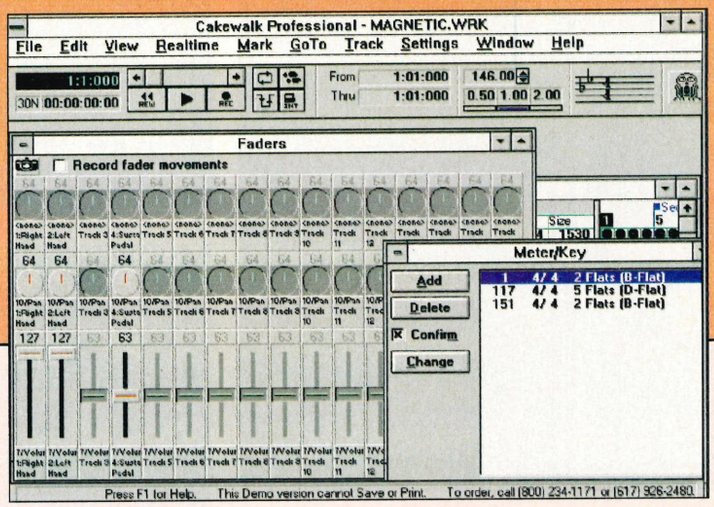
Closing date is 15th February 1994, and the editor's decision is, as ever, final.

Installing your cover disk: details on page 12

CAKEWALK PROFESSIONAL 2.0

3.5" disks only





Cakewalk is a high-powered MIDI-based music editor and sequencer. The software has on-line context-sensitive help, which will enable you to get to grips with its support for 256 tracks, wave files and extensive music editing features.

How to start, and how to quit

Add the program to the Windows Program Manager. To do this, run Windows, select File, New, Program Item. Then simply select the file Wcwdemo.exe in the dialogue box. This will add the icon to the program manager. Now just double-click on this to start the program.

To load one of the sample MIDI files, simply select Open under the File menu in Cakewalk.

To quit, select Exit from the file menu.

Cakewalk needs to be set up correctly in the control panel for the right MIDI drivers, but if you have any trouble installing the program, contact our helpline at the usual number.

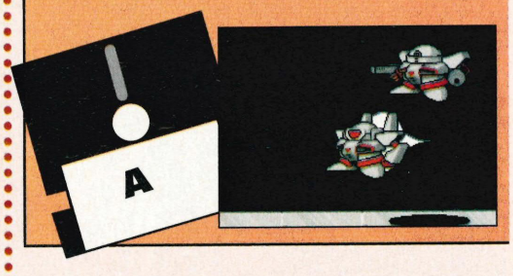
Hardware needed

A 386 PC or better, with a MIDI-compatible sound card, mouse and Windows 3.1.

- This cut-down demo does not include Print or Save functions.

BATTLE

5.25" Only Disk A



A complete game from Bullfrog productions, the team behind Syndicate and the immortal Populous. The aim of the game couldn't be simpler — wipe out the enemy. To attack an opponent, click on the weapon you wish to use, ensure you have enough range, right click to exit the weapon screen, then click on the opponent.

How to start

Type **Game [Enter]** to start

Controls

Move unit	
S	Attack unit
End unit's turn	
Right mouse button	view unit stats
Enter	ends turn
Weapon selection screen	name, range, damage, ammo, energy needed, accuracy

How to quit

Press Esc to return to Dos.

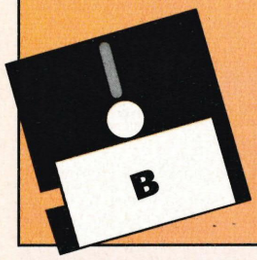
Hardware

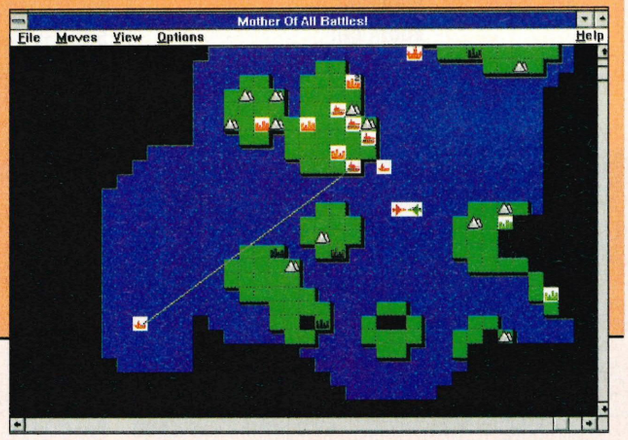
A 386 PC with VGA.



MOTHER OF ALL BATTLES

5.25" disk B





Mother of all Battles is an intriguing Windows strategy game in the 'Risk' mould for up to six players. The object is to destroy all your opponents' pieces by exploring new territory and by capturing both enemy and neutral cities.

How to start

In Program Manager, select New Item under the file menu, and then type the path and name of the file. Click on 'Rules' to read the instructions. Choose 'New' to open a new game, then select the number of players and click on 'OK'. Finally, change the file name to 'green' (top, leftmost box).

Games are saved automatically every four days of game time and when you exit the game.

How to quit

Double click on the '—' icon in the top left hand corner of the box to exit.

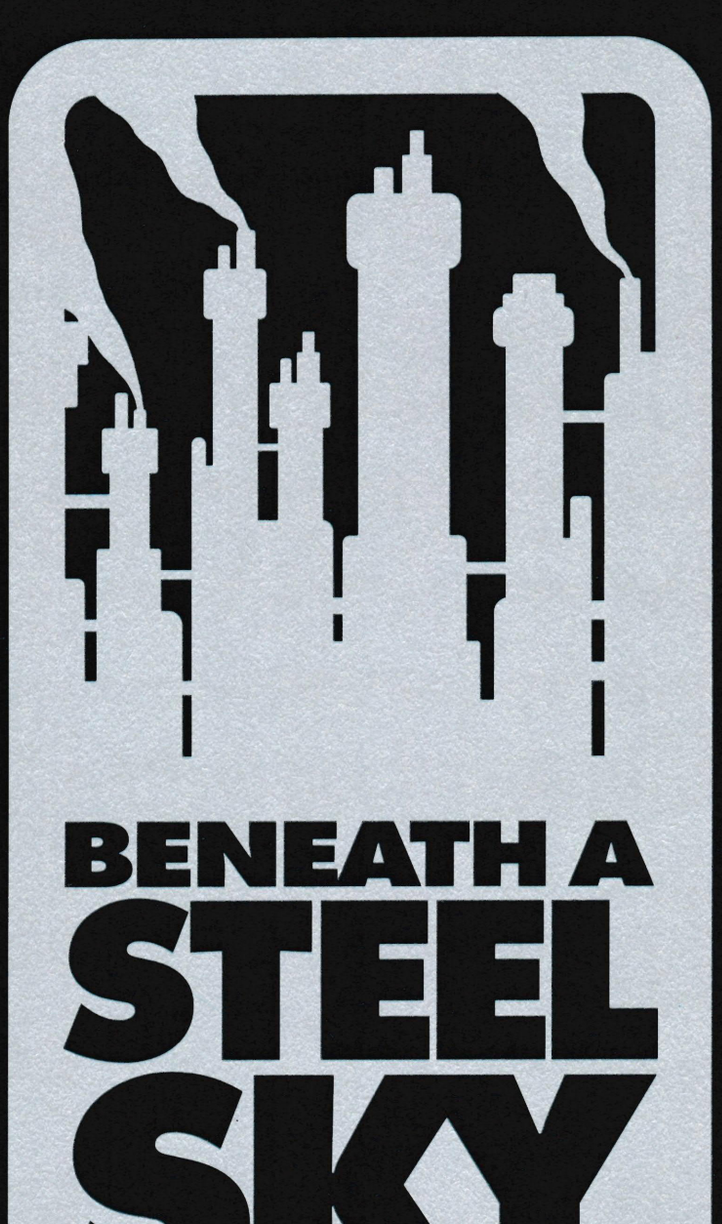
Hardware requirements

A 386 PC running Windows 3.1 and a mouse.

Controls

To select a piece or city, click on it with the right mouse button.To move the piece, click on the square you wish to move it to using the left mouse button. To attack an enemy piece, simply move your piece onto a square occupied by the enemy.

Having problems with your cover disks? Games not working? Turn to page 12 for help



BENEATH A STEEL SKY

REVOLUTION

VIRGIN INTERACTIVE ENTERTAINMENT (EUROPE) LIMITED, 338A LADBROKE GROVE, LONDON W10 5AH.

1994 REVOLUTION SOFTWARE P 1994 VIRGIN INTERACTIVE ENTERTAINMENT (EUROPE) LTD.

Virgin INTERACTIVE entertainment

How to use the cover disks

We've used Doom's own installation program for this game — just type Install to begin copying over the files. You'll also find a new, improved version of the PC Review menu used for Cakewalk Professional.

Step by step guide

Doom

1. Remove PC Review cover disk A — labelled DOOM — from its wrapper and insert it into your floppy disk drive. This is normally called drive A:, although yours may be drive B: if you have two floppy disk drives. If this is the case, substitute the letter B for A in the following instructions.

2. Log on to this floppy disk drive by typing
A: [Enter]
at the on-screen DOS prompt. This prompt should then read A:>.

3. Type
INSTALL [Enter]

4. You should hear a lot of whirring and the floppy disk drive light will come on. When the Doom installation screen appears, you will have a choice of hard disk to install to. Type C to begin the installation to hard drive C:.

5. When a picture of a floppy disk appears, reading 'Insert Disk 2 and press Enter', take cover disk A out of your floppy disk drive, and insert PC Review's cover disk B (labelled Cakewalk Professional v2.0) in its place. Press the [Enter] key. The program should now continue to copy files.

Faulty disk?

PC Review's cover disks are checked and validated, but if you have reason to believe yours is faulty, pop the disk(s) in a jiffy bag with a self-addressed envelope and postage to the value of 28p (55p from overseas) for return of the new disk and the form below (filled in), and send the package to the following address:

PC Wise
Dowlais Top Business Park, Dowlais
Merthyr Tydfil, Mid-Glamorgan
Cymru, CF48 2YY

Please DO NOT send the disk back to PC Review — we don't hold stocks of spare disks.

Name:.....

Address:.....

.....

.....

.....

The disk on my copy of PC Review was damaged. Please send me a replacement — I enclose return postage to the value of 28p (55p if overseas) and the original disk.

Quick guide

Doom

1. Put cover disk A into your floppy disk drive and log on to the drive.
2. Type Install [Enter] to begin installing Doom.
3. When the installation program prompts you for Disk 2, put PC Review cover disk B into your floppy drive, and press Enter.
4. After copying over all the Doom files, the installation program will then decompress them and create the Doom executable file.

Cakewalk Professional v2.0

1. Put cover disk B into your floppy disk drive and log on to the drive.
2. Type PCR [Enter] to access the new PC Review cover disk menu.
3. Select Cakewalk Professional from the on-screen menu.
4. If you are happy with the default directory (c:\cake), simply press Enter when prompted. Otherwise, backspace over the drive and directory name and type in the parameters of your choice.
5. Cakewalk Professional should now install to your hard drive.
6. Go into Windows File Manager, and run WCWDEMO.EXE from the c:\cake directory (or your own choice of directory if you changed the default).

Cakewalk Professional v2

1. Remove PC Review cover disk B — labelled Cakewalk Professional — from its wrapper and insert it into your floppy disk drive (normally called drive A:).

2. Log on to this floppy disk drive by typing
A: [Enter]
at the on-screen DOS prompt. This prompt should then read A:>.

3. Type
PCR [Enter]

4. When the PC Review menu appears on-screen, press Enter and follow the on-screen instructions to start installing Cakewalk Professional.

5. Cakewalk Professional is a Windows program. After installation, you must enter Windows, and Run the file WCWDEMO.EXE from Windows File Manager.

If all else fails ...

If you've tried everything, and you still can't get the wretched disks to work, try the PC Review disk helpline:

Disk helpline: (0685) 350505

The helpline operates between 10.30am and 12.30pm weekdays.

Please note:

- PC Review's cover disks are rigorously checked at each stage of production for all known viruses and duplicated under strict quality control.
- However, cover disks are used at the reader's own risk. PC Review can accept no responsibility for damage to either data or hardware caused by use of our cover disks.
- We also make every effort to ensure that the contents of each disk are exactly as advertised. If, however, circumstances should dictate that we are unable to supply the stated program we will endeavour to supply alternative software. PC Review, its distributors, and retailers will not be held responsible for any unnotified change to the contents of the disks.

AMERICAN ALLSTARS COMPILATION

With 4 all-American competitive games in one action-packed compilation, computer gaming fanatics can now earn their own stars and stripes learning to play ... the American way.



MORE BITE THAN MOM'S APPLE PIE

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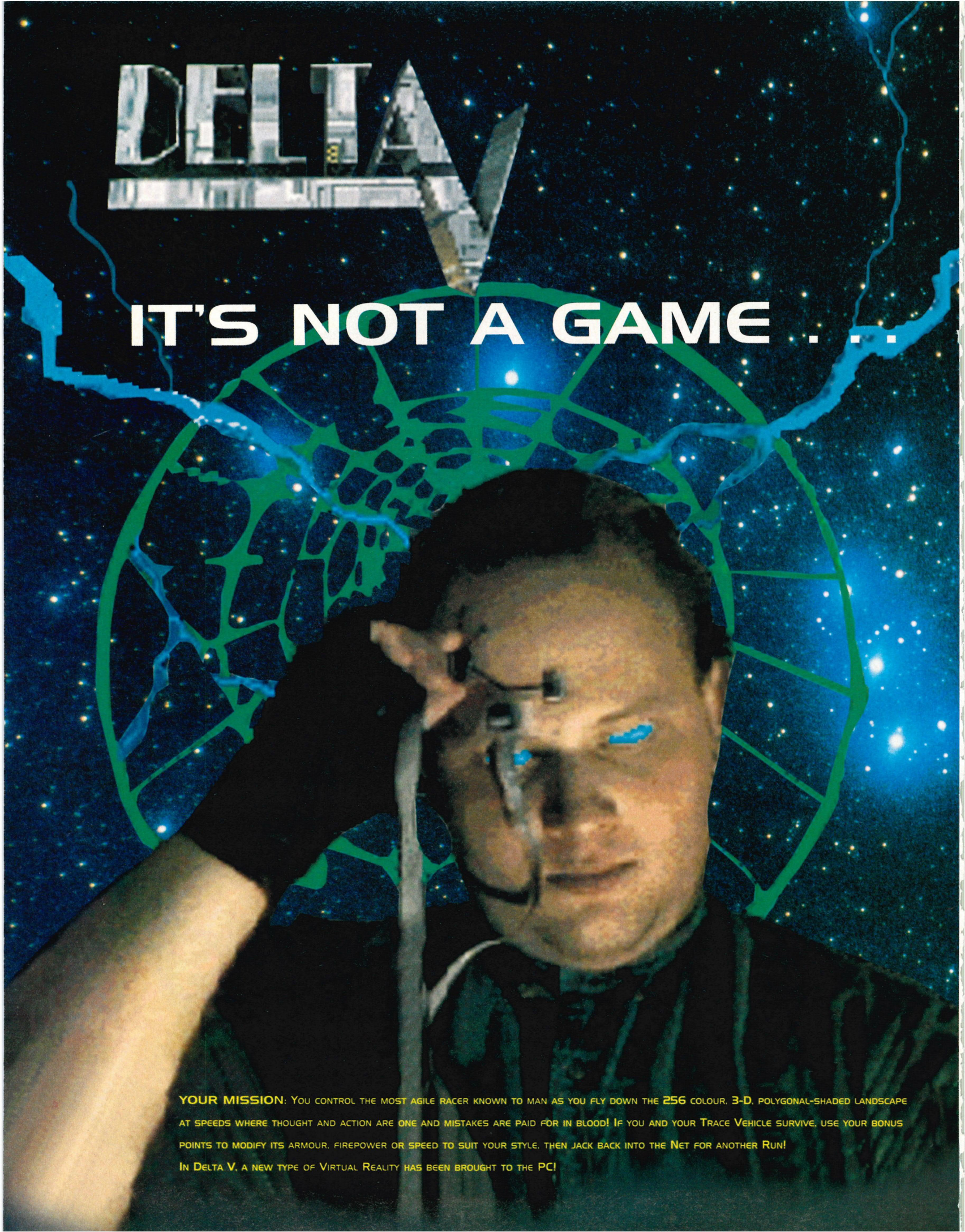
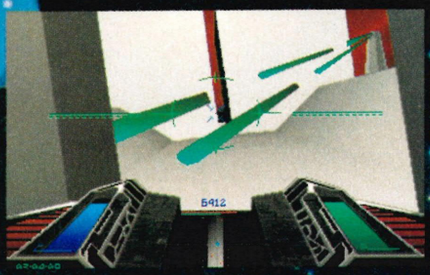
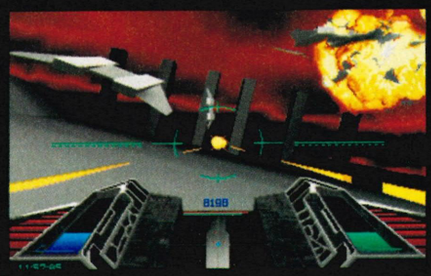

DELTA V
IT'S NOT A GAME . . .
YOUR MISSION: You control the most agile racer known to man as you fly down the 256 colour, 3-D, polygonal-shaded landscape at speeds where thought and action are one and mistakes are paid for in blood! If you and your Trace Vehicle survive, use your bonus points to modify its armour, firepower or speed to suit your style, then jack back into the Net for another Run!
In Delta V, a new type of Virtual Reality has been brought to the PC!







> L6 12-09-2147 - 17H34.48

> "So chummer, you want to know about runnin?

> "The Net's the most dangerous cyber-dream you'll ever have, 'cept it's not a dream. You gotta be ruthless and quick, huggin' the lattice like an Olthan lungworm on a Borian air-grazer. Once you jack in, it's just you and your Trace.

> "Like I always said, Netrunnin' is like a drug, the speed gets you higher than a 'ject of Cephilene Blue, but a mistake'll leave you deader than a jacked out straightliner.

> "That chum, is as permanent as it gets . . ."

> END

> GROTHAN JHIR, ex-Netrunner.

IT'S A STATE OF MIND

Available on: IBM PC AND COMPATIBLES

(VGA, minimum 386/33 processor, minimum memory 640k Ram, 2Mb EMS memory and high density disk drive required. Sonic support: Roland™, SoundBlaster and Gravis Ultrasound.)

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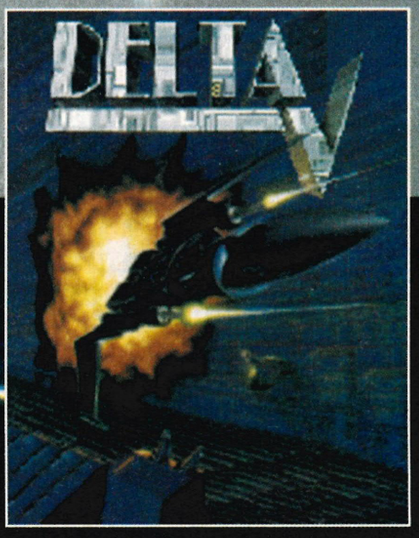


NEWS

Video game danger to children "overrated"

Concern that video games cause violent behaviour in children is largely unfounded, according to a report from the Communications Research Group. Only 19% of the 150 children interviewed claimed to have become more violent after playing computer games, but in most cases, this increase in aggression resulted in nothing more serious than play fighting.

Seventy-two per cent admitted to losing their temper while playing computer games, although only 41% said that they lost their temper more often when playing games than other activities.

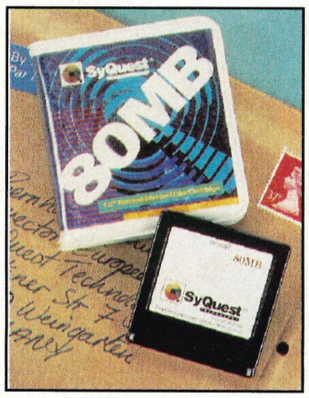
Most of the children questioned thought that video game addiction was possible, but 84% thought that it was equally possible to become addicted to other hobbies. It was also discovered that most children played games for less than one hour per day, and only three children claimed to devote more than four hours per day to playing games. Over two thirds of the group preferred other activities to playing computer games, and viewed them as a time filler rather than a main activity.

The main problem seems to be a lack of parental guidance. Only 41% parents restricted the amount of time children devoted to computer games, and whilst 58% restricted the type of programmes their children watched on television, only 3% exercised the same control over games. This absence of parental guidance is possibly due to a lack of understanding about computer technology: most children did not believe that their parents had the necessary skills to test the game for themselves. A Gallup survey commissioned by IBM revealed that in 37% of families studied, the child was seen as the household computer expert.

"What this research shows is that parents are interested in restricting the amount of time that children spend on computer games but not their content," said Roger Bennett, general secretary of ELSPA, the European Leisure Software Publishers Association. "Whilst the report also casts doubt on a number of concerns often voiced by parents, such as the supposed links between violence and computer games, I nevertheless find the absence of parental guidance worrying."

SyQuest launches first PCMCIA disk drive

SyQuest has developed the world's PCMCIA removable hard disk drive. The SQ1080 storage system uses 60Mb or 80Mb cartridges, and can be installed in any computer with a Type II or Type III stacked interface PCMCIA slot. Each cartridge is a little over half the size of a credit card, making it an ideal storage medium for laptops, notebooks and pen-based computers. The SQ1080 drive should be available in mid-1994 priced between £300 and £350. Cartridges are expected to cost around £40. To contact SyQuest, call Bernard Schuh on (010 49) 751 560500, while you can find out more about PCMCIA by reading the feature on page 42 of this issue.





PC buyers need advice from experts

Nearly eight out of every ten people who buy PCs need expert advice on operating it, according to an independent research study carried out by IBM.

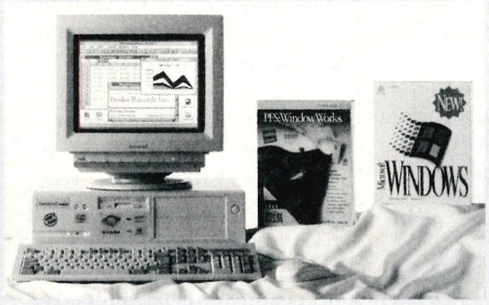
The survey canvassed opinions on after-sales support services from 221 personal computer users who had bought their machines from a range of suppliers.

Of those with access to a telephone helpline, 77 per cent had needed to use it, although three quarters of these had only had to phone in between one and five times. One per cent had phoned the helpline over 20 times before their problem was solved.

Most respondents found that the help they received over the phone was satisfactory; although many reported that their biggest problem was getting through to the helpline in the first place.

Multimedia PC from Amstrad

Amstrad has moved further into the PC mainstream with the launch of its PC9486 series, which includes a CD-ROM option, the PC9486 Multimedia — Amstrad's first foray into this growing market. This model incorporates a double-speed, multi-session, internal CD-ROM drive, a 16-bit stereo sound card, speakers and is bundled with Rebel Assault and the Software Toolworks Multimedia Encyclopedia, so that buyers can get going straightaway. It also has a 25MHz 486SX processor, 4Mb RAM, a 130Mb hard disk and SVGA monitor, and at £1,249.99 inclusive of Vat, is competitively priced.



The other machines in the series offer configurations based around the 486SX or 486DX2 processors, and have been designed to be easily expansible. "With a 237-pin zero insertion force overdrive socket and motherboard rated up to a true 50MHz, our systems feature full Pentium Overdrive capability," says David Hennell, director of international marketing.

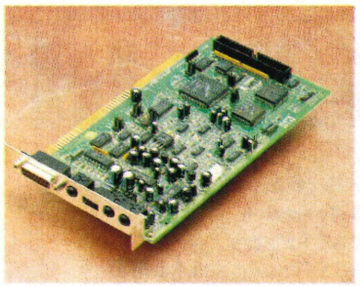
Prices for these begin at £998.75 for a 25Mhz 486SX processor with 130Mb hard disk, while a top of the range 66MHz 486DX2 with 340Mb hard disk and an ultra hi-res SVGA monitor costs £1,586.24 inclusive.

All the machines in the series come with five spare 16-bit expansion slots and two spare 5.25" drive bays and DOS 6, Windows 3.1, and the integrated package PFS: WindowWorks v2 are all bundled with the PCs. All come with a 12 month on-site warranty and free telephone helpline support.

Creative in sound moves

Creative Technology, developer of the Sound Blaster sound cards, has announced a series of new PC products in the audio and video market, combining the features of the Sound Blaster with a number of licensed technologies.

Based on technology from Digital Equipment Corporation (DEC), Creative TextAssist is a text-to-speech processor for the 16-bit Sound Blaster. MPEG Playback is a tool intended for use with VideoCDs, CD-ROM games, and video presentation.



● Creative has also been granted a preliminary injunction against Covox, over its Voice Blaster package. Covox has had to provide stickers for its packaging dissociating its speech recognition product from the Sound Blaster.

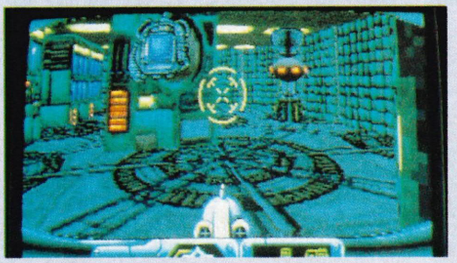
Virgin sets up school football scheme

Following the exit of England, Scotland, Wales and Northern Ireland from the World Cup, Virgin Interactive Entertainment has decided to rectify matters by launching The Virgin Games Football Initiative. The scheme is designed to train schoolchildren to become skilful footballers, and will be supported by both Adidas and the soccer magazine, Shoot. In addition, the Government has agreed to match Virgin's input pound for pound through its Sportmatch programme.



The scheme will cover 25,000 schools in the UK, and children will be given the chance to take part by entering a schools fund-raiser. Competitions are also being run in Football in Schools magazine, which goes out to 25,000 football teachers. Sponsorship money raised will pay for extra equipment and administration costs and a donation to the English Schools Football Association, and the remainder will go back into school funds or to a charity.

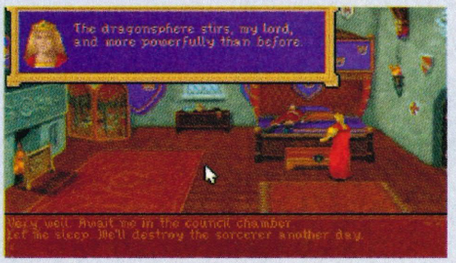
COMING SOON



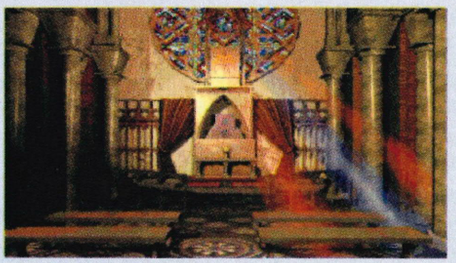
In Extremis is a combat game set aboard a spaceship, with hordes of aggressive aliens to be destroyed. Out soon from US Gold.



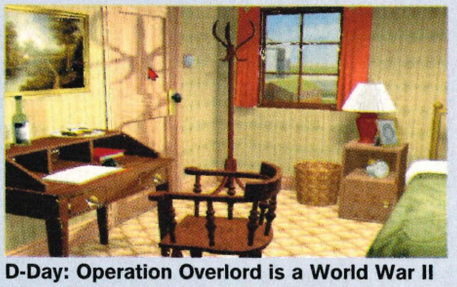
Team 17's acclaimed Amiga game, Superfrog, is due out soon on the PC. It's a jolly platform romp, with plenty of neat graphic touches.



Dragonsphere, from MicroProse, is based on the same playing engine as Rex Nebular, but has a mystical rather than humorous theme.



French team Cryo is busy working on Dragon Tales, a fantasy adventure due for release on both disk and CD-ROM.



D-Day: Operation Overlord is a World War II 'theatre of war' flight sim written by Reach for the Skies developer Rowan Software.

Microsoft targets consumer market

Microsoft's portfolio of consumer software on CD-ROM is growing rapidly, with the announcement of a new series of education/productivity titles and updated versions of the encyclopaedia, Encarta, and movie listings CD, Cinemania.

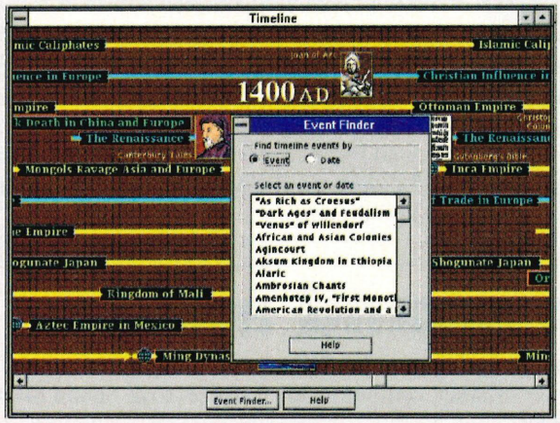
Cinemania is Microsoft's CD-ROM movie guide, which mixes film listings and reviews, biographies of movie stars and directors, and articles, with film stills, portrait pictures of screen stars, over 100 themes and songs from films and 20 video clips as well. Films can be researched by genre, actor, director, star ratings, release date or Academy Award winners, and listings pertaining to each film also include details of any Oscars won, and its availability on video tape or laserdisc.

Cinemania 94 incorporates the text from Leonard Maltin's Movie and Video Guide (19,000 film reviews), Baseline's Motion Picture Guide (800 reviews), 2,500 reviews from the venerable Pauline Kael's 5001 Nights at the Movies, and Roger Ebert's Video Companion.

The program also has a listmaker feature for adding notes to the reviews or printing out a list of films. Retail price will be around £50.

The new edition of Encarta includes major events from 1993, such as the historic accord between Israeli prime minister Yitzhak Rabin and PLO leader Yassir Arafat, and lists the new leaders from states of the former Soviet Union as well as other worldwide changes in leadership.

Some extensive revision has gone into many of the previous edition's articles — see PC Review, Issue 26, for more details on the original Encarta.



Sign of the Times

One year ago ...

Intel announced that the successor to the 486 processor was almost ready, although instead of being logically called the 586, it opted to christen it the Pentium, making it easier to defend its trademark.

Two years ago ...

NEC was raving about its 486SX colour laptop, using thin film transistor (TFT) technology to produce clear colour images. It may have been state of the art in its day, running at 20MHz, with 2Mb RAM and a 120Mb hard disk and bundled with DOS 5. But the price was a cool £6,795. Plus Vat. Ouch!

WIN a US Gold ski jacket

In the third in our occasional forays into the world of high fashion, PC Review is pleased, nay, proud, to present the US Gold ski jacket.

This top quality waterproof and fleecy-lined jacket is equally at home on those country walks as on the ski slopes, keeping the winter weather out and the warmth in. The US Gold branding is carefully, but discreetly, registered in the form of an embroidered logo on the right below the shoulder.

Firstly, because US Gold is branding these jackets to remind its public that its Winter Olympics game is now available in the shops, in which you can recreate on your PC all the thrills and skills of skiing, skating and bob-sleighing as displayed at the Olympics themselves in Lillehammer, Norway, next month.

Furthermore, US Gold is giving three PC Review readers the chance to win one of these jackets. Yes, in this elegant attire, you could be the envy of your friends, whether in the Alps or your local high street.

How to enter

It's this easy: just answer the following question on the coupon below (or a photocopy of it if you don't want to spoil the magazine), fill in your name and address and send the form to

US Gold ski jacket competition
PC Review
EMAP Images
30-32 Farringdon Lane
London EC1R 3AU

so that it reaches us before February 15, 1994.

Q. Which of these is NOT a Winter Olympics sport?

a) the luge
b) speed skating
c) heli-skiing
d) ice hockey



US Gold ski jacket

Name .....
Address.....
.....

Answer.....

Jacket size required: 36-38 ❑ 40-42 ❑ 44-46 ❑

❑ Tick this box if you do not wish to receive further information from companies associated with this competition

Closing date February 15, 1994

PC Review February 1994



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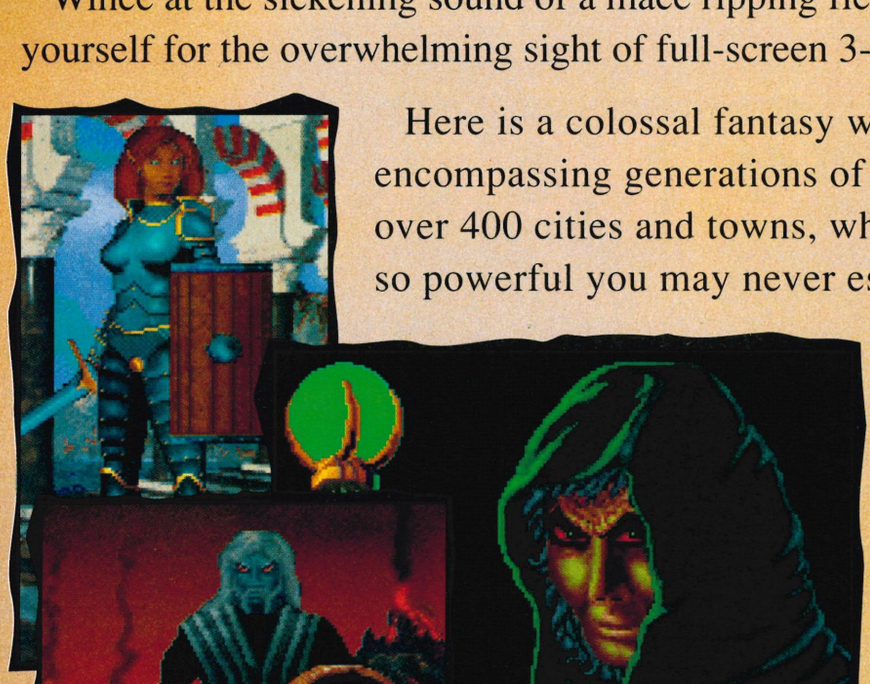
TO He who readeth this I say Peace be thine. For Fate Herself hast chosen thee to begin the most compelling Quest of thy life...

The Arena is but Chapter 1 of the Elder Scrolls, and truly an epic fantasy. Spin around with 360° movement to face dangers from any direction...use a unique combat control to leap, duck, slash with total freedom...and conjure up a bewildering array of life-saving spells.

Wince at the sickening sound of a mace ripping flesh, and prepare yourself for the overwhelming sight of full-screen 3-D smooth scrolling.



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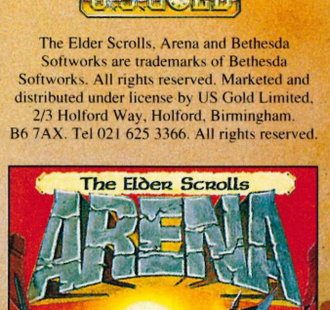

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Escom Design PC

PC manufacturers are finally learning that looks are important and, love it or loathe it, Escom's Design PC is certainly distinctive

With all the effort that's currently being put into turning the PC into a consumer item, there's a good chance that styling will be high on the agenda for the coming year and we're going to see some pretty strange looking PCs. The Escom Design PC certainly fits this description. It may, or may not, be your idea of mechanical beauty. But it is very different, no doubt about it.

The entire system — mouse and keyboard included — is finished in dark matt grey, with red trim. The casing is circular, about the size of a cake tin, and rotates through 360 degrees should you wish to show something on-screen to someone opposite. A flat screen passive-matrix colour monitor sits on top of an industrial-style pivot arm with counterweight. It even comes with a built-in keyboard light under the screen, and, if you don't fancy red, you can always chose another colour for the trim ...

Red trim, blue trim or whatever, this PC is not going to suit everybody's taste. Opinions in this office have varied from the unprintable to the envious. Mind you, placed on a paper-strewn, cigarette-burned desk in the basement of Emap Towers and surrounded by half-filled coffee cups it looks decidedly out of place. It does need to be seen in the right context to do it justice. It would look more at home in a swish executive office, a modern reception area, or a high-tech study.

Beneath the skin, there doesn't appear to be any major performance sacrifices. For a price tag of just over £2,000, the Design PC comes with a 66MHz Intel 486DX/2 processor, local bus graphics, 4Mb of RAM, a 252Mb hard disk drive and a single 3.5" floppy disk drive. It's quick enough, certainly, and would make a good all-round Windows PC, but it's not outstanding for the price. The screen is clear and sharp — but it's little more than a notebook display stuck on to a desktop PC, and the screen area could do with being a little larger.

In use, it has several practical advantages over a more standard PC. The monitor can be angled in a variety of directions far more easily than a conventional PC screen, and the ability to rotate the entire box is a blessing. Although, in all honesty it's just a base plate with ball bearings — you could probably knock up something similar with a quick trip to Do-It-All.

The compromises crop up in the space department. The Escom Design PC may be long on style, but it's definitely short on expansion. An internal CD-ROM is an impossibility for a start — short of taking a drill to the case — and although there are three free slots for cards, only one can have an external connector (as a sound card does, for example) and they are all quite tricky to get at.

This is one reason why it doesn't make an ideal games machine. It's not too bad if you're just a casual games player — there's plenty of hard disk space and it is pretty nippy, but definitely not for serious gaming.

Even so, I have to admit that I rather like the Escom Design PC. I've got used to having it on my desk, it's a good performer, neat and very distinctive. Black PCs have been tried before, as have unusual designs, but they weren't a great success. In fact, they weren't a success at all. But now things are changing, and this sort of PC is far more likely to be accepted these days than it would have been a couple of years ago.

But I wish Escom had taken the design that little bit further and used some more innovative technology to go with the cosmetics. A power-down mode à la 'green' computing, or a more modular 'plug-in' design internally wouldn't have gone amiss, for example.

Still, it's a start. Whether you consider the Escom Design PC to be the epitome of electronic good looks, or just a mechanical fashion victim, is up to you.



The most distinctive PC on the block. The Escom Design PC is very capable, but not an ideal games vehicle.

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THE COOKE REPORT

The forthcoming re-release of Lords of Midnight on the PC has set Steve Cooke thinking about the high points of his games-playing career

Reeling in the years

Everybody says that the pen is mightier than the sword, but what about the computer game? I'm not suggesting that, in 1994, games are more influential than books and bombs, but one day, who knows? Meanwhile, it's a very congenial pastime to reflect on the ten most important games of all time. You could, of course, get very academic about this and start rabbiting on about Hunt the Wampus or something, but something happened to me the other day to suggest that this selection should be a personal, not an intellectual, affair.

I was in Mike 'Midwinter' Singleton's office playing the as-yet-unfinished PC incarnation of Lords of Midnight. We were looking through the eyes of an unseen character as we trudged up a snowbound ravine, bordered by trees. Ahead of us, walking more or less in single file, were five other characters. We stopped, and the others continued, walking with palpable resignation (probably to their doom), slowly diminishing in perfect surrender to the laws of perspective, and finally disappearing round the brow of a nearby hill. All this to the music of Carl Orff's Carmina Burana.

At this point I suffered a Non-Maskable Cerebral Interrupt. I felt as if I was simultaneously watching a film, playing a game, and hearing an echo from the future. And the message was: "All that guff about interactive movies ... was true!". Forget the theory; there really is an interactive art form that lies beyond both games, film, theatre and literature!

The point I'm making is that you could have seen exactly the same sequence, and it might quite justifiably have meant absolutely nothing to you at all. There is a very strong personal element in our interaction with the best games, and I think it's this personal element that marks out their true potential for becoming an art-form of the future.

Because of this I decided to share my ten most striking game experiences (you can tell me yours later) with you.

1. The Day the Windscreen First Shattered in Battlezone

I was playing Battlezone and, for the first time, I was shot from behind. The spatial realism and the sound effects were so frightening that I actually had to stop playing because I was shaking so much. I'd played dozens of other arcade games, but this was the first time I'd been killed by something I couldn't see.

2. Scoring Three Million on Missile Command

I'm at the top of the High Score table in the pub off Leith Walk. No-one, and I mean *no-one*, can mess with me now!

3. Beating Bugs in The Hobbit

That orgasmic feeling of relief when I finally made it in to one of the barrels without the game crashing. This game, by the way, contains perhaps the most important text input in games history: the command (in the Goblin's Dungeon) "Say to Thorin 'carry me'", is the first time a puzzle in a game was solved through verbal and physical interaction with another computer-controlled character.

4. Admitting that I'd never solved Valhalla

Solving Valhalla without tips was the adventure game reviewers' test of man(or woman)hood in 1984. The trouble was, I'd hardly played the game at all. I just watched while the Gods beat the hell out of each other.

5. The Victory Message of Lords of Midnight

I'd been up all night, playing continuously for over 20 hours. I'd mapped the entire game on squared paper, and finally battled north with Morkin and the Ice Crown. I felt as if I'd really been in another world.

6. Being Told I Couldn't Play Boulderdash Any More

I don't think I'd ever been so addicted to a game before. My work went to pot, and in the end the game was banned from the office.

7. Breaking 300,000 on GameBoy Tetris on The Tube.

You may not think this is a red-hot score, but it was my personal best. And it happened just as we pulled in to Farringdon station. I was so excited that I completely forgot myself and yelled in triumph. A dozen commuters immediately stampeded in terror to the far end of the carriage.

8. Reaching the Underworld in Ultima V.

After playing for days, cracking most of the Overworld challenges and conversing with dozens of characters, I remember being exhilarated by the discovery of a whole new game area. A vastly underrated game that ought to be in every collection.

9. Playing ...

I don't think we'll go in to this one. It involved an unusual use of the mouse.

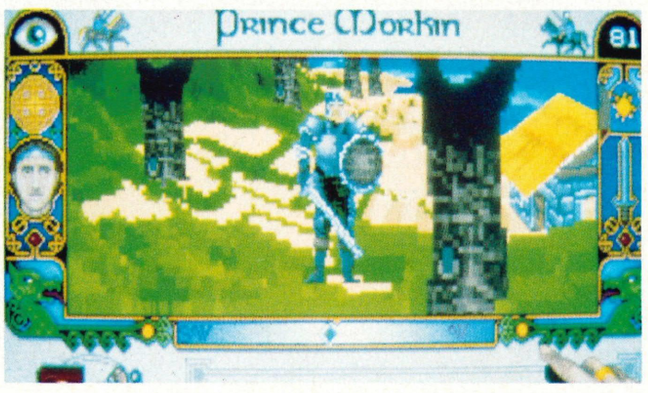
10. Watching the others walk away in Lords of Midnight PC.

Well, I've already mentioned this above. And I guess Mike Singleton has to possess some very special talent to get *two* entries in my top 10!

Well, those are my deeply personal moments at the screen. What are yours?



Lords of Midnight. We would just like to point out that Steve Cooke is not related to or paid by Mike Singleton.



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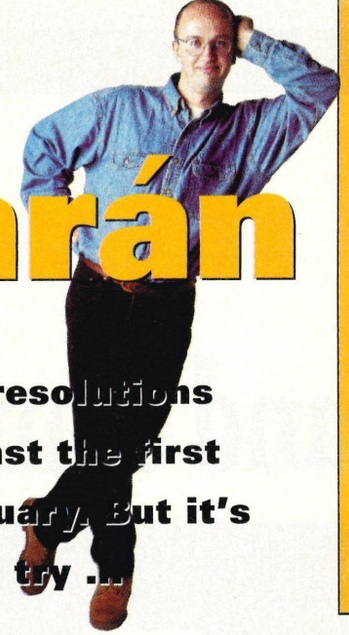
Ciarán Brennan

High resolutions



New year's resolutions rarely get past the first week of January. But it's important to try ...

If you sat back and thought about it for a minute, the whole idea of new year's resolutions would seem a little bit silly really. Just as you don't feel a year older on your birthday, there's really no reason why the first day of a new year should be a better time than any to make major life-changing decisions.

However, us humans are a funny lot (and PC owners funnier than most) — and besides, if you do feel that there's something about yourself that you'd like to change, then I suppose January 1st is as good a time as any to try to change it.

But enough about new year's day and all that — after all, we're already a couple of weeks past that stage, and most of our resolutions are probably broken by now.

This year, instead of making promises to myself that are impossible to keep anyway, I've decided to make a list of resolutions which I'd like to see software publishers sticking to. Here they are ...

New light through old windows

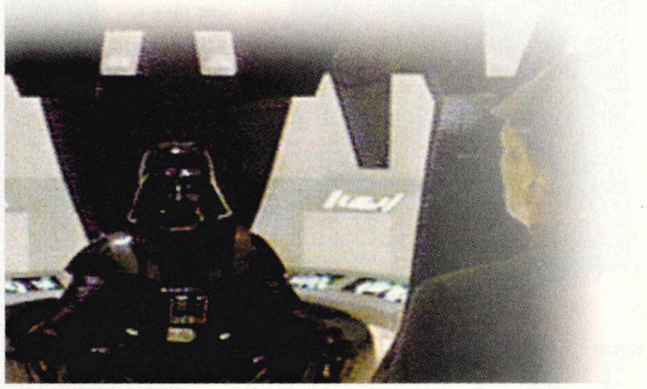
Wouldn't it be nice if 1994 was the year that saw the appearance of the first wave of truly Windows-compatible games? And by this I don't just mean games that conform to the Windows standard of borders and menu bars — why can't we have games which can be run in the background behind other computer applications so that you can dip in and out of them.

OK, so we always have Solitaire, Minesweeper and their ilk, but good as these are, they are hardly up to the standards which we've come to expect from the likes of Origin, Maxis, LucasArts and so on. It would be no easy task to develop a game like, say, Sam and Max, which could be properly enjoyed in five minute spells, but then that's the game designer's problem, not mine.

Seedy thoughts

There's already been enough talk about what will and won't happen regarding CD-ROM in 1994, but it would be nice if developers and publishers would avoid falling into the trap of discarding the floppy disk just because something shinier (literally) and newer had arrived.

Come to think of it, it would be nice if those who make the decisions about game development would bear in mind that we who buy their wares can't really upgrade our machinery every time they come up with a new idea — so let's continue to see new games for the still buoyant 386 market please.



"Mr Brennan, thank you for your new year's resolutions suggestions ... unfortunately I must now kill you".

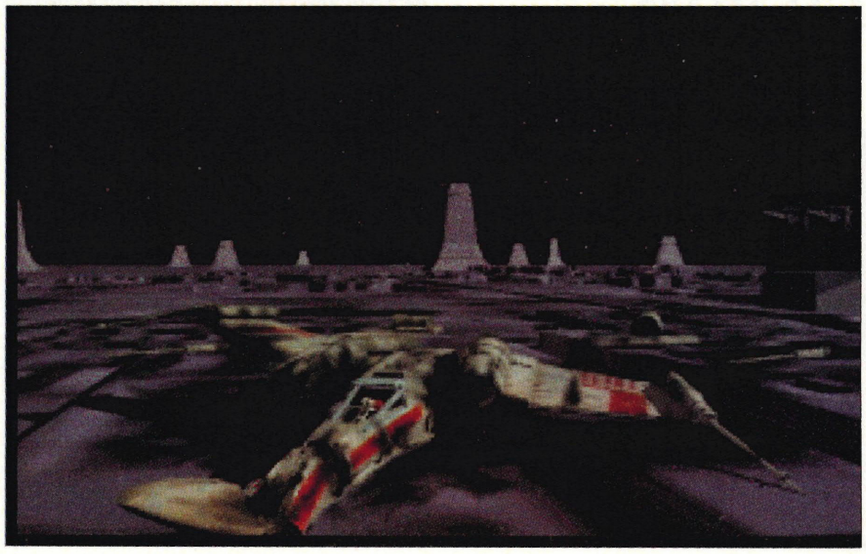
The price is right

Surely now that PC games have been in the mainstream for at least three years, it's time that PC software prices began to fall. The publishers can't have it both ways — so if the market is big enough to warrant multi-million dollar game development, it's also big enough for mass market pricing. (Of course, this is the development which is least likely to happen, in this or any other year.)

Assault and flattery

And finally I would like to make a New Year's wish that everyone who has any input into the making, marketing or distribution of PC games, takes a good long look at Rebel Assault — and then go straight back to their place of work, rip up all work in progress and begin again.

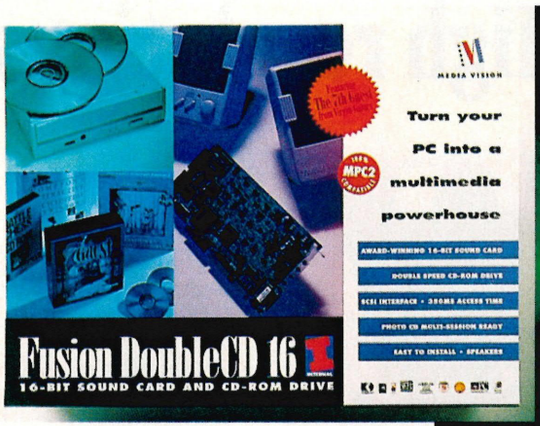
Of course none of the above are likely to happen (even though there are plenty of reasons why they should, but it's nice to be able to wish out loud sometimes), but 1994 should be a great year for PC software anyway. I wonder what we'll be hoping for come New Year's day 1995?



Stranded in a crashed X-Wing on the surface of the the Death Star, Ciáran Brennan cries out to the games industry for more of the same.

WIN

A complete CD-ROM and sound kit





We just keep those high value prizes going! This month, we're hot on the multimedia trail, with one complete sound and CD package to be won, courtesy of those kind chaps at Media Vision.

Our stupendously fortunate winner will get Media Vision's Double Fusion multimedia kit, which includes a Philips double-speed, multi-session CD-ROM drive, a Pro Sonic 16 sound card, speakers, and two full CD-ROM adventures, Critical Path and Quantum Gate, also from Media Vision. This will bring you right up to the forefront of the multimedia revolution — dare you miss the chance to win this wonderful package?

The second prize is just tailor-made for anyone who needs to upgrade their PC sound. The Pro Sonic 16 sound card, new from Media Vision, is a 16-bit card which gives you Ad Lib, Sound Blaster and Sound Blaster Pro compatibility and will add a whole new dimension to your PC games-playing.

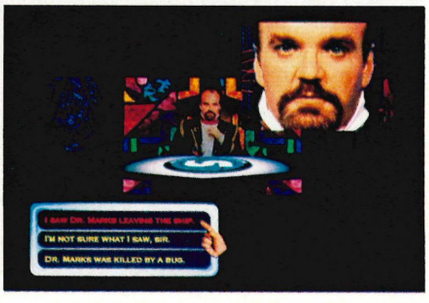
Finally, we have three sets of Critical Path plus Quantum Gate to give away to three more runners-up. These adventures, are Media Vision's first moves into CD-ROM software, and both contain around 45 minutes of full-motion digitised video footage, extensive sound and music and about 1,000 pages of text, using a software interface called Virtual Cinema.

Plus

Pro Audio Studio sound card and two terrific CD-ROM games







How to enter

Now, how to get your mitts on all these goodies. Below, you'll see a series of screenshots, all from well-known, critically acclaimed CD-ROM releases. There's also a numbered list of possible titles, with a fair few red herrings thrown in for good measure. All you have to do is match up the screen picture to the correct program name. So, for example, if you think that picture A is of the Software Toolworks World Atlas, then put (9), or write in World Atlas next to A on the form.

When you've completed the form, send it (or a photocopy if you don't want to spoil your copy of the magazine) to:

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1. Day of the Tentacle: the Talkie
2. Dracula Unleashed
3. Dune
4. Labyrinth of Time
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6. Newsweek Interactive
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PC Review February 1994

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No multiple entries, please.

No entries received after the closing date will be accepted.

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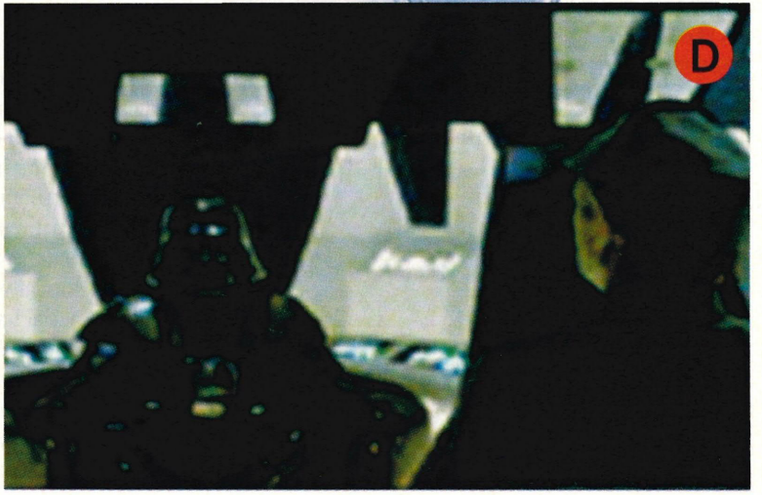


Pacific Fly-time

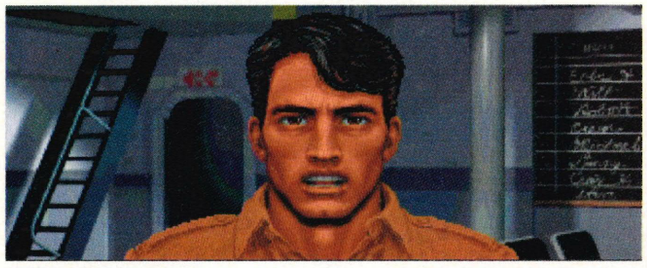
Not one but two Pacific-based flight sims are poised to dip, roll and go "dacka dacka" across your screens in the next three months. Dean Evans thumbs a lift to the flight deck and takes a peek at the battle for the skies

Pacific Strike

Soaking up media attention faster than a box of Kleenex on a damp worktop, Origin's Pacific Strike is the follow-up to Strike Commander, using the same impressive Realspace graphics engine and the highest of hi-res cinematic cut-scenes.

After the Japanese surprise attack on Pearl Harbour in 1941, you enrol as a US Navy pilot and get to take part in every major campaign of the war. Flying a selection of realistically modelled aircraft including the Wildcat, Dauntless torpedo bombers and Hellcat dive bombers, Pacific Strike hopes to iron out the niggles of Strike Commander (hard to control, unexciting combat etc). Zoom over lush islands, skim over frothing waves and pan around 360 degrees with the famous Origin padlock view.

So what will set this game apart, bar the texture-mapped graphics and the music and the cut-scenes? Well, with Pacific Strike you can change the course of the war. For example, if you don't destroy a Japanese aircraft carrier in mission A it will still be there come mission B and mission C. Obviously this may radically change the odds and could swing the advantage towards the enemy. Failure has never been so real.



Yet more square-jawed heroics as Origin returns with Pacific Strike.



With slower planes Pacific Strike should be eminently more playable than its forebear and embracing as it does all the elements that made Strike such a success, Pacific Strike looks stunning. Just take a look for yourself.

Title	**Pacific Strike**
Developer	**Origin**
Publisher	**Electronic Arts**
Contact	**(0753) 549442**
Release date	**late February**
Genre	**flight sim**
Price	**£49.99**

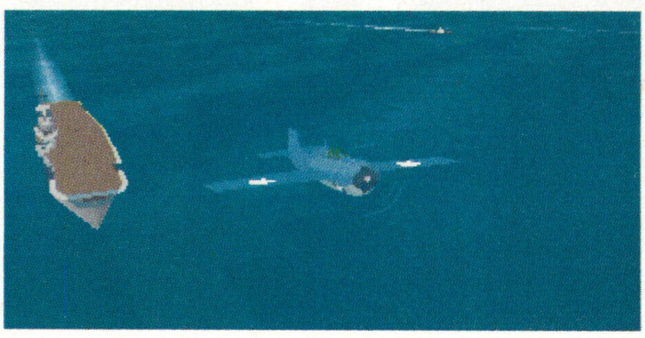
1942 Pacific Air War

MicroProse was once famed for its flight sims. F-15, F117A, ATAC and Gunship 2000 are just a few of the shiny gems in their huge back catalogue. Now, after a few unremarkable aerial releases MicroProse looks set for a return to form with the marvellous 1942: Pacific Air War.

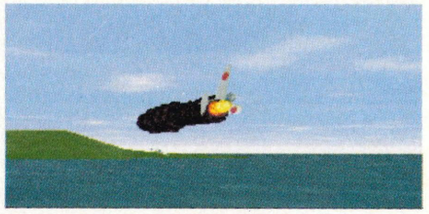
It's still early days but PAW looks ravishing. With a look and feel that owes much to Sierra's Aces of the Pacific, PAW (like Pacific Strike) dumps you slap-bang in the middle of the war against the Japanese navy.

Featuring similar technology to the forthcoming F-14 Fleet Defender, PAW features a nifty padlock view (or virtual cockpit as some people are calling it), historically accurate campaigns, carrier-based aerial battles and improved AI. And that's not all. MicroProse has crammed in some texture-mapping, light-sourcing and a huge attention to detail. Waves ebb, bullets splash and the clouds are wisps of white (rather than huge great slabs).

Watch out for PAW; it promises to be extremely impressive and may just give Pacific Strike a run for its money.



Pacific Air War is a huge leap forward for MicroProse flight sims. Check out the texture-mapping, the waves on the sea and the frothing ship's wake. Marvellous.



Title	**1942 Pacific Air War**
Developer	**MicroProse**
Publisher	**MicroProse**
Contact	**(0454) 326532**
Release date	**late April**
Genre	**flight sim**
Price	**£44.99**

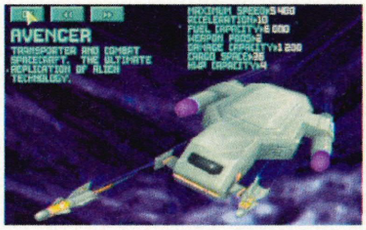
UFO: Enemy Unknown

Mystery and legend still surround the whole UFO phenomenon. Do UFOs really exist? If they do, where are they coming from? And why haven't they landed somewhere like Trafalgar Square, popped outside and said a big, warm "hi" to mankind?

Not that MicroProse appears to be interested in alien friendship, since in its forthcoming game UFO: Enemy Unknown — developers Target never released Laser Squad 2 themselves so UFO is more an 'unofficial' sequel to the original Laser Squad game — you take command of Xcom, a world funded organisation which is being paid to shoot down UFOs, dissect aliens and pinch new and exciting extraterrestrial technologies.



For starters, you must build a number of bases around the globe so you can successfully track the UFO menace. Once you've detected a likely candidate you can then launch a couple of interceptor aircraft to, er, intercept it and attempt to shoot it down. If you succeed, the next step is to send out the Skyranger transport aircraft, complete with highly-trained commando unit, and to deploy it at the crash site.



Once down on the ground, the game switches to the 3D isometric Laser Squad game. The ensuing skirmish is conducted on a turn basis, with each of your soldiers having a certain number of "action points" which they use up by moving, turning and firing. In fact the game is conducted very much like a board game (something like Space Hulk springs to mind) and MicroProse hope that it will test your strategic skills to the limit. The aim is simple: kill the fleeing aliens and stuff their technology into a huge black bag marked "swag". What could be simpler?

But, as always, saving the Earth is a lengthy process. New bases must be built, weapons must be improved and finances must be juggled. However, there's some heavy strategy and resource management involved here as well, because the 3D-shoot-the-aliens part is not, says MicroProse, the main chunk of the game. There are plans to make it optional, à la Starlord, at this stage, so if it's pure strategy you're after, pure strategy is what you can have.



So what is the point of it all? Well, behind these seemingly random alien excursions is an evil plot of huge proportions. I'm not going to say to much about it, but whether aliens want to carry off your women or steal your water is irrelevant. You've got to beat the alien threat and perfect the technology to follow the UFOs back to Mars where you will become embroiled in the ultimate battle with the corrupt intelligence behind it all.

Title	**UFO: Enemy Unknown**
Developer	**Target**
Publisher	**MicroProse**
Contact	**(0454) 326532**
Release date	**late February**
Genre	**strategy game**
Price	**£TBA**

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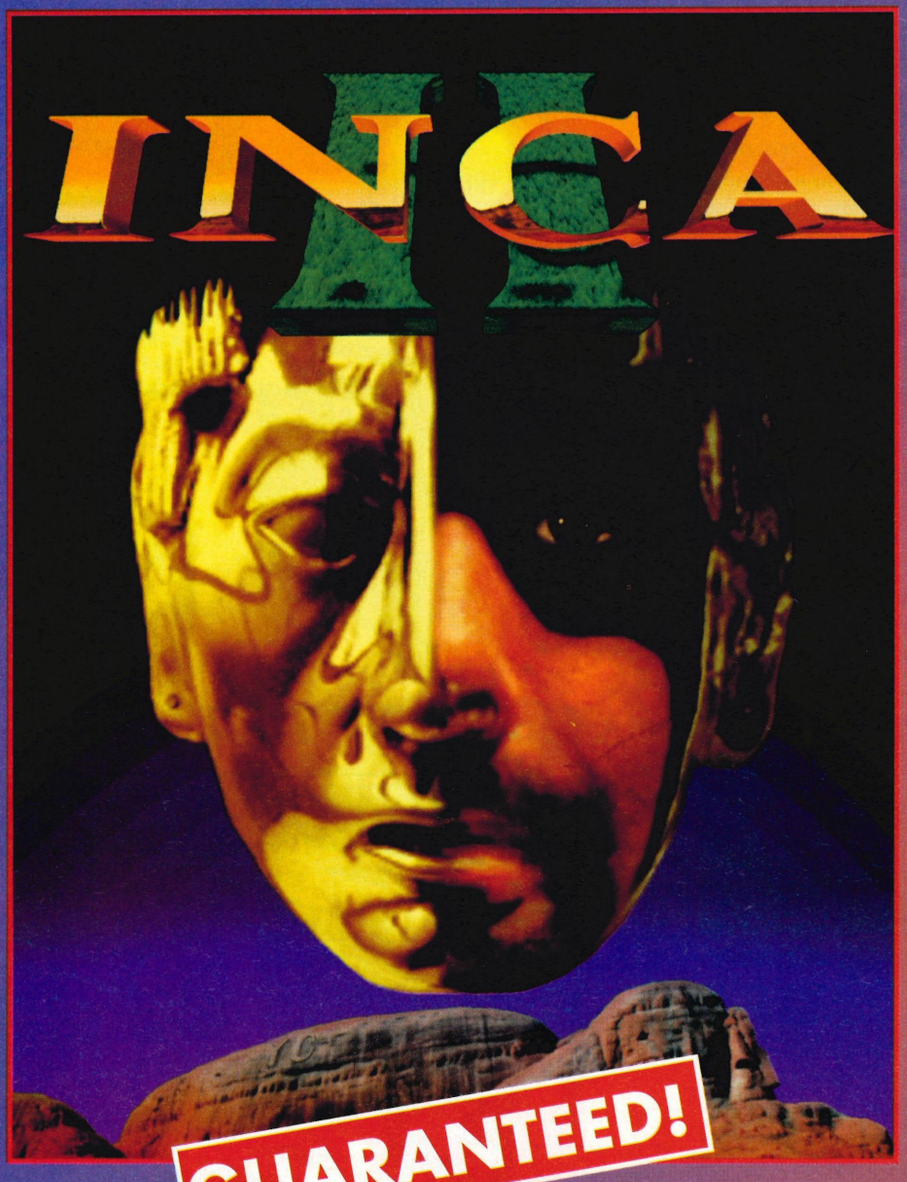

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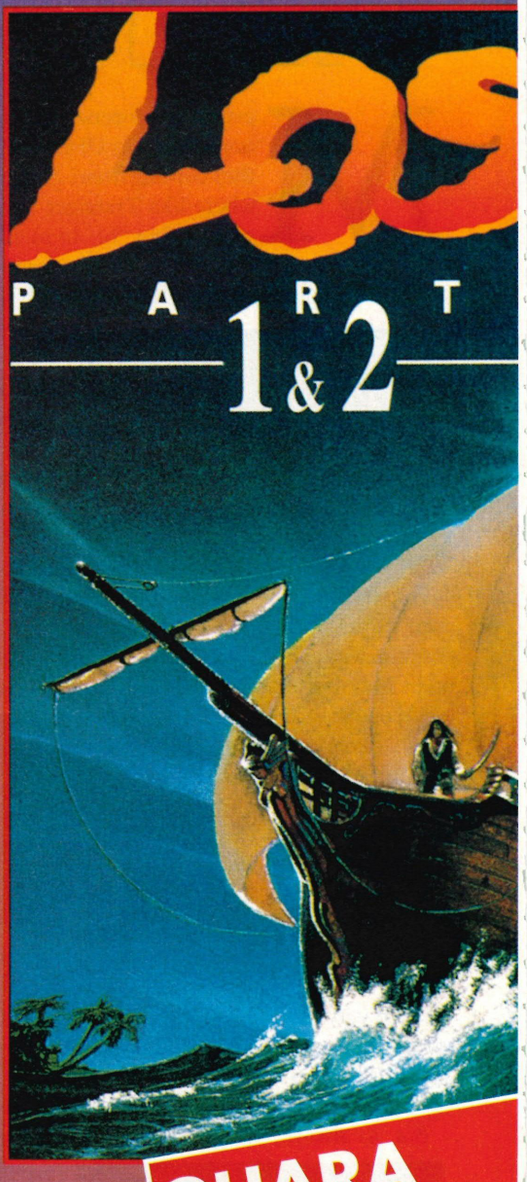

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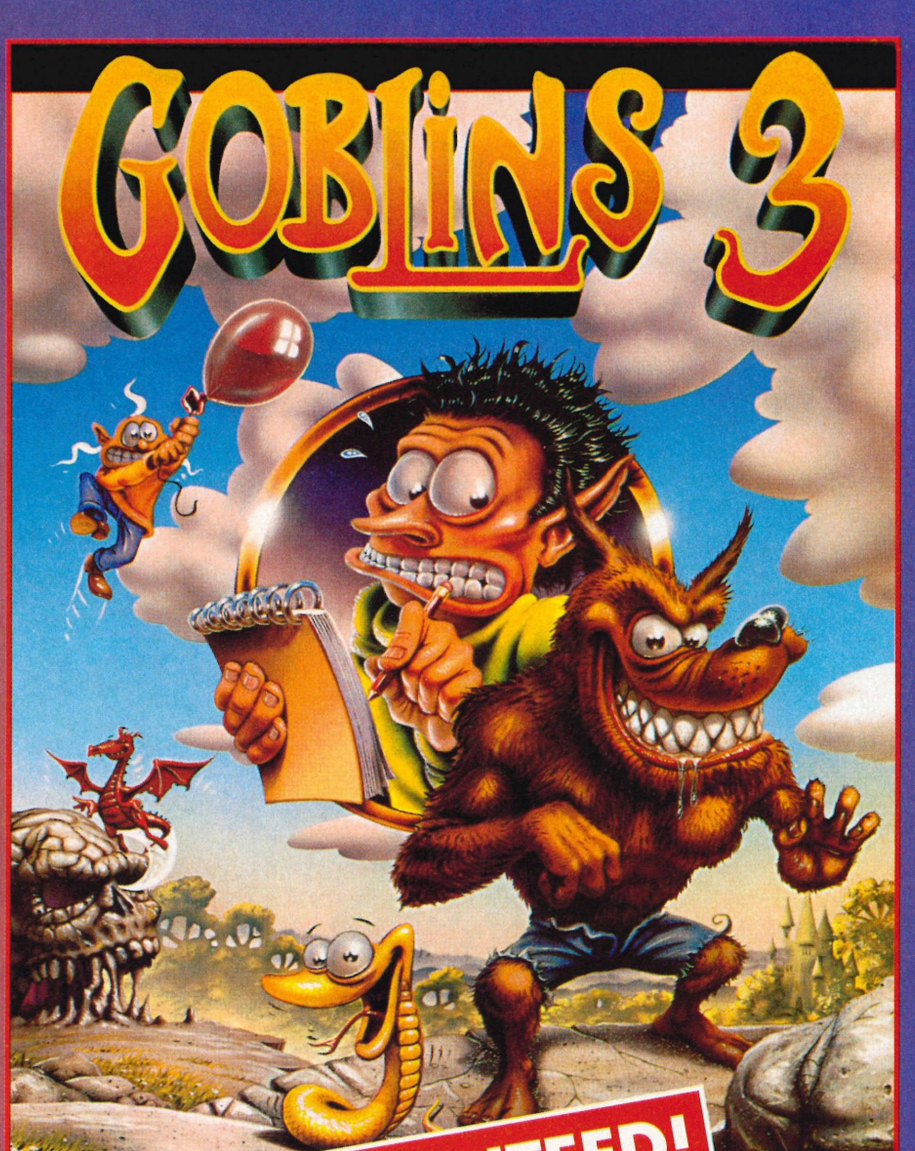

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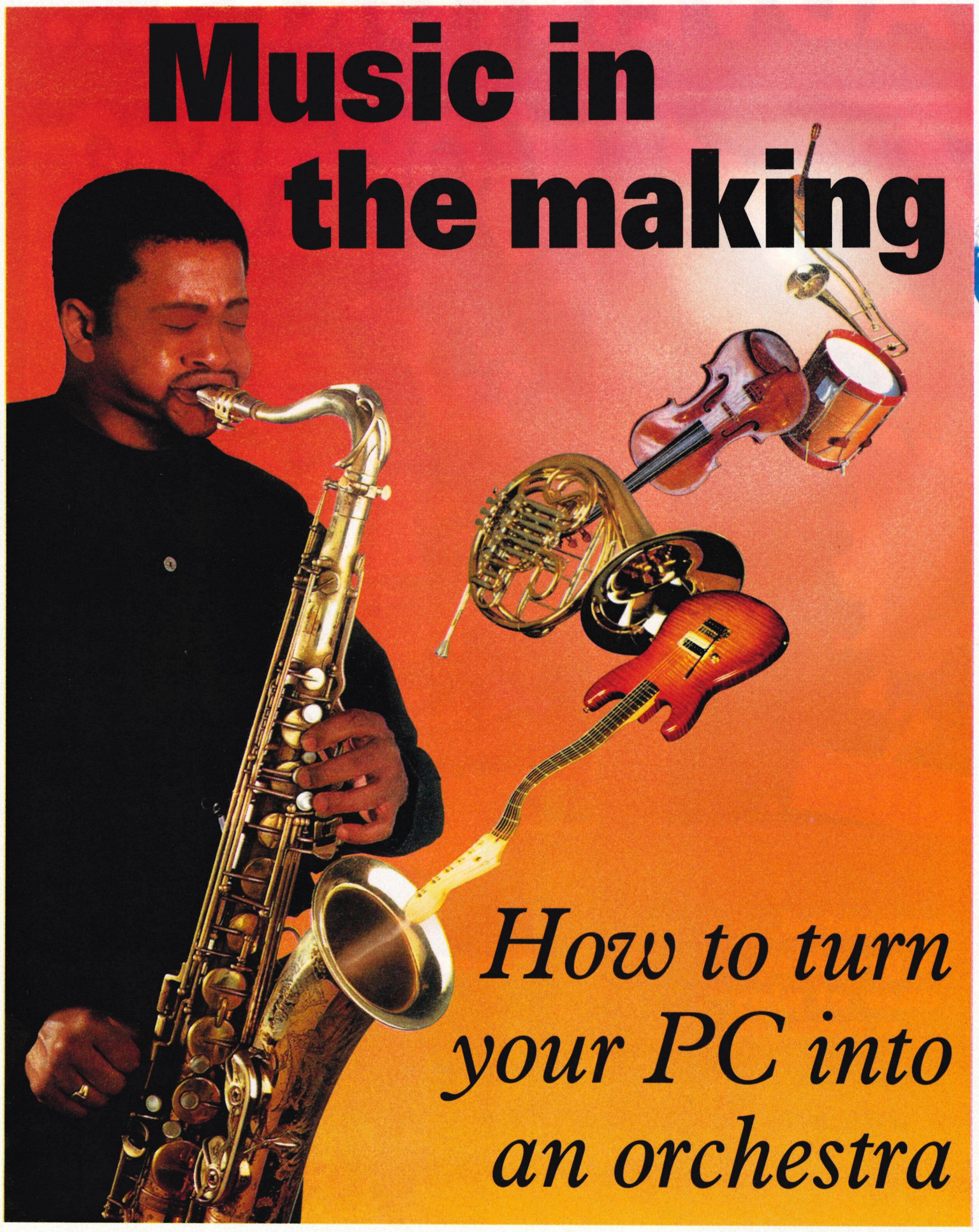
Music in the making



How to turn your PC into an orchestra

In the first of a three part series on making beautiful music with your PC, John Bennett moves from three-chord thrash to synthesised symphonies

If music be the food of love ... my social life is in for a distinctly rough patch. Aside from the odd editorial dictate from above, well, I have to come clean — part of the reason for this series is my complete inability to play the guitar. I've tried lessons, I've practised, I even bought a bigger amplifier (one that went up to eleven ...). But nothing worked. My attempt at the blues has sent dogs cowering down the road, my most dazzling rendition of two-and-a-half chord punk has the neighbours scurrying to the council clutching letters of complaint.

But then suddenly I saw the light. Since I spend all day up to my armpits in computer parts (lucky old me), why not put all that machinery to work on my musical compositions and perhaps come up with something a little more tuneful?

Call it cheating if you will, but the vast majority of chart music owes its existence to computerised recording techniques — often to paper over some yawning chasms in the talent department. The same is true for classical, jazz or whatever kind of professional or semi-professional recording you care to name, although not quite for the same reason.

The computer has become part and parcel of the music business, and there's nothing to stop anyone with an interest in music and a PC to hand getting into it. Once you get into it, it becomes fascinating, and, personally and for the sake of my long suffering neighbours, I'm only too grateful for a little help.

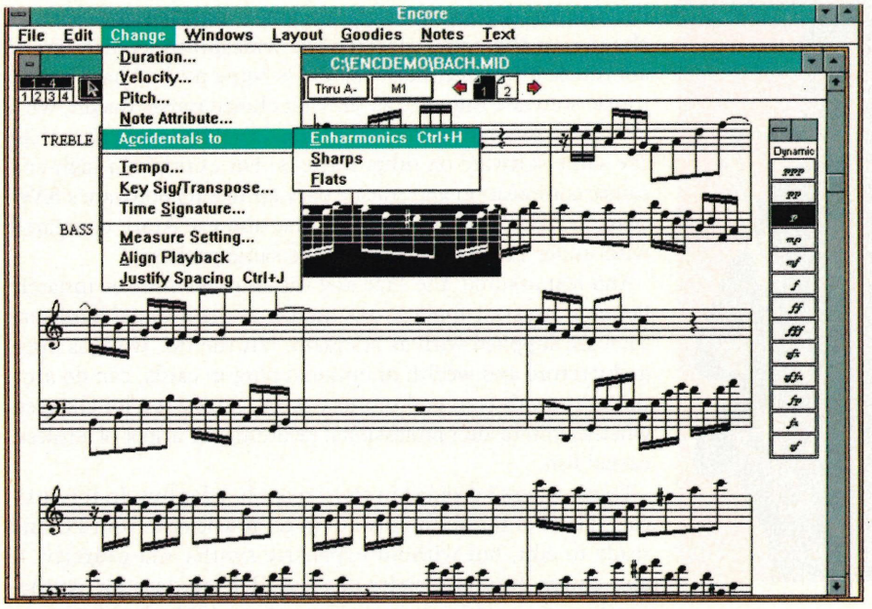
WHAT IS MIDI?

MIDI (Musical Instrument Digital Interface) is the standard for connecting electronic music devices to each other or to a PC

- All MIDI modules are polyphonic — meaning that one instrument can play more than one note at the same time. This is refered to as the number of 'voices' a device has.

- All MIDI modules are multitimbral. This means you can have a number of instruments playing simultaneously. Each takes up one track.

- You can always add more MIDI samples to the basic 128. Some sound cards come with 192 samples as standard. In most keyboards, for example, you can buy plug-in cards that provide more samples — in effect, more styles and effects to use. If that keyboard is connected to your PC, you can use them via the sequencing software, provided you tell it what you're doing by selecting the right MIDI map.



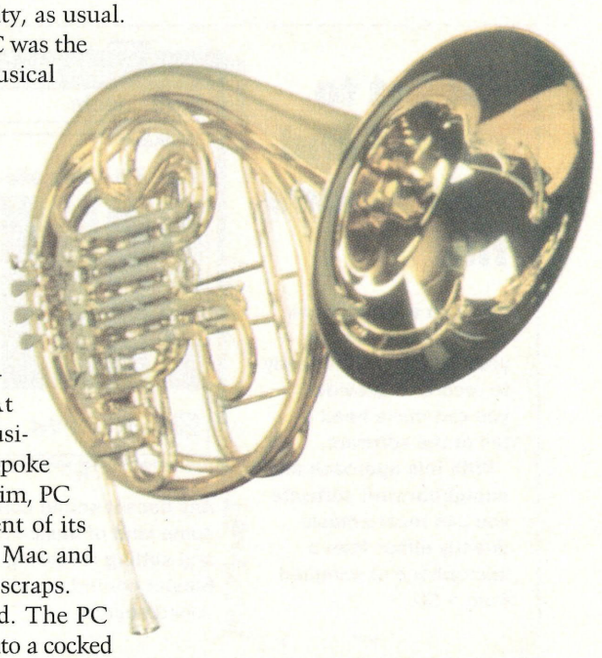
Drag and drop editing may make things easier, but it doesn't make musical notation any less intimidating.

What I wanted to do was simple: record my own (admittedly dreadful) songs and edit said racket until it sounded a little more presentable. Basically I wanted to compose and edit music without ever having to touch a musical instrument. Sounds tricky? Well, to take it to a high level of expertise isn't something that can be done overnight, or without spending a fair amount of cash, that's true enough.

But to get to a stage where you can start recording and editing music on the PC isn't actually that difficult or expensive. Like anything even remotely connected with computers, once you get past the jargon and the odd incompatible device it's really just a matter of hooking up the hardware, getting the right software and learning how to use it.

The first thing I had to confirm was that the PC was actually capable of working with music to any level. The Atari ST and the Apple Mac have traditionally been the standard platforms in both casual and professional music recording. In the case of the ST — which is all but dead in every other computing sense — the advantage is the low price of both the machines themselves and the readily available software. In the case of the Apple Macintosh, the legendary 'idiot-proof' interface is largely to blame for its popularity, as usual.

I'd always assumed that the PC was the poor relation to these two in musical terms. Not any more.



PC ascendancy

In recent years, the Mac and the Atari have vied for roughly a 40 per cent share each of the music software sales, with the PC trailing in a very poor third place. This year though, music software retailers report a dramatic increase in sales. At Sutekina Music in London's musical Mecca, Denmark Street, I spoke to Nick Howdes. According to him, PC software has roughly 70 per cent of its music software sales, with the Mac and the Atari fighting it out for the scraps.

The reason for this is twofold. The PC now knocks both competitors into a cocked



hat in terms of price versus performance. That has largely come about over the past year with the widespread availability of affordable 486s. Secondly, the PC is being pushed hard by the music software industry as the first choice music maker, with PC music software being sold at considerably lower prices than the same software on other formats. For example, a high-end music composition and editing package like IQ Software's SAW costs around £400 on both the Mac and the Atari, compared with under £200 on the PC for the same package.

And rest assured: the Mac and the Atari ST may be innately better at musical applications thanks to the internal hardware they are supplied with as standard, but the PC, with its open architecture and wealth of optional plug-in cards, can do anything its rivals can, and in most cases, can do it a lot cheaper, whether you're after professional recordings or a spot of aimless, casual fun.

That's where I decided to start: recording for fun. In this article I'll look at the simplest ways to get music onto your PC and ready to edit, but without expensive synths and gadgetry. It also covers basic principles of the MIDI interface for synthesised music, and in the next two issues, I'll be looking more closely at the synthesised stuff, as well as the more powerful software and hardware, and how to put all this stuff together with live recording.

For that, I'll be calling in some expert help, and I'm already indebted to Nick Howes and the guys at Sutekina Music for pointing me in the right direction more than once.

Bum notes ... and where to start

Recording music directly into your PC from what I'd call a 'live', non-electronic source — like a trumpet or a bass — is essentially very simple. At the risk of stating the obvious, the first thing you need is a PC with a sound card (there's more on this in the panel on sound cards). This needs to have a jack into which you can plug a microphone. Hook the sound card up to a pair of speakers, preferably through an amplifier, and you're just about set.

All you need after that is some suitable software to set it all in motion and start recording. Many sound cards come with composition, recording and editing software, albeit of a rudimentary level, and it's worth experimenting with these first before shelling out any more cash.

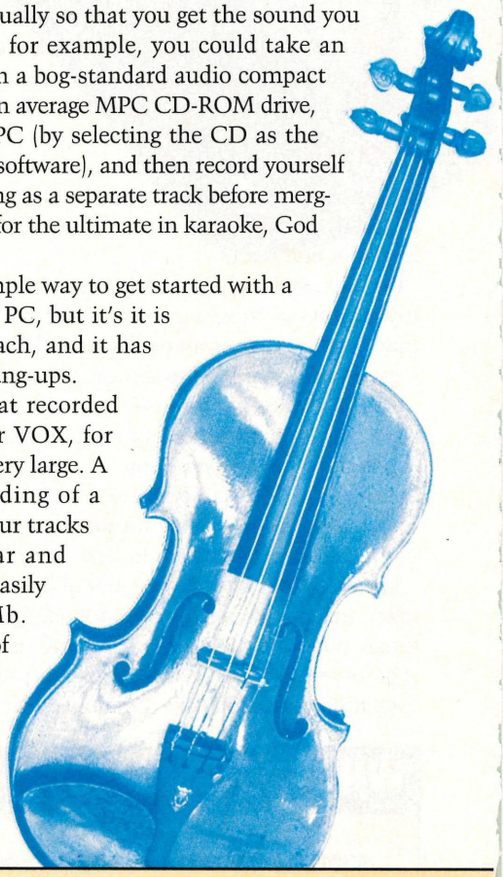
Otherwise there are a number of fairly cheap packages to get you going. As you'd expect, the Windows programs are usually that bit easier to get to grips with, and should provide simple recording, mixing (in the sense of recording and playback volume) and basic editing controls. A good example of this is MCS Stereo from Guildsoft (£59).

If the software is a little more sophisticated — like the aptly named Digital Soup — it will be able to cope with multiple tracks — usually four, eight or 16 or greater. Splitting music into tracks is simply a way of dividing up a piece of music into separate parts played by each instrument, or groups of instruments, rather than recording the whole thing at one go.

This way, you can record via the mike, the CD, a keyboard synthesiser (more about that later) or load files from disk and balance them individually so that you get the sound you want at the end. So, for example, you could take an instrumental piece on a bog-standard audio compact disc, play it through an average MPC CD-ROM drive, record that on your PC (by selecting the CD as the input device for your software), and then record yourself singing or playing along as a separate track before merging the two together (for the ultimate in karaoke, God help us all ...).

That's the most simple way to get started with a spot of music on the PC, but it's it is a very limited approach, and it has several nasty little hang-ups.

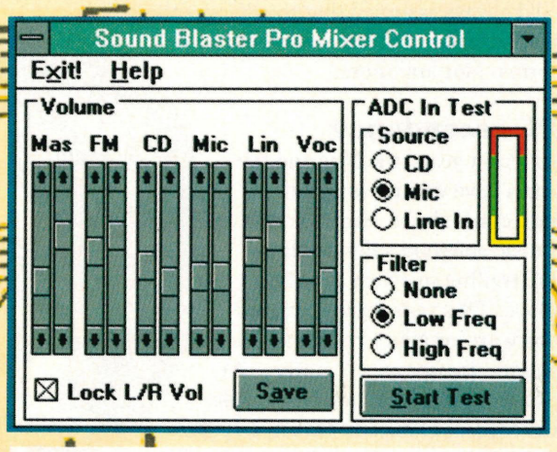
One problem is that recorded sound files (WAV or VOX, for example) are large. Very large. A three minute recording of a song split into say, four tracks (drums, bass, guitar and vocals, perhaps) can easily be as large as 30Mb. This is not the sort of thing that you can casually lob on to your hard disk and expect to edit at leisure. That is, not unless you



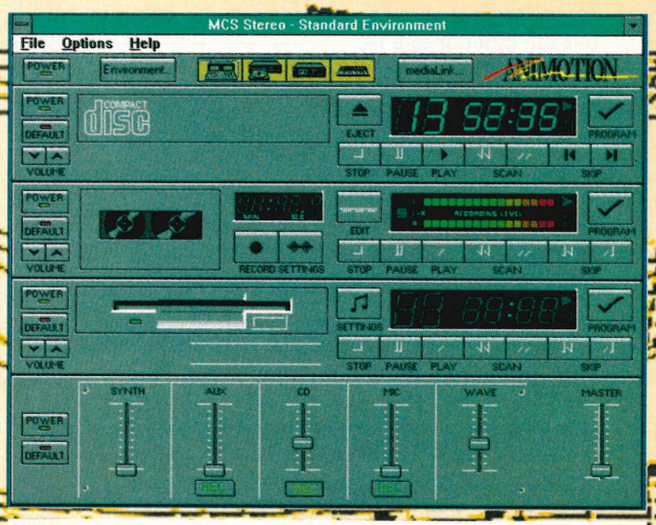
All set to record and edit a wave file

Hook up a microphone to the sound card on your PC and you're ready to record — provided you can make head or tail of the software.

With this approach and straightforward software you can record music directly either from a microphone or sampled from a CD.



Any decent sound card worth its salt comes with some kind of basic mixer for chosing input devices and setting recording levels. This is the Sound Blaster control panel, with the microphone set as the sound source.



MCS Stereo has an easy to use control panel, with volume sliders for individual sources, a CD player and built-in recorder.

want to delete every game and business application on your PC whenever you feel a song coming on. And come to think of it, how do you get a 30Mb file off your PC? Not easily, at any rate without an expensive SyQuest or optical drive.

But most importantly, if you simply record sound digitally you can't really edit it in the true sense of the word. The best you can do amounts to little more than distorting the recording. Sure, depending on the software you've got, you can flip it round, play it backwards, add effects like echo, flange, chorus and reverb, cut it, paste it and generally muck about with it, but you can't edit it musically. You just can't turn a bum note in to a sweet note.

Marvellous MIDI

To get round this rather large obstacle, you need to work with the Musical Instrument Digital Interface — or MIDI for short. This means a sound card with a MIDI interface, a MIDI adaptor and MIDI compatible music software.

MIDI is a standard for connecting electronic music devices. It's the link that enables you to hook up, say, two entirely different makes of keyboard — both of which, for the sake of argument, work on completely different principles — to a PC, and for all three to understand what the other is doing in musical terms and to pass instructions back and forth.

A MIDI device could be a keyboard synthesiser, for example, or a drum machine, a PC sound card, PC sequencing software or any other electronic medium that can use MIDI to transfer musical data.

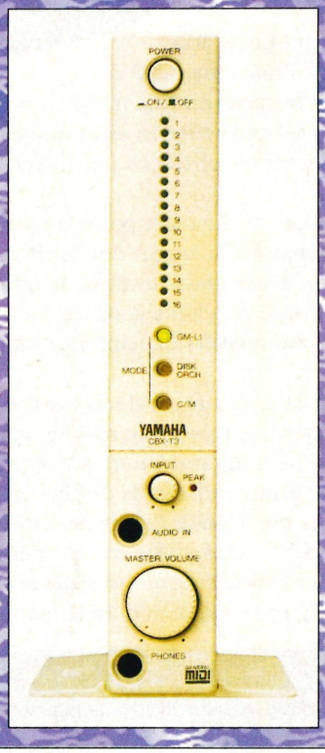
The MIDI data sent between these devices does not contain the complete recording of a piece of music. Instead, it simply holds the set of commands and instructions relating to pitch, key, duration etc so that any MIDI device will be able to understand them and apply them to its own set of synthesised sound samples to produce music. Since this is a relatively small amount of data compared to a digital sound recording, a MIDI file has the instant advantage of being a fraction of the size of a WAV file and consequently a lot easier to deal with.

The way a device that supports MIDI generates a range of sounds is by using high-quality 'samples' as the basis for everything that's played. A sample is a recorded snippet of sound, and the General MIDI Level 1 (GM MIDI) standard is a set of 128 instrument samples, ranging from the mundane such as violins, pianos or steel stringed guitars, to gunshots, barking dogs or helicopters. Any device that supports General MIDI level 1 will know which sample is referred to when told to by another MIDI device.

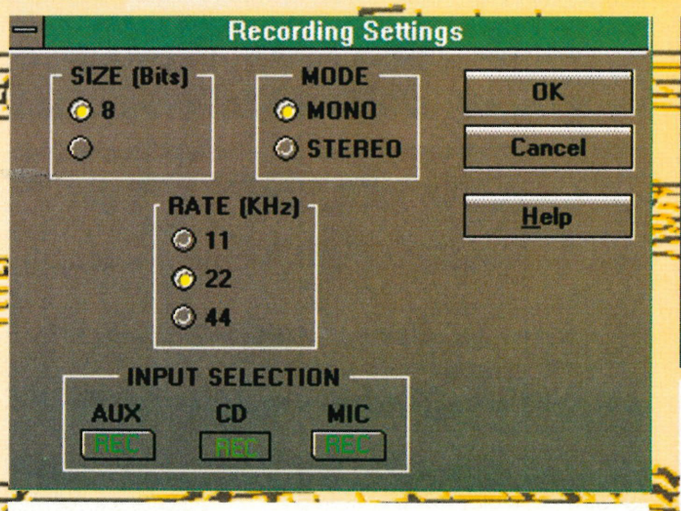
The big advantage of working with MIDI is that a recorded music track can be edited precisiely. This is the job of a sequencer; a piece of software that acts something like a musical word processor and file manager rolled into one. The sequencer is



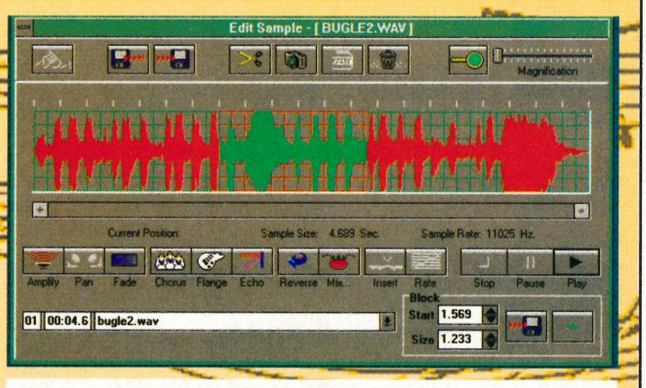
Yamaha Hello Music! The CBX T3



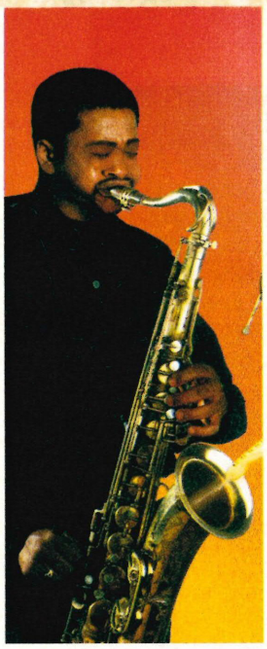
MIDI-compatible hardware encompasses all sorts of wierd and wonderful gadgets. The Yamaha CBX T3 is in effect a keyboard synthesiser without the keyboard — strange as this may seem. Called a 'tone generator', it has MIDI IN, OUT and THRU connections for linking it to your PC and other devices. You use the MIDI-compatible sequencing software on the PC to produce music via the Yamaha's store of built-in sounds and effects. In this respect, it's fine and great fun to play around with — although 'Hello Music!' gets the award for naffest title of the year without even breaking sweat. But, its biggest drawback as far as I can see is that the the sequencing and editing software, Cubase Lite, only allows you to work in musical score. If you're not familiar with this notation, you're left with something like an undersized, sweet-sounding jukebox until you've worked it all out.

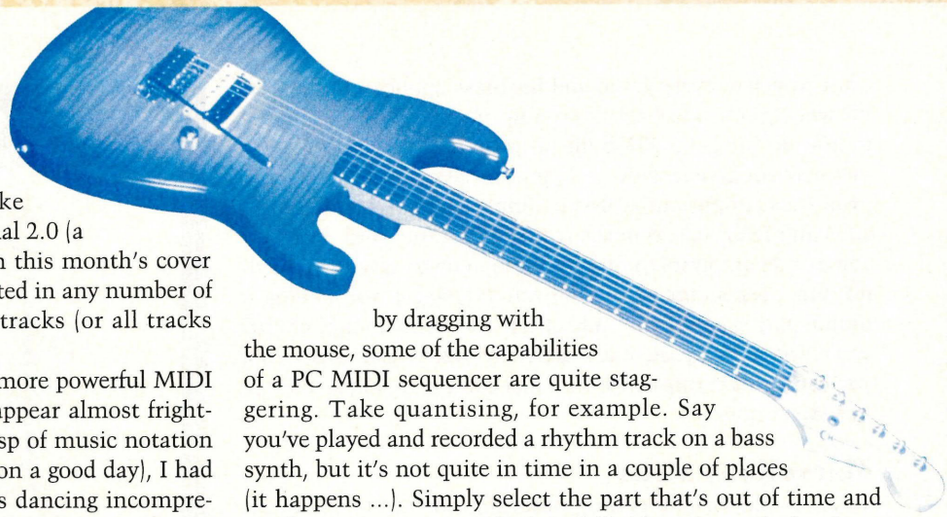


The quality of the recording will be poor at this sampling rate (22KHz). For CD-quality, I need to use the 44KHz setting. Unfortunately, my sound card refuses to do this in stereo ...



OK, I've set the ball rolling, played my stuff and recorded it — now comes the time to polish it up. Again in MCS Stereo, this is the Wave Editor. I can do all sorts of things to the overall sound — cut it, paste it, add effects like chorus, reverb and flange, and change the volume, simply by selecting an area with the mouse. What I can't do — or not without much more sophisticated and expensive software — is edit specific notes or instruments.





where you control all of the devices connected via the MIDI interface and it's also where you edit and compose the music.

Using a sophisticated sequencer, like Steinberg Cubase or Cakewalk Professional 2.0 (a cut-down version of which is featured on this month's cover disk), the music can be displayed and edited in any number of ways for each track or combination of tracks (or all tracks together, for that matter).

If you take a close look at some of the more powerful MIDI software packages you'll see that some appear almost frighteningly complex. As someone whose grasp of music notation and theory rarely gets much above zero (on a good day), I had horrible visions of crotchets and quavers dancing incomprehensibly across my screen.

That's doesn't have to be the case, though. You can work with traditional music notation, inserting, deleting or moving notes around with the mouse. But there are numerous other ways that the tracks and individual notes and chords can be represented on a sequencer, such as the 'pianola ' grid system with the notes represented as blocks — rather like the old punch hole sheets used in Victorian musical fairground attractions.

With things like pitch bends and modulation achieved just by dragging with the mouse, some of the capabilities of a PC MIDI sequencer are quite staggering. Take quantising, for example. Say you've played and recorded a rhythm track on a bass synth, but it's not quite in time in a couple of places (it happens ...). Simply select the part that's out of time and set the sequencer to work on it. It'll tidy — 'quantise' — it up for you so everything's in perfect time. And if that sounds too perfect, you can select 'humanise' to do exactly the opposite and imitate human error and feel.

And back to live recording again...

Editing, composition and fancy effects are only part of sequencing software, there's a lot more to it than that. The whole idea is that the sequencer software on the PC is what you use to control any number of MIDI devices that you care to hook up. If you're trying to record, it's no use having to run from one device to another hurriedly switching them on and then hoping they all start at roughly the same time. The sequencer's job is then to make sure that everything starts playing, as you probably guessed, in the right sequence.

This is all well and good for digital, synthesised music. But to come back to my original masterplan, you still need to be able to bring in live analogue recording and use it in conjunction with the PC and MIDI-based music. That's in the pipeline for next month's issue. ■

PC sound cards

Before you put any music into a PC, you need to be able to get something back out again. As most games players know, even on a good day, the PC internal speaker does its level best to imitate a flatulent frog in the mating season.

Since we're going to be looking at all the best sound cards on the market in a complete round-up next issue, I'll keep this brief for now — no sound card, no decent sound.

Prices start from around £80, and as ever there is a considerable difference in quality between cards. Most of the cards use a variation on the Yamaha OPL chipset, but the two main technologies in use are the more common FM synthesis as used in the Sound Blaster cards, and the more advanced but less well supported Wave Table synthesis used in the Gravis UltraSound and Orchid Sound Wave 32 cards.

There's also a new method of sound synthesis called Wave Guide on the horizon. It's currently being pioneered in a US university research lab, and Media Vision is threatening to bring the technology to its cards very shortly.

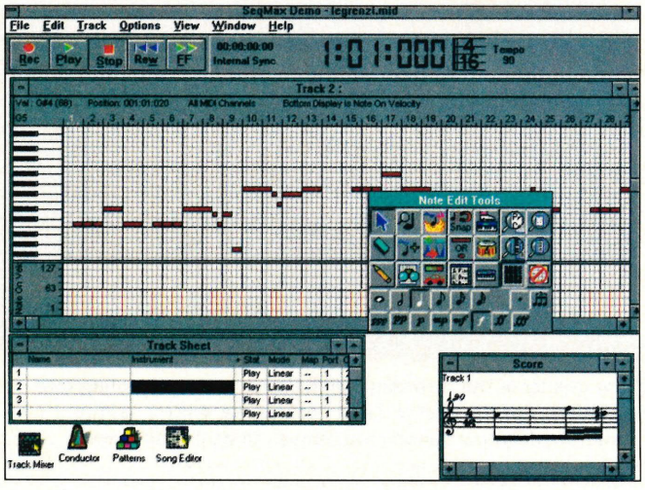
For music recording purposes, you need a 16-bit card. As far as the computer is concerned, the quality of the recording is dicatated by the resolution at which your sound card records and samples. A 16-bit sound card sampling at 44.1MHz is CD quality recording — or thereabouts. Lesser devices will produce a poor recording, so check to see whether your sound card supports recording and sampling at these frequencies, and if so whether the card can do the same in stereo, whether it is MIDI compatible, and how many voices (instruments playing simultaneously) it supports.

- A sound card is a simple device to install. It plugs into a free slot inside your PC, connects to your amp or speakers and comes with all the necessary software to drive it.

But connect it solely to a set of PC speakers and you won't do you much for the overall sound quality. The best way to start with is to hook the whole lot up to your hi-fi with leads you can pick up in any high street electrical shop for a couple of quid.

Sophisticated music software makes all the difference. Below: creating your own mixing desk couldn't be easier when you can just drag slider controls and the like from a palette and assign a function to them. Below; a piano-roll system simplifies editing of a MIDI music file. You can also see the list of individual tracks, the musical score and accessible icons for each tool.





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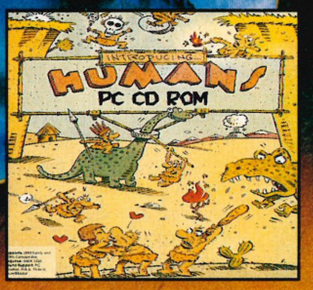

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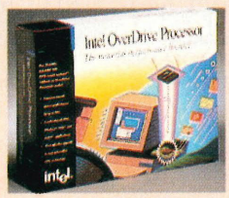

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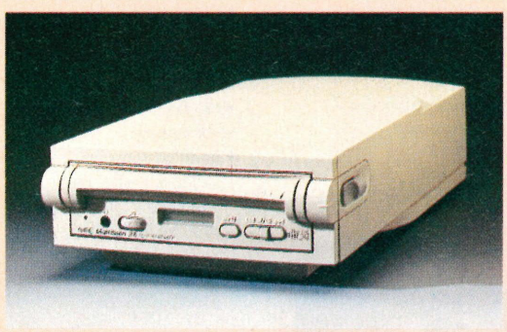

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Size does matter

Credit card sized hard disks? Modems in your wallet? Steve Boxer investigates why PCMCIA holds so much promise even though your local bank doesn't accept PC cards yet ...

Of all the ideas that have walked off the pages of sci-fi novels and straight into PCs, I'm still waiting for the most useful: a Tardis-style hard disk that expands to accommodate whatever you put on to it. I think I might have to wait a long time for that, but in the meantime, a new technology developed for notebook PCs may go some way towards providing the solution to finding that extra 40Mb of hard disk space required to house your latest bells-and-whistles supergame.

PCMCIA is an acronym you may have heard but won't know much about, unless you're rich enough to have bought a notebook PC. It stands for the Personal Computer Memory Card Interface Association and is a specification for a new generation of credit card-sized plug-in expansion cards. An impressive array of card types are now on the market, from tiny magnetic 1.8" hard disks to SCSI cards, via fax/modems, network cards, flash memory solid-state hard disks, ROM and RAM cards, sound cards and terminal emulator cards. I've heard there's even a TV tuner under development on a PCMCIA card. All of these share the same footprint as a credit card, range from 2mm to 10.5mm in thickness and weigh a matter of ounces.

It's easy to see how notebook owners could use these to give their machines access to functionality which is denied by the lack of room for an old-style expansion slot. But the most intriguing aspect is that PCMCIA cards are about to make the leap to desktop PCs. This could not only provide infinitely (and easily) expansible hard disk storage, but also solve any other expansion problems desktop users have. Exactly how is explained over the page.



PCMCIA cards were initially developed to overcome expansion difficulties on laptops.

What is PCMCIA?

First, though, an explanation of he cards themselves. There's not much to it, really; it's just the latest example of the miniaturisation revolution that's been raging since semiconductors were first coaxed out of lumps of silicon. There are a few potentially confusing areas, though. Firstly, there are two PCMCIA specifications: PCMCIA 1.0 and 2.0. You can afford to ignore PCMCIA 1.0 — it was the first stab at defining a PCMCIA standard and was a bit of a mess, as are most first attempts by committees drawn from the computer industry aimed at establishing standards. You can't get PCMCIA 1.0 cards any more, which is just as well, since they had a tendency to work in some machines and not others.

PCMCIA 2.0 was drawn up to solve incompatibility problems: it's just a much more tightly defined specification, making it easier for card and slot manufacturers to design cards that will work in any PCMCIA slot. You should make sure that any PCMCIA card you buy is a version 2.0 one — as it almost certainly will be.



There are three PCMCIA 2.0 sub-divisions: Type I, Type II and Type III. These actually just refer to the thickness of each card. In other words, all PCMCIA 2.0 cards have the same physical connector, and whether a slot can accommodate Type I, II or III cards depends on the clearance above that slot.

It would be a lot simpler if Type I, II and III had been called Thin, Medium and Fat PCMCIA cards respectively. For the record, a Type I slot must be 3.3mm high, a Type II slot 5.0mm high and a Type III slot 10.5mm high. Thus, if a manufacturer designed a PCMCIA card that was, say, 8mm high, it would be a Type III card (because it's too fat to fit into a Type II slot). As the connector and length and breadth specifications are same for the different types, you can use all three types in a Type III slot, Types I and II in a Type II slot and so on.

What type are you?

The vast majority of available cards are Type II ones, but the ones that are most likely to interest you and I are the Type III magnetic hard disks, which are impossibly cute mini-versions of the hard disks you find inside normal PCs. You often find double-Type II slots (one above the other), which can either hold two Type II cards simultaneously or one Type III card in the bottom slot.

Which brings us to using PCMCIA cards in desktop PCs. Manufacturers have just recognised the need for this and have responded by designing slots that fit into empty drive bays (into which you'd typically put a CD-ROM drive or a second floppy disk drive). As space isn't at a premium in desktop machines, these are all designed to hold Type III cards.

So, if you buy one of these slots and fit it to your PC, you'll then be able to buy as many of the readily available PCMCIA Type III magnetic hard disks as you can afford, and swap them around to your heart's content. At present, the highest capacity PCMCIA hard disk on the market is a 105Mb one made by Maxtor (which also makes a plug-in slot for desktop PCs), but I expect to see at least 200Mb drives by the middle of next year.

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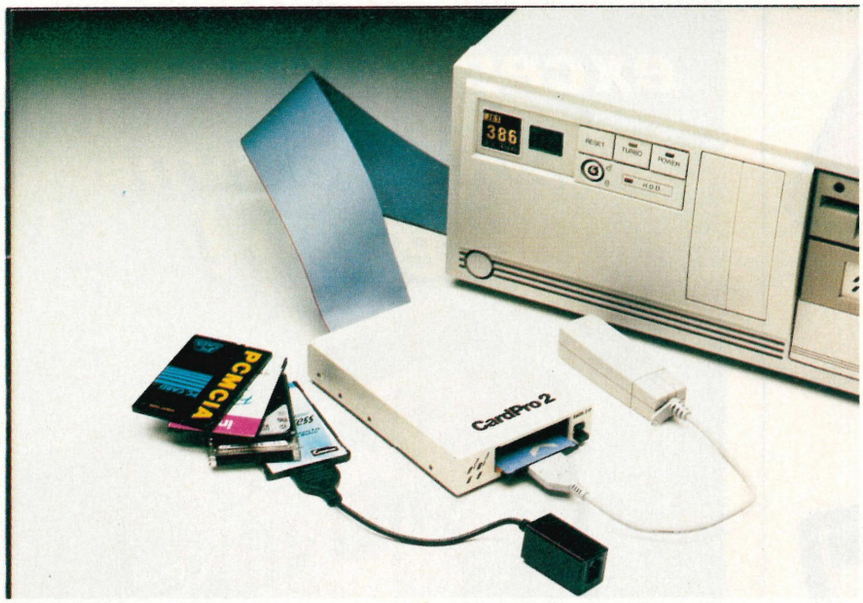

The CardPro PC peripheral allows you to connect up PCMCIA cards to desk-top machines that have no internal card slots.

Easy configuration

PCMCIA hard disks have a lot of things going for them. Firstly, they're pretty cost-effective, as you don't have to throw them away when upgrading, you just swap them around as you please. In fact, if you set your machine (via the BIOS) to boot up from them, you can dedicate them to certain games and configurations (which puts a welcome end to the familiar rigmarole of saving and renaming multiple Config.sys and Autoexec.bat files). Or you could have, say, one with all your games on and one with business applications on. And if you ever deal with sensitive files or the like, it's a breeze just to take them out of your PC at the end of the day and lock them away. UK company Calluna is one among many, selling 85Mb PCMCIA hard disks at an RRP of £377.

Another PCMCIA storage technology worth keeping an eye on is Flash memory. This is rewritable memory which, unlike other forms of memory, doesn't need power to keep its data and so can effectively be used as a super-fast hard disk. Flash memory cards (PCMCIA Type II in format) are terrifyingly expensive at the moment, but prices are coming down, and they have effective access times measured in microseconds rather than milliseconds, as with magnetic hard disks. They're also virtually indestructible, and have no moving parts.

But the most intriguing PCMCIA storage technology around comes from SyQuest, famous for its removable hard disks for PCs and, notably, Macs. SyQuest has designed a PCMCIA Type III card which, itself a normal PCMCIA card and therefore removable, takes tiny plug-in storage cartridges (in other words, it's the first removable removable hard disk). These cards are scheduled to ship early-ish next year, and SyQuest claims the cartridges (initially available in 60 or 80Mb capacities) will cost just £40 (the card and the first cartridge will cost under £250). You can't argue with a cost of 50p per megabyte, but the technology has yet to be proven, so watch out for a review early next year.

So what's the catch?

There aren't really any major drawbacks to PCMCIA, although you have to bear in mind that it's a new technology and has only just reached maturity. This is manifested in pricing — which is constantly coming down as more manufacturers join the PCMCIA party — and a few technological glitches, most notably in the software needed to get PCMCIA drives to recognise and configure cards (see panel below). The advantages of having a PCMCIA slot in your desktop PC are manifold — as well as the storage, you can plug in modems, network cards, SCSI cards or whatever to your heart's content — and so it's something you should think about.

Hewlett-Packard offers a PCMCIA slot as an option for its Vectra desktops, while Maxtor is selling PCMCIA slot kits for PCs. Chase Advanced Technology offers the biggest range of PCMCIA slot kits, with a parallel port one offering one Type III slot, an internal ISA card solution offeringone slot at the front and one at the back (both Type III; both cost £199) and a PCMCIA magnetic hard disk-specific slot for a drive bay which attaches to the secondary address on your PC's IDE hard disk controller.

PCMCIA and software

One day all PCMCIA cards will automatically work in all PCMCIA slots. Sadly, at the moment, this isn't the case. It will be though when Microsoft finishes writing Chicago, the 32-bit successor to Windows 3.1 and Chicago, which will have native support for PCMCIA, becomes the operating system of choice. Until then, we DOS and Windows users have to rely on software to get PCMCIA cards up and running.

This software is typically split into two types: socket services and card services. Socket services software operates at BIOS level and offers a form of communication between your machine and the socket, so it takes care of dtceting how many slots are there, and whether they're empty or full. Once you have a PCMCIA socket up and running, with the socket services software doing its stuff, you can leave the software to its own devices.

Card services software allocates things like interrupts, memory and so on, once socket services have detected a card in a PCMCIA slot, and works at an operating system level. It basically prepares the system to work with the card-specific hardware drivers that are required.

It has to be said that PCMCIA software isn't yet completely up to scratch — it's still evolving. Various software companies (including BIOS manufacturers like Phoenix) make PCMCIA Services software, and the holy grail they all seek is "hot-pluggability", that is, the ability to plug a card in and for it to instantly work. Notebook manufacturers like Compaq and Toshiba are pretty close to this, and you'll find that most PCMCIA cards come with drivers and some form of Services software; naturally, a plug-in drive for a PC would also come with the necessary services software.

As a general rule of thumb, a PCMCIA card is more likely to work straight out of the box if it comes from a major manufacturer. The only native operating system I'm aware of which currently ships with PCMCIA extensions is, intriguingly, IBM's PC DOS 6.1, so if all else fails, that's another avenue you could try. Or, if you're patient, wait for Chicago, which may well appear some time next year.

Contacts:

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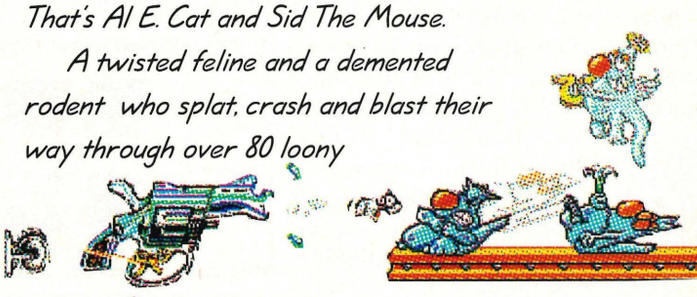

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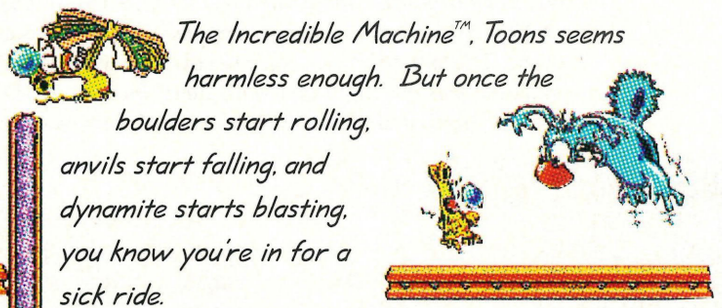

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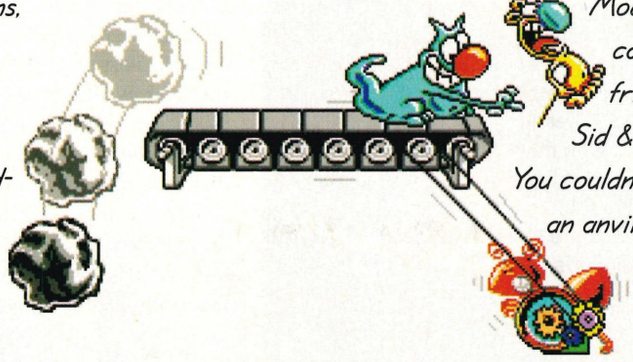

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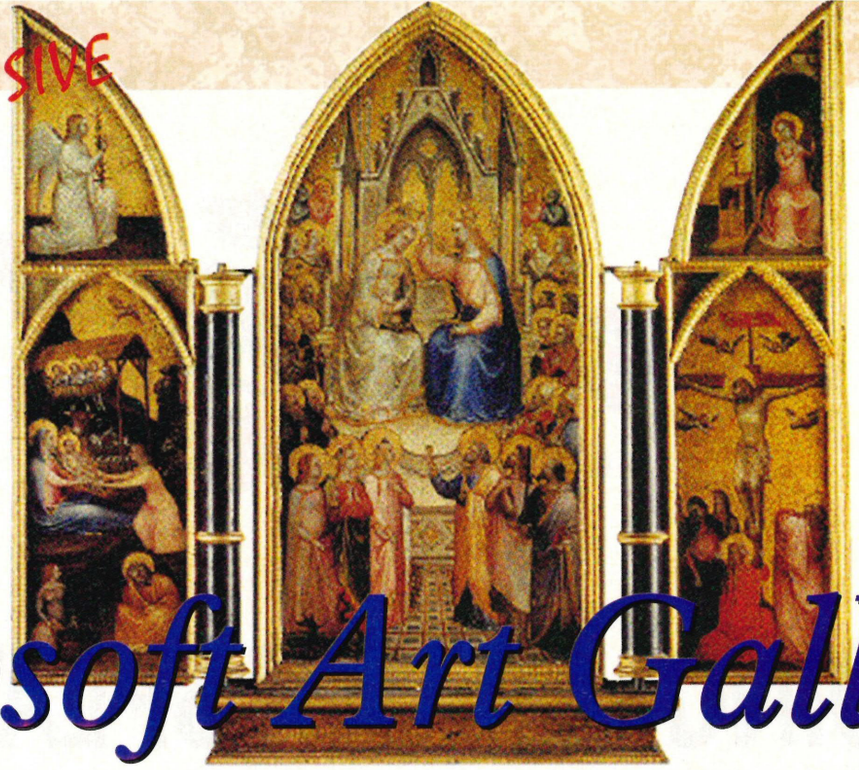


Microsoft Art Gallery

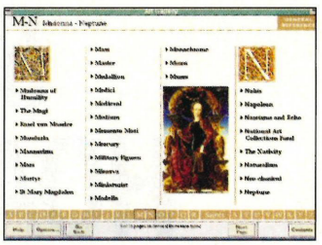
He doesn't know much about art, but he knows what he likes ... Microsoft's Art Gallery has John Bennett in raptures

Art Gallery is beautiful. Simply, delightfully, beautiful. It contains the *entire* collection of 2,000 paintings permanently housed at the National Gallery — arguably the finest collection of Old Masters in the world, including works by Leonardo Da Vinci, Michelangelo, Rembrandt, Seurat, Renoir, Degas, Constable and Holbein.

True, with that sort of subject matter you'd be hard pushed not to make something attractive and interesting to look at, but as CDs go this one really does stand out from the crowd.

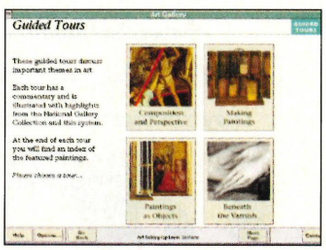
CD-ROM reference software often feels like a dull but worthy cause. The fact is that, a couple of years ago when the CD hype machine was getting under way, there wasn't exactly a great deal to get excited about — 90% of the CD software available was reference based, and the other ten per cent was, well, the polite term for it is 'shovelware'.

At least the reference material was comprehensive and generally well presented. But then, if you can't manage good presentation with 600Mb of space to play with, you deserve to be shot anyway.



Search for paintings by a broad range of subjects.

Recent releases have been getting steadily better, much less dry and workmanlike. But still, how many atlases, almanacs, encyclopaedias or glossaries of quotations do we need? Sure, they're vaguely interesting to browse through, good for the kids, and always there if you need a quick quote from Ben Johnson, or a smattering of Aristotle in an emergency ... but they rarely get away from being essentially mundane.



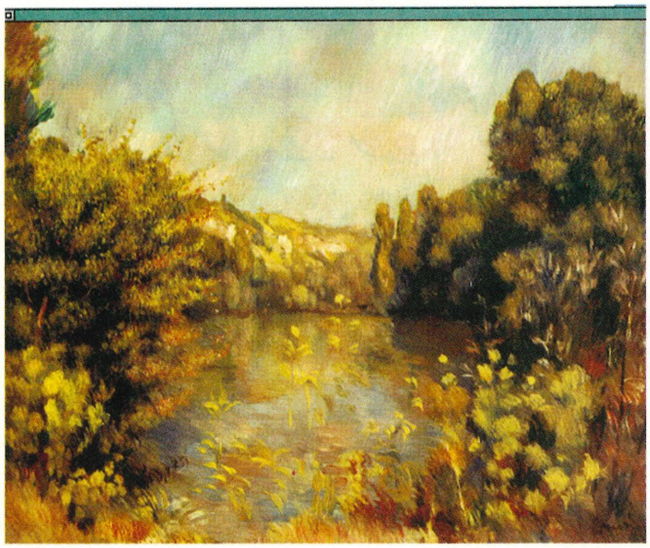
Choose from four animated Guided Tours with commentary.

Art Gallery is a step or three above all of that. It's based on the MicroGallery which is actually used by the National Gallery themselves, designed by Brighton-based Cognitive Applications, who have also been responsible for the conversion to a PC CD.

This is why it lacks the overtly American slant we've come to expect from CD-ROM reference discs. After all, it could easily have been the Metropolitan gallery in New York — it's not because Microsoft has seen the light and decided that the complete 1967-68 baseball season statistics are not actually an essential part of British life.



Philippe Rousseau's apt but unoriginally titled painting, A Valley — probably painted between 1850 and 1880.



Renoir's Lakeside Landscape from the period 1885-95. Pictures can be blown up to three-quarter screen windows

Whether there will be further galleries added to the series is still under discussion. The hard work in terms of the structure and programming of the CD has already been done, it's now a matter of acquiring the electronic publishing rights from further museaums and galleries. Bill Gates, Microsoft's CEO, got his hands on the electronic publishing rights to the National some years back as a 'personal thing'. He then sold them back to his company — profitably, one has to assume.

Picture perfect

The first thing that leaps out at you as you browse through the Art Gallery CD is the quality of the computerised paintings. On a bog-standard 256-colour SVGA screen, I'd expected Van Gogh's vibrant colours to dull into lifelessness, or Cézanne's landscapes to suffer in a blur of grainy pixels. Far from it. Digitised in 256 colours, the quality of the paintings is nothing less than remarkable.

The second is simply the way Art Gallery has been laid out. It comes with all the trimmings of your average reference CD, so you can make individual searches, flip back to the last page you were at, print out entire pages or swap to the contents menu at the press of an onscreen button.

But that's the standard stuff. What makes it all rather special is the way it has been so effectively organised into five principle sections.

The first of these is the obvious one: browsing through lists of painters. Select a painter, and you'll get a screen with a short biography, a series of thumbnail pictures of his works and highlighted text with cross references to other painters or subjects. When you click on these you'll either get a mini text window with more information, or flip straight to the artist or painting in question.

Next there's a geographical menu. As you'd expect, when you select a location on the map of Europe, this brings up localised maps with information about individual painters and schools of painting from that area.

The third choice is to go by types of painting. Initially, this is divided into portrait, landscape, religious, and so on. Select one and you'll be given further choices to narrow your search: for example, architectural or natural, under landscapes. Once you've narrowed down the search sufficiently, you're presented with a series of thumbnails paintings to chose from.

Alternatively, there's the thematic approach. Pick, say, Napoleon, or Moses, and it'll show you paintings and painters that relate to them (not surprisingly).

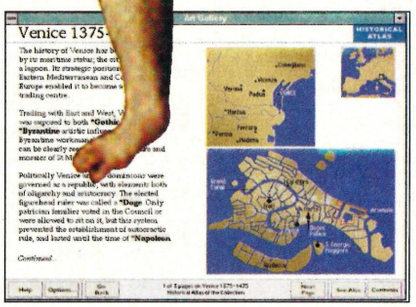
Lastly, there's the fascinating guided tour section. The four tours — covering composition and perspective, making paintings, paintings as objects, and 'behind the varnish' — come with a running commentary and animations to illustrate techniques or points of interest. For example, a grid will gradually appear over an architectural landscape to show the use of perspective and composition, or 3D rendering will be used to bring a 15th century sketch of a vase to life. And, animations are used to show where an original masterpiece has been retouched and altered over the years.

A quick spot check against the few art history books I could lay my hands on hasn't turned up any errors amongst this lot, or even minor discrepancies, but then I'm not exactly an expert.

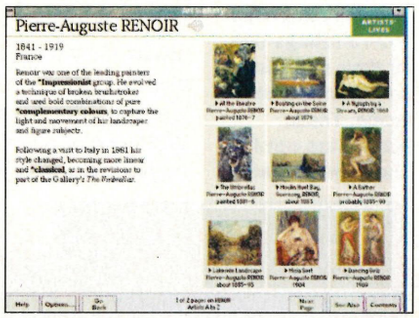
If I had to criticise anything about the Art Gallery CD overall, it would be that the voice-overs for the guided tours are a shade too trite and don't really take advantage of the CD's capabilities. Also, it's a shame that you can't expand the pictures up to full screen size, and that not all of them are in colour. Otherwise, it's perfect.

The end result is that Microsoft Art Gallery is comprehensive and flawlessly presented CD in which the pictures are allowed to speak for themselves.

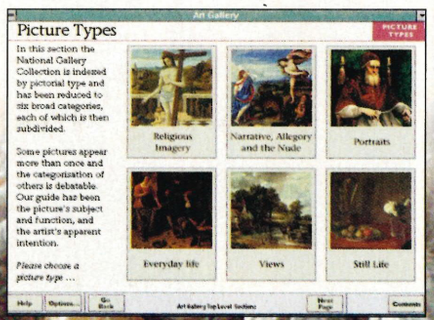
Microsoft is starting to produce general interest software like there's no tomorrow; including titles like Multimedia Stravinsky and the Musical Instruments CD, Microsoft Dinosaurs, and of course the Microsoft Encarta encyclopaedia. But in Microsoft Art Gallery, it already has the ultimate coffee table book cum reference library on disc.



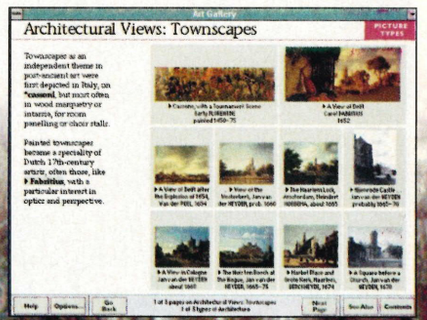
Zoom in to a location with details of schools of painters and individual artists.



A page of thumbnails for Renoir. Cross-references are highlighted in the text



Start off with a range of major picture types and styles ...



... then narrow down your search to more specific categories.

Apogee: the Wolfenstein people

As games such as Privateer soar above the £50 mark, many people are turning back to shareware. Dean Evans talks to Apogee Software about Wolfenstein, the universe and everything

There are very few software producers that can honestly claim to have produced more than a few smash hits. Electronic Arts, Sierra and US Gold all fall into this elite category. But remember these are the big boys, commercial software publishers who regularly notch up sales to the tune of millions of pounds. Apogee aren't really in this league. If US Gold is a Manchester United, for example, Apogee is a giant-killing Sutton; if EA is a Big Daddy, Apogee is an eight-stone accountant who leads a secret life as a ninja. All are successful, the difference is just one of size and marketing.

Now you may not even have heard of Apogee. It's not a big-name software company like EA and you won't ever see any of its games propping up on a shelf in a high street store. But business is positively booming and Apogee is dominating its market with a whole range of high-quality titles. The secret? Well, Apogee is a games company that chooses to market its products by releasing parts of them as shareware, and over the past four years it has been the brains behind such gems as Commander Keen and Duke Nukem. Apogee are also the Wolfenstein people, a game that has done for shareware what Richard Branson has done for personal enterprise.

Both Wolfenstein and Blake Stone have self-imposed PC-13 ratings due to their realistic depictions of violence. These games are not for the faint-hearted.





Sadly, the office whip-round came up about £375 short of a return flight to their offices in Garland, Texas so I met Scott Miller, co-founder and president of Apogee and Dan Linton of Software Creations at Transend Software, a major shareware library based in a small town just outside Bradford.

If I mention shareware you might tend to think of small DOS utilities and poor quality VGA platform games written by some bloke in his garage. Let's face it, after playing commercial titles, it's true to say that most shareware releases are visually ancient by comparison. But Apogee continually puts out top-quality games, packed to the brim with gameplay. Now, with a new policy of using higher resolution graphics and 256 colours as a minimum, the games will look even better.

"We're trying to put shareware games on the map," said Scott Miller. "Apogee were unique in that we primarily used shareware as an advertising, marketing and distribution tool. We did not seek out retail distribution of our games like most games companies do."

The current Apogee strategy is a simple one. "We make the kind of games that we like to play," enthused Scott. "The shareware concept means that you can't bring out a game with no gameplay. If you can't sell your game in the first three levels you aren't going to sell the rest of it."

Although Apogee says that it isn't trying to rival the industry "biggies" like EA and Sierra, its games can and do compete with commercial games in terms of quality and gameplay. Add to this the fact that they're about £15 cheaper and you can see why both Apogee and libraries like Transend are doing well.

Apogee tend to produce high action arcade games (platforms, shoot-em ups and 3D games) — not the sort that usually require a huge instruction manual and 103 keys. This isn't the market that Apogee are going for. Action is the very essence of a successful shareware game and Apogee know it. They make games for people who just want to sit down, load up and play.

What is shareware?

Shareware is essentially a 'try before you buy' concept. Although subject to copyright, shareware programs can be freely copied — indeed 'shared' — but if you use the product on a a regular basis you should pay a registration fee to the publisher. In return for your honesty, you may well be sent further infor-



From left to right: Andrew Amess of Transend Software; a certain fabulously talented young journalist (it says here); Scott Miller, President of Apogee and Dan Linton (seated), founder of the Software Creations bulletin board.

mation, or a proper manual, or free upgrades when the program is updated. Apogee's approach is to offer you only the first episode, say the first three levels of a game. If you like it, get thoroughly hooked and want to play more, you send a cheque and get sent the rest of the game. If you don't you can blank the disks and forget all about it. Prices of the full games tend to vary but are usually around £20 to £30 mark, but it must be remembered that in spite of this they are still much cheaper than their retail counterparts.

So where can you get a game like Commander Keen? Where are the Wolfenstein and Halloween Harry full-page ads? Apogee and other major shareware companies rely heavily on software libraries like Transend, BBSs (bulletin board systems) and word-of-mouth for sales. I heard about Commander Keen from a friend of mine and Wolfenstein was the same. "Have you seen this great game?" the aforementioned friend said. "You get to wander round a maze blowing holes in Nazi stormtroopers, and it's all in 3D ..."

"We actually do very little advertising," explained Scott. "Currently we're spending about $30,000 a year, taking out a years worth of ads in three different magazines. We work with Dan Linton and the Software Creations BBS and this is our biggest advertising arm. We sponsor his board so I guess you could consider that advertising money. But for the most part we just use the established shareware channels and their advertisments. So if you put a game out as shareware, people will do your advertising for you, through word-of-mouth, bulletin boards, passing games on from hand to hand etc. It's a complete network."

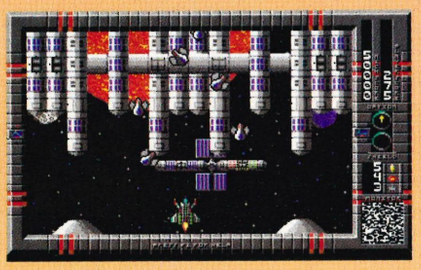
In fact the Software Creations BBS has proved both an invaluable and essential marketing tool and Dan Linton, its founder and Sysop (bulletin board superviser/caretaker/troubleshooter, etc) has also nipped across the pond to investigate the possibilities of extending the Software Creations BBS network to include the UK.

"We set up the BBS two years ago as a marketing tool," explained Dan. "It highly promotes Apogee products though it does carry other top shareware titles. It is a place where developers, beta testers and magazine reviewers can log on and get the latest shareware releases, test pre-release versions and discuss ideas. Software Creations is a central distribution point and has a dedicated file section where other Sysops come in and take the files back to their own boards. There are about 70,000 BBS systems across the US, and this is a huge distribution channel."

Of course BBS use isn't as widespread over here and most of the shareware business is conducted by software libraries. Like the BBS they store all the current shareware titles and the postal system simply replaces the modem download (though it obviously takes much longer). Shareware libraries also take out ads in various magazines allowing them to sell and promote Apogee and other shareware titles even further.

Yours for a fiver

Most of Apogee's older titles tend to be action-orientated platform games. A lone hero, usually with a large machine gun, laser or powerful peashooter, blasts his way over numerous alien-packed levels, defeating an end-of-level baddie here, rescuing a frightened maiden there. But here, for your perusal and delectation is the best of Apogee, shoot 'em up, 3D and platform.



Major Stryker is Apogee's foray into the shoot 'em up/blast 'em market. Featuring triple parallax scrolling (very tricky to do on the PC), you must save mankind from rampaging aliens by travelling to their home base and casually blowing it up. Did I mention you had to do this single-handed? No? Well, you do.



Duke Nukem 2 is the inspired title of the follow up to the highly successful Duke Nukem. You control Duke and must negotiate a multitude of tricky platform levels, blasting aliens, picking up bonuses and generally being heroic. Arcade games like this are two-a-penny on the console formats and Duke Nukem is a lot of fun.



Cosmo's Cosmic Adventure is the nearest you're going to get to Sonic the Hedgehog on your PC. After crashing on an alien planet, Cosmo's parents are kidnapped and poor young Cosmo must leap, spring and bound his way through the platform stages collecting bonuses and killing baddies. Highly addictive.



When Wolfenstein 3D appeared on the PC it caused a huge stir and people just couldn't get enough. With Blake Stone — Armour of Gold, Apogee returns to the 3D arena with a game that is basically Wolfenstein on a space station. Shoot scientists and genetic mutants in an orgy of full 256 colour violence!



Monster Bash is yet another of Apogee's platform games. Although it follows the same old leap and kill formula, this game features spooky graphics and a child hero armed only with a catapult. Can you escape the clutches of the denizens of the Underworld? Can you save your kidnapped dog? Play it and see.



After failing on a secret mission the Nazis have locked you deep in the dungeons of Castle Wolfenstein. Luckily you manage to escape and, armed only with a handgun, you must wander the corridors searching for a way out. Buy the final episodes and you reach a stunning finale against old Adolf himself! Brilliant.

Loads of money

In the past three years Apogee has released some high quality products and with each game more successful than the last, it seems strange that Scott and company didn't chuck in the small-time operation and step up to commercial publishing. Was the temptation there to become a commercial publisher?

"Yes, we thought about it. We talked to Electronic Arts and other big companies and they wanted to jump in with a contract that was bigger than the bible. They want to control what you do, and produce games that you have to sell with an inch-thick manual. *We* just want quick-fix, high action games that you see on a console like the Super Nintendo; arcade style games. Hardly any companies are doing that style of game on the PC and we don't want to deviate from it, it's our speciality."

Obviously, arcade-style games work best as shareware precisely because they are smaller and less complicated. You couldn't, for example, release something like Kings Quest VI as shareware because it would be too large and too unwieldy.

So despite their big-name status, Apogee is determined to avoid retail distribution and to continue marketing their products through shareware channels. There's no question of them getting too big for their boots.

But what is Apogee up to in the future? Well by the time you read this Blake Stone — Armour of Gold and Duke Nukem 2 will have been released and Apogee has much more still hiding away in development.

"Right now we have 12 design teams developing new software technololgy, new game engines and new games. One of our teams, for example, is working on the sequel to Wolfenstein. It's still set in Germany but takes place after the fall of Hitler and reveals who was really behind him.

"We've also got even better engines than Doom (see this month's cover disk). We have the two primary programmers who developed the 3D engine for Ultima Underworld 2 working for us and they have developed an engine that enables you to look up and down, roll and pitch, etc. I think there's a lot of unrealised potential in the 3D game and we'll be doing a lot more of them.

"But we're also not going to abandon Commander Keen-style games. We're working on enhanced 2D engines also, and have better engines than Halloween Harry coming out. ID software, which produced Wolfenstein, are working once again with us on a new Keen game. They've got a new engine for it and are going to bring back some of the old characters. There's also a couple of street-fighter type games on the way. It's something we feel hasn't been done very well."

Apogee's future looks bright indeed. We can already see the cost of high-end 486 computers falling quickly while the prices of games, especially the top games, is rising even faster. In comparison you can get a shareware game for around a fiver.

As a company Scott Miller believes that Apogee is still going to grow and that it has enough diversity in its current set-up (platform games, beat-em ups, shoot-em ups, 3D games) to avoid becoming stale. It's a refreshing change that Apogee games often have more gameplay in them than the latest big commercial title.

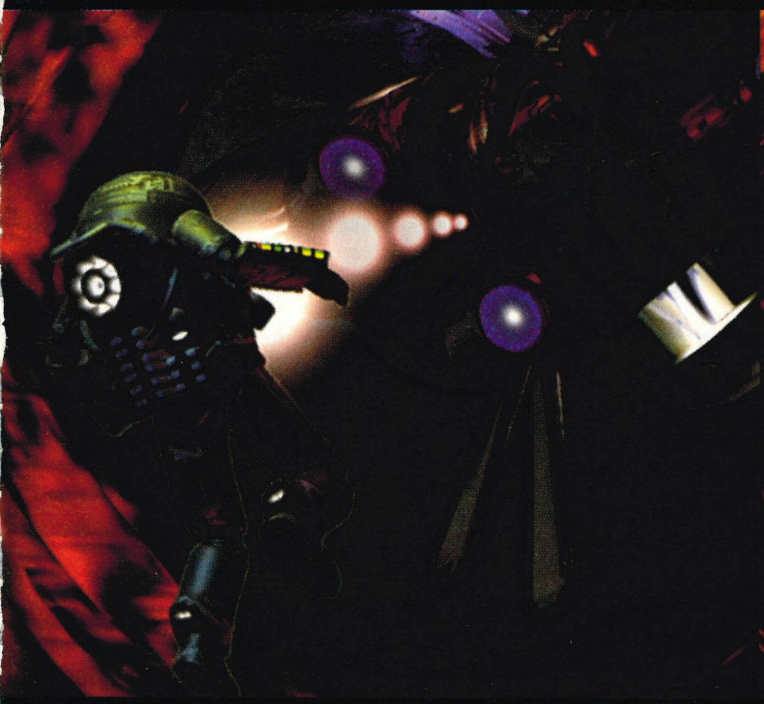
1994 should see Apogee go from strength to strength and with a game developed by the Ultima Underworld team, if it's anything like Doom and Wolfenstein, we could all be in for another shareware revolution.

● You can contact the Transend shareware library by phoning (0274) 622228 or by writing to: Transend Services, Moor View Business Park, Leeds Road, Thackley, Bradford BD10 8JH.

THE CD-ROM WAS CREATED FOR ONE REASON...

Microcosm features the most incredible movie sequences - combining some of the world's most advanced graphics with stunning live action footage.

Breaking new ground, Microcosm is the first game ever to use fractal engine technology, which allows the player full interaction with all the superb graphics created by the system. Play Microcosm and you'll be witnessing some of the most stunning computer graphics and awesome gameplay seen on any system EVER!





PRESS TALK

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PSYGNOSIS

Inside

The standard pointing device for the PC comes in many shapes and sizes. Mike James outlines their advantages and disadvantages — and manages to refrain from mentioning cheese

The mouse is the standard pointing device in use on the PC and most other computers today. It may not be essential for all games and other leisure software but for most other applications it is a required item. The mouse is now such commonplace accessory that it is easy to forget that it is a complex and vital a piece of electronics. It only takes a small malfunction to remind you just how important a mouse is!

How many types of mice?

There are two types of mouse — optical and mechanical — and they each have their particular advantages.

Optical mice are generally considered to be better (PC Review's editor Christina Erskine swears by them because they don't get stuck and they don't need cleaning) but they usually cost more. They work by shining a beam of light onto a special reflective mouse mat. The mouse mat has horizontal and vertical grooves which alter the way the beam is reflected back. As the mouse is moved across the mouse mat the result is a series of pulses which are detected by the electronics within the mouse. Of course there has to be a light source and detector for both the horizontal and vertical directions and the mat has to be ruled up in both horizontal and vertical directions but that's about all there is to it. As the mouse is moved the pulses that are generated are counted by the PC so that it can keep track of where the mouse is.

Mechanical mice are the more common species. Although there are slight variations in design, the basic principle is the same. A ball is placed in mechanical contact with two small rollers set at right angles to one another. Each roller is coupled to a small disk with slots in it. As the mouse is moved the ball moves the rollers and rotates the disks. Moving the mouse vertically rotates the vertical disk and moving the mouse horizontally moves the horizontal disk. The final element is a pair of optical sensors. Each disk is equipped with a light emitter on one side and a light detector on the other. As the disk rotates it interrupts the light beam and so generates a pulse. Just as in the case of the optical mouse, moving a mechanical mouse generates two series of pulses — one that tracks horizontal movement and one that tracks vertical movements.

So, given that the two types of mice seem to be very similar, they both use optical devices to generate pulses corresponding to how the mouse it moved, which is preferable? The optical mouse is generally claimed to be more accurate than a mechanical mouse because it doesn't have any moving parts. A mechanical mouse uses a ball that has to be dragged across a surface without slipping to work properly. In many cases it is necessary to use a specially rough mouse mat to make it feel like an accurate pointing device. On the other hand an optical mouse needs a reflective mat to work at all!

The main problem with mechanical mice is that they become dirty. As you roll the ball around the average desk top, even with a mouse mat in use, the mouse picks up fluff, dust and gunge. After a while the gunge gets between the ball and the rollers and the result is a mouse that no longer seems to be as responsive as it was. The solution to this problem is to clean the mouse and there are special mouse cleaning kits that you can use for the task, although it's probably just as effective to remove the ball from your mouse yourself and clean it and the rollers directly. Occasionally mice do fail in more serious ways than just an accumulation of dirt. In these cases the simplest solution is a replacement.

What is special about mice is that they are 'relative' pointing devices. That is a mouse only signals to the computer how far you have moved it — not where it is at the moment. Contrast this with a joystick which always tells the machine where it is currently. When you place a joystick into the centre position the cursor, or whatever it is controlling, is also in the centre but for a mouse there is no centre position or any other absolute position. A mouse doesn't specify a position, only how far to move the cursor on the screen in response to a movement of the mouse.

Taking the mickey

This — the movement of the mouse producing a movement on the screen is a key idea. Most mice allow you to alter how sensitive they are. This sensitivity or resolution is measured in *mickies* (no joke!) as pulses per inch, or less fancifully as dots per inch (dpi). Moving the mouse one inch can produce a large movement on the screen or a small movement depending on the sensitivity. The trouble is that high resolution enables you to position the cursor accurately but demands large movements of the mouse to move around the screen. A low resolution makes large movement easy but makes accurate positioning difficult. The solution is to use ballistic positioning. In this case the resolution depends on how fast you move the mouse — the faster the lower the resolution. So if you want to move from one side of the screen to the other a fast small movement will do the job. If you want to position accurately then all you have to do is move the mouse slowly. Ballistic positioning

the PC - The mouse

doesn't require any change to the way the mouse is built — it's something that the mouse software implements.

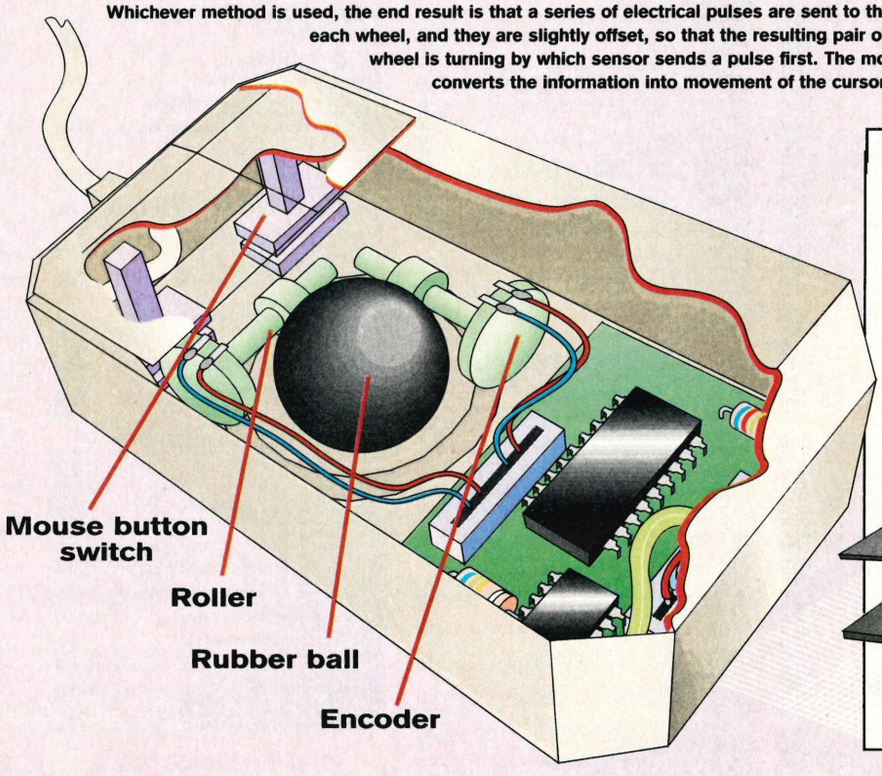
An interesting question is, how many buttons a mouse should have? If you are a Mac user then the answer would be one. Most PC users need a two button mouse — but the right button isn't used that much. A Unix or workstation user would claim that three buttons are the very minimum that can be tolerated but they really only make use of two of them. In short, two buttons are quite enough!

There are variations on the basic mouse design. For example, if you take a mouse and turn it upside down then you have a trackball. In this case you alter the position by spinning the trackball. Some users find trackballs fast and easy to use — the majority find mice better. Another variation is the mouse pen. In this case the ball is built into a pen — rather like a giant ball point pen. You hold the pen as you would a normal pen and as you 'write' the ball rolls as it would in a normal mouse. Some users like pen mice — others find them difficult an awkward, and the only way to find out is to try one.

And finally ... If you are interested in making the best use of your machine for games playing you'll need to have both a mouse and a joystick — they are not alternatives.

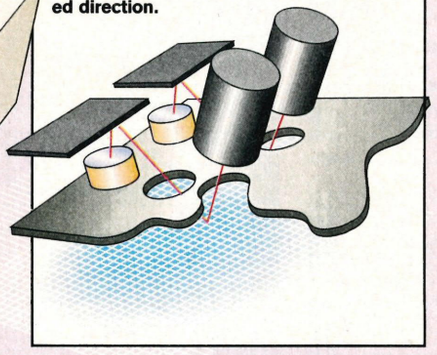
How it works: the mouse

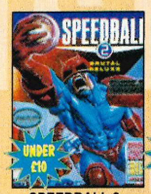
As the mechanical mouse is moved across a surface, a rubber ball within it is rotated. This in turn rotates two rollers which are mounted at a 90 degree angle to each other. One roller responds to the backward and forward movement of the mouse; the other responds to sideways movement. At the end of each roller is a wheel called an encoder. This is either covered in metal strips which make contact with two bars as the encoder rotates — or, in some mice, these are replaced with slits which allow light to fall on pairs of photosensors as the encoder rotates. Whichever method is used, the end result is that a series of electrical pulses are sent to the mouse circuitry. Two sensors are used for each wheel, and they are slightly offset, so that the resulting pair of pulses indicate in which direction the wheel is turning by which sensor sends a pulse first. The mouse sends signals to the computer which converts the information into movement of the cursor on-screen.



The optical mouse

The optical mouse works by sending light from two sources through the bottom of the mouse. This light reflects off a pad covered with a grid of fine dots, and projects an image of the dots on to two photosensors. One sensor detects forward and backward movement, the other detects lateral movement by counting the dots as they pass over it in the designated direction.





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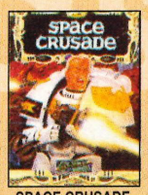

SPACE CRUSADE
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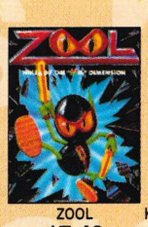

ZOOL
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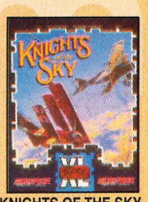

KNIGHTS OF THE SKY
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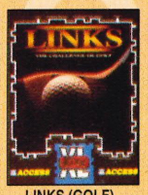
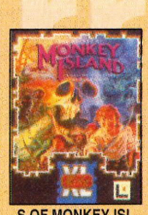


LINKS (GOLF)
12.99



S OF MONKEY ISL
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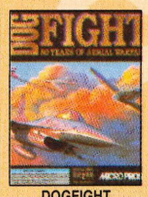
B17
17.49



DOGFIGHT
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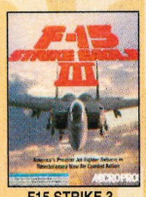
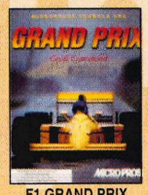


F15 STRIKE 3
15.49



F16 FALCON V 3.0
15.49



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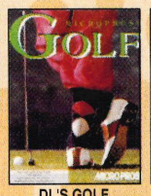

DL'S GOLF
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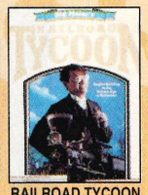

RAILROAD TYCOON
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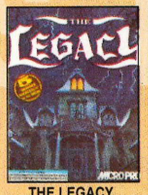

THE LEGACY
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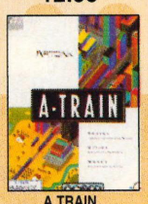

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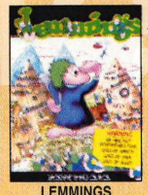

LEMMINGS
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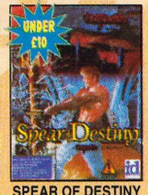

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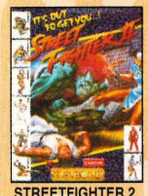

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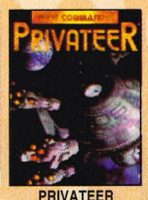
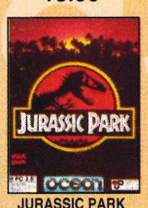


PRIVATEER
32.49



JURASSIC PARK
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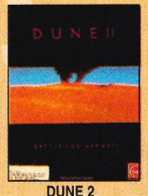

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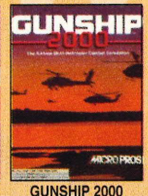

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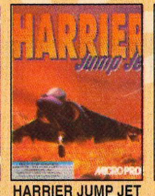

HARRIER JUMP JET
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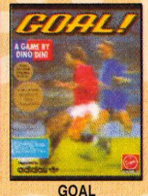

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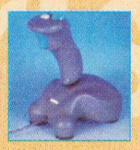

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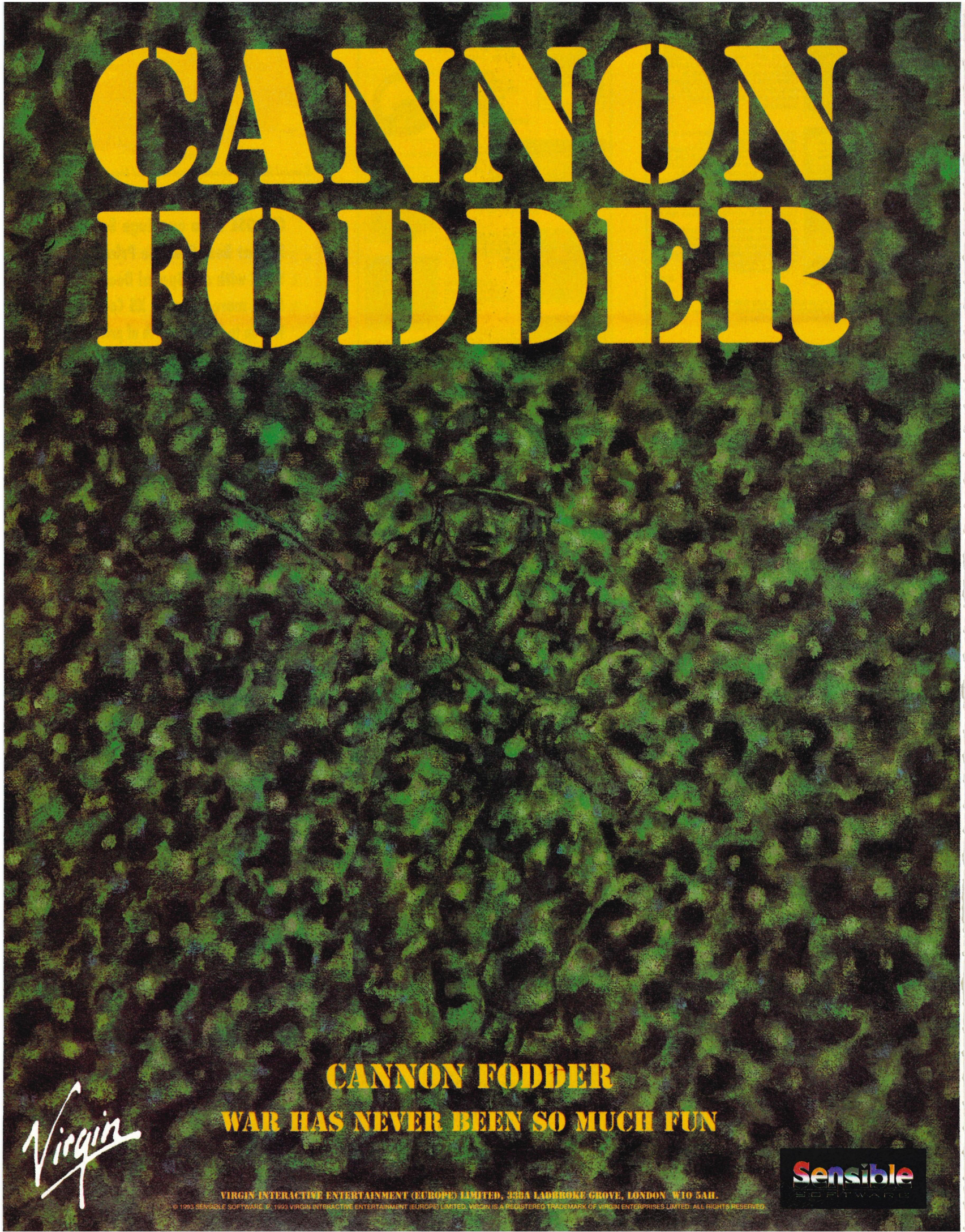
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REVIEWS INDEX

Our unbeatable reviews service starts here. Over the next 50 pages, you'll find the very latest games, CD-ROM titles and budget releases appraised and dissected in PC Review's inimitable style, as detailed below

Two Minutes *of trading places*

You haven't exactly had the best start in life. Working in a fish processing plant on a distant planet isn't much of an existence, so when you inherit a spaceship and 100 credits from your grandfather, Commander Jameson, it seems like a dream come true.



This is where it begins: Sirocco base on Merlin, a moon circling the gas giant Aster in the Ross 154 system. Merlin is a cold, inhospitable world, hence the domes covering the city. The sooner you get away from here, the better. Or so you think.



All you have at this stage is a rather basic Eagle fighter and 100 credits to start your business empire with. Your initial aim is to make money by trading, so it's a good idea to find out Merlin's major exports. Meat seems like a good bet.



Now it's off to the stock-market to get your pound of flesh. That's about all you can afford with only 100 credits, but I guess you have to start somewhere. When you've stocked up, find a system whose primary import is meat and plot a course there.



Before you leave, you must get permission to launch. If you forget to do that you'll get hit with a big fine, and if you fail to pay your fine you'll get hit by an even bigger laser. Once you're safely in orbit, hit that hyperspace button fly.

TWO MINUTES

This is the closest you'll come to seeing the game in action. We take a series of manoeuvres from the game and explain, step by step, the play required to get through the screens. Not only will you get a flavour of the gameplay, but you may even find some helpful hints in this section!

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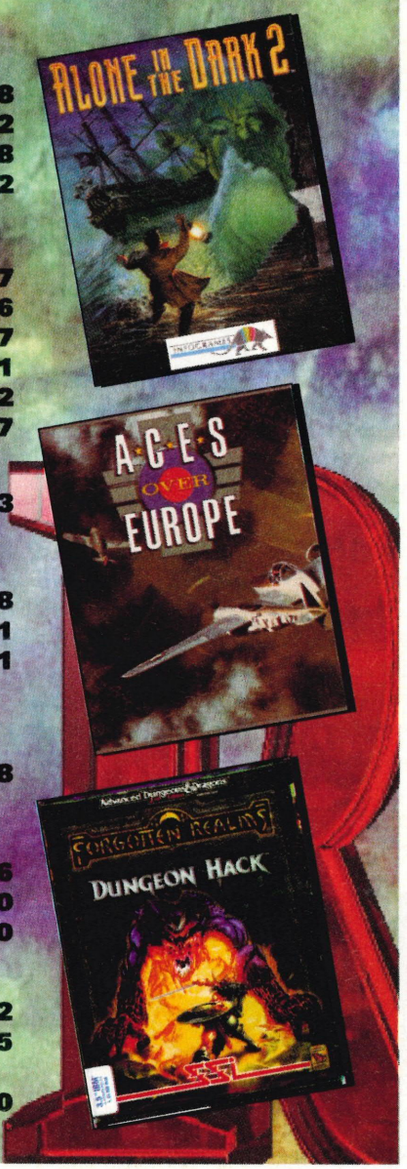


ALTERNATIVELY

We believe games should be placed in context. You may like the sound of game Y, but suspect it might be too technical, or difficult to control. We'll tell you about other games of a similar style, or subject matter, which may be more to your taste (or warn you off those which are inferior to the game bring reviewed).

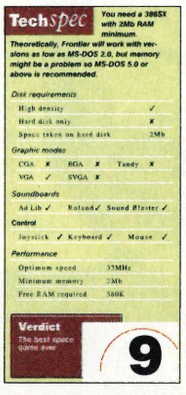
Alternatively...



Privateer
Origin, £49.99
Rated 5, Issue 26
Origin's answer to Elite, Privateer is a space trading game with similar style graphics and combat to the Wing Commander series. There are about 25 missions, if you can actually find them, but for the most part it involves an awful lot of aimless wandering. It has infinitely less depth than Elite, let alone Frontier, and the combat is inferior to X-Wing. Rather disappointing in all.



Space Legends
Empire, £34.99
Reviewed Issue 22
Three classic space games have been included in this value for money pack: Elite Plus, Wing Commander and the futuristic role-playing game, Megatraveller. Elite Plus has aged very well, and if you haven't played it yet, you might want to try it before graduating to Frontier. Wing Commander is more combat oriented, but remains good fun, and Megatraveller is entertaining stuff.



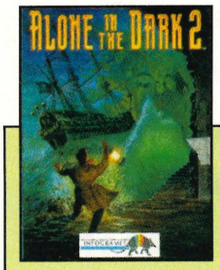
TECHSPEC

Detailed and easy to read at-a-glance, this panel will tell you if the game is suitable for your PC. Note that a cross in the SVGA column means that no *specific* SVGA version is available (use VGA instead), and that the optimum speed rating is a PCR recommendation, not a manufacturer's stated minimum.

RATING

0-2	Dreadful	6-7	Good
3-4	Deficient	8-9	Excellent
5	Average	10	Perfect





Title	**Alone in the Dark 2**
Publisher	**Infogrames**
Contact	**(071) 730 0199**
Price	**£xx.99**

After receiving a telegram from his friend, Striker, Carnby travels to Hell's Kitchen to rescue Grace Saunders. Unfortunately, the mobsters are ready for him and have posted armed guards at the gate. How can he get into the house?



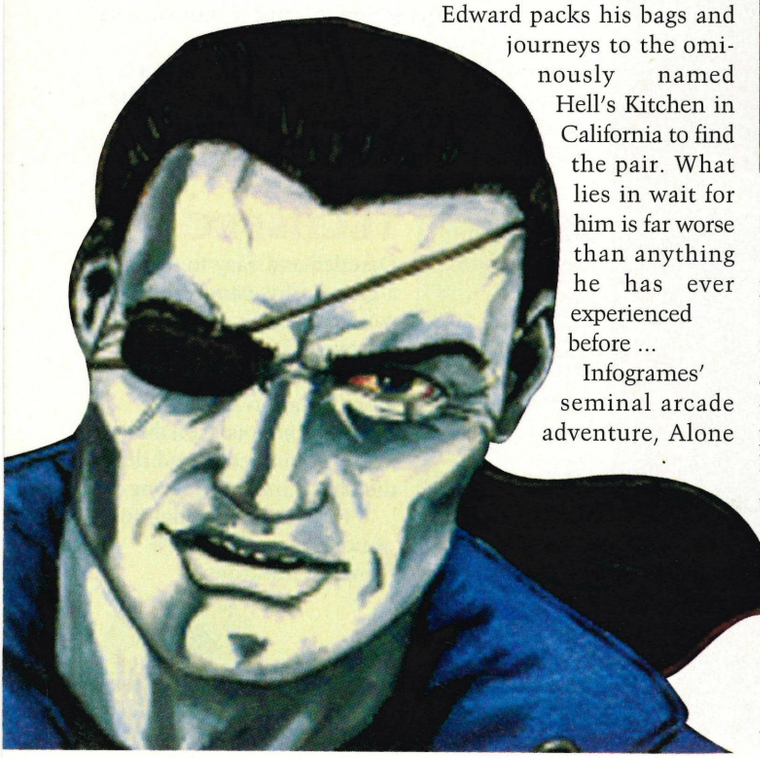
The first step is to eliminate the guards in front of the house. They're extremely tough, and it'll take careful planning to overcome them. Once they're out of the way, you can check out the entrance to the manor.

Alone in the



Housework is obviously not at the top at the pirates' list of priorities, as Edward discovers when he visits the bathroom.

Edward Carnby is back, and this time he's mean. Having extricated himself from Jeremy Hartwood's demon-infested mansion, the detective hero of Alone in the Dark is now on to an even tougher case, involving pirates, voodoo and bootleg liquor. It all starts when he receives a telegram from a fellow detective, Striker, who has got into difficulties when trying to rescue a kidnapped girl. Without a thought for the consequences, Edward packs his bags and journeys to the ominously named Hell's Kitchen in California to find the pair. What lies in wait for him is far worse than anything he has ever experienced before ...



Infogrames' seminal arcade adventure, Alone in the Dark, was undoubtedly one of the highlights of 1992. Its innovative use of detailed, bitmapped backgrounds with polygon-based sprites was quite unlike anything that had been seen before, and it certainly sparked a lot of interest in gaming circles. Not only did it look wonderful, but the superbly creepy atmosphere made it quite an experience to play. It seemed inevitable that a sequel would appear, and now, finally, it has arrived.

Alone in the Dark may have been a wonderful, atmospheric and exciting game, but it wasn't entirely flawless. The main problem was that it was too small. Anyone with a bit of adventuring experience could have worked their way through it in a weekend, which doesn't exactly represent fantastic value for money.

Tough enough

Alone 2, on the other hand, is much, much bigger and much, much harder. Roughly four times as large as the original, Alone 2 has many more locations and a greater variety of enemies, but in any case, progress will be slower because it's that much more difficult. It took the Cal-and-Dean team four days of solid play to get even one third of the way through, which may give you some indication as to how tough it actually is. A lot of the puzzles aren't immediately obvious, and making progress is far from easy. This can be extremely frustrating at times, but you do get one hell of a sense of achieve-

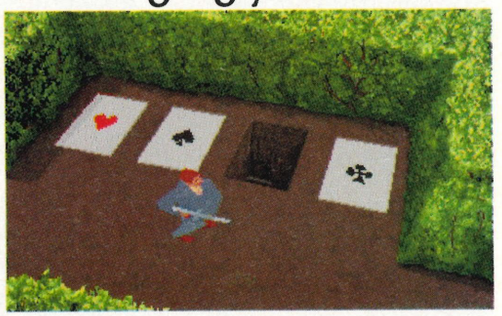
MINUTES of hedging your bets



It's locked, of course, so you'll have to find another way in. Since you can't get round to the back of the house, your best bet seems to be the maze. Pushing the statue reveals an opening in the hedge.



Wandering through a maze patrolled by machine gun wielding zombies is not a pleasant experience: not only do you get lost, but you get shot at as well. Pity you couldn't quite fit that ladder in your pocket, eh?



Aha! A trap door. Could this be a secret entrance to the coal cellar? There's only one way to find out. Just watch your step and don't forget to keep an eye out for monsters lurking in the shadows ...

Dark 2

He's not alone, it's not dark, but danger lurks around every corner in the sequel to Infogrames' classic horror game

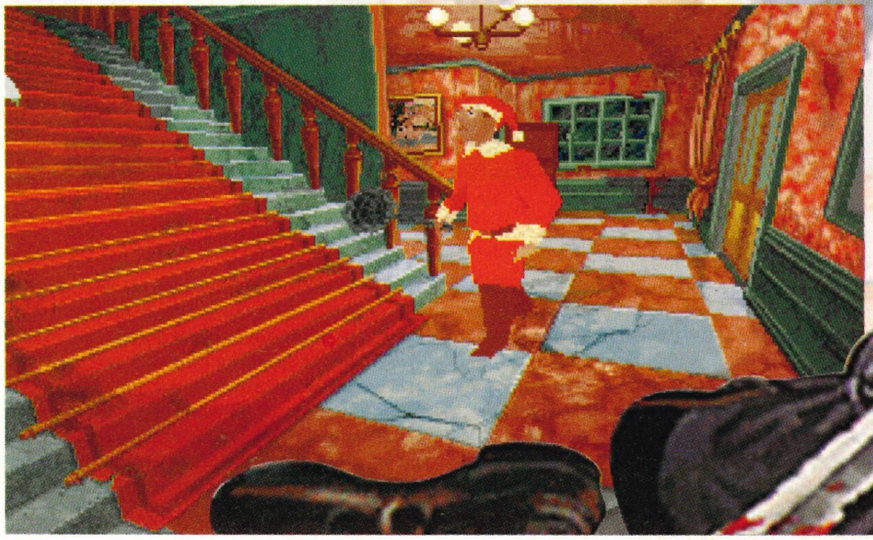
ment once you've managed to get past a sticking point.

One of your main problems will be dispatching the monsters, because they're a lot harder to get rid of than the zombies in the original game. For one thing they're armed, and will inflict a lot of damage if you're not quick to respond. More to the point, they're a heck of a lot smarter. Once a zombie has spotted you, he'll follow you around until either you kill him or he kills you. To make things even worse, more monsters can appear on screen together. I don't remember having to deal with more than two at any one time in Alone 1, but in this game you could be fighting up to seven bloodthirsty pirates at once. If this happens, you might find that it's because you've gone wrong somewhere along the line. Many of the puzzles revolve around avoiding fights, and if you suddenly find yourself surrounded, it's often because you've neglected to do something earlier in the game. For example, you'll find a Santa Claus outfit in one room, but unless you put it on before you go upstairs, a nervous cook will raise the alarm and the entire zombie population of Hell's Kitchen will converge on you all at once. That death sequence gets pretty annoying after a while, I can tell you.



Left: The kitchen was a hive of activity until Edward got busy with the frying pan. Guns are the best weapons for dealing with the bad guys, but often Edward has to make do with what's at hand.

Below left: The interiors are even more lavish than in the original game, but the sprites retain their quirky 3D appearance. Here, Edward dons his Santa suit and goes to find out what's upstairs.



You can't always avoid getting into a scrap, though. Fighting is much the same as in Alone 1: select the combat option from the inventory screen, hold down the space bar and use the cursor keys to direct your punches and kicks. The only real difference is that Edward can now nut his opponents to death if you press the 'up' arrow; the left and right arrows allow him to punch and the back arrow makes him perform an acrobatic kick.

Lethal weapons

Unarmed combat is useful for dealing with zombies at close range, but you'll need to employ other weapons when they're further away. The zombies are all kitted out with tommy guns in and around the house, which they sometimes drop when you've





The game has two different death sequences: if you're caught in the house, your body will be dumped into the sea, but if you die on the ship, Jack strings you up from the yardarm and parties away underneath.

defeated them. The good old tommy gun is by far the most devastating weapon available to you, but runs out of ammo quickly and can also jam. The shotgun is another good weapon, as is the Derringer, but you might find yourself having to improvise with a ping pong bat or a frying pan. Directing shots isn't the easiest thing to master, especially when the zombies are moving around, so get in plenty of practice and make sure that you use all the available save game slots. If you haven't played the original Alone in the Dark, I'd recommend that you do so before going on to tackle this game. Not only is a fantastic game, but it'll also allow you to get used to the control system. Alone 1 breaks you in a bit more gently than this game, which is very tough going even from the start.

Although this game undoubtedly provides far more of a challenge than Alone 1, I was interested to find out whether it had been improved in other areas. I hadn't really expected it to look significantly better than the original, but the graphics are nothing short of stunning. The interiors are lavishly drawn, and sprite movement is a lot more fluid. There were only a few different types of monster in the first game, but in Alone 2 each pirate has his own character. The first part of the game takes place in the house, where the pirates dress in contemporary clothes (the game is set in 1924) and carry guns. Once you have defeated them they return to their ship, the Flying Dutchman, and revert to more traditional pirate gear. Edward also looks different this time around. He's rather more dashing in his wide-shouldered, double breasted suit, and the droopy moustache has now been trimmed into shape. The sprites still look a little strange and quirky, but the animation is excellent and this more than makes up for that.

Like Alone in the Dark, the locations in Alone 2 are viewed through various different 'camera' angles, giving the game a more cinematic feel. Each room has a couple of pre-set viewpoints, and as Edward or Grace moves around, the angle that room is seen from changes. This interesting use of perspective adds to the creepy atmosphere, although it can make combat difficult from time to time. Sometimes the enemy goes out of shot and you can't see where to aim at, and even when this doesn't happen, judging distances can be very tricky.

Alone 2 is a little more light-hearted than its predecessor, and contains a few humorous moments. Watching Edward mowing down zombies while dressed in a Santa Claus suit is quite something, and at one point he picks up a frying pan to fight with T Bone, the chef.

There are drunk pirates, snoring pirates, pirates who laugh while they kill you and cute (but annoying) little Chinese cooks who wander round armed with meat cleavers. The atmosphere is less menacing than in Alone 1, but it's no less enjoyable for that.

The sound effects and music in Alone 1 were outstanding, and enhanced the atmosphere considerably. The music in Alone 2 is just as good, and since this game is bigger, there's more of it. One thing I did notice was that the music in this game is less dramatic than in Alone 1, and doesn't make you jump in quite the same way. Even so, it's still excellent.

The most obvious difference between this game and Alone 1 is that you now have two very different characters to play instead of just the one. In Alone in the

ALTERNATIVELY



Alone in the Dark
Infogrames, £44.99
Rated 9, Issue 14
Despite being bettered by Alone 2, Alone in the Dark is one game you can't afford to miss. Inspired by HP Lovecraft's Cthulhu mythos, it's set in a creepy mansion populated by ghosts and zombies. The innovative graphics and stunning soundtrack make it one of the most atmospheric games around. Now available on CD-ROM with a bonus game, Jack in the Dark, which features Grace Saunders.

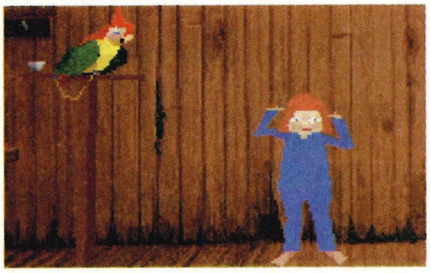


Legacy
MicroProse, £44.99
Rated 8, Issue 19
This first person perspective horror adventure looks quite different from Alone in the Dark, although the subject matter is similar. The interface features movable and resizable windows and you are given a choice of characters, but the block scrolling graphics look a little old-fashioned. Quite atmospheric, Legacy contains more gore than Alone and is definitely not for the squeamish.



Elisabeth Jarret, the evil Voodoo priestess, is not quite so immortal after all, it seems.

Playing Grace adds a whole new dimension to the game.



Dark, you were given the choice of playing either Edward Carnby or Jeremy Hartwood's niece, Emily. The two characters had different skills: Edward was better at combat but Emily had more agility and could jump across gaps with less fear of falling.

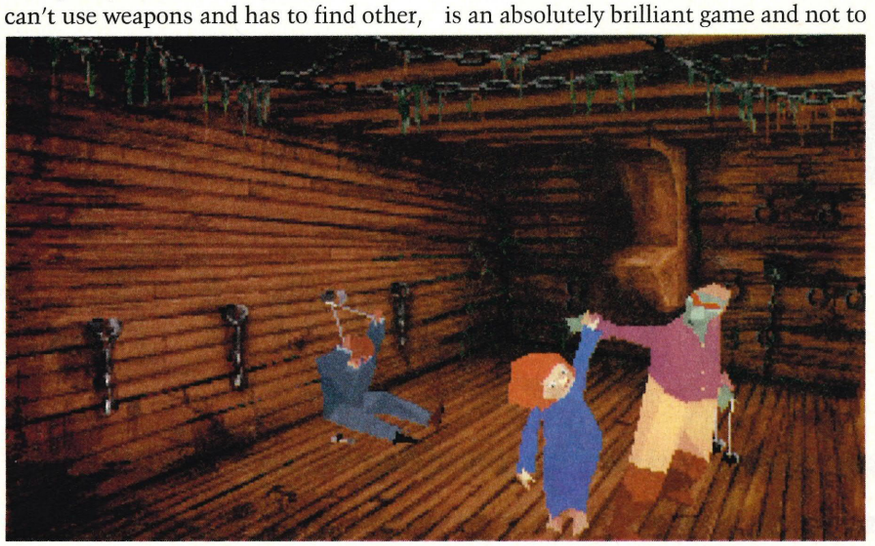
Amazing Grace

Emily does not make an appearance in the sequel, and you'll spend most of the game playing Edward. However, once Edward has been captured by the pirates, you must take on the role of Grace, the kidnapped child, and attempt to find the key to his manacles. This adds an interesting dimension to the game, for Grace can't use weapons and has to find other, more devious ways to defeat the pirates. Being small, she can fit into small spaces to hide, but she can't run very fast and can be caught quite easily. Although the pirates won't try to kill her, getting captured means that she can't rescue Edward and this proves just as fatal in the long run.

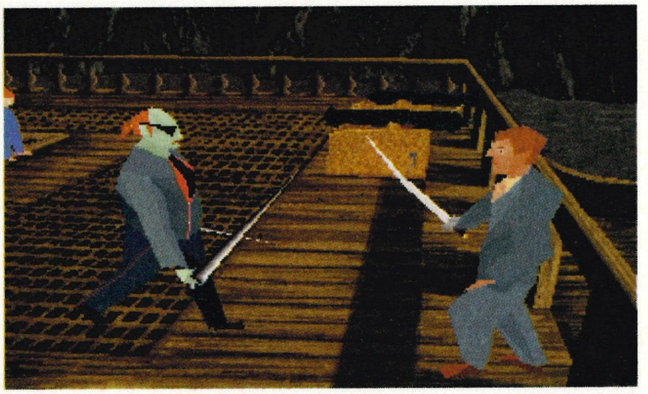
I enjoyed playing both Edward and Grace, but one thing did puzzle me. Why is it that Grace can destroy a pirate by making him slip on ice, whereas Edward needs to keep hammering away with a machine gun to get the same result? It's a bit odd, but maybe I'm just being pedantic.

Alone 2 is fiendishly difficult — I really can't emphasise this enough. You'll come to a point in the game where it seems impossible to continue, and you'll curse and swear and feel like banging your head against a brick wall. Don't. Alone in the Dark 2 is not, I repeat, not, impossible to complete. I did manage to complete it eventually, and with a bit of patience, you will too. Despite all the frustrations, this is an absolutely brilliant game and not to be missed. It's better than Alone 1 in almost every department, and will keep you entertained for quite some time. It's unfortunate that, with its festive theme, it missed its pre-Christmas release, but if you want something to cheer you up on those long, cold January evenings, look no further. Alone 2 is simply superb.

■ Cal Jones



After finding the key to Edward's manacles, Grace is caught and taken back to the hold. Now you must get Edward to reach the key which she has dropped to his right.



"Ha!" cries Edward, "I've got more hair than you, you follicularly challenged rapscallion!" "But I have more swords than you," Jack replies. "Take that, you mustachioed buffoon!"

Hell's Kitchen — Recipe for a good plot

In 1724, One Eyed Jack and his men gained immortality by entering into a pact with Voodoo priestess Elisabeth Jarret. So that they could remain young, a child would have to be sacrificed on Christmas Day once every 100 years. It is now 1924, and the pact must be renewed. The pirates are running a bootleg liquor operation from their den at Hell's Kitchen, California, and it is there that they have taken eight year old Grace Saunders. Edward's friend, Striker, disappeared when he went to investigate — can Edward get there in time to rescue her?

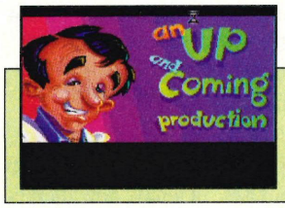
Techspec

Alone 2 requires a 25Mhz 386 or better running MS-DOS 3.0 or higher. It needs 256K EMS memory, and supports the Disney Sound Source.

Disk requirements					
	High density	✓			
	Hard disk only	✓			
	Space taken on hard disk	14Mb			
Graphic modes					
	CGA	✗	EGA	✗	Tandy ✗
	VGA	✓	SVGA	✗	
Soundboards					
	Ad Lib	✓	Roland	✗	Sound Blaster ✓
Control					
	Joystick	✗	Keyboard	✓	Mouse ✓
Performance					
	Optimum speed	33MHz			
	Minimum memory	2Mb			
	Free RAM required	560K			

rating **9**

Verdict
Bigger, better and 50 times harder than the original.



Title	**Leisure Suit Larry**
Publisher	**Sierra**
Contact	**(0734) 303322**
Price	**£39.99**



Left: the game show Stallions is where it all begins. If you think the graphics are gaudy now, wait until later in the game.



Leisure Suit Larry:

Shape Up or Slip Out

Larry is back: older, wiser and balder than ever before. But is it time the old leisure suit was packed away for good?

The aim of Larry 6 is simply to find, woo and make love to as many beautiful women as possible. Here, for your perusal, are just four of the lovely women that Larry must run errands for.

These days every graphic adventure tends to have a major angle or a thematic slant. Monkey Island has its pirates, Beneath a Steel Sky embraces Blade Runner and Simon the Sorcerer has its goblins, wizards and dragons. As for the Leisure Suit Larry series it has always had sex. Sex, sex, sex and more sex. Lots of it. In fact I think there's more rampant testosterone in this game than an entire university rugby team and that is really saying something.

Of course there are puzzles and jokes, too (it's an adventure after all), but where other games might hint at sexual congress and have little more than a "nudge, nudge, wink, wink, say no more" attitude towards sex, Leisure Suit Larry is a game that runs naked through the streets yelling willy jokes at the top of its voice. It's brazen and shameless and it's precisely this sort of behaviour that made the early Larry games become instant classics, secretly played on thousands of office computers across the country. However, the old joke may now be wearing a tiny bit thin.

If you're new to all this and you're not familiar with the Leisure Suit phenomenon, Leisure Suit Larry: Shape Up or Slip Out (or Larry 6 as I shall call it from now on) is the latest in the long line of Larry graphic adventures and it slots neatly into the big Sierra bag of sequels alongside the equally successful Police, Kings and Space Quest series.

You control Larry Laffer, a professional California sad man and semi-competent seducer. Now if you're not altogether sure what I mean by this, let me explain. Larry is an American version of Essex Man, a man who dresses in a casual white lounge suit, long collared shirt (unbuttoned to reveal wiry chest hair naturally) and the obligatory gold medallion. Look at the picture on the left: he's not exactly an Adonis-like sex-god is he? As for his aim in life, the words "women" and "making love to lots of" suddenly spring to mind.

But I digress, let's get down to the plot. Larry Laffer, our interminably sex-starved hero, is walking (for "walking" read "strutting") along Venice Beach when a 100 metre long stretch limo rolls up and a beautiful young woman pops her head through the sun roof.

It transpires that she's looking for contestants to appear on a TV dating show called Stallions (cue sound of whinnying horse), a show where two remarkably hunky male, er, stallions each take out three lovely women and then talk about their experiences live on the show.

Anyway, Larry takes part in the show and unsurprisingly he loses out to Rock Hard, a man built tougher than a brick dunny and more rugged than a well-mined quarry. But on Stallions (cue sound of whinnying horse again) nobody goes away empty-handed and while Rock Hard

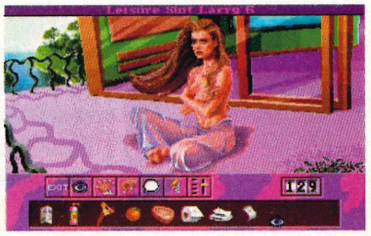
0 MINUTES of potential conquests



Gammie is the receptionist and she's desperate to lose weight. All Larry has to do is repair Dr. Swinebutt's patent 'Suck Off' machine in the Cellulite Drainage Salon down the hall.



Charlotte Donay — or Char to her friends — is a lover of electricity. She can't find six batteries for her 'late night friend' and will satisfy Larry's desire if he finds her some.



Shamara is a difficult prospect. She's looking for the perfect man. He doesn't have to have the perfect body but is spirit must be pure and unblemished. Hmm. Rules Larry out.



Thunderbird looks after the hotel gym and as you can no doubt tell she's a fan of dangerous living. She's all for a 'session' but only Larry brings a pair of shiny new handcuffs.



goes on a luxury cruise, Larry wins two fun-packed weeks at the La Costa Lotta health spa. Yes, two whole weeks of women, sunshine and hopefully lots of that other word beginning with S.

Yes, sex. Larry 6 revolves around sex like the moon around the Earth. It is, after all, its big selling point. What would a Larry game be without poor taste, comedy breasts, scantily clad women (or babes as hipsters such as Larry call them) and reams and reams of bad jokes. It may not be to your taste but the Americans seem to lap it up. After all, Sierra has managed to keep this one-joke series going for over four years now.

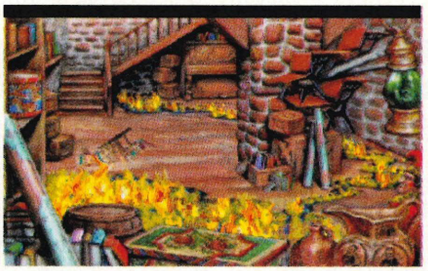
But if you take away the sex aspect, and get down to the bare bones, Larry 6 is a graphic adventure cast in the traditional mould and veteran players will find nothing new in terms of gameplay, graphics or control. Unlike Day of the Tentacle and Hand of Fate (reviewed this issue on page 82) there isn't an ongoing narrative either, because the aim of Larry 6 is simply to woo and bed a bevy of beautiful and hugely well-endowed women.

And that is pretty much it. Of course this isn't easy: you can't just wander up to a likely-looking candidate and say, "how about it then, babe?" No, each girl wants a certain something before she'll throw away her inhibitions and jump enthusiastically into the sack. It may be a new dress, a bunch of flowers or even a pair of handcuffs, but whatever it is our Lazza must find it before he can claim his sexual reward.

If you like the humour of the Carry On films, if fart noises and lavatory flushes send you into uncontrollable fits of giggling and you're quite happy to ogle scantily clad women, then Larry 6 is most definitely for you. But if you like your humour a little funnier, your graphics a little better and want a plot that engages

Dr Swinebutt's patent 'Suck Off' machine is broken. Larry needs to repair it to stand a chance with Gammie the receptionist.

ALTERNATIVELY



Freddy Pharkas Frontier Pharmacist
Sierra, £39.99
Rated 5, Issue 21
Kings Quest uses fantasy, Space Quest uses science fiction and Freddy Pharkas uses all the old Wild West clichés under the sun. Can you save the small town of Coarsegold from stampeding snails, flatulent horses and the evil Kenny the Kid? Do you really want to? Al Lowe's western adventure is nicely drawn but the puzzles are too easy and it isn't really that funny.



Day of the Tentacle
USGold, £42.99
Rated 9, Issue 23
Although it's far too easy and also too short, DOTT is the best and the funniest adventure on the market. Featuring superb, cartoon-quality animation, you follow the antics of Bernard, Laverne and Hoagie as they travel through time to thwart the evil plans of purple tentacle. With digitised speech on the CD-ROM version, DOTT is superb.



Cav here is the aerobics instructor and she has something you want. It's the ID card hanging round her neck.

your mind rather than your libido, I'd suggest you steer well clear.

Between you and me, Larry 6 is a mess. I know the Larry series has never taken itself seriously but compared to some of the humorous adventure games currently on the market (Day of the Tentacle, Simon the Sorcerer etc), Larry looks bad, plays worse and I've seen better jokes in a box of cheap Christmas crackers.

Now maybe it's me, maybe I'm missing something really vital here. Larry 6 does after all throw joke after joke after joke at you on visual, verbal and aural levels. So why haven't any of them hit? Why doesn't the line, "thank you for coming so fast" leave me rolling around on the floor in fits of laughter?

Here at the La Costa Lotta gymnasium, the beautiful people work out to funky disco music.

Like Larrys 1, 2, 3 and 5 before it (there wasn't a Larry 4 because the very fact that it didn't exist formed part of the plot of number five), the biggest problem with Larry 6 is that the humour is still based around the one same joke. It plays on sexual coyness, finding mirth in large tonkers and hilarity in anything that is shaped like a pair of breasts. Here is a game where, despite numerous attempts at funnies and word-play, urinating in a fountain is considered a "good gag".

Now several years ago, this sort of comedy was funny. Everyone remembers the Carry On films with their duck-whistle noises, sexual innuendo and brief nude bits. Most of us laughed and can fondly remember individual jokes and scenes. Even Ben Elton forged his early career on a series of jokes about bums, willies and plastic dog turds on train seats. But things have moved on.

This is the 90's and Larry 6 is still doing the same old routine. It's Carry On meets Viz without the charm of the first and the sheer outrageous humour of the second. Larry 6 has its phallic symbols, double entendres (correction: make that 'single entendres') and its puns all right, but sadly it has very few real funnies scattered anywhere in-between.

Take the last Carry On film, for example. Carry On Columbus absolutely bombed at the box office, sinking beneath the cinematic waves like a lead balloon tied to an anvil. Here was a movie that was based around bottoms, breasts and sexual innuendo and people just didn't find it funny. Surely this tells us something — maybe that times have changed and people's expectations have changed along with them? Leisure Suit Larry was amusing in the early days and I suppose it would be too much to expect him to learn from experience but it' also a bit too much to expect people to pay £40 for more and more of the same.

But let's move on to the graphics. Visually, the game doesn't match up to Day of the Tentacle, Beneath a Steel Sky, Legend of Kyrandia 2, in fact, I could name just about every other adventure currently on the market and Larry 6 would lose out to all of them. Where has Larry 6 been during the renaissance of the graphic adventure? In a cupboard? While other games are trying out digitised speech and high resolution backgrounds, the technology in Larry 6 doesn't appear to have improved at all.

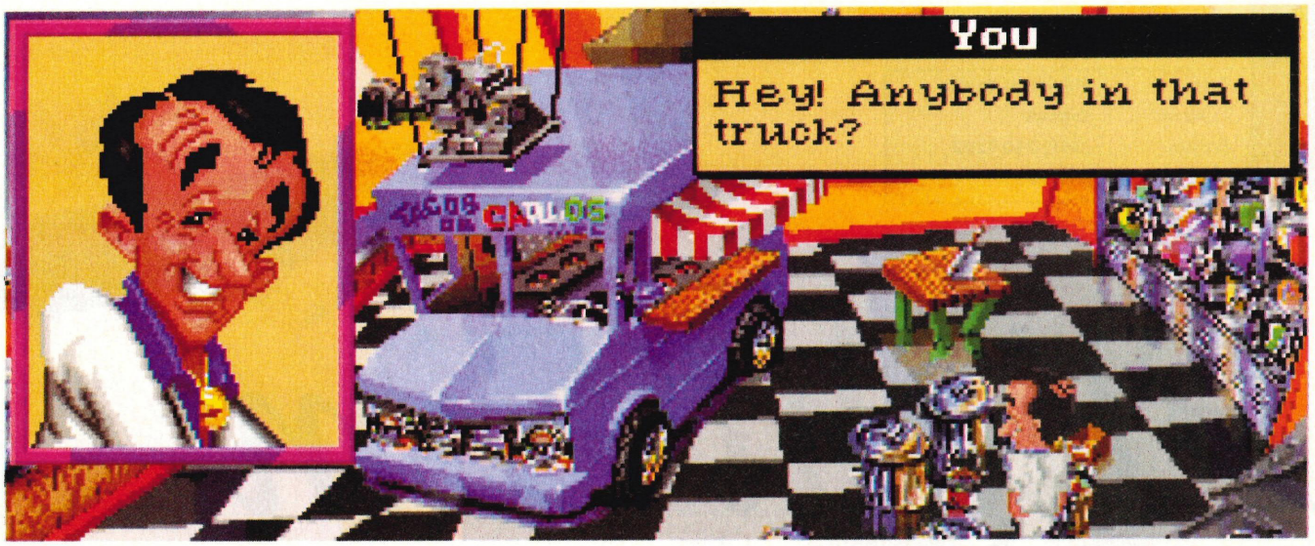
You only have to take a glance at the screenshots to see that the graphics are a mish-mash of gaudy colours and the sprites (which continually get lost against the backgrounds) are way too small. The animation isn't particularly impressive either and is positively basic compared to the quirky cartoon-style of LucasArts' Day of the Tentacle.

Leisure Suit Larry who?

Larry 6 is written and designed by veteran Sierra programmer Al Lowe, whose last release was the good-looking but flawed Freddy Pharkas Frontier Pharmacist. There are four other Larry games available: Leisure Suit Larry in the Land of the Lounge Lizards; Looking for Love in Several Wrong Places; Passionate Patti in Pursuit of Pulsating Pectorals and Passionate Patti Does a Little Undercover Work.







The kitchen is deserted because almost everything is automated. The old canteen truck is now a portable silent movie projector.

Ah, a nice cool shower. At times Larry 6 is so juvenile you even get points for going to the toilet and remembering to wipe afterwards.

With the huge advances being made in gaming these days, I must admit I expected a bit of digitised speech (apart from "yes" when you earn some points), higher resolution graphics and a whole host of incidental sound effects. I'm disappointed. Hugely so. Larry 6 is a game that looks very dated and does nothing even vaguely original. I've seen better graphics, heard better sound and indeed solved harder, quirkier puzzles. In short, you're not going to catch me recommending Larry anywhere in this review. Not with a batch of better, more innovative games around anyway.

Ooh, he's being very harsh, surely there must be some good points, a few redeeming features, one even. Well, OK, yes there is. Just the one. If Larry 6 has one good thing going for it, it's the incredibly catchy 'Lounge' music.

If you've ever seen the movie The Fabulous Baker Boys, you'll know the kind of sound I'm talking about. It's the kind of music that can be played with an organ and a single snare drum. Brushes are essential of course, add a touch of the latin rhythm and you're away. It's the kind of music played in hundreds of small tacky US bars with plastic palm trees. Yes, the music is the best thing about Larry 6. It's unselfishly tacky and I love it.



The game uses the familiar Sierra icon interface. You have the basic commands; walk, look, action (manipulate an object), talk and take, all of which allow you to control Larry in the game world. There is also a zipper icon and, as the manual kindly points out, if you don't know what to do with this you've bought the wrong computer game. There also several built-in sound effects included for your amusement. Press F4 and you get a belch, F6 a fart, F8 a lavatory flush and F10 a comedy boing. If I had doubts about the game before, they were dispelled when I discovered these. Juvenile or what?

If you've got the impression that I didn't like Larry 6 you'd be absolutely right. It seems it's little more than an excuse to show gratuitous pictures of half-naked women while promising to show sex that it never really delivers. It was fun for the first few games, but the whole Larry thing is becoming stale. Take a joke too far and you'll find that people won't laugh any more. You might just raise a smile, a grin even, but a belly laugh? A raucous, side-splitting chortle? I don't think so.

Maybe it's time that Al Lowe packed away the lounge suit and pensioned Larry off to a nice, quiet retirement home. Or maybe Sierra should just take him out and shoot him. The second option sounds promising.

Yes if I had a choice between a slap in the face with a wet fish and playing Larry 6 I can safely say that I'd have to go for the fish slap every time. Unless you're a devoted fan, give it a wide berth. Laugh? I nearly did.



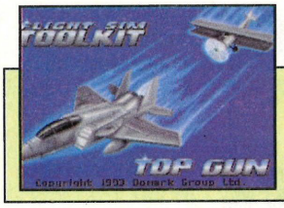
■ Dean Evans

Techspec *Larry 6 makes no hefty demands on your system and can even be installed to run under Windows which is ideal for hiding the game when your boss appears.*

Disk requirements					
	High density	✓			
	Hard disk only	✓			
	Space taken on hard disk	11Mb			
Graphic modes					
	CGA	✗	EGA	✗	Tandy ✗
	VGA	✓	SVGA	✗	
Soundboards					
	Ad Lib	✓	Roland	✓	Sound Blaster ✓
Control					
	Joystick	✗	Keyboard	✗	Mouse ✓
Performance					
	Optimum speed	25MHz			
	Minimum memory	1Mb			
	Free RAM required	584K			

rating **5**

Verdict
Sex has never been so dull



Title	**Flight Sim Toolkit**
Publisher	**Domark**
Contact	**(081) 780 2222**
Price	**£49.99**

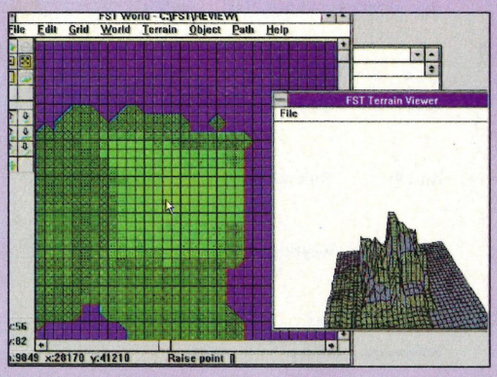
Flight Sim Toolkit

Bored with Falcon 3.0? Fed up with Tornado? Well, now you can design your own flight sim. Aces over the Mendips anyone?

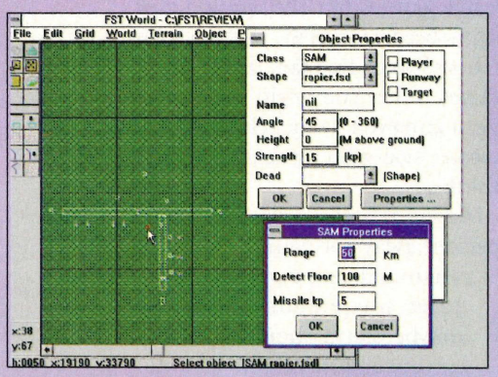
I imagine that there are a few of you reading this who have, at one time or another, wanted to design your own game. Maybe you've looked at commercial games and said "I could do better than that", or perhaps the current batch of flight sims (Tornado, Falcon 3.0, TFX, etc) don't quite give you the intense gaming experience that you're looking for.

So why not design your own? It doesn't matter if you know nothing about programing and you don't have to spend a year and a half in development with graphic artists, musicians, project leaders and producers. Just pop down to your local software emporium and grab a copy of Domark's splendid new Flight Sim Toolkit, a construction kit that allows you to create anything from an authentic World War Two flight sim to a futuristic 3D shoot 'em up. And it will only take you a couple of hours, too.

Flight Sim Toolkit (FST) is without doubt a superb utility, a set of powerful tools that enable you to create your own small but very perfectly formed flight games. If you have a reasonably powerful PC and a copy of Windows 3.1, then using FST you can sculpt your own indi-



In the world editor where I've created a small, peaceful island. You know; swaying palms, shimmering lakes, a real holiday destination. Playing with the raise land option, I've created a completely improbable mountain range.



My little airport. Once you have the basic shapes it's just a matter of assigning them the correct properties. If I place a Rapier missile battery to defend the airport, FST allows me to change the angle they face, their strength and all the stats.



When designing a 3D world it's often useful to nip out of the toolkit and load up the 3D mode. If you give your aircraft the aerodynamic properties of the "flying brick" you can easily zoom around your world. There's my airport and hangars.



Left: Create your towns, your runways and your heavy industrial zones, then take to the skies and blow them sky high. Goodbye hangers, farewell cranes, ta ta telephone kiosks. Bang, crash and kaboom.

vidual landscapes, design your own aircraft and lovingly build your own tiny towns. The possibilities are endless, limited only by your machines processing power and the boundaries of your own imagination.

So how does it all work? The best way is probably to show you how to go about building your own game, showing you not so much "two minutes" of FST, but rather something like "seven hours". You can see my first hesitant efforts with the toolkit on these pages, but before you move on to it I'll try and clue you in on a few FST basics.

The FST program itself is divided into five main areas: the world editor; the 3D shape editor; the colour editor; the cockpit editor and the aerodynamic model editor.

The world editor is where you'll spend most of your design time, frittering away hours constructing your gaming landscape and placing various objects on it. Simply put, it's a god mode, enabling you to raise and lower land squares (in true Populous-style), carving deep valleys and fashioning impossibly high mountain ranges. There is also a "fractalize" option which randomly generates huge tracts of landscape and finally the whole thing can be viewed by clicking on the handy FST 3D terrain viewer.

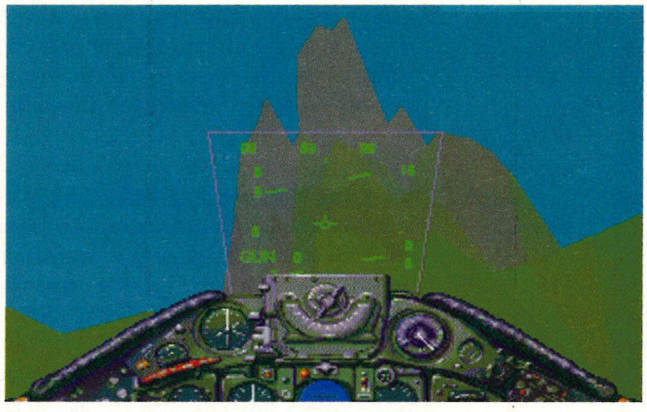
The world editor, as I've mentioned, is also the tool used to place objects in the world. Let's say, for example, that you want to build a warship, a frigate perhaps. To start with you would place the default object (a box) in the sea and then assign it a 3D frigate shape from the clip art library. This particular frigate might have a helipad at the back so you might want to give the frigate the same properties as a runway so that helicopters can take off and land on it. Next you should give it some defensive capabilities so you might mount two SAM batteries on the deck or a couple of AA guns. Again to do this you'd place a default box, assign it an AA gun shape and the properties of an AA gun, setting its burst rate and reload times. Then you could assign a route for it to follow ... the possibilities are numerous.

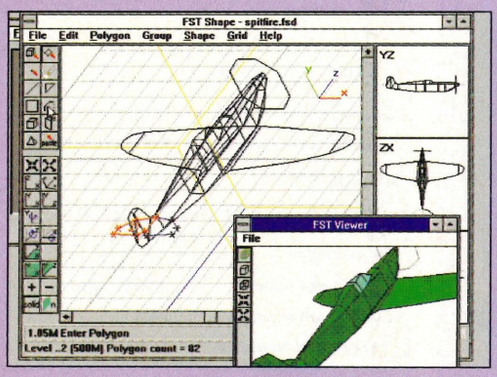
Clearly the objects that you place in your 3D world are limited by the contents of the clip art library (but there are lots crammed in there, including various aircraft, buildings, the Eiffel Tower, the Golden Gate bridge, the Sphinx, etc). However, if you want to design say, a futuristic attack interceptor, you can click on the 3D shape editor and quite literally knock one out for yourself.

The shape editor enables you to build complex polygon-based objects in a 3D working environment. For example, I tried building the Cloud Base from Captain Scarlet (don't ask me why) using just basic rectangles, cubes and triangles and although it looked a bit blocky, I was fairly pleased with the result. Your shape, whatever it may be, can be rotated around the X,Y and Z axis, edited and viewed in the 3D shape viewer. You can even cut and paste from other objects, taking a deck gun here and an industrial crane there, and lastly you can colour the whole thing in. A bright pink cloud base? Nah.

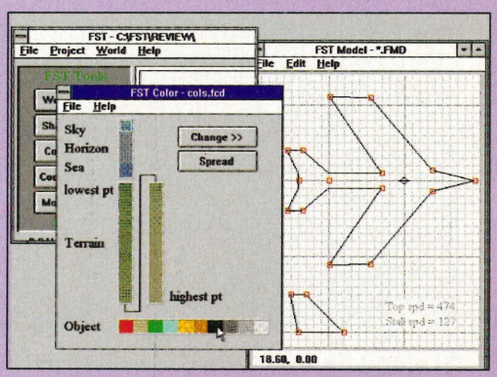
Of course these are the two main tools and you can literally spend hours moulding landscapes and modelling new shapes. As for the final three editors, the colour editor enables you to change the colours of your 3D world. You can give

Below: Conform to the principles of geography and geology? Me? I don't think so. Look at that improbable mountain range. It's huge! Just the kind of thing to make the tourists flock to my tiny holiday isle.





The shape editor looks and sounds rather daunting but once you start experimenting it is quite easy to use. Like the landscape, once you have constructed your polygon object like the Spitfire here, you can then colour it and view it in 3D.



OK, so you've got your nicely designed Spitfire and if you're really serious about your flying, you can sit and tweak the plane's aerodynamics. This is all still a bit beyond me, dealing as it does with dihedrals, crucial lifting surfaces and so on.



The cockpit editor. I wasn't able to find any PCX cockpit files lying around so, not fancying my artistic abilities much, I made do with the standard ones. Here I've added a completely useless G Force gauge (top right outlined in red).

ALTERNATIVELY



AV8B Harrier Assault
Domark, £39.99
Rated 9, Issue 15

AV8B is a good alternative to FST if you just fancy playing the game rather than struggling to design one. Based upon the aircraft carrier Tarawa you must fly your harriers overt the island of Timor, recently the victim of a military invasion. Superb campaign management, AV8B is now available in a shiny new SVGA version.



3D Construction Kit 2
Domark, £49.99
Rated 6, Issue 16

If game designing is your thing why not take a peek at the 3D Construction Kit? Build up a huge variety of objects using a similar 3D polygon routine and create your own small-scale 3D worlds. Although it's much better for modelling your house or your car rather than an entire country, I feel it's still worth a look.

the sky a fiery red tint, paint the ground purple and change the hue of the ocean.

The cockpit editor is a wonderful utility that allows you to add a whole range of dials and gauges to standard PCX format cockpit pictures. Try searching through your old flight sim collection for PCX cockpit files because these can then be edited and have HUDs, altimeters, fuel dials, buttons and a variety of useless flashing lights superimposed upon them. If you can't find any, you can always don your floppy artist's beret and draw your own in Windows Paintbrush. It's completely up to you.

Lastly, we come to the aerodynamic editor. Obviously, powered flight can not be achieved simply by attaching an engine to a set of wings, crossing your fingers and hoping. No, I'm afraid if you want the ultimate in realism you're going to have to take a crash (no pun intended) course in the fundamentals of aerodynamics. The editor allows you to change the size, angle and orientation of the various lifting surfaces, as well as to specify the engine type, the positioning of the engines and a whole host of other variables. It sounds horribly technical but using the editor does enable you to model anything from an F-16 to a Cessna with accuracy.

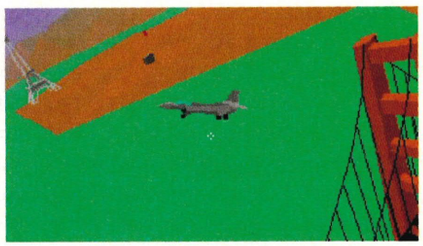
If you're a real flight sim fan I think you will truly appreciate the power of FST. If you're not, you won't. It's a stunning package and although it doesn't have texture-mapped graphics and a padlock view (the game engine is derived from the successful AV8B Harrier Assault) the range of options is highly impressive.

I only have a couple of moans and the first is the fact that FST isn't as user-friendly as it could be. If you do forget anything or do something wrong, FST won't tell you what it is. I created my first world and loaded it up and my plane was continuously surrounded by explosions (I never found out why), I've been unable to take off from a runway and on one occasion the sim part wouldn't load at all, chucking me back into DOS with a rather unfriendly "load error" message. A few pointers and maybe an on-line troubleshooter would have been nice.

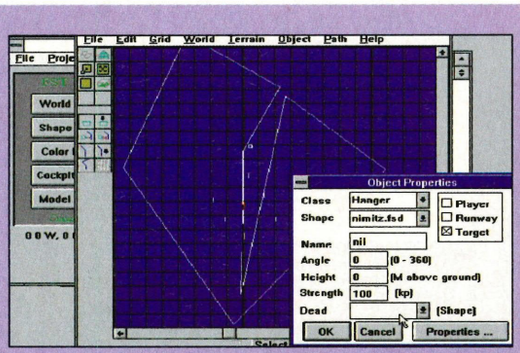
Finally, the whole FST package can be very complicated. If you're not prepared to sit down for days building yourself a world then this is probably not for you. But if starting from scratch seems a bit daunting FST comes complete with two predefined worlds — Private Pilot and Top Gun — which serve not only as stand-alone games but show you just what can be achieved with FST. You can either play these as they stand or customise them, tweak them and turn them into something completely new.

FST is a superb utility and if you're a flight sim nut I can't recommend it highly enough. Oh, all right I can. Buy it.

■ Dean Evans



Like any good flight sim, FST also boasts a wide range of nifty outside views. Marvel as I dodge the Golden Gate Bridge ...



I've got my base and my plane, and now all I need is a target. To remedy this I have created a fleet of ships headed by the US aircraft carrier Nimitz. Surrounded by frigates with AA guns, the Nimitz will launch SU-25 planes if I come within 50 miles of it. Me? I've got to fly and destroy it. Ha!



Et voila. After about seven hours of trial and error I'm finally diving down onto the Nimitz, narrowly dodging the spluttering trails of AA fire from the frigates and the SU-25 that has just taken off. I wonder what else I can add? Make the sky darker, change the planes, alter the Nimitz, tweak the ....

Techspec

Although the actual FST game runs in DOS, the FST tools only run under Windows. FST supports an SVGA mode too and because of its clever 32-bit coding it only works on 386 based machines. Sorry, 286 owners.

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	***12Mb***				
Graphic modes					
CGA	✗	***EGA***	✗	***Tandy***	✗
VGA	✓	***SVGA***	✓		
Soundboards					
Ad Lib	✓	***Roland***	✓	***Sound Blaster***	✓
Control					
Joystick	✓	***Keyboard***	✓	***Mouse***	✓
Performance					
Optimum speed	***40MHz 386***				
Minimum memory	***2Mb***				
Free RAM required	***590K***				

Verdict
A superb and complicated flight sim designer

rating **8**

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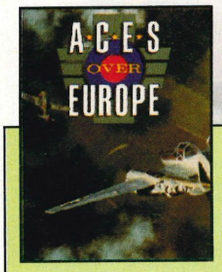


Title	**Aces over Europe**
Publisher	**Dynamix/Sierra**
Contact	**(0734) 303322**
Price	**£44.99**

Aces over Europe

Famous among flight sim fans for the best balance of playability and flight modelling, Aces over the Pacific was hot property. But Europe is a much colder place

Two weeks ago, if a friend had asked me to recommend a playable and detailed flight sim, I'd have said Aces over the Pacific, without a moment's hesitation. Aces over Europe has left me stumped, though.

It's no less a good game than Aces over the Pacific was; in fact it's improved in many ways. But it just hasn't kept up with the times. Try as I might, I still can't convince myself that this is a full price game, not a data-disk — and that it's been a year and a half in the making.

That's because if any game genre is driven by technology, it's flight sims. A simulation is all about recreating the 'experience' — and surely the closer you can get to that visually, the more realistic the simulation?

Recent releases like TFX, Flight Simulator 5.0 and Strike Commander (for all its faults) point the way forward. By comparison, Aces over Europe is something of a nostalgia trip, entrenched in simple, flat polygons. Somehow I don't think a bit of extra shading on the fuselage and a graduated horizon constitutes state of the art flight simulation.

Take the clouds, for example. Aren't we past the days of solid white slabs of floating concrete? Or the landscape — a flat green expanse, criss-crossed with railways and the odd pyramid (from the Egyptian 'green' period, I guess) that's supposed to represent a hill.

The end result is a sim that looks two years old, and it's as simple as that. Which is a shame, because in terms of gameplay Aces over Europe is just the ticket.

Although the overall structure of this version remains pretty much identical to its predecessor, you've obviously now got Europe to play with, which means nine new campaigns, plenty of new squadrons to fly for over Belgium, France and Germany, and the choice of flying for either the Luftwaffe, USAF or RAF.

You've also got a whole new fleet of aircraft to tinker with. And you can't fault Dynamix for its attention to historical detail, either in the manual or the game. Many companies would have called it a day after three or four well known planes, and ignored the more esoteric models that crept in at the tail-end of the war, but not Dynamix. Because of this we have some of the more unusual craft, including the ME 262, and the Arado 234 jet bomber.

Sadly, we're still at the mercy of American games players though — the game starts from the D-Day landings and not a moment before. Goodbye, Battle of Britain — if American planes were not



Right: A common foe, the F190A is one of many new planes and vehicles in Aces over Europe.



It's time to test my flight reflexes. There may be no Dambusters or 633 squadron, and no Battle of Britain, but the Bridge at Remagen historical mission has a familiar ring. I promise not to try and fly under it.



Missions are tough in Aces over Europe. For once though, it's not a German plane that's brought me down, but the massive concentrations of flak.

involved, then Aces over Europe doesn't want to know.

If you have actually played Aces over the Pacific, then after a while it is easy to see what Dynamix has worked on in the past year or so. All sorts of details have been tweaked and improved throughout.

Here's a brief run-down of some of the refinements: a taller resolution mode smooths out the more obvious jaggies on the planes, events are relayed to you between missions and planes fade from view rather than blip out like they've just hit the Bermuda Triangle.

The missions themselves are more varied too, with three new options — interdiction, close support and crossbow. The enemy pilots aren't as predictable as they were, either, and this improved AI makes for a more challenging and frantic dogfighting experience.

And lastly, the flight model has also been given a good overhaul — even though it was hardly shabby to begin with. Spins are more accurately modelled, planes shake when they're hit, stalls vary in recovery difficulty, and flaps and landing gear can be damaged. Not only that, but mass makes a greater difference to the plane's handling. You're certainly aware when you swap from a nippy fighter to a ground attack mission in a Mosquito, for example. It feels like you're flying a brick.

I like playing Aces Over Europe; it's nicely balanced for serious flyers or casual dogfighters, it's definitely an improvement over its predecessor and it has plenty of gameplay for the money. But I was still disappointed. It should have been a whole lot better.

What is it with Sierra and 'tried and tested' formula games (Larry 6, King's Quest 6 and Police Quest 4)? Aces over Korea is still to come too, and then Aces of the Deep. This undoubtedly sells bucketloads of software in the States, but where will it all end up? Aces over Willesden, mapped out in khaki and grey polygons?

However, if you can forego the graphical splendours of more technically advanced flight sims (Origin's Pacific Strike is due out in March), you'll find Aces over Europe a comprehensive, playable flight sim. Just don't expect anything startlingly new or exciting. Aces worked before, and it works again — it's just not going to set the world on fire.

■ John Bennett

ALTERNATIVELY



Pacific Strike
Electronic Arts
£TBA
Due out in February, Pacific Strike is a WW2 flight sim from the Strike Commander stable. Expect state of the art texture-mapped graphics, and the need for a 66MHz 486 to run it.



TFX
Ocean/DID, £39.99
Rated 9, issue 25
Immensely playable and visually stunning flight sim. TFX is a high-tech sim, with the emphasis on missiles rather than machine guns and strafing, but no less fun for that.

Techspec *Worth making sure your joystick is correctly set, because Aces can really make the most of multiple-button controllers. Other than that the only thing to watch out for is the need for 614k of base memory.*

Disk requirements					
High density	x				
Hard disk only	✓				
Space taken on hard disk	6Mb				
Graphic modes					
CGA	x	EGA	✓	Tandy	x
VGA	✓	SVGA	x		
Soundboards					
Ad Lib	✓	Roland	✓	Sound Blaster	✓
Control					
Joystick	✓	Keyboard	✓	Mouse	x
Performance					
Optimum speed	25MHz				
Minimum memory	1Mb EMS				
Free RAM required	614K				

Verdict An excellent platform game lacking a little colour

rating **7**

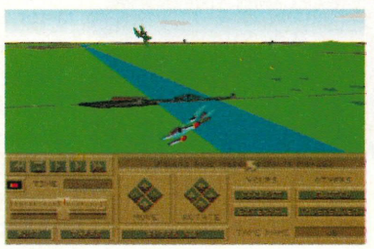
0 MINUTES of low-flying polygons



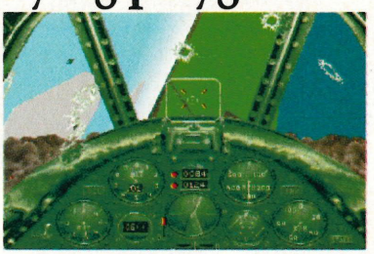
Before I can get stuck in, it's mission briefing time. Apparently the Germans are going to 'throw everything they've got at the bridge'. Visions of low flying sinks, prams and the odd paving slab spring to mind ...



An improved map screen shows my flight path and mission objectives — and a recon photo if one is available. The only thing that's missing are the Dad's Army arrows fending off Hiltler's troops.



Aces over Europe's flight recorder is the best in the business. Unfortunately, all it's telling me right now is that my knackered flight of Tempests is completely outnumbered by the German ME 262s.

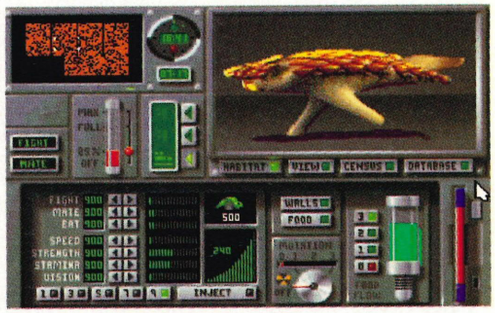


Now, did I remember to pack my parachute? In a nutshell, I've had seven shades of something knocked out of me by the ME-262s, and I'm now heading for an intimate meeting with the ground. Not good. Not good at all.



Title	**Unnatural Selection**
Publisher	**Maxis**
Contact	**(071) 490 2333**
Price	**£29.99**

This set of theroid zips is well-fed, with room to roam and rove. With the mutation level turned up to introduce those all-important rogue genes, let's switch on to what the manual calls 'peeping tom' mode, and view the zips at work and play.



This zip (speedy, but not particularly strong, theroid) is mooching around the pen looking for food, a fight, or maybe a brief but meaningful relationship. (They're all hermaphrodites, according to the manual, so just about anyone will do.)

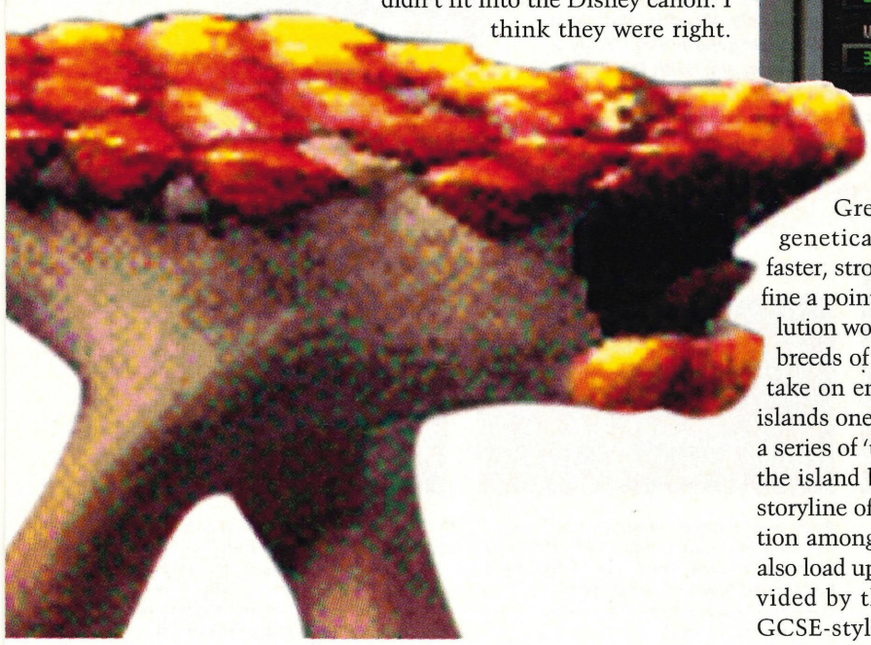
Unnatural

Right: a slug in close-up, as he prepares to do battle with a zip — pictured below.

Unnatural is putting it mildly: this has got to be the strangest program I've seen in months. A combination of genetic engineering, strategic warfare, and even some chemistry set style experiments, it looks like nothing so much as a collection of odds and ends from various unfinished computer games that some bright spark then linked together to release as one.

In fact, Unnatural Selection was originally a project for Disney Software, until the powers-that-be decided that it simply didn't fit into the Disney canon. I think they were right.





In Unnatural Selection, you create creatures — called theroids, which is roughly Greek for wild animals — and genetically manipulate them to be faster, stronger, and, well, not to put too fine a point on it, *lustier*, than their evolution would naturally allow. With your breeds of super-theroids, you can then take on enemy creatures on a series of islands one at a time, or you can take on a series of 'top secret' missions, in which the island battles are linked to a surreal storyline of sabotage and world domination among leading geneticists. You can also load up a series of 'experiments' provided by the program and follow the GCSE-style instructions to determine which traits will enable a theroid species to survive better. There's even an experiment designed to show whether theroids are 'intelligent' or not.

Creatures with feet of clay

There are five distinct species of theroid, although with four separately manipulable characteristics and three different innate drives per beast, the genetic permutations run into thousands. Those creatures with a high speed rating are depicted as 'zips', strong theroids are 'hulks', those of relatively high stamina are 'slugs'. The other two are unnamed but appear as distinct species on-screen.

Theroids can be viewed at three levels of magnification. At the lowest, you can

MINUTES

of the mating game



Aha. Spotted a likely-looking partner. The preliminaries are mercifully brief, since the more your creatures reproduce, the better, to keep population levels rising and to improve genetic characteristics by cross-breeding.



Modesty forbids me to describe just exactly what is going on here. The accompanying sound effects are hilarious — a cacophony of grunts, squeaks and squelchy noises. Delicate readers can always zoom out to 'woodlouse' view, which is much less explicit.



And after an implausibly short gestation period, another baby zip comes into the world. Another mouth to feed, another solider in the troops to air-lift to the islands to do battle against the mutants developed by Dr Skinner.

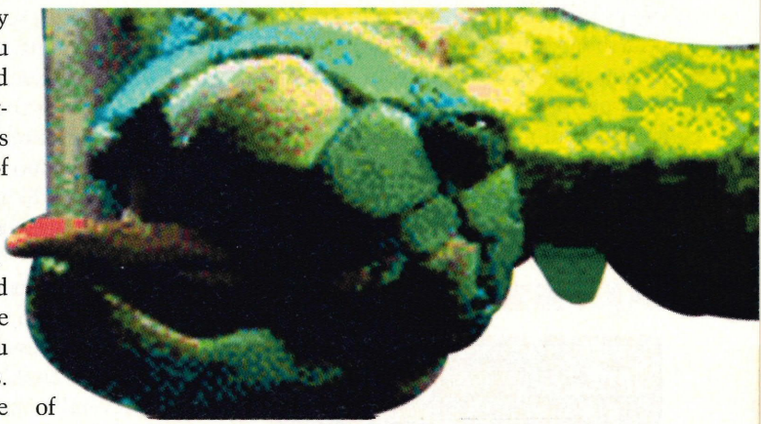
Selection

It's time to play the mad scientist again, in Maxis's decidedly eccentric look at genetic engineering — now with added 'rage' and 'lust' ...

see all the theroids you've created at once, but they just look like wiggly dots. One level up, and they more resemble woodlice. At their largest, they change appearance altogether: now each individual beast is shown as a Claymation-style close-up, wandering the terrain, stalking prey, and more often than not, mating frenetically. More of the private lives of theroids later.

Creating, say, a number of theroid 'zips', with the basic characteristics of a zip (ie, fast, and not much else) won't in itself give you a reproductively successful species, and certainly won't win you any island battles later on in the game. You need to strengthen the genetic stock, and the fact that there are a number of different ways to influence the way a species develops gives the program some sort of educational bent, I suppose.

To strengthen the stock, you can give them a dose of radioactivity, which will cause mutation, which will then be passed down the generations. It will also give some of the theroids viruses, and you should cull the creatures carrying a virus. However, you could plan to colonise one of the islands by sending hot-blooded, but diseased theroids there to mate with the native creatures, infect them and thus debilitate the original inhabitants.



Above: the death throes of a hulk (strong, but not, I suspect, very bright). Theroids don't live very long, so you have to keep that reproduction rate up.



Swamp Island (admittedly not one of the difficult ones) has been completely overrun by my rampant zip troops, whose population is doubling every two minutes or so!

Creating, say, a number of theroid 'zips', with the basic characteristics of a zip (ie, fast, and not much else) won't in itself give you a reproductively successful species, and certainly won't win you any island battles later on in the game. You need to strengthen the genetic stock, and the fact that there are a number of different ways to influence the way a species develops gives the program some sort of educational bent, I suppose.

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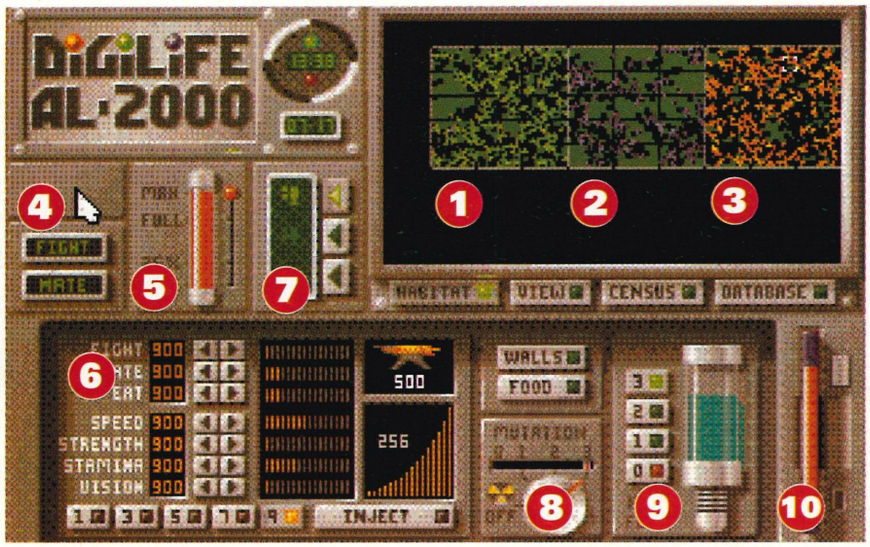
You can also cross-breed theroids: a zip and a hulk might produce a creature with both strength and speed. You can also build up your theroid's characteristics to the highest common factor, by accessing the database of all theroids, 'sorting' it, spreadsheet-style, so that all the theroids with the weakest stamina rating, for example, are listed at the bottom and can be killed off. Now those breeding will be those with higher stamina ratings to pass on down the generations.

This part of the game has a fascination all its own. You can happily play around



Left: 1) hulks in the breeding pen; 2) slugs; 3) zips; 4) click on 'fight' or 'mate' to see which of your theroids are doing these at one time; 5) the neural pattern regulator: switch on to animate your theroids; 6) theroid characteristics; 7) level of magnification indicator; 8) mutation level lever; 9) controlling the food supply; 10) access the islands.

Below: one of the unnamed theroid species — an 'ugly', I reckon — and this is a baby ugly.

with mutation and watching your creatures work, rest and play in close-up without worrying about the wider plot to recapture the islands which the evil Dr Ingrid Skinner is using as a breeding ground for a race of super-killer-theroids.

It is when you decide to put your own theroids to the test in battle that a sense of displacement and jumping from one type of game to another with its own distinct graphic and playing style comes in.

Having picked a suitable island to invade, you need to air-lift your theroid troops there. Suddenly you appear to have been dropped in the middle of a flight sim, as you choose which of your aircraft to send off in which order, and where they should land to give your troops the best terrain advantage. You'll need to take some cargo as well — not all the islands have their own food supply — and here the game takes a turn for the truly bizarre.

Apart from supplies of food, you can also take parcels of 'decoys', 'noisemakers', 'lust', and 'rage'. You can even, if the occasion demands it, program your theroids once in the field with further bolts of rage with a satellite beam. At this point I was fully expecting one of the theroids to step out of the shower and tell me all my saved games so far had only been a dream.

Fast breeder reactor

Each island has its own terrain and obstacles — some have trickier theroid opponents to deal with, so your battle strategy should be different, in theory, anyway, with each island. You should also be treating the islands in the user experiments section as a sort of training ground for the 'top secret' game mode, where you follow the story of Ingrid Skinner and her hordes of deadly mutants and take nine other islands in turn.

I say "in theory", because in the course of playing, I hit on a remarkably successful tactic more or less by accident, a strategy which has enabled me to rampage through several islands in double quick time, and with the minimum of fuss.

Back at the genetic engineering stage, I was concerned that my theroids were dying out too quickly, so I killed off those with a low mating urge until I had a good selection of zips all with a very high 'mating rating'. From there on, doubling, trebling, even quadrupling the size of my theroid colony was a speedy process, since they no longer bothered with other basic functions such as eating or fighting, they simply, er, *reproduced*, constantly, which gave me plenty of cannon fodder. On the islands, this breeding rate continued, so that even if quite few of them were killed by the enemy, there were always plenty more to take their place, and eventually, my lot would simply take over. So, you can take this as a hot tip: the sexier you make your theroids, the better.

Unnatural Selection is, in a word, weird. I can cope with the idea of breeding your own creatures in the lab until the sudden appearance of the Claymation models in glorious close-up — enormously entertaining, but gratuitous. I can even cope with evil Dr Skinner and her world domination plans until I find that to thwart her, I have to load my Sea Stallion with crates of rage and lust.

It's also been great fun, and I have a sneaking suspicion that Unnatural Selection may well be remembered long after the current crop of workaday releases have been deleted and reformatted. If this was a movie, it would be a cult classic, screened only in independent cinemas, as opposed to 'multiplex' games, such as Day of the Tentacle or Ultima VII. If it was a TV programme, it would be on Channel 4 (and very late at night).

■ Christina Erskine



ALTERNATIVELY



SimLife
Maxis, £39.99
Rated 6, Issue 17

I always thought SimLife was a bit heavy-going and Unnatural Selection would certainly prove a lighter experience. SimLife approaches creation from an ecological rather than genetic point of view and puts your creatures in an earthbound habitat to survive as best they can. Interestingly, Maxis says the genetic models in Unnatural Selection are closer to real life, and more complex than in SimLife. Must just be the plot, then, that gives it that surreal edge.

Techspec

Whatever you do, play this with a sound card and EMS memory, so that you get the proper speech synthesis and the wonderful sound effects — the mating calls and battle cries — of the creatures.

Disk requirements					
	High density	✓			
	Hard disk only	✓			
	Space taken on hard disk	15Mb			
Graphic modes					
	CGA ✗	EGA ✗	Tandy ✗		
	VGA ✓	SVGA ✗			
Soundboards					
	Ad Lib ✗	Roland ✗	Sound Blaster ✓		
Control					
	Joystick ✗	Keyboard ✓	Mouse ✓		
Performance					
	Optimum speed	33MHz			
	Minimum memory	640K			
	Free RAM required	570K			

rating **7**

Verdict
Unusual and oddly endearing

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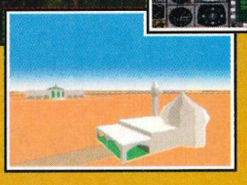



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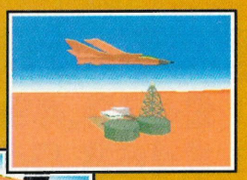

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Title	**Silverball**
Publisher	**Team 17**
Contact	**(0924) 291867**
Price	**£29.99**

Silverball

Silverball is the fourth pinball game to be make its way onto the PC in recent months (the others being Pinball Dreams, Eight Ball Deluxe and Take-a-Break Pinball for Windows), it's going to have to be pretty damned good to have any hope of making an impression.

I mean, I like pinball and all that, but do we really need another game? After all, if you've recently been looking for a pinball game to add to your collection, the chances are you've already found one that suits your needs. So, what exactly does Silverball have that the other games lack?

Let's start with the basics. Silverball has five tables to choose from (as opposed to Pinball Dreams' four, Take-a-Break's eight and Eight Ball Deluxe's one) which is a pretty reasonable selection. Each table has its own theme, features, scoring and level of difficulty, so you're bound to find at least one that appeals to you. Unlike Eight Ball Deluxe and Pinball Dreams, which are both three screens high, the tables in Silverball cover only two screens. This makes a multiball feature possible, which is one thing that is missing in the other two games.

Scrolling is smooth (I played it on a 386SX running at 20MHz — the minimum specification for this game) and controls are simple: space to fire the balls and the two shift buttons to move the flippers.

Silverball is one of the better pinball games around, being comparable to Pinball Dreams (reviewed issue 24) in terms of playability. Ball movement is quite natural (stop sniggering), although I often found it difficult to trap the ball on the flipper because the darned thing has a tendency to bounce straight off. As in Eight Ball Deluxe, you can alter the tilt of the table, and you have the choice of playing the game with either three balls or five. There are numerous features such as ramps, ball traps and various targets which vary from table to table. Some tables are more difficult than others; Blood in particular is very unforgiving, whereas Odyssey is much easier to get into.

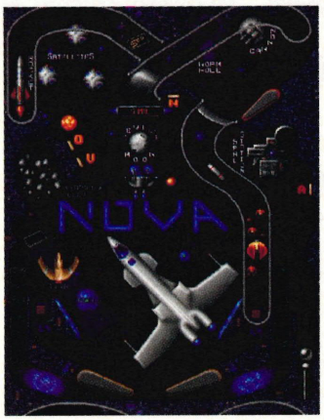
The graphics are reasonably good and tables look quite authentic, but unfortunately the artists have chosen to use a lot of dark colours and this makes the whole thing look rather drab. The music and sound effects aren't at all bad, though, and sound almost as good as the genuine article.



In all, Silverball is a pretty good pinball simulation, but it doesn't really offer anything new. If you already own a decent pinball game, I can't honestly see that there's much point in buying this one as well. As a first purchase it's a much more viable option, but bear in mind that Epic Megagames has released a shareware version (the registered version costs £23.99 and comes with eight tables — albeit different tables from those in Silverball) which is much better value for money.

■ Cal Jones

Nova (below) and Fantasy (right) are just two of the tables you can try. Odyssey (bottom left) was my personal favourite, with three flippers and loads of features.



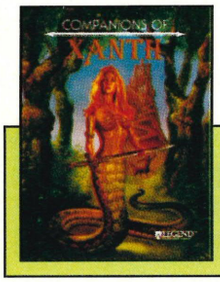


Techspec *Silverball requires a 386SX (Team 17 recommends a minimum speed of 20Mhz) or better, VGA and DOS 3.3 or higher. The Gravis Ultrasound soundcard is also supported.*

Disk requirements							
	High density				✓		
	Hard disk only				✓		
	Space taken on hard disk				2Mb		
Graphic modes							
	CGA	x	EGA	x	Tandy	x	
	VGA	✓	SVGA	x			
Soundboards							
	Ad Lib	x	Roland	x	Sound Blaster	✓	
Control							
	Joystick	x	Keyboard	✓	Mouse	x	
Performance							
	Optimum speed				33MHz		
	Minimum memory				640K		
	Free RAM required				555K		

rating **6**

Verdict
Playable and addictive, but do we really need another pinball game?



Title	**Companions of Xanth**
Publisher	**Legend/Accolade**
Contact	**(081) 877 0880**
Price	**£39.99**

People have been predicting the death of the text adventure for years now. This latest game from Legend hammers the final nail into the coffin

Companions of Xanth

One of the notable things about Xanth is the preponderance of puns. This censor-ship, for example, is not only a ship containing smoking censors but is also device for restricting the free-speech of the nearby villagers!

Oh weep, all ye who once braved the Great Underground Empire of Zork, the mysterious realms of The Pawn or the magical universe of the Spellcasting trilogy. The glorious history of the text adventure is now at an end. We shall never see its like again.

Over the past couple of years, Legend has been the only major company to continue producing adventure games in which the main mode of communication was the English language. Nevertheless, the plain fact of the matter is that most players now prefer a point-and-click interface and so, with the advent of Companions of Xanth, even Legend has decided to go with the flow.

Actually, in spite of the new graphic environment, it turns out that it still *is* possible to construct fairly complex commands in Xanth. Whenever you select an object, either in the main screen or in the inventory at the bottom of the screen, you can use it in combination with some other object by selecting from a set of textual commands resident in a context-sensitive list.

In practice, this works well and, happily, it enables you to try out a reasonable variety of ridiculous commands such as 'Attach the anchor to the lamp cover' or 'Tie the rope to the buttercup'.

Companions of Xanth is based on a popular series of fantasy novels by Piers Anthony, the latest of which, 'Demons Don't Dream' is supplied in the game box.

When the game first starts, you are presented with a picture of a computer sitting on a desk. Your first task is to get a game to play on it. Fortunately, a friend of yours conveniently phones to tell you about a brilliant new adventure called — yes, you guessed it — Companions of Xanth.

He immediately sends the game around to you. You open up the box, take out the disk and load it into the on-screen computer. Only then are you ready to start playing the main part of the game.



Companions Of Xanth is actually a game within a game. You play the part of a computer-game player whose first task is to load an adventure game into the PC. Confusing, huh?

The plot revolves around two demons who want to rule Xanth. To do so, each one must use a human being to find an obscure object in the land. Said demon sets you up by inviting you to Xanth at the beginning the game (hence the complicated process outlined above).

Once there you have four choices of companion on the mission, though only one of them will get you anywhere — and I'm not telling you which one.

The conceit of a game-within-a-game carries on throughout. You have to remember that, even as you are playing the game on your own computer, you are also playing the part of someone playing the same game on their computer. To emphasise the weirdness of this scenario, your 'character' in Xanth is portrayed as a computer monitor. Consequently, other characters insist on referring to you as 'screen': "Greetings, wandering screen", they say. Even the game messages play along with this charade. If you try to climb a tree you will be told, "While you can do most things in your screen form, climbing a tree is out of the question."

This kind of tongue-in-cheek nonsense is funny for a while — but after a few days of concentrated game-playing the rib-tickling hilarity of it all does begin to wear a bit thin.

Apart from this, the humour in Xanth is, I'm happy to say, of a more elevated variety than some of Legend's games. Taking inspiration from Piers Anthony's novels, Xanth indulges in a lot of word-play, especially puns. In the course of the story you will encounter shrieking frozen eyeballs called the 'eye-scream', a magical character named Fairy Nuff, and a censor-ship which, as the name suggests, is a ship containing censors that emit an expletive-deleting smoke.

These censors are, in fact, at the heart of one of the more difficult puzzles in the game. All you have to do is find a way of stopping them, which sounds simple but definitely isn't.

The puzzles are, on the whole, pretty satisfying. There are enough straightforward ones to keep you going while you rack your brains to solve the more baroquely complicated ones.

Even though some of us will inevitably bemoan the passing of the traditional text adventure, it has to be said that Legend has done a good job of creating a highly interactive environment in Companions of Xanth. Unfortunately, the graphics are only adequate rather than spectacular.

Nevertheless, this is a well thought-out game with better than average puzzles. Even though it may not be the best-looking modern adventure it is moderately entertaining.

■ Huw Collingbourne

Techspec

Sound cards are supported but it can also produce good sound effects through an ordinary PC speaker. Also, while the manual states that 580K of free RAM is needed, I managed to get away with just 550K.

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	**7Mb**				
Graphic modes					
CGA	✗	**EGA**	✗	**Tandy**	✗
VGA	✓	**SVGA**	✓		
Soundboards					
Ad Lib	✓	**Roland**	✓	**Sound Blaster**	✓
Control					
Joystick	✗	**Keyboard**	✓	**Mouse**	✓
Performance					
Optimum speed	**20MHz**				
Minimum memory	**640K**				
Free RAM required	**550K-580K**				

Verdict
A text adventure for non-typists. Moderately entertaining

rating **6**

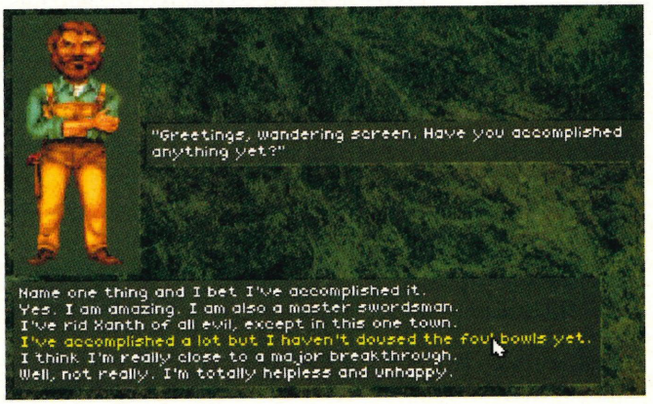
ALTERNATIVELY



Gateway II: Homeworld
Accolade, £34.99
Rated 6, Issue 25
This recent release from Legend uses its old text-and-graphics interface. You can either write commands one word at a time, or you can build them up by making selections from long vocabulary lists at the side of the screen. Gateway II (and Gateway I before it) is based on Frederick Pohl's inter-galactic sci-fi novels about ancient alien empires. It's not an especially difficult adventure to solve. Even so, it's an entertaining example of this dying (dead?) breed of keyboard intensive game.

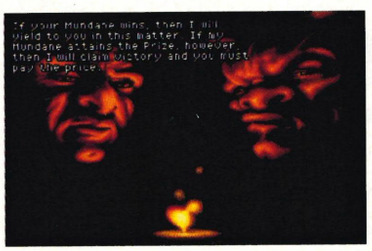


Return To Zork
Activision, £45.99
Rated 6, Issue 26
The original Zork trilogy comprised three of the best-loved and most influential PC adventures ever written — and there wasn't a single graphic to be seen in any of them! Now Activision has taken Zork's Great Underground Empire, added painted backdrops and digitised video clips, removed all trace of the old text-based interface and ended up with a good-looking and reasonably engaging game. Unlike the originals, however, Return To Zork is high on kitsch and low on enchantment.

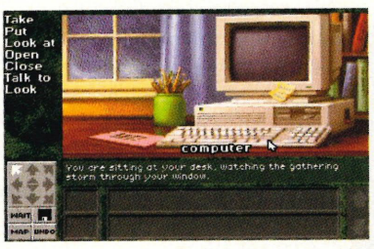


The closest you'll get to interactive characters in this game are little cartoon figures who ask far too many questions.

0 MINUTES travelling to Xanth



When the game opens you find that two demons have decided to play a game to determine which of them will control the world of Xanth. Now you just have to hope you are on the winning team!



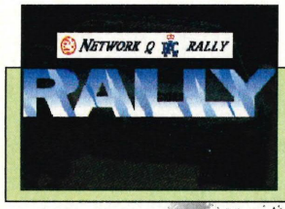
As any adventurer knows, the first thing you have to do is start up your computer. And that's just the way you start your adventure in Xanth too. But, wait a minute, you don't seem to have a game disk ...



Just then, the phone rings and a friend of your tells you all about this wonderful new computer game called Companions of Xanth. A few minutes later, the doorbell rings and the game arrives.



Having inserted the game disk into your on-screen computer, the screen lights up and you are presented with four potential companions. Once you've picked one, the game-within-the-game starts in earnest.



Title	**Rally**
Publisher	**Europress Software**
Contact	**(0625) 859333**
Price	**£34.99**

Rally

Gordon Houghton dons his driving gloves, slips on his helmet, revs up his engine and gets totally confused — is Rally an arcade game? Is it a simulation? Is it actually any good?

There are two main types of driving game: uncompromising simulations such as MicroProse's Formula One Grand Prix, and arcade racers such as Gremlin's Lotus: The Ultimate Challenge. Rally doesn't easily fit into either category.

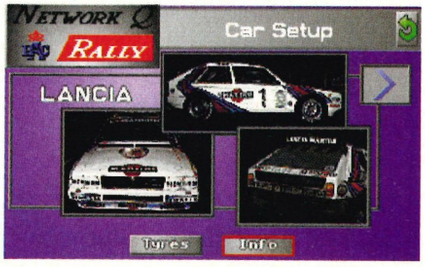
The action has a definite arcade feel, with sprite-based 3D, the option of simple driving controls and limited realism. However, the game also claims to be a highly detailed simulation of 350 miles of the Network Q RAC Rally.

This event, staged in Britain, is the final leg of the World Championship Series, and the programmers assert they have recreated every last bend, dip and crest of the gruelling, 35-stage course. They've also given you five of the world's top rally cars to choose from, a multi-player mode, and a chance to practise three special stages before driving the real thing.

After you've watched the neat (if small) digitised animations in the loading sequence, you're confronted by the main menu. This allows you to load an old game, start a new one, practise, determine the number of players and the cars they will drive, display the positions in the current rally, toggle between joystick and redefinable keyboard controls, and select from a sub-menu of options.

These options effectively act as a difficulty setting, and further blur the line between arcade and simulation. You can toggle the head-up display on or off (this shows the speedometer, rev counter and turbo gauge), select computer or manual brakes and gear changes and make your car indestructible (although you still sustain damage). You can also show the stage map, without which you have to rely exclusively on your co-driver's advice, display this advice on the dashboard, and use a rear-view mirror (allowing you to keep an eye on advancing competitors).

If you have a compatible sound card, enough memory, and if your computer is fast enough, you can even have a speaking co-driver.



Once you've chosen your car and entered cosmetic details such as your name and age, the race can begin. Each of the 35 stages is preceded by a map of the course ahead, including information such as mileage, the type of surface and the weather. You can use this data to match the tyres to the conditions.

This initial complexity promises a good deal but delivers little, because driving the car is a actually big disappointment when

The Lancia is just one of the five types of car you can choose to drive: the other models are from Ford, Toyota, Mitsubishi and Subaru.

It's important to spend time on repairs before each stage of the race, otherwise the car's performance deteriorates. This shattered windscreen is a result of driving in to far too many obstacles.



TWO

Having entered your name, chosen a car and selected a team to drive with, it's time to get down to the serious business of racing. Aided by a computer co-driver who warns you of every twist and turn in advance, you turn on the engine ...



A variety of weather and day/night effects create a vague sense of realism in Rally. Driving at night is no laughing matter: you can barely see ten yards in front, even with your headlights on.

you finally get to do so. The 3D effects are poor, with jerky sprite movement and bland use of colour.

The textured road surface doesn't work well either. It should convey an impression of speed and ruggedness, but it all too often feels as if you're hardly moving. There is a fair amount of graphical variety from stage to stage and from region to region, but none of the courses adequately recreates the feel of, say, driving at 70mph through a forest, or skidding around a hairpin bend.

The graphics as a whole are disappointingly poor. Apart from the weak 3D effect, competitors' cars (when they occasionally appear) are crude in close-up, the size of trackside objects sometimes appears disproportionate in relation to the perspective, and the graphics used in the menus are depressingly basic.

The sound isn't much better. Three of the four stereo channels carry engine, turbo and other noises, and these are impressive enough, but the fourth channel carries the speech and sampled effects. The sampled effects are often indistinct (particularly the crude music), and while the speech bravely tries to create the impression that you have a co-driver, its grating fuzziness is more of a distraction than an aid.

The only thing that makes Rally worth playing at all is its high level of difficulty. This is initially disconcerting, because it's very easy to veer off the road at least half a dozen times in the first couple of miles. It doesn't get much easier, either: even when you've mastered the basic techniques of taking the various bends at exactly the right speed and gear, slowing down in dips and trying not to fly over humps, you still have to master all of the 35 different stages, each with its own surface, weather conditions and tortuous route. Achieving the right balance between damaging your car and maximising your speed is a though task.

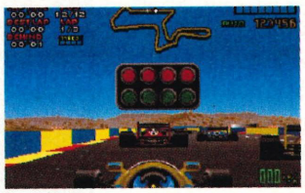
With better visual and aural effects and a more polished front end, Rally could have been a much more accomplished racing game. As it stands, it manages to capture the boredom and frustration of driving 350 miles, but not many of the high-speed thrills.

■ Gordon Houghton

ALTERNATIVELY



Lotus: The Ultimate Challenge
Gremlin, £34.99
Rated 6, Issue 23
If you're after realism from a driving game, this isn't the place to look. Your car can't crash, and it handles like a dream even at high speeds and in a variety of weather conditions. That said, this is a good, solid, high-speed race game.



Nigel Mansell's World Championship
Gremlin, £34.99
Rated 5, Issue 20
Based on the 1992 F1 World Championship season this game is more of an arcade racer than a simulation, and suffers from bland graphics and repetitive gameplay. However, the 3D is more effective (if less detailed) than in Rally.

Techspec *If you want to get the most from Rally's 3D effects and the brief introductory animations, it is best played on a 486. Roland isn't supported, but Disney Sound Source is. If you want to hear Sound Blaster speech samples and effects you'll need extended memory.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	5Mb				
Graphic modes					
CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		
Soundboards					
Ad Lib	✓	Roland	✗	Sound Blaster	✓
Control					
Joystick	✓	Keyboard	✓	Mouse	✗
Performance					
Optimum speed	33MHz				
Minimum memory	640K				
Free RAM required	580K				

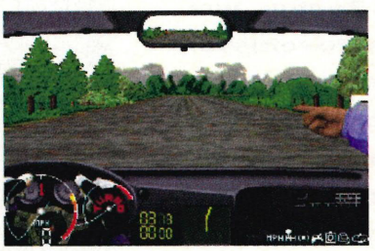
Verdict
A poorly implemented and overly ambitious simulation

rating **4**

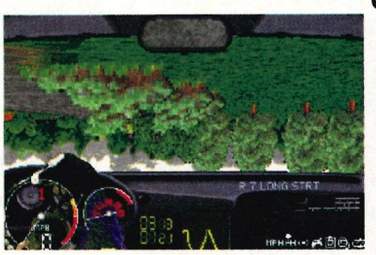
0 MINUTES of driving in the country



Rally covers all 350 miles of the Network Q RAC Rally. This British event is the final challenge in the World Championship Series, and every bend, hump, dip and track surface has been faithfully reproduced.



There are nine stages in the Midlands, and this is the first. Each follows the same pattern: after selecting tyres, servicing the car and scrutinising a series of detailed maps, it's time to drive. The finger points the way!



If you drive like a demon you'll flip the car over on the first hairpin bend. If your mean machine is indestructible this isn't so serious, but it still means the loss of valuable seconds. Now you know why rally drivers wear helmets.



You finally reach the end of the stage — in last position. You can abandon the race and start again, or you can continue and try to perform better on the next leg. Alternatively, you could take up a more peaceful pursuit — like basket-weaving.



Title	**The Hand of Fate: Legend of Kyrandia 2**
Publisher	**Virgin Interactive**
Contact	**(081) 960 2255**
Price	**£39.99**

The Hand of Fate: *Legend of Kyrandia 2*

Kyrandia was one of the prettiest planets in the galaxy, so someone decided to demolish it to make way for a car park



The sole (sorry) purpose of this ship is to take gallons of mustard to a remote island, populated entirely by cannibals. Once you've managed to book a passage, you'll have to find a means of changing course to Volcania.

There are two types of heroes in regular adventure games. They're either incredibly macho and have names like Stark or Kurt, or else they're comic and nerdy like Leisure Suit Larry, Guybrush Threepwood or Bernard Bernouli. Westwood's Legend of Kyrandia, whilst much praised for its pretty graphics, was let down by the fact that its hero, Brandon, had about as much personality as a concrete breeze block. Brandon may have been a nice enough lad, but boy, was he dull.

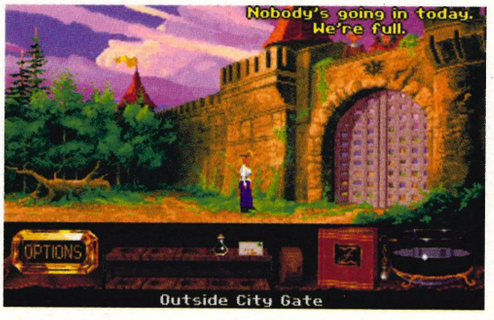
Somehow, though, the charismatically challenged chappie managed to defeat the thoroughly evil court jester Malcolm (a menacing name if ever I heard one) and save Kyrandia from ecological devastation. Unfortunately, a year later, an even worse threat looms. Kyrandia is disappearing bit by bit, and no-one knows why. Will Brandon save the day once again? Thankfully, no. Westwood, not wishing

If you've ever wondered what lies over the rainbow, now you know: it's a huge monument to Swiss watchmakers.



TWO

Kyrandia is in peril, and Zanthia has been told to retrieve the magical anchor stone from the pits of Volcania. Unfortunately she's having problems getting transport, and it doesn't help when a pair of bureaucratic guards won't let her get to the port.



The docks lie on the other side of that wall, but there's absolutely no way that the guards are going to let you in. They can't be persuaded or bribed, so you're just going to have to find a way to distract them. How about going for a walk.



to make the same mistake twice, has replaced Brandon with a much stronger central character. This time the fate of Kyrandia rests in the capable hands of a feisty lass named Zanthia. She might get through more costume changes than Madonna, but she's no girlie wimp, that's for certain. She's never afraid to have a go, even if it means going hand over hand up a ski-lift cable or riding on the back of an angry Tyrannosaurus Rex.

Zanthia has been chosen by Kyrandia's mystics to journey to the centre of the planet and bring back the legendary anchor stone. Getting there is far from easy: at the start of the game Zanthia discovers that her laboratory has been turned over by thieves and they've stolen the ingredients she needs for her portal spell. Instead she must make her own way there, travelling by foot, boat or even dragon back. The apathy and uncooperativeness of her fellow Kyrandians will make progress difficult, and she must use her ingenuity in order to attain her goal. The only person who seems willing to help is her flamboyant suitor, Marko, but his bumbling efforts usually end in disaster. Could this be something to do with his new valet, a mysterious giant hand that suddenly arrived in Kyrandia from another dimension? Or has Malcolm escaped to wreak havoc once again? You'll spend a fair amount of time tearing your hair out before you find out the answers.

Potion sickness

One thing I ought to make clear is that Hand of Fate is not the easiest of games. To say that the puzzles are obscure is something of an understatement, and if things weren't difficult enough already, the game contains more red herrings than Sainsbury's fish counter. If you have yet to play the original Legend of Kyrandia, it's not immediately obvious how to go about solving things. I'm all too familiar with the LucasArts style of puzzle which involves trying out weird combinations of even weirder objects, but Hand of Fate isn't like that at all. Most of the problems involve making magical potions, and not only do you have to know which potions are appropriate to your circumstances, but you will also have to find suitable ingredients. One particular potion required a toadstool, but the mushroom I had in my inventory just wasn't good enough. What I actually needed was a little wooden stool which toads used for sitting on — pedantic, or what?

Another difficulty is knowing exactly how to use the potion. In one part of the game you have to make a sandwich potion to lure some guards away from the city walls. After going to extreme lengths to assemble the ingredients, I threw everything into the cauldron, filled the flask and handed it to the guards. Much to my surprise, they were less than impressed with my offering. A good deal of cursing and a quick phone call to Virgin later, I discovered that my lack of success was down to my failure to remove the sandwich from the flask. Silly me! If only I had known that I had to click

Good heavens, bunny, you've been at those steroids again!



Zanthia's ride on the ski lift turns out to be rather more traumatic than she expected.



Maybe you'll find something in the sulphur springs to put in your swamp snake potion.

MINUTES of scare tactics



The farmer tells you that the guards have a penchant for sandwiches, so maybe your sandwich spell will come in handy. First, find some ingredients. There might be something useful in the farmer's cellar, if only he'd let you have a look.



You'll find some grain in the meadow, and the sheep also have something you'll need. But what's this ghost doing in the haystack? Talk to him and he'll offer to distract the farmer, but you'll have to find him a body first.



Well, there aren't too many corpses lying around in the pleasant land of Kyrandia, so you'll have to make do with this scarecrow. Put the ghost in an empty flask, then empty the flask onto the scarecrow and get ready for some fun.



Marko and Zanthia's bondage session was rudely interrupted by a giant mutant hand.

the flask on the Zanthia sprite to get the sandwich out, I'd have been well away.

Once you get used to the way everything works, it starts to get a lot easier. The interface is very simple, but it comes as a bit of a shock after seeing LucasArts' SCUMM system. The inventory takes up the lower part of the screen, but you won't find any verbs from which to choose your actions. To use something, you just have to click on it, and to talk to someone, click on them. That's all there is to it. The only problem is trying to determine which objects on screen you can and can't use. In most adventures, usable objects are highlighted when you move your cursor over them. In Hand of Fate, however, everything remains anonymous: you can either pick it up or you can't. I found the system a bit vague to begin with, but once again it's something you get used to.

Sitting pretty

Like the first Kyrandia, Hand of Fate is a lovely looking game. The scenery is very bright and colourful, especially once Zanthia has managed to leave her gloomy swampland home, and the sprites have plenty of character. It isn't significantly better looking than the original, but since Kyrandia was one of the prettiest games around, this is hardly a problem. The only thing that might put you off is that it's rather twee, but if you don't object to cute, tearful dragons, cuddly squirrels and dancing trees, you'll love it.

Hand of Fate is, for the most part, a very nice game. It took me a little time to get used to the logic behind it, but once I'd made a bit of progress I really started to enjoy it. The puzzles are quite challenging and I estimate that it would take most people a week of solid play to complete it, or longer if you play only at weekends or after work. Bear in mind that this is one of those adventures where one false move can spell sudden death, so make sure that you save your game often and try not to do anything rash.

Legend of Kyrandia had a trendy ecological theme, but quite frankly I find all that tree-hugging stuff rather nauseating. I'm glad say that Hand of Fate is not nearly so right-on; it manages to get on with the story without dealing out morals every five minutes. The storyline itself contains one or two surprises, and was good enough to keep me interested right up until the end. If it has one fault, it's probably that the game is a little bit too *nice*, though it's considerably less squeaky clean than the original. I'd recommend it to almost anyone, so unless you're the sort of person who only enjoys games which involve killing things, why not give it a go?

■ Cal Jones



Zanthia needs to use the ski lift, but the squirrel operating it is on his lunch break. Nuts!

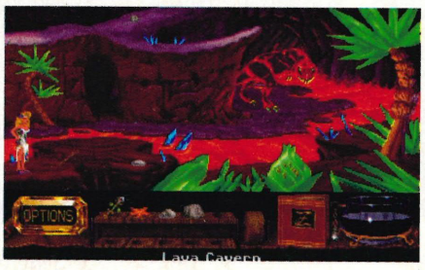
ALTERNATIVELY



Simon the Sorcerer
AdventureSoft, £39.99
Rated 8, Issue 24
If you like colourful, humorous fantasy adventures, Simon the Sorcerer is definitely worth checking out. It pokes fun at well known fantasy stories, including Lord of the Rings and many fairy tales. The graphics are attractive, a map utility makes movement easy and the puzzles are very tricky indeed. It'll keep you going for a bit longer than most adventures. Well presented and good fun.



Secret of Monkey Island
Kixx XL, £16.99
Rated 5 stars, Issue 25
Engrossing, entertaining and absurdly funny are a few of the words which describe this classic tale of piracy in the Caribbean. The combination of colourful graphics, toe-tapping music and insane puzzles has set a standard which few adventures have managed to better. If you haven't already played it, you shouldn't miss this opportunity to buy a truly great game at budget price.



Believe it or not, this cross-looking Tyrannosaurus is going to give Zanthia the ride of her life.

TechSpec *You'll need a 386 (20Mhz minimum) or better with 2Mb RAM and MS-DOS 5.0 or higher. It also needs a mouse.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	20Mb				
Graphic modes					
CGA	x	EGA	x	Tandy	x
VGA	✓	SVGA	x		
Soundboards					
Ad Lib	✓	Roland	✓	Sound Blaster	✓
Control					
Joystick	x	Keyboard	x	Mouse	✓
Performance					
Optimum speed	33MHz				
Minimum memory	2Mb				
Free RAM required	560K				

Verdict
The prettiest game of the year, with plenty of decent puzzles.

rating **8**

Turn your PC into a music centre from only £14.99

Fancy yourself as a bit of a Beethoven? Or maybe you think you could join Jean Michel Jarre on stage! Then again you could be completely clueless about making music, but have a burning desire to write and record the next Christmas Number One. If you fall into any of these categories or any in between then Midisoft is just the program for you. After taking the United States by storm, Midisoft - the ultimate music program for Windows PCs is now available in the UK from BCC through Multimedia Warehouse. Simply plug in, turn on and you'll soon discover how easy it is to record, create edit and sample your own compositions and those of your musical heroes. Midisoft is quite simply the best, easiest and most professional music program available.

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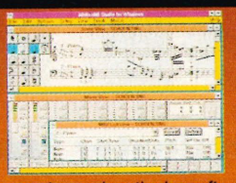

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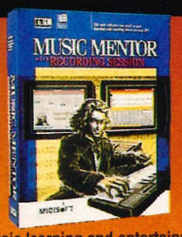

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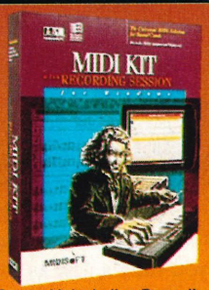

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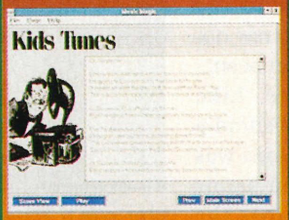

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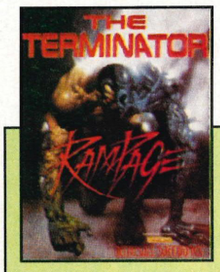
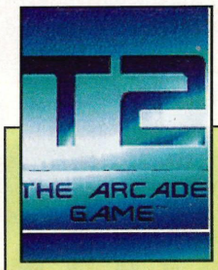


Title	**Terminator Rampage**
Publisher	**US Gold**
Contact	**(021) 625 3366**
Price	**£35.99**



Title	**T2: The Arcade Game**
Publisher	**Virgin**
Contact	**(081) 960 2255**
Price	**£35.99**

Terminated

Terminator fans, rejoice ... now you can indulge yourself in some sheer, unmitigated violence — Arnie style

Right: er, there's not really a hell of a lot you can say; just move the mouse around and fire at the terminators. Pretty simple really.

After the rip-roaring success of the Terminator films the avid fan can now satiate his bloodlust with not one but *two* movie inspired games; T2 the long-awaited coin-op conversion and Terminator Rampage, a dark and moody Wolfenstein 3D with robots and death-dealing exoskeletons.

First up, and firmly stuck in the year 2029 is T2 from Virgin. Now if you haven't been wandering around the arcades during the past year, you may not have been aware of the phenomenal success of the T2 coin-op game. Like Operation Wolf, T2 stuck you behind a cabinet-mounted Uzi and the aim was simply to shoot any metal human-hating scum-buckets that dared to cross the screen. It was fast, it was frantic and best of all, you could battle it out with the help of a friend. Yes, furious two-player action shoot-em up for a mere 50p, and you can't say fairer than that.

As it stands, T2 is a simple and addictive game. If you remember the plot of the film you'll know that a shape-changing T-1000 Terminator was sent back to kill the young John Connor and Arnie, now reprogrammed to be a good guy, was sent back after him. Carnage, outrageous stunts and expensive explosions then followed in generous abundance.

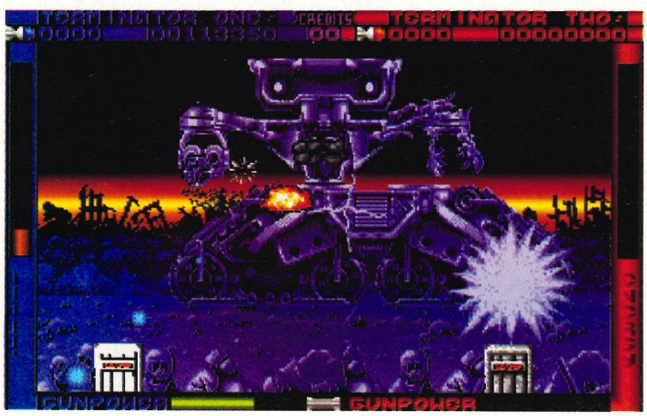


The game loosely follows this plot and puts you in control of Arnie himself. Using a horizontally scrolling first-person perspective, you view the world through Arnie's electronic eyes and, using your mouse, all you have to do is move the target crosshair and shoot robots like a maniac. There are bonus items and power-ups to be collected by shooting the crates that appear at the bottom of the screen and the game takes place over numerous levels ranging from the wastelands of 2029 to the laboratories of Cyberdyne back in the 20th century.

Now, this T2 conversion is a very faithful one. As you can see the graphics are suitably dark and blasted and the action, believe you me, is just as intense. Those boys at Probe (who are also doing Mortal Kombat for the PC, bless 'em) have done a great job, but sadly T2 doesn't generate the same heart-pounding excitement as its coin-op counterpart. I don't blame Virgin for not including bolt-on Uzi's, but this is where the game stumbles and trips where really it should run.

Frankly it's all a bit boring. Waggling your mouse around isn't a great substitute for hammering your finger on a gun-trigger. There also isn't much variety. While the backgrounds may change, and very nice they are too, there's not much more to T2 than the waggle and fire routine. So, if you fancy the look of T2, don't expect gameplay of cavernous depths. It's shoot 'em up action from the word go and on this level it acquits itself wonderfully.

Each level has a big, bad end-of-level guardian. You think the terminators are tough, try this guy.



Terminator Rampage from Bethesda is the second movie tie-in and features a equally tortuous time travel plot. It goes something like this: after the events of Terminator 2, John Connor and the rebels destroyed the Skynet Orbital Platform. However, just as it exploded Skynet launched a modified Terminator, a Meta Node, back into 1984 to the Cyberdyne laboratories to alter the time-line and neatly avert its own destruction. You have been sent back in time to stop the Meta Node interfacing with the Cyberdyne computers and to save the future of mankind. Hurrah.

Terminator Rampage is a smoothly scrolling 3D shoot 'em up rooted firmly in the Wolfenstein and Ultima Underworld tradition. Using a variety of weapons, including a humble handgun, an M-16 and an Uzi, you must prowl the corridors of the Cyberdyne labs, searching for 16 gun pieces that will enable you to construct a huge cannon and thus destroy the Meta Node. It all boils down to three main things: walk along dark, moodily lit corridors, shoot robots and search rooms. But not necessarily in that order.

Rampage is a highly atmospheric game and the graphics technology is pretty darned good, but sadly the actual gameplay is a bit on the dull side. Although Rampage can certainly be fast and furious, there isn't nearly enough ammo dotted around to make staying and slugging it out a really viable option. It's also very easy to get lost as, bar the odd pile of scrap metal you can't tell if you've previously been in a particular room or not.

That's not to say it's easy, far from it. In fact Rampage is one of the toughest games I've played in a long time. Unfortunately there's nothing here that would keep me coming back to try it just that one more time. It doesn't have the playability of my personal favourite, Doom (try out this month's coverdisk and you'll see why this shareware title is scooping up all the plaudits), and although you can always rely on finding ammo clips in the Gents toilets (don't ask me why?) and annoying Terminator 'Infiltrators' around most corners, there's not nearly enough going on.

But if you're a Terminator fan, you could safely have both of these games on your hard disk without fear of being cheated out of your hard-earned cash. T2 is a mindless shoot-em up and Terminator Rampage is a good (if a little tiresome) addition to the 3D first person Wolfenstein-like stable.

■ Dean Evans







Above: it's dark, it's dimly lit and there are hundreds of robots around who want you dead. And all you've got is a handgun. Typical. Absolutely typical.

Left: eat lead and die Terminator trash. It may not be as good as Doom but Terminator Rampage is one of the toughest games I've played.

Don't worry if you haven't got a fast PC because you can turn down the detail. You sacrifice texture-mapping for speed but it's still extremely atmospheric.

Techspec *I had some problems getting T2 to run successfully but all you need to do is chop around your Config.sys file so it includes the line, Emm386.exe noems.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	**2Mb**				
Graphic modes					
CGA	**x**	**EGA**	**x**	**Tandy**	**x**
VGA	**✓**	**SVGA**	**x**		
Soundboards					
Ad Lib	**✓**	**Roland**	**x**	**Sound Blaster**	**✓**
Control					
Joystick	**✓**	**Keyboard**	**✓**	**Mouse**	**✓**
Performance					
Optimum speed	**25MHz 386**				
Minimum memory	**1Mb**				
Free RAM required	**590K**				

Verdict
A neat, mindless shoot 'em up. Not much depth of gameplay

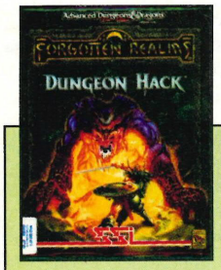
rating **5**

Techspec *Terminator Rampage shouldn't cause you any problems at all, but you'll find it works best with a mouse, because the keyboard response is a bit too slow.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	**17Mb**				
Graphic modes					
CGA	**x**	**EGA**	**x**	**Tandy**	**x**
VGA	**✓**	**SVGA**	**x**		
Soundboards					
Ad Lib	**✓**	**Roland**	**✓**	**Sound Blaster**	**✓**
Control					
Joystick	**✓**	**Keyboard**	**✓**	**Mouse**	**✓**
Performance					
Optimum speed	**25MHz 486**				
Minimum memory	**2Mb**				
Free RAM required	**585K**				

Verdict
Nice 3D blast but it isn't a patch on Doom

rating **6**



Title	**Dungeon Hack**
Publisher	**SSI/US Gold**
Contact	**(021) 625 3366**
Price	**£39.99**

You've been dumped in a dungeon full of hostile beasts, and you must somehow get yourself down to the bottom level and bring back a magical orb. There are a lot of monsters to kill on the way, and plenty of treasure to collect.



The first thing you need to do is create a character. Unlike Eye of the Beholder, in which you start off with four characters, Dungeon Hack is a one character game. You can choose your race, career, alignment and sex. Statistics may then be modified.

Dungeon Hack

Take an old but classic role-playing game, add 3D VGA graphics and you get Dungeon Hack, the latest release from SSI

No, it's not a party political broadcast by the Natural Law Party — it's actually the introduction to Dungeon Hack. The sorceress is about to send you to a dank and smelly dungeon to retrieve her orb, whether you like it or not. What it is to be a hero, eh?

In the beginning there was Hack, a horribly addictive little role-playing game made up of text characters in which you (represented by an @) had to fight off lots of Os (ogres), Vs (vampires), Ks (Keystone Kops) and other assorted nasties as you trudged through a dungeon in search of the fabled Amulet of Yendor. Hack, or NetHack as it's now known, may look primitive, but it's great fun nonetheless. I've been playing it since 1989, which just goes to show that a game doesn't have to look wonderful to be entertaining. One of the things which makes it so addictive is that the dungeon is never the same from one game to the next, so if you manage to complete it, you can go back and play it again and it'll be totally different.

Now SSI has brought out its own version of the game, but instead of using humble text characters to represent the dungeon, we can now experience it in full VGA colour. Each dungeon is randomly generated (although there's also a custom dungeon option in which you can specify the number of levels, puzzles and how tough the monsters will be) and there are over four billion possible permutations.



At first sight, Dungeon Hack looks like the perfect product. Unless you're new to gaming, you've probably got a whole shelfful of computer games which are gathering dust because they're only designed to be played once. Dungeon Hack avoids this problem because it can be played over and over again and you'll get a whole new dungeon every time.

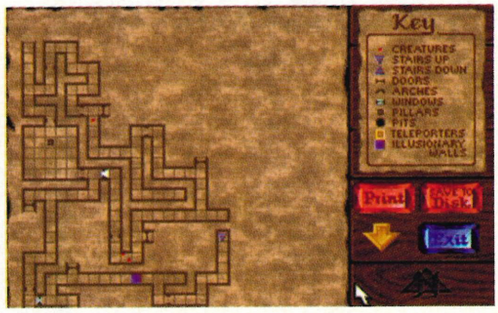
Sounds too good to be true, doesn't it? Well, there *is* a catch. First person perspective RPGs fall into two categories: square based, flick-scrolling games which limit you to 90 degree turns (Eye of the Beholder, Dungeon Master and so on), and glorious, smooth, multi-directional scrolling games such as Ultima Underworld and Shadowcaster. Dungeon Hack fits into the first category.

Dungeon Hack is actually based on the Eye of the Beholder engine. Beholder was an excellent game when it first appeared, but by the time it reached its third instalment, it looked very dated. Now it's back, masquerading as Dungeon Hack. Why SSI couldn't let it die with dignity I'll never know. After experiencing the joys of multi-directional scrolling, I'm not sure that anyone would want to go back to a

MINUTES of hacking and slaying



Once in the dungeon, you'll come across all sorts of evil creatures which seem to want you dead. This stone giant isn't one of them, however: it's just a statue. Even so, it's blocking my way and I'll have to find another way around.



The easiest way to get your bearings is to consult the map. The map shows the passages you've already explored, along with pillars, doors and so on. Monsters are represented as red dots, and small grey dots show the locations of objects.



As soon as I arrive on the next level, I get jumped by this malevolent gargoyle. Fortunately he's quite easy to kill. In the custom dungeon, you can determine how often monsters crop up, but you can't choose what type of monsters they'll be. Pity.

block scroller like this. The graphics may be better than NetHack's, but NetHack will run on an XT with a mono monitor whereas Dungeon Hack requires a 386 with VGA — the same specifications as Ultima Underworld!

Dungeon Hack is a straightforward monster bash, with little emphasis on puzzles. This makes it rather limited. Origin's Shadowcaster (reviewed Issue 27) was similar in this respect, but just about got away with it because the combat required a bit of skill. In Dungeon Hack, combat is simply a matter of clicking on your weapon icon — not the sort of thing to get the adrenalin going, really.

So if the puzzles are weak and the combat's pedestrian, what exactly does it have going for it? Well, there's always the exploration element. Unlike Beholder, Dungeon Hack has automapping. The map screen can be brought up at the click of a button, or printed out if you so wish.

Unfortunately though, there isn't all that much to explore. If you've seen Eye of the Beholder, you'll know what to expect — a selection of different walls, doors and the odd puddle or tapestry. Once you've seen one corridor, you've seen 'em all. To be honest, it doesn't look bad (scrolling excepted), but it's nothing special.



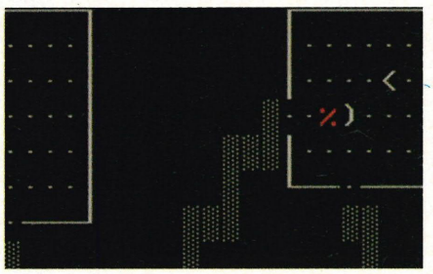
If you want to design a custom dungeon, this screen is where you do it. You can set the number of levels, monsters, food, treasure and so on, but the shape of each dungeon is determined by the random dungeon generator.

What this game really needs is a bit of humour. NetHack doesn't look great, but its funny moments more than make up for this: potions of hallucination which give you the munchies, the aforementioned Keystone Kops who pelt you with custard pies, pets who follow you around and help fight monsters ... the list is endless. Dungeon Hack, on the other hand, has no humour at all, and consequently falls a bit flat. Not only this, but it has no character interaction and little depth.

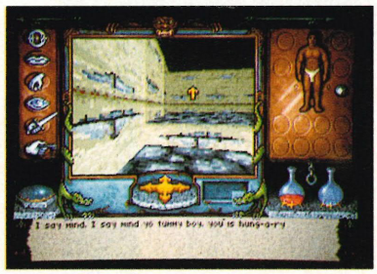
Frankly, there isn't much to recommend about Dungeon Hack, other than the fact that you can play it more than once. Even that isn't such a blessing if you think about it: an eternity of mediocre block scrolling? No thanks. If you want limitless gameplay, get NetHack instead. It doesn't cost anything and is less demanding on your PC.

■ Cal Jones

ALTERNATIVELY



NetHack
Public Domain
If I had to name my top five games, NetHacks would be in there. Pretty it ain't, but it's extremely addictive and enjoyable. For a game composed of text characters, there's plenty of variety and I've never managed to complete it in five years of play.



Ultima Underworld
Origin, £39.99
Rated 9, Issue 8
Another favourite of mine, Ultima Underworld is first-person perspective role-playing as it should be. It's one of the most atmospheric RPGs around, and has plenty of combat, puzzle solving and interaction.

TechSpec

You need a 386 or better, and although SSI recommends a minimum speed of 25Mhz, it'll run slowly on a 20Mhz PC. It also needs DOS 5.0 or higher and a Microsoft compatible mouse. It uses XMS memory and each save game takes up 255K of disk space.

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	12Mb				
Graphic modes					
CGA	x	EGA	x	Tandy	x
VGA	✓	SVGA	x		
Soundboards					
Ad Lib	✓	Roland	✓	Sound Blaster	✓
Control					
Joystick	x	Keyboard	✓	Mouse	✓
Performance					
Optimum speed	25MHz				
Minimum memory	2Nb				
Free RAM required	575K				

Verdict
Unlimited but uninspiringt

rating **5**

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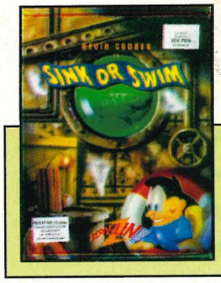


Title	**Sink or Swim**
Publisher	**Zeppelin**
Contact	**(091) 385 7755**
Price	**£29.99**

Techspec *Sink or Swim is fairly undemanding. It needs a 386SX or better running DOS 3.0 or higher. Also supports the Orchid SW32 sound card, and is available on CD-ROM.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	**10Mb**				
Graphic modes					
CGA	✗	**EGA**	✗	**Tandy**	✗
VGA	✓	**SVGA**	✗		
Soundboards					
Ad Lib	✓	**Roland**	✓	**Sound Blaster**	✓
Control					
Joystick	✓	**Keyboard**	✓	**Mouse**	✗
Performance					
Optimum speed	**20MHz**				
Minimum memory	**640K**				
Free RAM required	**540K**				

Verdict
Unoriginal, but good fun nonetheless

rating **6**

Sink or Swim

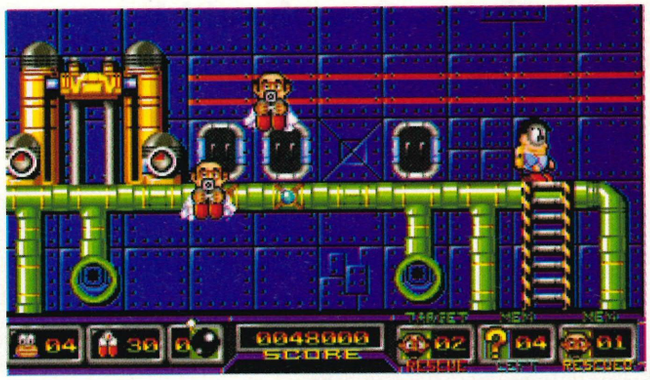
Forget James Pond — meet Kevin Codner. Zeppelin's latest full pricer looks a bit like Lemmings on the Titanic

It's fair to say that Sink or Swim isn't based on the most novel concept in the world. This is a platform puzzle game in which you have to guide a group of moronic creatures through a dangerous area filled with traps — in this case a sinking cruise liner. The general idea is to rescue as many as possible: getting them all killed wouldn't look too good on your CV, after all. There are at least three other games that revolve around the same concept (Lemmings and Creepers, for example), so how does Sink or Swim compare?

In their panic, the passengers will do anything to avoid the rising water, even if it means walking straight into scalding jets of steam, raging fires or deadly pieces of machinery. You, as international hero Kevin Codner (er ...) have to guide them to the escape hatch before they get themselves killed.

Each level has its own traps and problems. You have a supply of bombs which can be used to blow up the bulkheads and cargo boxes which get in the way, and a life raft which you can launch if the passengers start to drown.

Burst steam pipes are lethal to both Kevin and the passengers, but can be mended easily. There are conveyor belts which move over and back courtesy of switches set in the wall, crushers which will flatten anything dumb enough to walk underneath at the wrong moment, spikes, vats of acid and electric fields.



Jet packs can be thrown to drowning passengers, who will then be able to fly off to safety. Just watch out for that lethal crusher on the left.

The chain allows Kevin to swing himself across to the platform on the right. He can then use the lever to reverse the conveyor belt and move the passengers towards the exit.

As in Lemmings, you have to get a certain number of passengers to safety before you can move on to the next level. Passengers who die turn into angels and fly off the screen, and if you fail to rescue the required number, you lose one of your three lives.

Sink or Swim has 60 levels in all, and these vary in difficulty. Some are pretty straightforward, others look very hard but are actually quite easy and some are almost impossible to complete. I did, however get through 25 levels in a day or so!

If Sink or Swim was a budget title I wouldn't hesitate to recommend it, but at close to £30 it's a bit expensive for what it is. Even so, it's highly addictive and a lot of fun to play.

■ **Cal Jones**





Title	**Magic Boy**
Publisher	**Empire**
Contact	**(081) 343 7337**
Price	**£25.99**

With 64 levels, 32 hidden stages and a free game thrown in, Magic Boy should be good news for platform fans. Unfortunately, all is not what it seems ...

After stumbling into the Grand Wizard's basement, Hewlett the apprentice sorcerer accidentally freed an assortment of crazy, magical creatures. He must return them all to the basement before daybreak. This is how ...

Magic Boy

Arcade games usually have a spurious plot, and this is no exception. For what it's worth, Magic Boy is the story of an apprentice wizard named Hewlett. Prize fool that he is, he has managed to set loose dozens of weird and dangerous creatures into the four lands that border the Sorcery School. In order to spare himself a deserved thrashing at the hands of the Grand Wizard, he has to recapture these magical monsters before morning.

Strip away the plot and you discover a platform game cast from a traditional mould. Anyone who has played Bubble Bobble — or more specifically its two sequels, Rainbow Islands and Parasol Stars will immediately recognise the vertically-scrolling leap-and-capture action. Magic Boy even has bonus fruit, extra life letters and a magic rainbow warp. Unfortunately, the similarities end when it comes to a comparison of quality.

Magic Boy certainly appears to offer variety. There are 64 main (and 32 hidden) levels spread across the four worlds — Sand Land, Wet World, Plastic Place and Future Zone. Each world is divided into eight levels, and once you've completed all four worlds you visit them again, encountering a different set of levels on the second visit. Cynics might suggest that repeating graphics in this way saves time, money and effort (as well as disk space). On the other hand, this game is cheaper than most of its rivals.

Before loading Magic Boy you might like to check out the 'free' game included in the package, The Cool Croc Twins. This was originally released a year or so ago, but in the context of modern platform games it looks primitive, sounds awful and manages to play worse than it looks or sounds.

It invoves completing an increasingly difficult sequence of single-screen puzzles, leaping across platforms, switching on panels and avoiding monsters. I endured it for as long as I could before finally giving up in boredom and frustration.

When you load up Magic Boy a menu screen offers you the choice of one or two players (not quite as interesting as it sounds, because there's no cooperation option), and the chance to turn off the music and sound effects ... the music is monotonous and remorselessly cheerful, and apart from an occasionally amusing bouncing effect the sound isn't much better.

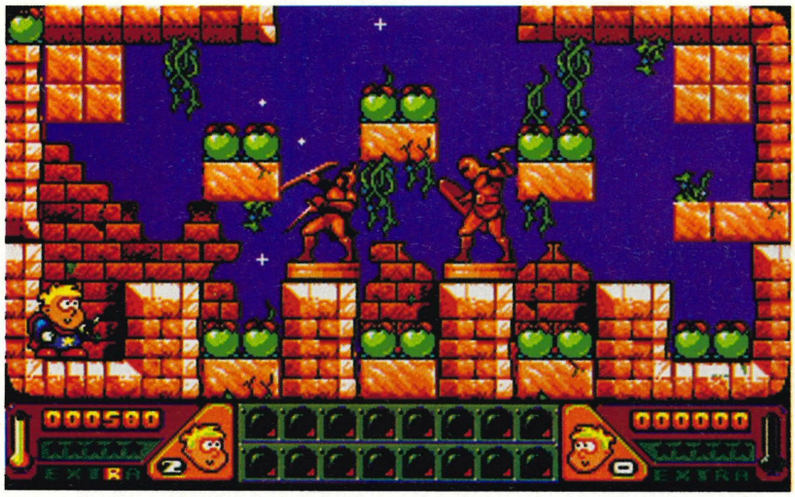
There is no introductory animation, there are pitifully few options and the English section of the manual is a measly six pages long.

Magic moments

In each world you can play the first four levels in any order; once you've completed all of these you can play the remaining four in any order too, and then progress to the next world, with fresh challenges and a new graphical style.

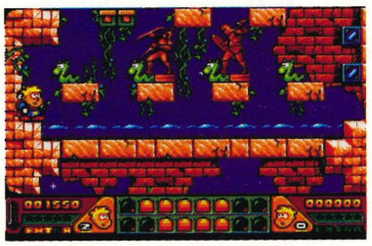
The levels are quite small and scroll vertically. To complete a stage you must capture all of the monsters and send them back to the basement from which they escaped. This means stunning a creature with your wand, capturing it by walking over it, then pulling down on the joystick to dispatch it to the basement. If you don't send it packing soon enough, the creature escapes and you lose a life.

The level ends automatically once the last creature has been returned. However, Magic Boy would be a pretty dull experience if it simply involved catching the Grand Wizard's errant pets. For a start there are plenty of hazards to negotiate, including tricky platform layouts, spikes and skull traps, sticky blocks, conveyor



This is just one of the 32 secret bonus levels. Hewlett's job is to collect as many goodies as possible in the limited time available.

0 MINUTES of crazy creature capture



This is the beginning of Sand Land level four. Hewlett has to use his wand to stun those sneaky snakes, pick them up before they recover, pack them into his sack and send them back to the basement. If he lands in the water or touches a moving creature, a life is lost.



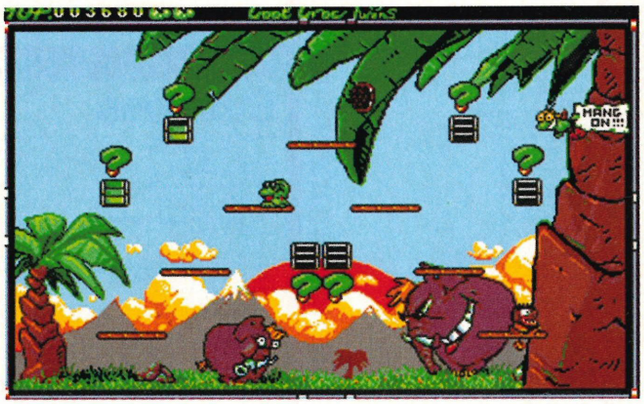
Toxic water isn't the only hazard — this skull and crossbones trap is activated when Hewlett treads on the platform beneath it. Other obstacles include conveyor belts, sticky blocks, dissolving platforms, spike traps, ice slides, springs and pistons.



Only three monsters remain and that three-way wand enhancer should help him bag the lot. Once the last one is packed off to the basement, Hewlett returns to the level select screen. The block with the exclamation mark will help find a bonus area.



Once the first four levels in any world have been completed any of the next four can be selected. This is level five, and already the problems are getting trickier. How can Hewlett avoid those birds and stun that roving dinosaur. Maybe another weapon will help?



belts, springs and pistons, toxic pools of water, dissolving platforms and ice slides. These actually prove more of an annoyance than a challenge, particularly when a missed leap can send you a long way back down the screen or on to a monster you might not otherwise have seen.

The creatures themselves are fatal if touched, unless you stun them first. They also grow progressively more elusive, beginning as static targets which are picked off easily, but eventually turning into moving targets, veering around the screen erratically and returning fire. Most of them are cute, at least.

Magic Boy comes complete with a free extra game, The Cool Croc Twins. Unfortunately, it's extremely disappointing and excruciatingly dull.

Blocks with an exclamation mark can reveal just about anything, including fruit, enhanced powers for Hewlett's wand (including three-way horizontal and two types of vertical fire), and access to hidden bonus screens, where you have a short space of time to collect goodies. Some parts of the landscape dissolve to reveal new treasures, such as extra lives, bombs, warps and invincibility potions. Two bonuses are particularly useful: collecting the letters E, X, T, R and A will gain an extra life, and collecting five stars results in an extra continue option.

Because of this variety in the gameplay, Magic Boy is a reasonably enjoyable game. The graphics are big, cute and colourful, with a few interesting animations and a sense of humour throughout.

The screen display is large, as you can see from the pictures, and it scrolls pretty well even on slower machines. Thanks to the graphics each of the four worlds has a distinct atmosphere.

The controls, too, are well up to scratch, though life is a lot easier with a joystick: the response is good and you can quickly make Hewlett leap nimbly around the screen. The difficulty curve is well graded, but because of the similarity of the tasks from world to world the action does become a bit tedious after a couple of days.

Unfortunately, Magic Boy has a lot of strong competition from current platform games too, including the recent Fire and Ice (reviewed last month) and The Lost Vikings. Even a much older rival such as Night Shift (see Alternatively), boasts better presentation, more impressive visual and aural effects, and offers a more interesting test of your skills.

With almost 100 levels (one third of them hidden), lots of bonus features, varied monsters and cute animations, Magic Boy could have been a very good game indeed; as it is, poor presentation, annoying sound and an ultimately dull design let it down.

There is enough here for a platform enthusiast to enjoy, but if you're an idle dabbler in arcade games try one of the alternatives first.

■ Gordon Houghton

ALTERNATIVELY



Night Shift
Kixx XL, £12.99
Rated 3 stars, Issue 26

One of the oddest, most difficult and enjoyable platform games around, Night Shift is set in a toy factory which produces dolls based on Lucasfilm's most famous creations. Playing Fred or Fiona Fixit, your job is to ensure that all parts of the machine work properly and that the correct dolls are produced and safely packaged. A good difficulty curve and impeccable presentation make this well worth seeking out.



Robocod
Millennium, £30.99
Rated 6, Issue 22

A huge hit on the consoles and other games machines, this wasn't as well received on the PC. The gameplay appears to be aimed at younger players, with huge, gaudily-coloured levels (2,500 screens' worth) and largely untaxing gameplay. Lots of bonuses, secret levels, end-of-stage bosses and a cute main character are some compensation for what is basically a very simple and ultimately tedious platform adventure.

Techspec *Hewlett's adventures shouldn't cause anyone any hardware problems. Everything comes on one low-density floppy disk, with no need to install and no recommended minimum CPU (though 12MHz would be a good starting point). I would recommend using a joystick.*

Disk requirements					
High density	x				
Hard disk only	x				
Space taken on hard disk	0.6Mb				
Graphic modes					
CGA	✓	EGA	✓	Tandy	✓
VGA	✓	SVGA	x		
Soundboards					
Ad Lib	✓	Roland	✓	Sound Blaster	✓
Control					
Joystick	✓	Keyboard	✓	Mouse	x
Performance					
Optimum speed	20MHz				
Minimum memory	640K				
Free RAM required	560K				

Verdict
A frustratingly average platform game.

rating **5**

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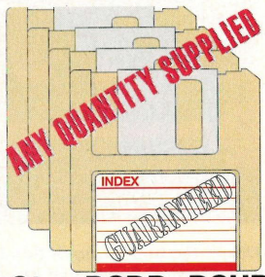

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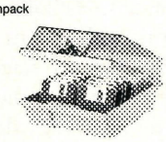

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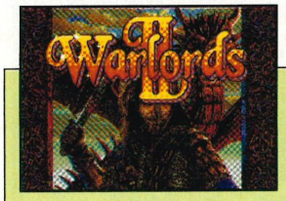
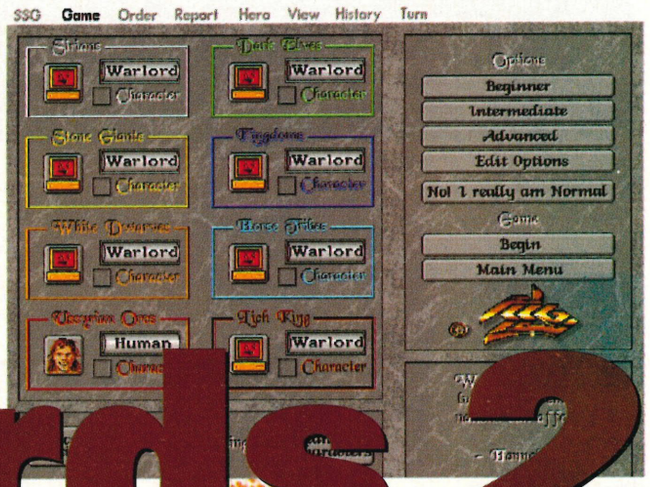


Title	**Warlords 2**
Publisher	**SSG/Electronic Arts**
Contact	**(0753) 549442**
Price	**£44.99**



Warlords 2

Fantasy strategy games have often been accused of being too daunting for beginners ... Warlords 2 could be the one that breaks the mould

Australian-based Strategic Simulations Group (SSG) is best known for its war games. But this time they've tried their hand at a fantasy strategy game, and what's more, easily one of the the best of its kind.

The objective in this turn-based title is world domination, the world in question being the mythical land of Etheria, an ever-changing realm, thanks in no small part to the random map generator. The game even includes a 'design' facility so you can customise the world too. There are also pre-formed worlds and completely undiscovered worlds, the latter being revealed acre-by-acre as armies make their way across it.

Victory is attained by eliminating all of the opposition. This is usually acheived by capturing, or destroying, enemy castles and strongholds which double up as production centres.

You start off with a common foot soldier and a hero. As befits their status, heroes have considerable strength and are very useful in battle. Only heroes can discover what lies within the ruins which are dotted throughout the map.

Instead of grabbing treasure from a ruin, you may opt for a quest, which often means conquering a designated city for a greater reward than would otherwise be forthcoming.

Altogether there 30 different types of armies in the game, ranging from giant bats and minotaurs, to worms and the undead. Most of these all of these have some special quality such as being able to move or fight better on a certain type of terrain, while others may negate bonuses opposing heroes have bestowed on their troops.

Armies can be mixed together and moved (or fight) as a stack. Using these correctly, coupled with a sense of strategic purpose, is the key to the game. But beware; the computer opponents are no pushover, especially when set to compete at the optimum Warlord level. SSG has used the expertise they've gained in wargames to produce an artificial intelligence system of the highest order.

For those who enjoy multi-player games, Warlords II can be played by up to four humans. However, because of the to-ing and fro-ing from the monitor, such games can sometime last a mini-lifetime. However, SSG has included some short scenarios to eliminate this problem.

Movement and combat are activated by the left mouse button; nothing new there. But hit the right mouse button and you get an estimation of your chances of victory in combat, while the cursor can change into eleven different shapes to provide a visual indicator for actions.

The graphics, are in 640x480 SVGA while the digitised sound provides a top-notch accompniment. For anyone who has never played a strategy game before, Warlords II is a good place to start.

■ Brian Walker



Starting off with one foot soldier and one hero you can build an army out of many different kinds of beings.

You can create your own terrain or rely on the computer. As your army moves forward new objects and places appear.

Techspec

A 20 MHz 386 PC is a realistic minimum for playing Warlords 2, otherwise there should be very few problems. It's worth using the SVGA mode if you can.

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	4Mb

Graphic modes

CGA	x	EGA	✓	Tandy	x
VGA	✓	SVGA	✓		

Soundboards

Ad Lib ✓	Roland ✓	Sound Blaster ✓

Control

Joystick ✓	Keyboard ✓	Mouse x

Performance

Optimum speed	25MHz
Minimum memory	2Mb
Free RAM required	585K

Verdict

An excellent strategy game ifor beginners and experts alike

rating **7**

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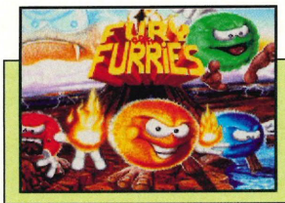


Title	**Fury of the Furries**
Publisher	**Mindscape**
Contact	**(0444) 246333**
Price	**£34.99**

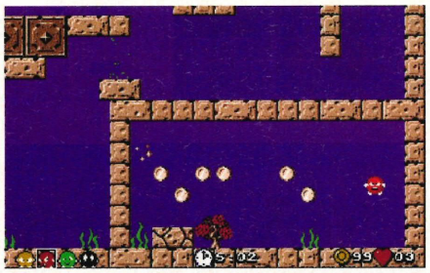
Fury of the Furries

Most arcade game characters are cute, cuddly and furry — but Mindscape's creations have just a few things in common with Lemmings

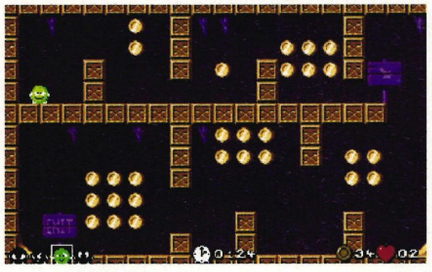
Lemmings is the game that springs to mind when you've played half a dozen levels of Fury of the Furries. Both games feature interchangeable cute and cuddly creatures with unique abilities. Both have screens packed with traps, obstacles and puzzles, with a clearly marked exit. Both have a time limit which seems to be excessively generous or excruciatingly tight according to the level you're on. Both begin with ridiculously easy stages and build up to some real stinkers.

On the planet Sklumph, a band of rebel tinies led by The Wicked One has overthrown the king. (In case you're wondering, tinies are the hedonistic fur-balls you can see in the pictures). Your job is to take control of one of the sensible Tinies, rescue the king and restore order.

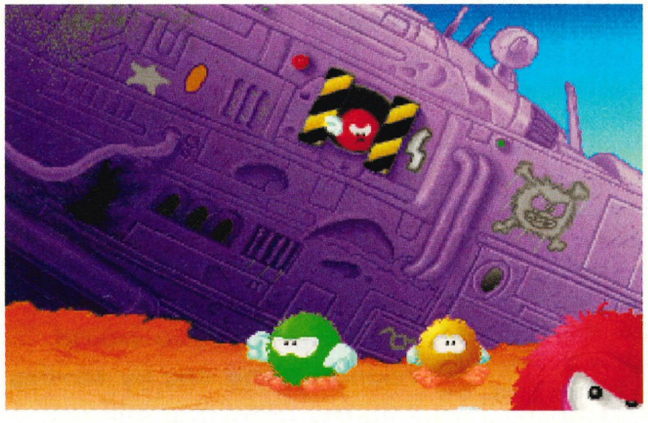
Basically, this means you have to complete around 100 levels by negotiating obstacles, solving puzzles, avoiding or destroying enemies and ultimately reaching a marked exit door. The levels are arranged in groups of ten and each area has its own characteristics, beginning with the desert and ending with a castle. The variety in graphics, monsters and difficulty between these areas is one of the game's most compelling factors.



The Evil Lagoon is where the action really begins, but it's only one of the territories you have to negotiate on your mission to rescue the king of the tinies.



There are plenty of bonus rooms to be found but you need to know where to look. If you can collect all the coins within the specified time limit, you could be on your way to an extra life.



The nasty Furries attempt to take over the planet. The Desert Area contains the first set of 10 levels. It's really just a taster for the wide variety of traps, puzzles and creatures to come.

Life is made more interesting by magical transforming rings which, by pulling down on the joystick, can give your character a variety of abilities: yellow power gives him fireballs, blue power lets him swim underwater, green power allows him to cast a line onto any solid object, Spiderman-style, and red power lets him chomp his way through parts of the scenery.

Each level is played against a time limit, some more strict than others. A variety of bonuses help your progress, including clocks (for extra time), 1-up eggs, teleports, colour fields (giving you new abilities), and gold coins (collect 100 and you gain an extra life).

Naturally, there are plenty of opportunities to lose a life too, through being shot, burned, trapped and stunned.

Luckily though, an automatic game saving facility sensibly records your progress every five levels — a good idea because although it's a tad too easy to begin with, Fury can become frustrating later on.

If you're a sucker for interesting puzzles, good presentation (including a choice of music) and cute special effects, there's plenty in Fury of the Furries to keep you interested.

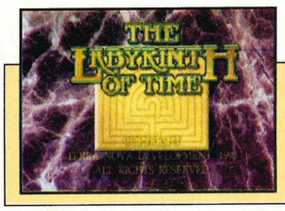
■ Gordon Houghton

Techspec *Fury comes on two high density disks and is best played on anything from a 386 upwards; at 20MHz or slower the scrolling speed is affected and the Tinies' movements are sluggish. You'll need an extra 128K of expanded memory for Sound Blaster effects.*

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	9Mb				
Graphic modes					
CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		
Soundboards					
Ad Lib	✓	Roland	✓	Sound Blaster	✓
Control					
Joystick	✓	Keyboard	✓	Mouse	✗
Performance					
Optimum speed	33MHz				
Minimum memory	640K				
Free RAM required	577K				

Verdict
An interestin, but ultimately unoriginal, arcade game.

rating **6**



Title	**The Labyrinth of Time**
Publisher	**Electronic Arts**
Contact	**(0753) 549442**
Price	**£39.99**

The LABYRINTH *of* TIME

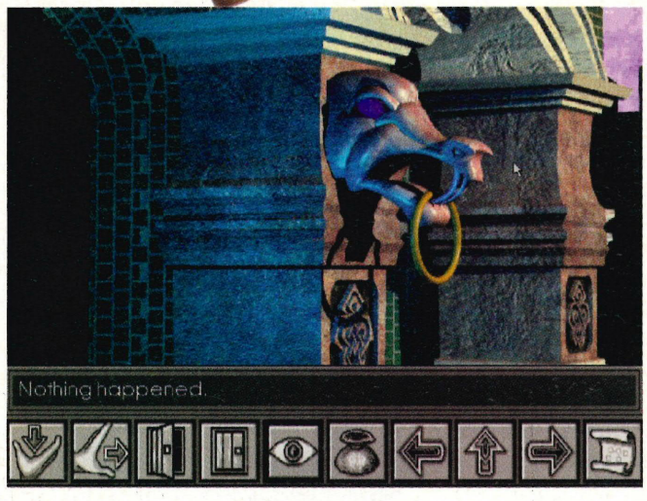
Commuting to and from work every day is bad enough, but what happens if an ancient Greek god suddenly appears in front of you on the train?

Some games are great, some games are dreadful and a few games vacillate annoyingly between the two extremes. The Labyrinth Of Time, unfortunately, falls into this last category.

Even though it's a bang-up-to-date multimedia spectacular, Labyrinth is, at heart, a fairly traditional adventure which casts the player in the role of a reluctant hero who has to wander around from room to room, picking up objects, solving puzzles and saving the universe into the bargain. Sounds familiar, eh?

In common with all the best adventure games it manages to merge reality and fantasy to create a fictional world with its own weird but internally consistent logic. Soon it begins to seem perfectly normal that a brick wall is fitted with a combination lock, that a laundry chute is perched on the edge of a precipice or that a Wild West town branches off from one of the upper corridors of a 1930s hotel room. Full marks then, for sheer bizarreness.

The excellent quality of the graphics can be seen to good effect when you zoom in on details of the scenery such as the stone head on this column. It's a pity the non-graphic elements of the game don't demonstrate as much attention to detail.



Four dimensional nightmares

The game is based around the interesting, if improbable, idea that the spirit of Daedalus — the man who designed the Minotaur's labyrinth beneath King Minos' palace in ancient Crete — has now been compelled by the spirit of Minos to design another and far more fiendish labyrinth. The new labyrinth weaves its way not only through the mere three dimensions of space but also through the fourth dimension of time. Minos, being a thoroughly nasty sort, intends to use it as a way of reaching into history and enslaving mankind.

For some inexplicable reason, the ghost of Daedalus decides to materialise, of all the unlikely places, in a rush hour tube train. Here he chooses the first bored-looking office worker he can find to undertake the heroic quest of traversing the entire labyrinth to discover the secret which will destroy it. Yes, well, when you're playing a fantasy game, it's probably best to forget everyday rationality and just revel in the weirdness of it all.

Apart from the game's appealing strangeness, another thing in its favour is that it looks absolutely terrific. Each scene is beautifully illustrated using 256-colour ray-traced graphics, and many of the scenes are further enhanced by detailed fractal patterns to give a finely textured three-dimensional effect.

Even so, some players will, no doubt, complain that the graphics are not really state-of-the-art. The trouble is that they lack animation. True, there are a few set pieces in which characters such as Daedalus wave their arms about, or in which objects such as doors fly open or toilets have a good flush. On the whole though, the graphics could best be compared to gorgeously ornate theatrical backdrops with nothing very much happening in front of them.

Life doesn't present very many opportunities does it? So when one comes along you should take it. Little did you think, when you got up this morning, that you would round off the day by saving life, the universe and everything.



The maze addict is well catered for in Return to Zork. This Cretan maze is one of several you will need to navigate. Although you can view each scene from four directions you cannot scroll and pan so there is precious little feeling of movement.

Even though each location can be viewed from four different points of view (and if you want to have any chance at all of solving the game, you'll need to look at everything from every conceivable angle), each view takes the form of a static picture. This means you have no real sense of movement from one place to another. In fact, due to the slowness of loading the pictures from the CD, your progress around the labyrinth sometimes almost grinds to a halt.

Of course, some adventure game enthusiasts aren't bothered about animated graphics at all — so many of us grew up playing text adventures such as the Zork trilogy (and, let's face it, graphics don't come any less flashy than that). What an adventure fan cannot ever forgive is bad, boring or illogical puzzles. And The Labyrinth of Time, sadly, has more than its fair share of these.

All too many of its puzzles can only be solved after some arbitrary item is retrieved from a remote location: a key to open a certain door, or a card to operate a certain machine. Getting hold of these keys and cards may not require any great puzzle-solving skills — just a great deal of patience. Most of the necessary items will show up eventually, just so long as you have the stamina to walk though every door, examine every object and open every drawer.

Puzzle problems

Too many of the puzzles in the Labyrinth of Time demand far too little thought and far too much trial and error. There is nothing so frustrating as being forced to try and try again without any real reason for doing so. OK, so the brass key doesn't fit the cell door — oh well, I guess I'd better see if it works in the hotel door. It doesn't fit there either — oh well, let's try the station door. And so on and on, and on ...

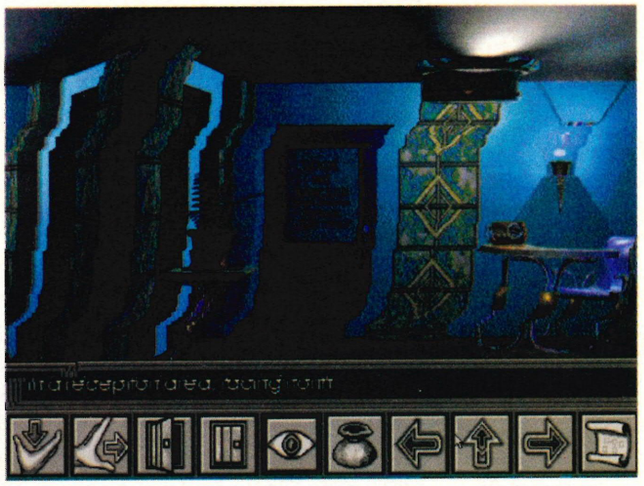
Even though you can wander around all of the (more than 275) locations in almost any order you wish, you cannot take such a freewheeling approach to solving the puzzles. Until you've been to location Z and found that blasted key, no amount of work is going to help you open that door in location A. And until you've got the door open in A you won't be able to retrieve the book that provides the solution in location Z — too much of your progress is dictated in this way.

It also doesn't help matters that the degree of interaction between the player and the game is sorely limited. A set of icons at the bottom of the screen lets you look at, take, move, open or close objects. This is done by first selecting the appropriate icon and then clicking on the picture of an object. But there is no way of performing complex actions. You can't input textual commands, for instance, like Legend's games such as Gateway II. Nor are the items context-sensitive, as they are in games such as Accolade's Return To Zork.

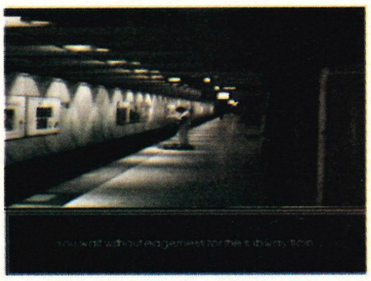
Useful tools

The most useful tool is the viewing icon. Using this you can often zoom in on an object at one or more levels of magnification. When you do this, the exceptional quality of the graphics is actually

Labyrinth's rendered graphics make the locations a series of interior design masterpieces. I certainly wouldn't mind an office like the one below, anyway.



10 MINUTES of the Labyrinth of time



The game intro is all in monochrome — to emphasise what a dull, grey existence you are leading as you fight your way back from a dull, grey day at the office on a dull, grey evening.



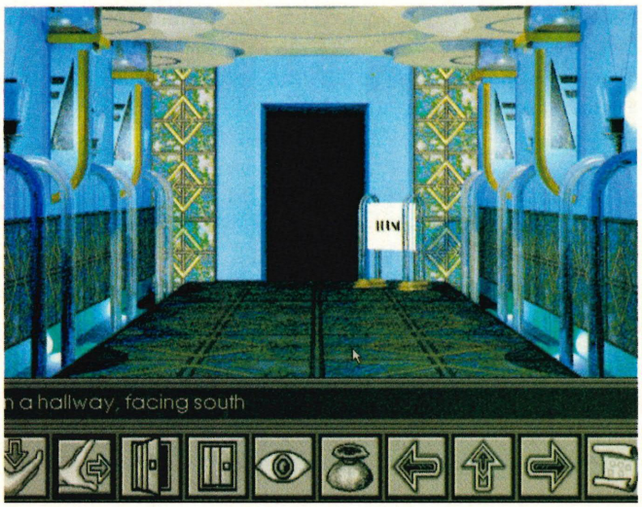
Suddenly this weird figure materialises in front of you. Not only is he dressed in Gary Glitter cast-offs but, even more startling, he's in colour. His name is Daedalus and he's got a job for you.



Your mundane world vanishes and you find yourself in a universe linked together by corridors running though space and time. Naturally you walk straight into that gaping mouth ...



... and find yourself trapped inside a mirror maze. You can attempt to take or move things by clicking on the icons at the bottom of the screen but it's more fun admiring the scenery.



Labyrinth doesn't scroll; when you input a move, the screen refreshes to show your new position. This means that it takes you three separate turns to get down the corridor, above, rather than sweeping down it in a single mouse click.

breathtaking. The huge variety of textures, shadows and reflections produce an almost photographic effect of solidity. Using the other icons is rarely as satisfactory. Few and far between are the objects you can move or take no matter how small and portable they appear.

Of maps and mazes

Given the name of the game, it comes as no surprise that a certain amount of maze-mapping is involved. In fact, there are several self-contained mazes including a mirror maze, a mediaeval maze and a Cretan maze. Each of these mazes is contained within the greater maze of the Labyrinth itself.

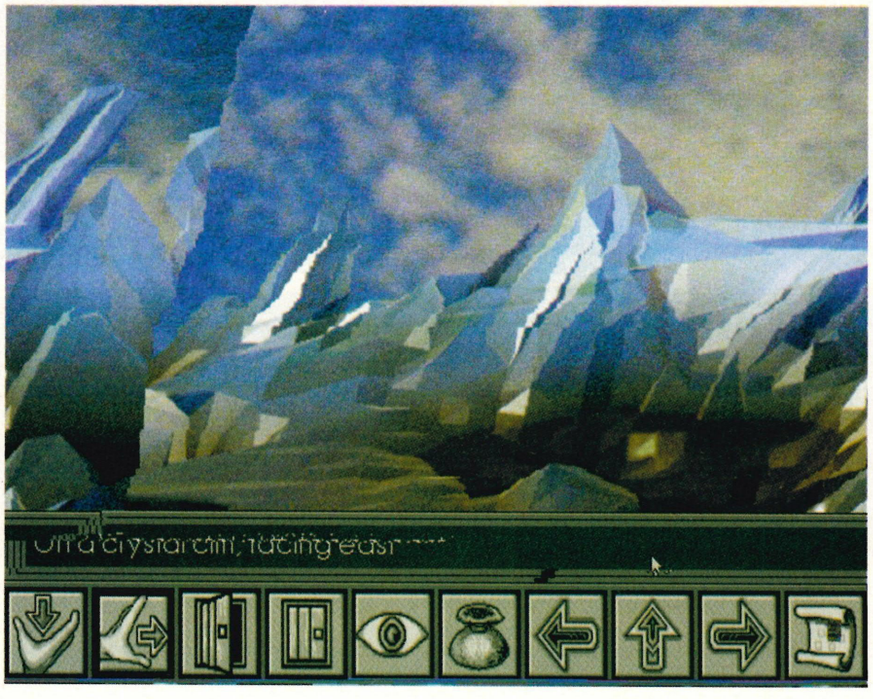
It's normally a safe bet that mazes are there to be solved — and this necessitates mapping. In many adventure games they are composed of innumerable rooms and twisty little passages that are all alike. You normally have to do something (dropping objects on the floor being the traditional option) to help you distinguish one room from another. In this way you can begin to map out the maze.

Not so in this game. Labyrinth actually draws a map of the maze for you. Every time you enter a new room, it is added to the map complete with its available exits. Normally I am all in favour of on-screen mapping ... however, since it's central to Labyrinth's plot, an auto-mapped maze does strike me as defeating the object of the exercise here.

Also, this particular map is not as useful as it might be. If a game does automatic mapping, I reckon that the rooms should all be labelled. Here they aren't, though you can see the room names by individually selecting locations using the mouse. It's also useful to be able to click the rooms on the map as a quick way of moving around. In Labyrinth you can't.

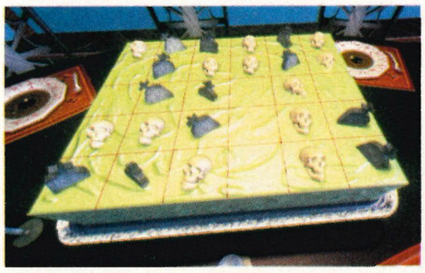
Overall, The Labyrinth of Time looks an awful lot better than it plays. If only the puzzles were up to the same standard as the graphics, it might even have got within striking distance of PC Review's elusive 10 score. But they aren't and it isn't ... So near and yet so far!

■ Huw Collingbourne



The pictures may be beautiful, but the locations aren't always plausible. Go north from the long corridor and you find yourself teetering on this ledge. Nice view ... now how do I get back from here?

ALTERNATIVELY



7th Guest
Virgin, £69.99
Rated 7, issue 20

The 7th Guest was released last summer as the game that threatened to revolutionise CD gaming technology. Although visually and aurally beautiful, it was found to be somewhat lacking in the puzzle department. However it sold a lot of CD ROM drives. The second instalment, to be called 'The Seventh Hour' is due out in March 1994 and promises to have yet more real-time digitised video. It remains puzzle based — let's hope it's as innovative.



Return To Zork
Activision, £45.99
Rated 6, issue 26

The original text-only Zork trilogy of was one of the first and, some would say, still one of the best interactive adventure games. It took place in a kind of subterranean labyrinth which you never saw. Zork has now been brought up to date with animated graphics, digitised video and sound, returning as Return To Zork — an occasionally nice looking game that's lost just about all the charm of the original.

Techspec *Labyrinth is played entirely on CD so no hard disk is needed — except for storing saved games. A Sound Blaster compatible card and a VESA compatible graphics card are essential, as is a fast CD ROM drive; the minimum transfer rate is 150K/sec, but 300K/sec will see you traversing the labyrinth much faster.*

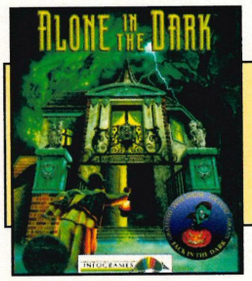
Graphic modes					
VGA	✓	SVGA	x		
Soundboards					
Ad Lib	✓	RolandX		Sound Blaster	✓
Control					
Joystick	x	Keyboard	✓	Mouse	✓
Performance					
Optimum speed		16MHz			
Minimum memory		3Mb			
Free RAM required		525K + 2048k			

Verdict
The Labyrinth of Time is visually stunning, but the gameplay is less than stirring

rating **6**

CD-ROM reviews

The rest of the latest CD-ROM titles — whether originals or 'enhanced' versions of disk releases — are put to the test



Title	**Alone in the Dark**
Publisher	**Infogrames**
Contact	**(071) 738 8199**
Price	**£44.99**

Alone in the Dark

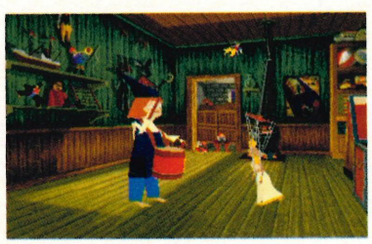
Now over a year old, Alone in the Dark has finally made it on to CD-ROM. Infogrames' classic horror adventure was much praised for its distinctive graphics, marvellous sound and incredible atmosphere, and is every bit as good now as it was when first released on floppy disks. Inspired by the works of HP Lovecraft, the game is set in a haunted mansion. You play either the deceased owner's niece, Emily, or private detective Edward Carnby, and must uncover the horrors which lurk inside the house.

The graphics are highly original, combining bitmapped backgrounds with polygon based sprites to good effect. They haven't been updated for this version, and aren't as impressive as those used in Alone in the Dark 2 (see the review on page 58 of this issue).

The sound, however, has been improved considerably. Music is now far more dramatic, although the original, atmospheric sound effects remain the same.

Alone is also packaged with an enchanting game called Jack in the Dark, featuring Grace, the eight year old heroine of Alone 2. Grace has been locked into a toy shop on Halloween, and must rescue Father Christmas from the clutches of evil puppet, One Eyed Jack. The two games complement each other perfectly, and if you've yet to sample the delights of Alone in the Dark, now's your chance.

■ Cal Jones



Techspec

A 33Mhz 386 or better running MS-DOS 3.0 or higher is required. Supports the Disney Sound Source.

Graphic modes

VGA ✓ SVGA ×

Soundboards

Ad Lib ✓ Roland × Sound Blaster ✓

Control

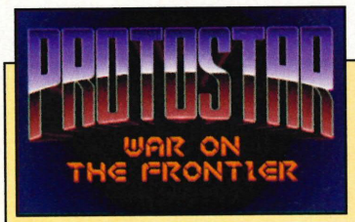
Joystick × Keyboard ✓ Mouse ✓

Performance

Optimum speed	***33MHz***
Minimum memory	***640K***
Free RAM required	***580K***

Verdict
A classic and original game – get it or regret it

rating **9**



Title	**Protostar: War on the Frontier**
Publisher	**Tsunami/Accolade**
Contact	**(081) 877 0880**
Price	**£39.99**

Protostar: War on the Frontier

Some CD versions of games already released on disk boast major enhancements in graphics and sound. Some feature minor but interesting changes which make token use of the new format. Some simply give you the original game and add a few interesting extras. Protostar fits neatly into this last category.

Nothing much has changed since the original version was awarded a 5 back in Issue 21. The CD features interviews about the making of the game and eight good, atmospheric musical tracks, but the gameplay itself remains the same — a basic exploration, trade and combat scenario which stresses ambassadorial talents and a good business brain above confrontation.

Your job is to help humanity defeat the all-conquering Skeetch Empire, primarily by allying four sentient alien species and earning enough money to maintain mankind's deep space defences. Most of your time is spent travelling around the galaxy, talking to people, engaging in a variety of missions (including a few fights), gathering resources for later sale, solving puzzles and gaining strategical knowledge.

This apparent diversity is an illusion. The bland planet graphics and repetitive nature of the tasks quickly become tiresome, and unless your interest lies in strategy to the exclusion of all else, the gameplay's appeal soon fades.

■ Gordon Houghton



Techspec

Protostar's minimum requirements are a 25MHz 386, a Microsoft compatible mouse and 256-colour VGA. As far as the CD ROM drive goes, you'll need a data transfer rate of at least 150K per second.

Graphic modes

VGA ✓ SVGA ×

Soundboards

Ad Lib ✓ Roland ✓ Sound Blaster ✓

Control

Joystick × Keyboard ✓ Mouse ✓

Performance

Optimum speed	***33MHz***
Minimum memory	***640Kb***
Free RAM required	***590K***

Verdict
An average game with very few new features

rating **5**

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BUDGET reviews

Games needn't cost a fortune — there are plenty to choose from in the bargain bin. We sort out the essential buys from the games best avoided



SpeedBall 2
Kixx/XL
£14.99

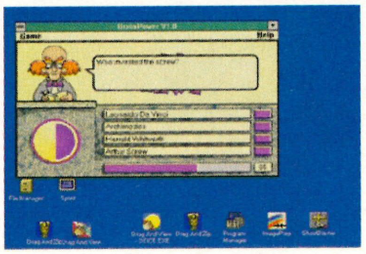
Ah, Speedball 2. This brings back fond memories. The original was one of the Bitmap Brothers' finest moments, and Speedball 2 has weathered the passing of time rather well. It's still the nasty, addictive little Rollerball look-alike it always was.

Essentially, Speedball is an armoured version of hi-tech hand-ball, complete with bonuses, bizarre scoring opportunities and multiple injuries. With the various options for leagues, knock-outs, one-off games and a team management aspect — or, 'how to buy a new pair of knuckle-dusters for your goalie' — there's plenty of gameplay left in the old dog, too.

The sound struggles a little, but it does the job, and graphicallly Speedball 2 is tidy enough and has plenty of character — although you can't expect miracles from 16 colours.

If you want the niggles, then there are perhaps a few too many ways to make consistently big scores with set-piece moves against a not-too-bright computer opposition, and generally you'll be a lot happier if you have a digital joystick, because playing with the keyboard is too much of an uphill struggle.

But all said and done, Speedball 2 is a regular little bargain with plenty of gameplay. Give me this rather than latterday full-price imitators like Brutal Sports Football any time.

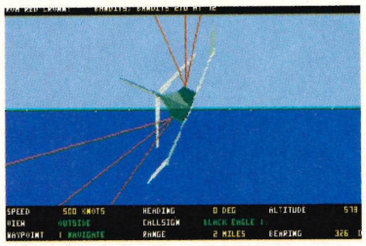


Brain Power
Pandemonium
£7.99

Brain Power is, unsurprisingly, a general knowledge quiz game for Windows. As such, it's mildly diverting, not too difficult, and could have done with a bit of spell-checking during production: "Which of these *slay* the Minotaur?" and other howlers produce most of the humour in the game, if unintentionally.

There's a reasonably broad range of trivial questions, although it would be nice if you were told the answer when you get a question wrong, and if so many of them weren't based on obscure dates.

But otherwise, Brain Power is fine for what it is, and manages to produce some hilarious moments with the wording of the questions. An adequate diversion for a few minutes or so.



Supreme
Simulations
Action 16
£34.99

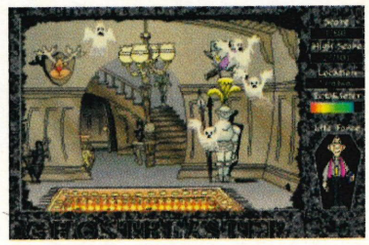
A quartet of sims from Spectrum Holobyte and Digital Integration on a CD can't be a bad idea, can it?. Certainly, Falcon was the definitive flight sim of its day, offering 12 tough missions at the controls of an F16. It also has a head-to-head modem link, which is always a bit of extra fun.

Flight of the Intruder, on the other hand, was an average game when it came out. Set in 1972 in North Vietnam, it does give you the chance to control more than one plane per mission, but it turns out to be too fiddly to be that much fun.

Back on solid ground — or at least solid polygons — Stunt Driver is an unusual and particularly tough driving sim. With the emphasis firmly on staying on the track despite corkscrews and loop-the-loops, you race your Shelby Mustang round five courses, until you get fed up with them, and designing new courses with the course editor.

Last, and definitely least, comes Tank — an average tank platoon sim completely eclipsed by the equally dated M1 Tank Platoon.

Not a bad collection all round — you certainly can't fault it in the price versus hours of gameplay stakes. A better alternative — if you prefer flight sims only — might be LucasArt's Air Combat Classics, but otherwise Supreme Simulations has a lot to offer.



Ghost Blaster
The Genesis Arcade
£7.99

Ghost Blaster has one thing going for it — it's cheap. After that it's a real struggle to find any good reasons for its existence.

It consists of a series of locations in which a number of ghosts and ghoulies appear. Click on a ghost and it disappears with a belching sound. Leave them on screen too long and you die. There's an end of level baddie who needs to be nobbled, then it's on to the next location, and so on, ad nauseam.

Visually, it's basic. Technically, it's primitive. And in entertainment terms it's a dead loss all round.

This is the PC equivalent of the cheap plastic puzzles you pull out of a Christmas cracker — fit for five minutes mindless twiddling, before thowing it into the bin. Or in this case — dumping it off your PC.

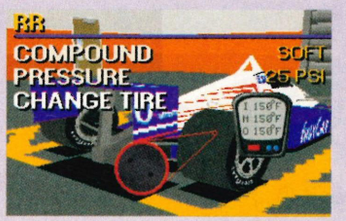
PC review recommended

We don't give PC Review Recommended awards to many games, but you can be assured that those that do get this accolade will be, in our opinion, outstanding in all areas. A PC Review Recommended award is a guarantee of excellence

RECOMMENDS RECOMMENDS RECOMMENDS RECOMMENDS



Chessmaster 4000 Turbo
Mindscape, £35.99
This game boasts an awesome array of features, including a choice of 12 sets, 2D or 3D view, resizable windows, annotations, tutorials and a LAN/modem option. It has a stronger engine than Chessmaster 3000, too.



IndyCar Racing
Virgin, £44.99
If you thought MicroProse F1GP couldn't be beaten, think again. IndyCar is the new king of the racing sims. The cars are responsive, the wipe-outs are spectacular and it looks terrific. Tough, challenging and full of depth.



Rebel Assault
LucasArts/US Gold, £49.99
Rebel Assault is the first game we've seen to make proper use of CD-ROM. This Star Wars spin-off is an exciting arcade shoot 'em up with cinematic quality sound and graphics. More importantly, it's brilliant fun.



Alone in the Dark 2
Infogrames, £44.99
Alone in the Dark was the ultimate horror adventure, with its quirky but brilliant graphics, marvellous sound effects and intense atmosphere. Alone 2 surpasses the standards set by the original, and is much more challenging.

PC Review Recommended

Win Alone in the Dark 2 — recommended this month

Answer the questions below and send the form to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU, to reach us by February 10, 1994, and your entry will be placed in the prize draw.

❑ Alone in the Dark 2

Q1: What is the name of the girl who has been kidnapped in Alone 2?
A1: .....

Q2: In which American state is Hell's Kitchen located?
A2: .....

Q3: In what year is Alone in the Dark 2 set?
A3: .....

Name .....
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WIN!

PC Review Recommended games

Not only do you have the advantage of knowing that these are currently the best games in their class, but we give you the chance to win a copy of a PC Review Recommended title. We have five copies of each newly Recommended game to give away to the winners of this competition.

How to enter

If you'd like the chance to win a copy of the Alone in the Dark 2, simply answer the question on the form, left, and send your entry on a postcard or back of a sealed envelope to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

The closing date is February 10, 1994, and any entries received after that will not go into the prize draw. All normal competition rules apply, particularly the one about not sending in multiple entries. One form per person, please!

Charts: *the PC Top 10*



1. IndyCar Racing	*Virgin*
2. Rebel Assault	*LucasArts/US Gold*
3. Frontier: Elite II	*Gametek*
4. Sam and Max	*LucasArts/US Gold*
5. Flight Sim 5	*Microsoft*
6. Subwar 2050	*MicroProse*
7. Rally	*Europress*
8. Syndicate data disk	*Bullfrog/Electronic Arts*
9. X-Wing	*LucasArts/US Gold*
10. Jurassic Park	*Ocean*

Charts courtesy of Virgin Retail

Personal bests

It may be a brand new year, but this is a personal selection of the games which kept us happy throughout 1993:

Christina Erskine (editor):

1: Rebel Assault
LucasArts/US Gold
2: Day of the Tentacle (CD)
LucasArts/US Gold
3: Premier Manager
Gremlin
4: Stunt Island
Infogrames
5: Shadow of the Comet
Infogrames

John Bennett (deputy editor):

1: Doom
Id Software
2: Syndicate
Bullfrog/Electronic Arts
3: X-Wing
LucasArts/US Gold
4: IndyCar Racing
Papyrus/Virgin
5: Rebel Assault
LucasArts/US Gold

Dean Evans (staff writer):

1: Doom
Id Software
2: Alone in the Dark 2
Infogrames
3: Sensible Soccer
Renegade
4: Rebel Assault
LucasArts/US Gold
5: Premier Manager
Gremlin

Cal Jones (staff writer):

1: Syndicate
Bullfrog/Electronic Arts
2: Serpent Isle
Origin
3: Alone in the Dark 2
Infogrames
4: Day of the Tentacle
LucasArts/US Gold
5: Pinball Dreams
21st Century Entertainment

REVIEWED THIS MONTH

Alone in the Dark II	**9**
Flight Sim Toolkit	**8**
Hand of Fate: Legend of Kyrandia 2	**8**
Aces over Europe	**7**
Unnatural Selection	**7**
Warlords 2	**7**
Companions of Xanth	**6**
Fury of the Furries	**6**
Silverball	**6**
Sink or Swim	**6**
Terminator Rampage	**6**
Dungeon Hack	**5**
Leisure Suit Larry 6	**5**
Magic Boy	**5**
T2 Arcade Game	**5**
Rally	**4**

CD-ROM GAMES

Alone in the Dark	**9**
Labyrinth of Time	**6**
Protostar	**5**

The PC Review elite

The number of games in the prestigious 9/10 club is growing slowly, but surely. Those titles which have been awarded a 9 are as follows:

Alone in the Dark
Alone in the Dark 2
AV8-B Harrier Assault
Chessmaster 3000
Chessmaster 4000 Turbo
Day of the Tentacle
Falcon 3.0
Frontier: Elite II
Indiana Jones and the Fate of Atlantis
IndyCar Racing
Jimmy White's Whirlwind Snooker
Monkey Island 2
Rebel Assault
Sensible Soccer
Syndicate
TFX
Tornado
Ultima Underworld





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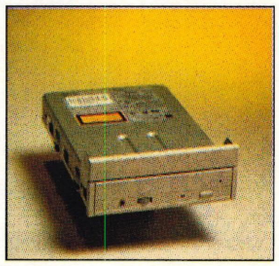

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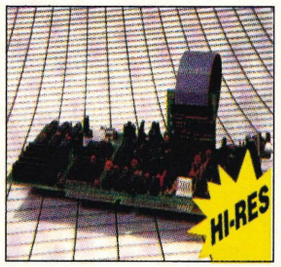

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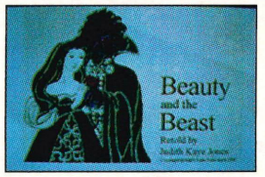





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Shareware reviews

Sam MacKenzie expands his knowledge of movies this month with a database from the States ... and packs his windows with icons

SuperBar

SuperBar is a useful utility that adds custom icon tool bars to any Windows application. What this effectively means is that you can replace complicated menu commands with a selection of icons to improve ease of use. Simply put, SuperBar allows you to create picture-based macros.

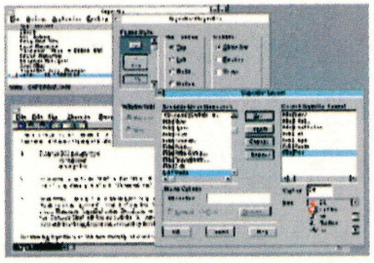
For example, if you add a tool bar to Windows Write using SuperBar you can then have icons for saving, loading and printing, etc. What is also important to remember, though, is that you can customise almost any Windows application.

Operation is also simple. When you start SuperBar, it lists all of the current Windows applications that you have running. Then all you have to do is select the application that you wish to customise (obviously the application needs to be running at the time).

For example, let's say that we want to add a toolbar to Windows Paintbrush. After selecting the application from the File Manager, launching the 'show SuperBar' command in SuperBar adds a blank icon bar to the application.

Once you have this bar you can then begin to customise it. This is done by selecting the Edit command, which results in the SuperBar 'properties' box being displayed. Here you can select the button style, the bar location and numerous other properties.

Next you need to click on the layout button which shows you what commands and icons you can place on the icon bar. Any of the menu commands in the application can



be selected, eg, file save, file open, edit, cut and paste, etc ... These will then be added to the icon bar with an icon of your choice. As long as you only want to add the common commands, then it's all very quick and easy.

You can also add an icon that runs a SuperBar macro — a set of keypresses and mouse movements that you have recorded earlier. This feature makes SuperBar useful even when an application already has a predefined icon toolbar.

SuperBar has some more sophisticated features (there is an icon editor and a replacement for the task manager) but these are really just extras. The real value lies its ability to smarten up your old applications, making them easier to use.

Supplier:	*PDSL*
Telephone:	*(0892) 663298*
Product code:	*3948*
Price:	*£6.00 or less*
Registration price:	*$25*
Registration pack:	*The next version*
Minimum spec:	*Any Windows machine*
Disk space:	*500K*

Product SuperBar

shareware tech spec 1994

StowAway

This program is a clever idea, especially if you're suffering from a shortage of space on your hard disk (and who isn't?).

I know what you're thinking, but StowAway isn't a disk compression utility at all, it's actually an archiving management program. It copies files that you're not using, from your hard disk to floppy disks, or to any large capacity removable drive. You can also opt to use data compression if you want to, and StowAway will format and prompt you for extra disks as required.

So far this may sound as though it's not very different to MS-DOS's Backup and Restore commands, but the clever part is that StowAway keeps a list of the files that it has archived and which diskettes they are stored on.

If you want one or more of the files that have been backed up, all you have to do is start StowAway and look at the archive list. Once you've select the files that are required you will be prompted to find the relevant diskette. This way you have less chance of forgetting where you have archived files — and they are almost as accessible as if they were still stored on the hard disk.

A companion utility, StowDir, allows you to perform a search of all

Supplier:	*Nildram Software*
Telephone:	*(0442) 891331*
Product code:	*STOW*
Price:	*£3.00*
Registration price:	*£29*
Registration pack:	*Extra utilities, bound manual*
Minimum spec:	*Any with hard disk*
Disk space:	*650K*

Product StowAway

shareware tech spec 1994

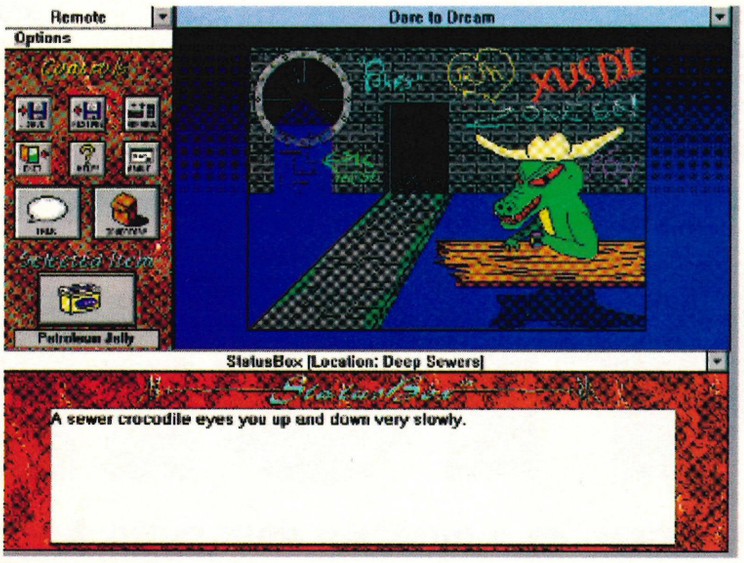
of the archived files, just . Dir command allows you to search a standard directory.

That's really all there is to StowAway, but it has lots of extras to try to make your life easier: you can archive files in groups so that they can be restored as a group, there is an automatic archive feature and you can even ask StowAway to clear files off your hard disk until you have a specified amount of space free.

As well as using StowAway for archiving you can also use it as a backup program. But if you are only interested in a backup utility it must be said that there are much better backup programs around than this.

My main criticism of StowAway is that the maximum compression setting was rather slow. Otherwise it's easy to use and, as long as you are prepared to learn, it should free up some disk space for you. No Windows version though.





Dare to Dream

Dare to Dream is a very nicely implemented Windows adventure game. In it, you play the role of Tyler Norris, a 10 year old who is having a particularly bad dream. After materialising in an alleyway you must guide Tyler around the town, picking up objects.

It's all fairly standard adventure stuff, but the graphics are good and the game interface is smooth and easy to use.

Like most adventures, if you click on any object you will be told exactly what it is. As you move the cursor over anything of interest, it turns into a magnifying glass and double clicking while this is visible results in your character performing an action. The action depends, of course, on the object that you have selected from the inventory.

Some of the objects needed to solve problems are not quite what you would expect (the word obscure springs to mind), but I don't want to spoil the game. My only hint is not to play the game in 'easy mode'; it is so easy you'll finish far too quickly and get no satisfaction.

The game is very promising, but I found when I played it, that there didn't seem to be enough to do. Often there wasn't anything to pick up, and when there was, it was so small that you had to indulge in a vigorous bit of pixel-hunting to spot it. For example; there is a fish on the deck of a boat but you can only just see it, even though you know it's there — and it's vital that you pick it up!

The documentation that accompanies the game claims that its creators have tried to produce a game where you cannot lose or be killed. While they have done this, Dare to Dream just replaces dying with a large dose of aimless wandering.

As for the object of the game, you're left completely in the dark and this leads to an random expression of curiosity — is there anything to pick up? Can I open this door with a halibut? ... and so on. Also as nothing bad ever happens to you, there is always another chance to go back and pick up some object that you have missed.

Although there are other Dare to Dream volumes, I have to say that this first volume seemed very much like an experiment. The program is written in Visual Basic and so it could indeed be just that — an attempt to see if a commercial adventure game can be written using something other than C.

Having said all this I have to admit that I did enjoy the game at first and found some of the graphics and ideas a lot of fun. If you like adventure games in general then you might like Dare to Dream. Sadly it just isn't my cup of tea.

Supplier:	*Transend*
Telephone:	*(0274) 622228*
Product code:	*11670*
Price:	*£2.50*
Registration price:	*£25*
Registration pack:	*Two extra volumes*
Minimum spec:	*VGA, all sound cards*
Disk space:	*2.4Mb*

Product Dare to Dream

shareware tech spec 1994

Movies to Go

Movies to Go brings you details of some of the best known and well loved films — both recent and classics. Movies to Go, includes both graphics and animation and is interactive, ie, you click on icons and get the information you require.

The opening screen shows the list of films that it covers and you can select the movie of your choice, or search through 25 categories including action, drama, horror, sport, western etc. Or, alternatively, you can specify the actor or actress you are interested in, or the director. You can also search by key word, by year, or even by review — whether the movie was found good, average, or poor.

Once you have selected a specific film, you move on to the 'now showing' screen, which gives you all the basic details of your chosen film — director, cast, who wrote the screenplay, its Academy award nominations, its year of issue and length in minutes.

Graphics are used to indicate the film's major characteristics, three film categories which sum it up, its rating and its review category. To read the full review, you simply press F4 or click the icon.

Not all of the films have reviews, but where there are reviewed they tend to have been written by individuals like Mike Prestwich, who is based in Albuquerque, the home of Imagisoft, the author (though we don't know if he's a Barry Norman or not). Not only are reviews attributed to the writers but their photographs also appear.

Using the mouse, you can use the 'now showing' screen as the springboard to further information. Clicking on the name of an actor or actress in the film will display their photo (if there is one) and the program will search for all the movies in which that person has starred.

Similarly, clicking on a director will perform a search for other movies he or she directed. You can also perform a category search by clicking on one of the categories on display: If you want to find a spy movie, you can go to an obvious one and then look for others.

Despite being on two disks, the shareware version only has space for 1,000 films. The registered version has in excess of 3,000 and at least a hundred titles are added each month. Once you have registered, you can request updates as often as you wish for just $6.95 plus P&P. Registered users are permitted, and encouraged, to submit reviews of movies they want added to the database and to send a photo in addition to their copy.

This is not an exhaustive database (even the non-shareware version is just a selection) and coverage is patchy. Sci-fi films, for example, were a bit thin on the ground. But the presentation and the animation is pleasing — other databases would do well to copy its approach.

Supplier:	*Softcell Services Shareware*
Telephone:	*(0443) 238630*
Product code:	*100059/EO*
Price:	*£6.00 (2 disks)*
Registration price:	*$29.95*
Registration pack:	*Many more movies on database, plus the opportunity to submit reviews.*
Minimum spec:	*286 EGA/VGA*
Disk space:	*4Mb*

Product Movies to Go

shareware tech spec 1994

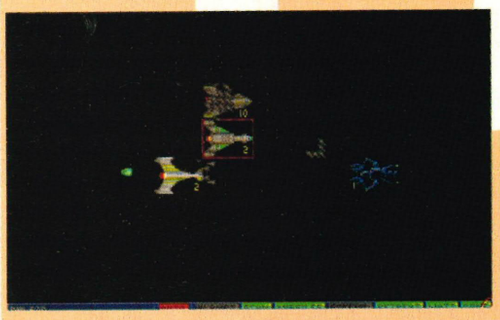


Master of Orion

If you fancy yourself as a galactic dominator but you're not having much success, then join Simon Shaw's Master of Orion academy ...

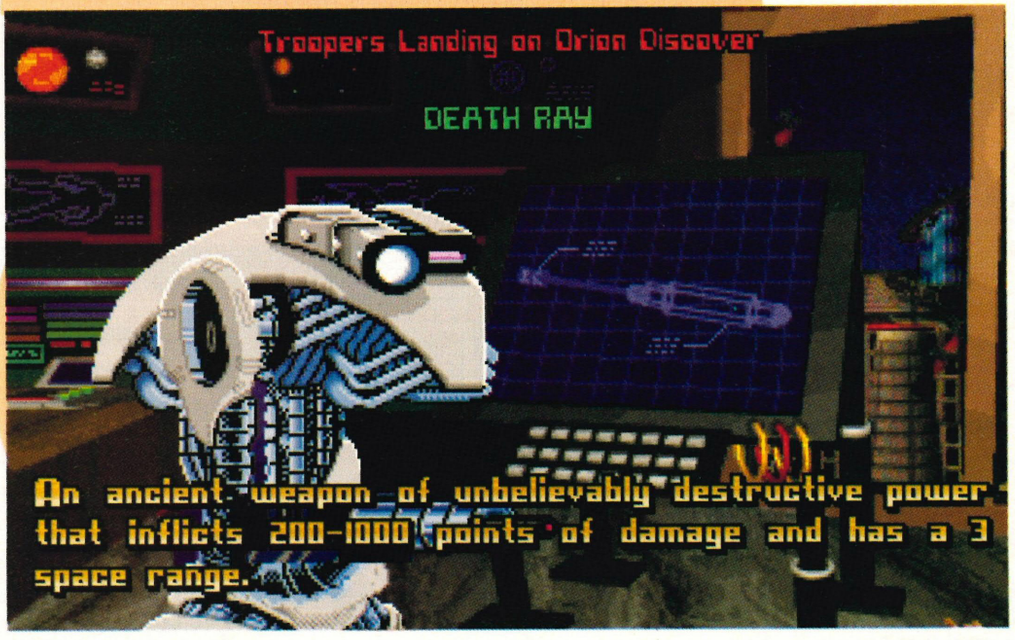
As with all strategy games it's essential to get a good start. Because you only have a limited starship range to begin with, you must discover a habitable planet within three parsecs. If you don't find one, scrap the game immediately and start again — unless you're playing at the lower levels, you won't be able to make up for lost time.

The initial emphasis must be on industrialisation, but spare a few BC for research as soon as you can, because there's a bonus for steady investment. Concentrate all your technological resources into propulsion until you've made your first range-increasing breakthrough.



Use your scouts aggressively. If you meet an enemy scout/colony ship, advance towards them and they'll run away. If you find a rich system, hang on to it with a scout until you can get a colony ship built and sent over. Missile bases are the best form of defence, but don't get complacent when you think you've got enough. You can never have enough. Use a few fast centrally placed spaceships as 'firefighters' to bolster threatened planets.

Ship construction is the key to winning the game. Forget small and medium designs, concentrate on large and — when you're sufficiently industrialised to bear the cost — huge spaceships. The designs you're given at the start are useless — scrap them. Don't waste your precious resources building ships early on though; they'll be obsolete by the time you need them. Wait until you encounter other races first. Then concentrate ship building on your most developed planets because large/huge ships require massive resources.

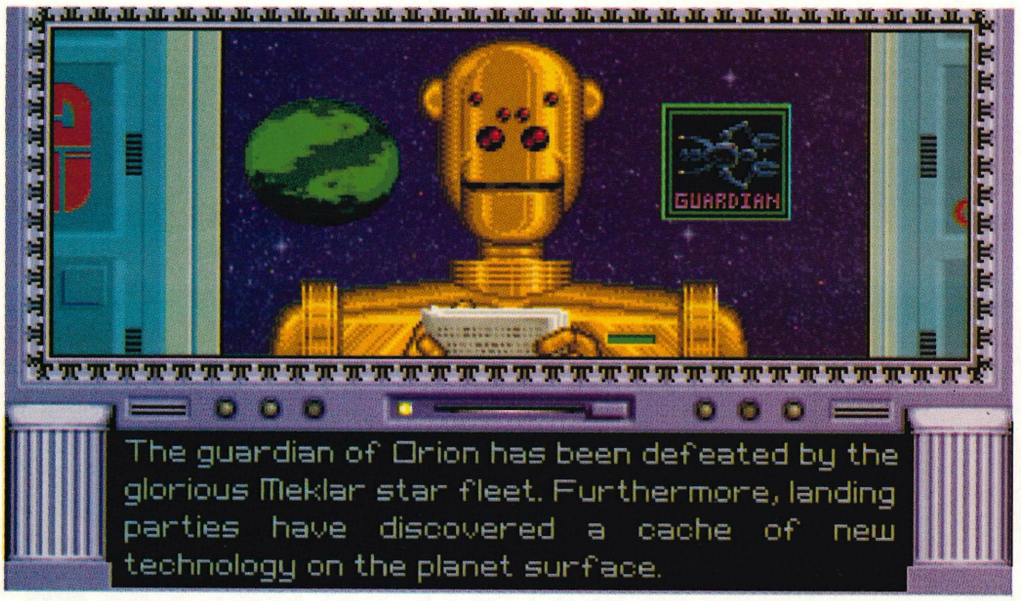


I recommend a 'rolling' system of ship design. When the time comes to start building, lay down a large ship, (you won't yet be able to afford huge) called 'mark 1', give it the best computer/ECM/shields you've got (but not the thickest armour; it's not worth it) and fill the rest of the available space with missiles — using the five shot rather than the two shot variety. In general, missiles are better than beam weapons, so you should concentrate your research points on developing the best available. Start building on two or three planets and coordinate it so that the new ships will become available at roughly the same time.

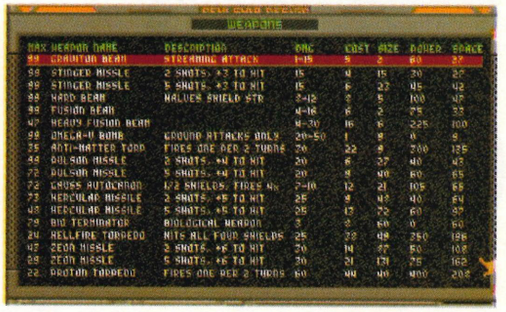
Completion date will probably be anything from 10-15 years away (building at the rate of your slowest planet) and in that time you will no doubt make important technological breakthroughs. These will result in more construction space becoming available, so you should design a 'mark 2' ship to take advantage of these advances. Now switch production to the 'mark 2' and scrap the 'mark 1' design. Keep rolling the designs in this manner. Sometimes it's worth slowing down the ship building programme if you're on the verge of a major breakthrough, then quickly designing and switching production to a new model in order to take advantage. In particular, construction advances in armour allow significant but cheap additions to your defensive capacity.

The advantage of a big ship is the amount of damage it can soak up; the disadvantage is the expense of replacing it. If you're attacking a heavily militarised planet, don't expect to annihilate its defences in one go. Make planetary missile bases your priority target, 'taking out' as many as you can before sustaining critical damage, then run away. Come back again in a few turns and you'll be restored to full strength, but the enemy won't have had time to rebuild the destroyed bases. It may take three or four attempts to 'take out' a heavily defended planet; be patient.

Don't neglect ground combat advances, because capturing enemy planets rather than bombing them



The friendly robot newsreader reports the news you most want to hear — The Guardians of Orion have been defeated and some of their sophisticated technologies have fallen into your hands.



As your technology improves your choice of weaponry becomes ever greater — and more destructive.



A Huge ship design from the later stages of a game: Fast, manoeuvrable and heavily armoured.

out of existence has tremendous advantages: You don't need a colony ship; the planet is already industrialised; and you can seize enemy technology. Just because a planet has a population maximum doesn't mean you have to restrict yourself to that number of troops when attacking. Send more — you're going to incur casualties anyway so the excess won't be lost. Attack from more than one planet to get numerical superiority, coordinating your transports so that they arrive on the same turn.

Keep your wars limited to one opponent at a time and try to build long-term alliances. There's no surer way to alienate an alien than by attacking him. Broken treaties will be remembered; only agree to one if you're interested in long-term friendship. You need to cultivate friends in order to get votes for the council elections. The surest way to annoy your allies is to spy on them. The best way to butter them up is to offer tribute, preferably a technology. The more you give them, the more they'll love you, and the less likely they'll be to use them against you. The two races with the biggest populations are shortlisted for election. Try to be the second biggest. Having the most planets annoys everyone.

You don't necessarily need to take out the Guardians to win the game, because by the time you're strong enough to face them (they have 10,000 hit points) you'll probably be in a winning position anyway. But if you do attack Orion make sure you have a colony ship on hand, or else one of your allies may slip in and take it.

The new technologies you acquire after vanquishing the Guardians are very potent and will make a difference in a close game.

One of the critical decisions at the start of Master of Orion is the choice of which race to lead. Some are definitely better than others, and I've divided them into three groups — The Good, the All right and the Rest; or, if their mugshots are anything to go by, The Ugly, the Ugly and the Ugly:

Group 1:



Klackons — The Klackons get a 50% productivity bonus, which means that each unit of population produces as much as a factory.



Meklars — The robotic Meklars are even more productive than the Klackons, but it'll be longer before you enjoy the advantage, as you must industrialise fully if you're to benefit.



Psilons — A 50% research bonus gives them a formidable edge in the technology stakes. Keep internal security high to catch the spies of backward races.

Group 2:



Silicoids — Silicoids are immune to hostile environments and are superficially perhaps the most attractive race of all.



Darloks — Your spying skills mean you have an excellent opportunity to steal enemy technologies. The drawback is that none of the other races trust you.

Group 3:



Mrrshans — The combat bonus looks attractive, but it's not enough to make a significant difference.



Alkari — As with the Mrrshans, the pilot skill bonus promises a lot more than it delivers.



Bulrathi — Bulrathi ground-fighting skills shouldn't be underestimated, but they won't swing the game on their own.



Sakkra — Rapid population growth is only a plus if you've plenty of space in which to expand. Which doesn't happen often.



Humans — In many ways, the turkeys of the bunch. You'll need more peace than you're ever likely to get in order to reap the benefit of the trade bonus.

One of the best features of Master of Orion has to be the sheer variety of races — you can try to rule Orion using a different, perhaps more difficult one, each time you play. You may also find that a particular race just suits you, so go ahead and use them ... but remember you've got to pick planets which are inhabitable.

QED

Lost in Time

Cal Jones brings you the final part in our solution to Lost in Time. Find out how to get aboard the sunken ship, recue Melkior and save humanity from a terrible fate!

Go back to where you found the boat and collect the objects you left behind. Return to the well. Use the razor on the hosepipe to make a club. Enter the manor, place the handkerchief in the fireplace and then pour on some kerosene. Use the club to break the ship in the bottle and take the matches. Strike one on the match box you found inside the cigarette packet and light the fire. Then put the barrel on the flagstone. Open it with the club and block the small hole with the candle. Open the box next to the fire and take the fire extinguisher. Use the shoe to fill the barrel with sand. A secret passage will open in the wall. This takes you to the wreck. Once inside the ship, collect water from the puddle using the pipe. Examine the box, and use the floats on it to insulate you from electric shock. Then use the copper wire on the electric wire. Check the mast, take the pliers and use them to cut the electric wire. Use the water on the lock followed by the fire extinguisher. Finally, break the lock with the club. When you look inside the box, Jarlath appears and sends you back in time.

Back on the mid deck, get the hook from Melkior and return to the hold. Use it to open the box. Take the clothing and ribbon. Return to the mid deck. Use the ribbon to tie the wooden pin to the oar and then bend the nail using the pliers. Now use the nail on the stick to make a boat hook.

Take one step towards the back of the ship and turn right. Enter the closet. Use the hook on the halyard and the corkscrew on the notch in the wall. Then use the end of the halyard to tie it to the corkscrew.

Leave the closet and take another step to the back. Turn right. Click on the porthole and then on the rope. Click twice on the bucket to get the sawfish bone (this can be used as a saw). Then get the corkscrew back. Return to Melkior and free him using the saw.

After this, you'll find yourself locked in the captain's cabin. Go to the balcony and get the flag. Enter the room. Take the key from under the rug. Return to the cabin. Enter the chamber and get the flask and bowl from the dresser. Take the banana slices from the dish and examine the rug.

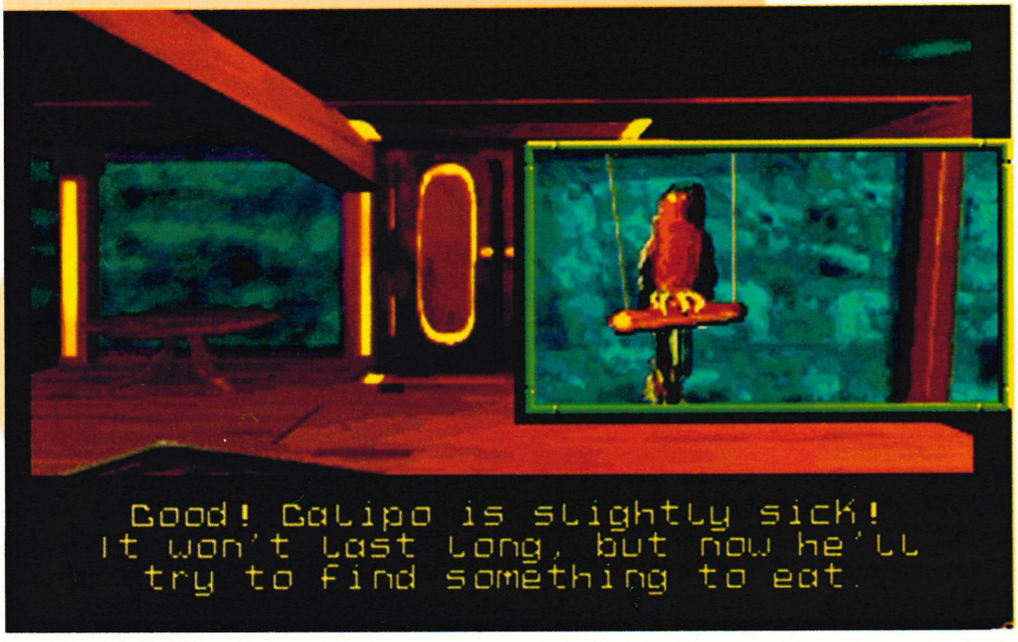
In the cabin, examine the chair and desk. Open the drawer using the key. Take the blotter and dagger. Use the dagger to cut the rug in the chamber. You will now be able to open the trapdoor underneath.

Return to the hold, open the box and use the dagger on the spring. Take the powder and handkerchief. Return to the upper deck. Open the cellar door. Examine the post, use the corkscrew on the opening and take the master key. Use the powder on the post. Go back out into the passage. Use the master key on the first door. Enter and get the flask from the shelf.

Use the master key on the elegant door. Examine the secretary drawer. Take the ring. Get the cage from behind the curtain. Return to the cellar and climb up the post to the cabin. Use the salts flask on the bowl and place it under Galipo. Put the banana slices in the cage and place it on the table under the painting. Put the paint remover under Galipo. Lock him in the cage and cover it with the flag. Enter the room. Use the ring on the cupboard door. Enter the cupboard!

In the music room, take the phonograph and the record. set the record on the phonograph and return to the cabin. Then place the phonograph on the music table and press the start button.

Open the dresser with the silver key. Take the iron key from the box. Examine the painting. Next, enter the room. Use the polish on the handkerchief and wipe the sink. Use the blotter on the sink. This will give you the code for the safe. Get the small box from the safe.



Galipo keeps watch over you in the captain's cabin. You can get rid of him by making him as sick as a parrot.

Examine it. Turn the box right. Click on the top and take the key from the secret compartment. Then click on the top and middle of the box. Use the key to open it and take the revolver.

Get the cage and return to the mid deck. Open the cache and put the cage on the bottom, then collect the cage. Look at the trap door and use the steel key on the lock to enter Yoruba's cell.

Examine the floor and crevice. Use the pliers on the shiny object (the necklace) to retrieve it. Take the cotton bale. Examine the mast and use the pliers to keep the door open. Use the bale on the mast before using the boathook on the shelf to get the rum. Use the wet sponge on the rum label. Use the magnetic necklace on the revolver and the revolver on Yoruba's shackles. Give the label to Melkior.

When you arrive on St Cristobald, take Melkior's holocom unit. Go to the waterfall and talk to the child, who will tell you that his pet manicou is sick. Open the coconut with the corkscrew and use the coconut milk and the flag on the manicou. Then use the parrot on the passage and the key from the parrot on the cage to get at the coins.

At Makandal's, put the coins through the slot in the door. Speak to Makandal. Go to Delia's and take the recipe book. When she leaves the room to look for the book, take the mirror and use it on the spider. The spider will move away and you can now take the blouse. When Delia returns, give her the recipe book. Take the potion she gives you and return to Makandal's. Give him the blouse.

When he asks you to drink with him, open the window. Use the holocom on the table to frighten Makandal and when he hides, use the potion on his glass. Give the glass to Delia. Go with Velvet and then return to Makandal's. Take the Bequiet. Visit Delia to get the inverter. Use it on the Bequiet to make Speakable. Go to the property. Use the Speakable on Serapion. Take the salt. Use the inverter on the salt to make sugar, and give it to the dog.

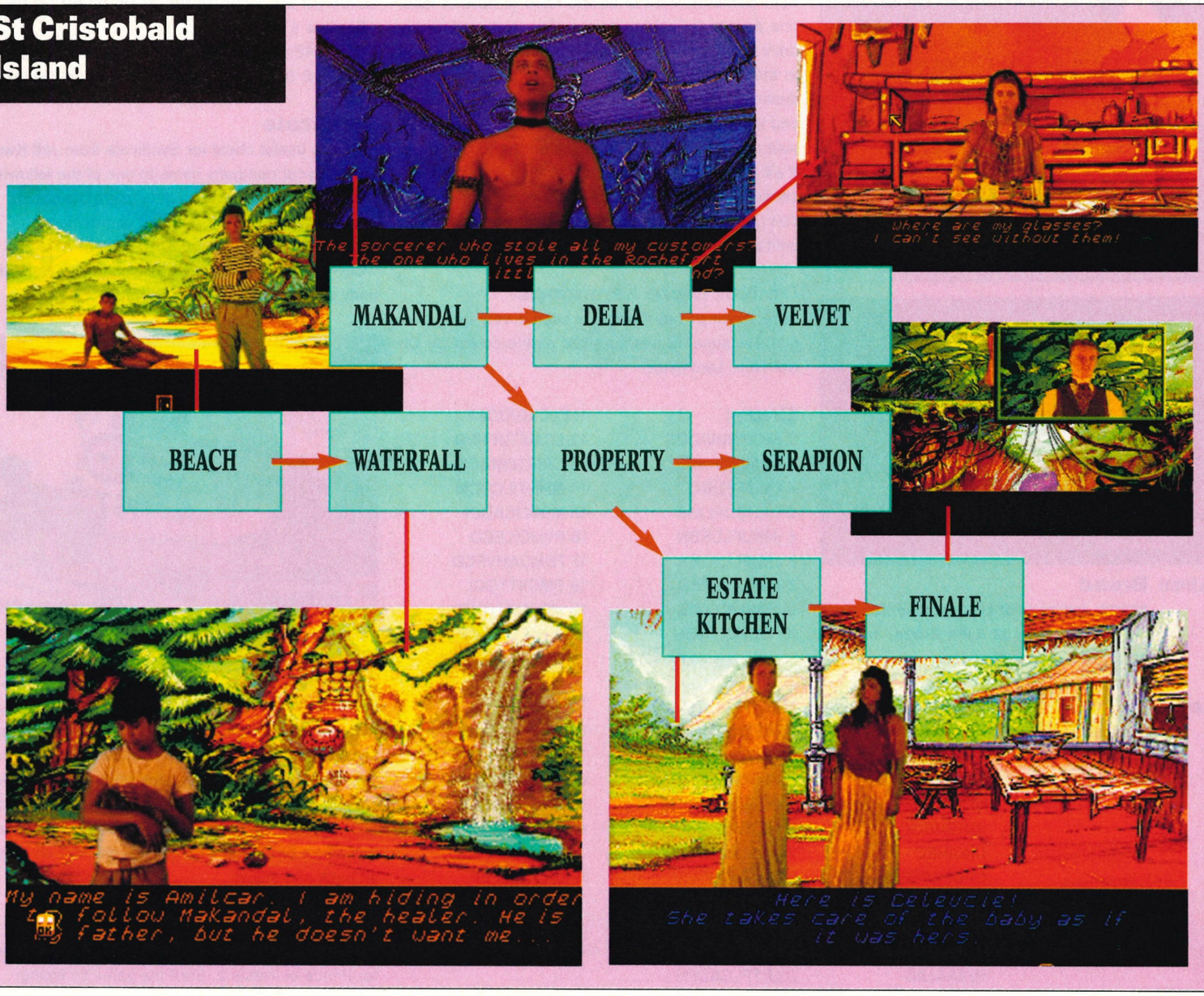
Click on the crib in the kitchen and see the snake. Take the bag from the table and remove the vanilla and flower. Use the bag on the embers. Use the stool. Place the bag on the stool so that the snake enters it and then put it on the fire to kill the snake.

Now Jarlath will confront you and you'll have to escape. Use the flower to make him sneeze, which will cause him to fall from the branch.

We've reached the end of the adventure, but is Jarlath really dead? And will there be a Lost in Time 2? Well, I'll let you in on a secret: Coktel Vision is planning another adventure featuring Doralice, but it promises to be very different from Lost in Time. Until then, just sit back and enjoy the finale.

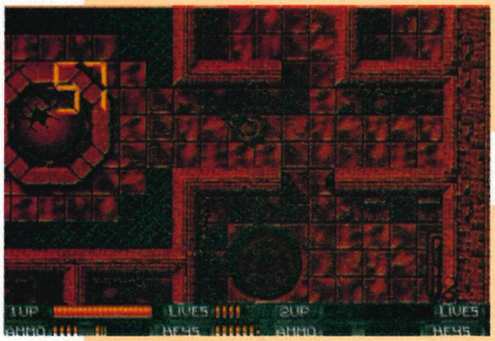


St Cristobald Island



QED

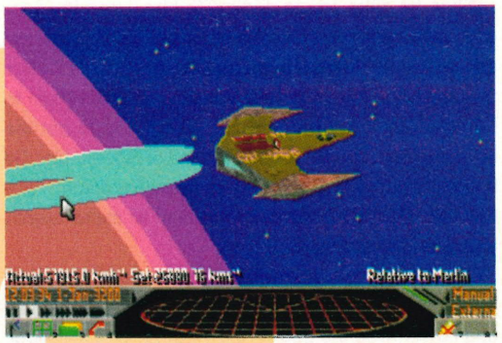
Do not attempt the tips marked with this icon unless you are sure you understand what you are doing. In any case, it's sensible to make back-ups of the files before you start tinkering around with program editors. PC Review is not going to accept any responsibility for damage to data incurred when trying out tips, so be warned! Send all your cheats to QED Tips at the usual PC Review address. We'll print as many as possible each month and the sender of the highlighted Star Tip wins a software prize – so don't forget to include details of your PC's configuration with your letter.



Alien Breed

Alistair Jackman of Basingstoke has been hammering away at Alien Breed, and has supplied all the level codes:

Level	Code
1	No code
2	AAJIHGDDC
3	CGGHDGGDG
4	HDICICCII
5	IDHEHDGCC
6	IJIIDIHEC
7	CFDFEFEFJ
8	JIIJIIIIC
9	AAAABAAAA
10	CCGDGBBBB
11	HHIAAJJIG
12	GGDDJJHFD
13	JIECBFGFF
14	HGGEDDCCB
15	HHHGFGDCC
16	IHDCHGHFF
17	No code
18	No code



Frontier: Elite 2

Scott Berridge and David Read have found a great cheat for the classic space game, Frontier: Elite 2 from Gametek. First of all you need to have at least one passenger cabin on your ship (sell your hyperdrive to make room for one if necessary). Then log on to the bulletin board and take on a passenger (the destination is not important). Next go to the shipyard and the ship's menu. Find a ship that's cheaper than yours (in the minuses) and click on the 'buy' button. It will tell you that you can't buy a new ship with a passenger on board but it will also increase your credits. You can then click on 'buy' as many times as you like until you have enough money.

Oh No! More Lemmings

John Jennings has obviously been a very busy person, because he has supplied all the codes for Oh No! More Lemmings.

Crazy:	
2 NICMHUWODS	11 FLCIHVUOBF
3 LCALVTFHBJ	12 LCAMTUFPBR
4 CLITTFLIBQ	13 CAIPTDMBCK
5 CAHRUFLJBE	14 MHRTILCCCM
6 IHRUFLCKBN	15 MRVLICADCI
7 LRUFLCALBK	16 PVLICILECO
8 RUFLCILMBD	17 TDMCAHVFCD
9 LRWLICELCE	18 DMCIITTGCL
10 WHNCIVNBH	19 MCAMTTDHCI
	20 CIMTTDMICR

Wild:	Wicked:
2 MIPWLICKCG	2 FMCIHTUODG
3 LRWLICELCE	3 MCALVUFPDF
4 PUDMCMLMCF	4 CILVUFMQDO
5 UDMCAHVNCM	5 GAHPTDHBEK
6 LICIITWOCK	6 IHRTDLGCEJ
7 MCALVUDPCS	7 LPTLLFADEL
8 CILVUDMOCL	8 RVLHGILEEF

Havoc:	
2 IHPTFLGCFK	4 RTFLGILEFS
3 LPTFLGADFH	

Paula Pheby of London also has a useful hint for Oh No! More Lemmings. Go to the password option and type SLAMRACING. Whenever you play a level, press the '5' key on the numeric pad and you will complete the level with 100%.

Privateer

Vemund Dyrkolbotn, who hails from Norway, has sent in two cheats for Privateer which need a hex editor.

For 16 million credits, start a new game and then save it. Load the saved game in the hex editor. Search for the sequence:

43 43 52 47 49 00 00 00 08 D0 07

Then edit it to read:

43 43 52 47 49 00 00 00 08 FF FF FF

The second cheat will kit you out with the best weapons available.

Enter the game. Buy a Centurion with a turret and lasers in all positions. Save the game and load it into the hex editor once more, then search for the sequence:

47 55 4E 53 00 00 00 18 05 04 00 00 05 03 00 00 05 02 00 00 05 01 00 00 05 07 00 00 05 05

Replace it with:

47 55 4E 53 00 00 00 18 09 04 00 00 09 03 00 00 09 02 00 00 09 01 00 00 09 07 00 00 09 05

Syndicate

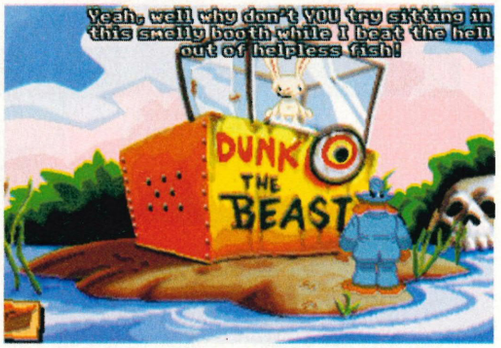
Here's a useful cheat for Syndicate from Jeff Kwon. Change your company name to one of the following:

NUK THEM (resurrects all dead team members)

WATCH THE CLOCK (speeds up the clock)

ROB A BANK (gives you $100 million)

COPPER TEAM (kits out your squad with Version 3 body parts and advanced weapons)



Sam and Max Hit the Road

Cheltenham's Gareth Hunter is having all sorts of problems in the Tunnel of Love (as you do) and wants to know how to stop the boat so that he can go and investigate. Well, here's how. Get the black light from the office and use it on the torch you should have won playing the Wak-a-Rat game. Then get back in the boat and use your torch. You should now be able to see a fuse box in the wall. Quickly use Max on it, then sit back and enjoy!

Prince of Persia 2

Joe and Donal Harvey have sent an impressive cheat for Prince of Persia 2. Start the game by typing:

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C:\prince2>prince yippeyahoo

Then try out the following keys:

Shift - T to gain a life
Alt - N advances you to the next level
+ to increase time
- to decrease time
K gives you a smart bomb
R resurrects the prince
Shift - I inverts the screen
Shift - B turns the screen (apart from the prince) black



Simon the Sorcerer

Simon Roberts of Liverpool is having trouble gaining entry into the goblin village. After giving the list to the shopkeeper, go to the crossroads in the forest and take the north-east path. Climb down the vines on the left hand side of the screen (they're a bit hard to spot) and talk to Gollem. You'll have to give him some of the swapling's stew to get him to leave, and then you'll be able to find the magic ring. Once you've got the ring, go back to the shop and climb into the hamper.

You won't be able to get past the snowman until you've been to the goblin village. Something you find there wil help you.

Jamie Fuller is also stuck, and can't find out how to dig up the milrith. Take the interesting looking rock (found in the snowy wastes) back to the blacksmith and use it on the anvil. Then take the resulting fossil and give it to the palaeontologist who'll move his dig site to where you left the metal detector. Return there, look at the dirt and pick up the milrith ore. Use it on the anvil to make an axe head, and then give it to the woodcutter.

Alone in the Dark

Peter Gibson is having trouble getting past the harpies at the top of the stairs. You need the mirrors from the chest in the bedroom (the key is in the vase). Place the mirrors on the statues in the hall. You'll must stand directly in front of them because otherwise Edward will try and place the mirrors on the floor. This is the only way to kill the harpies — if it genuinely doesn't work for you, contact Infogrames on (071) 738 8199.



Serpent Isle

PJ Davies is one of the many poor souls marooned in Serpent Isle, and is currently having difficulties with the Gorlab dream realm. He has the Helm of Courage and the Mirror of Truth, but can't find the third item he needs to complete this section.

Cal Jones answers: "The item you're looking for is the Rose of Love. Visit Fawn and talk to Zulith when you notice him following you. Speak to the townsfolk to learn that Lady Yelinda wishes to meet you. Go to the banquet hall which is just south east of the throne room. If it's empty, you'll have to sleep for a night and return later. During the banquet, an incident will occur which results in one of your companions being arrested. You must then go to the temple to give evidence at the trial. During the recess, find Alyss and and talk to her. Do what she suggests and eventually your companion will be freed and Lady Yelinda will give you the rose."

HELP WANTED

I'm playing Indiana Jones and the Fate of Atlantis (team path) and am in Atlantis. I've found everything (I think) in the maze and have got rid of all the guards. My problem is getting Sophia out of the cage. I also don't know how to get past the octopus in the canals.

Chris Philips, Kent

I can't find the last piece of the map in Monkey Island 2. I have the pieces from the shop on Booty Island, the skeleton under the cottage and the pile of papers in the tree house.

Matthew Sears, Worcestershire

I'm stuck on Dinky Island in Monkey Island 2 and am trying to make the voodoo doll to defeat Le Chuck. My problem is that I don't know what to do with the helium balloon or the rubber gloves to get the beard.

Paula Pheby, London

I'm playing Prince of Persia 2 and am stuck in the caves on the level with the collapsing bridge and the skeleton. No matter what I do, every time I cross the bridge the rock wall on the other side is always down.

Rob Cooper, Hertfordshire

I recently bought Start Trek 25th Anniversary and have reached deadlock in the Harry Mudd scenario. I've defeated the Elasi pirates, found Mudd, the power tool, memory cube, miracle degrimer and the lens that turns the degrimer into a weapon. I've used Mr Spock to knock out Mudd but don't know what to do next.

S Ackroyd, Kent

The future of QED guides

Following the demise of QED Guides, several readers have written in to offer their services.

MJ Loebenberg has completed Indiana Jones and the Fate of Atlantis (all paths) and is willing to help anyone who is stuck in the game. Please send your queries along with an SAE to:
Master MJ Loebenberg
6 Park Grove
Edgware
Middlesex
HA8 7SJ

James Abel has bravely volunteered to help all those in the following games:
Day of the Tentacle
The Secret of Monkey Island
Le Chuck's Revenge: Monkey Island 2
Indiana Jones and the Fate of Atlantis (all paths)
KGB
Ultima Underworld 2
Simon the Sorcerer
Indiana Jones and the Last Crusade

Send your queries and SAEs to the following address:
James Abel
14 Dickens Wynd
Elvet Moor
Durham
DH1 3QR

Paula Pheby has completed Indiana Jones and the fate of Atlantis, Sherlock Holmes: The Case of the Serrated Scalpel and Quest for Glory 2.
Contact her (enclosing SAE) at:
Paula Pheby
32 Tatnell Road
Honor Oak Park
London
SE23 1JY

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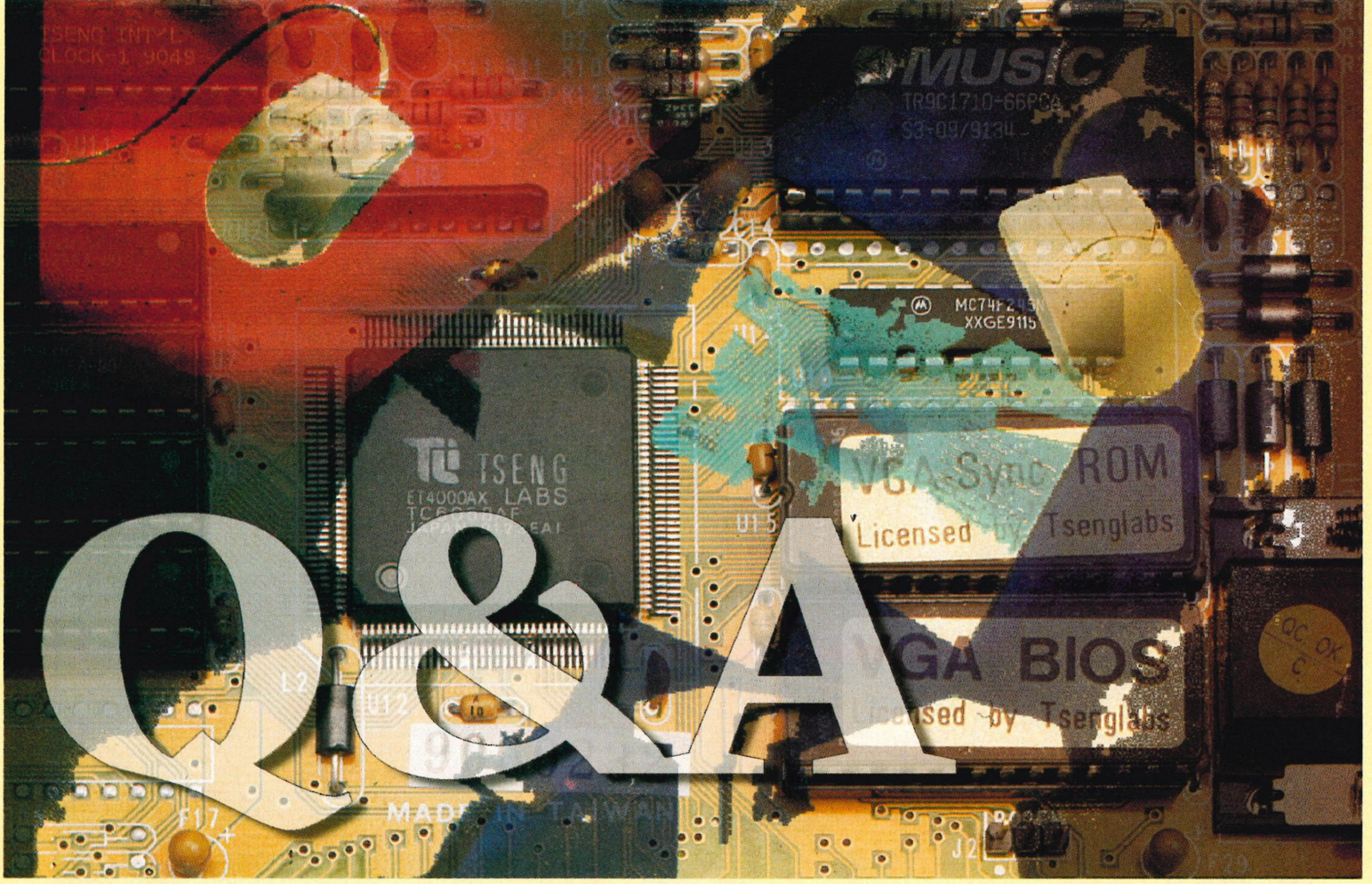

Bemused, befuddled, or bewildered about your PC? If your hardware gives you headaches and you're stricken with software seize-ups, share your problem with Q&A's Mike James and he'll endeavour to help

Into the sea with it?

Q In July I bought a Sound Galaxy Pro sound board. When I installed it and ran the test software, it was working perfectly, but when I configure Formula One to Sound Blaster or Ad Lib and start the game, a lot of funny noises come out of the speakers (the start-up music works fine). It also happens in most other games. Sometimes at once, other times after a couple of minutes. I took the board back to the shop where I bought it, but they said there was nothing wrong with it. Do you have any suggestions?

Also I read the article in the October issue about upgrading a 386DX processor to a 486DLC-33 and I tried it. Well, changing the chip was easy, but when I start up my computer and the RAM test is finished, I get an error message saying there is a memory parity error at the address FOOO:DE71. I then get the option to reboot or shut the NMI off. The last option sounded interesting so I tried it, and it seemed to work OK. This error occurs every time I cold-start my computer. Sometimes it happens earlier, so it does not finish the RAM test. Before I changed the CPU I performed a speed test with Norton's SYSINFO, and it was 12.4. After the change, the speed is 7.9. That's a bit odd isn't it? Different software does say it's a 486.

Peter Vrist
Denmark

A *You are probably suffering from compatibility problems — the curse of the PC world! The Sound Galaxy Pro should work fine but, as the software is always very careful to say, "this works with 100% compatible Sound Blaster cards" — and of course the only thing that is 100% is the real thing. This makes it very difficult for you to take the clone sound card back and complain. The hardware people will blame the software people and vice versa. In this case though my best guess is that there is a hardware problem. Either the FM or the digital channel is probably not working properly despite passing the hardware test. The only other possibility is that there really is a compatibility problem with the Galaxy Pro — can any reader who knows of one write in and let us know too!*

Now to your real puzzle — the 486DLC-33. In theory this is a plug-in replacement for a 386DX, but in practice this isn't always the case. There is more to making a particular processor work than supplying it with the clock signals of the correct speed. Different processors are more or less tolerant of variations in the quality of clock signals. It could very well be that the motherboard that you are using generates clock signals that are good enough for a 386DX but not suitable for a 486DLC. The timing problem could be the cause of the memory error but I have to admit to being puzzled at the results of the Norton speed index. I would have expected it to be higher.

Don't throw your machine away just yet: a 386DX is still worth something and even if the 486 upgrade had worked it would only have given you a speed boost of about 50-75%. If you want a 100% speed increase then wait for the Cyrix 486 upgrade chip which is designed to be an end user upgrade for existing 386 motherboards — or if you can't wait then change the motherboard.

Only half a screen!

Q I have a VTech 486sx/25 and have come across a problem I am unable to solve despite much effort.

I use various Windows and non-Windows software (both games and 'serious' applications) and have no difficulty with these but I have a problem with three games, Wing Commander, X-Wing and The Lost Files of Sherlock Holmes. The cursor will not move into the right hand half of the screen in any of these games. The problem is the same whether I am using the keyboard, the mouse, or a joystick to control the game. Other applications run perfectly well. This means that these games are unplayable and I am reluctant to buy new software in case I have the same problem,

Ian Jones
Cumbria

A If you hadn't thrown in the comment that the problem occurs even if you use the keyboard or the mouse I would have suggested a joystick miscalibration — but this clearly isn't the cause. I have encountered this problem once before but with a old CGA graphics card. The cause of the odd behaviour was never tracked down! In this case I am equally mystified. My only suggestion is that the three games that cause the problem make use of an odd VGA mode that your particular VGA card doesn't support properly. The only way of finding out would be to swap the VGA card for one of a different make.

Dyslexic program?

Q My son has recently purchased a copy of the above game, unfortunately he has been unsuccessful in his attempts to run the software. The game has been installed to the hard disk and when he attempts to run it the following error message is displayed, "Not enough memory to run Sensible Soccer. 568K of RAM needed". He uses a boot disk to ensure there is sufficient RAM available (using the DOS Chkdsk facility, there is 588352 bytes free), nevertheless the game will not run.

David-J Nicholls
Herts

A Sensible Soccer needs 586K to run, not 568K — the programmer who created that part of the game typed in the last two numbers in the wrong order!

Notice that Chkdsk reports the number of bytes and to convert to kilobytes you have to divide by 1024 not 1,000 as you might expect. This means that 588352 Bytes free translates to 574.56K free which is more than Sensible claims it needs, but not as much as it really needs — not very sensible at all really!

Too many Tentacles

Q I recently bought a copy of Day of the Tentacle on CD-ROM, and I was pretty miffed to discover that I can't free up enough memory to play it! I have tried to 'Rem' out as much as possible in my Autoexec.bat file, but because the game is on CD, and requires use of my Sound Blaster and mouse, I don't know of anything else I could possibly get rid of. Tentacle says it requires another 43K to run properly.

The other weird thing is that after it has told me it needs another 43K, it also tells me that "EMS detects less than 2Mb". This all seems a bit strange as I have 4Mb of SIMMs in my computer; why can't it detect them all? I was running the program through DOS, as I presumed that I would be unable to free up any more memory through Windows, as it requires Smartdrive (which I 'remmed' out). I have also been having trouble getting the right driver to run my Trident SVGA card at 256 colours, so to be honest I'm avoiding Windows like the plague.

Jo Wright
Middlesex

A The solution to your problem is to use MS-DOS 5's clever memory management facilities rather than using Rem statements. Using these you can move drivers and other modules that clutter up conventional memory into Upper Memory Blocks — UMBs. For example, my guess is that you haven't taken advantage of moving MS-DOS into high memory. To do this, add the line DOS=High to the Config.sys file following the Himem.sys line. This should add around 64K to your conventional memory in one step.

The trouble with trying to optimise memory that it is a very technical procedure. If you're not happy about trying this unaided then my best advice is to upgrade to MS-DOS 6.2 or buy a memory manager such as Qemm or 386Max. If you do this you will be able to auto-configure your system so that the largest possible amount of conventional memory is free.

And finally the mystery of the missing EMS memory ... by nature the memory in your machine is extended memory, ie, not EMS expanded memory. To turn it into expanded memory you have to use Emm386. You almost certainly have this in your Config.sys file, but it only creates 256K of EMS memory by default.

To increase the amount of EMS memory available add a number to the end of the Emm386 line in Config.sys which specifies the number of kilobytes the game can make use of.

Q&A update

Parity errors

Perhaps the most mysterious of all error messages that your PC can produce is a 'parity error'. It is so mysterious that many users fail to recognise it as a serious problem and carry on using their machine as if nothing was wrong — which is a big mistake.

When IBM invented the PC it made an important design decision — it included parity error checking. At the time this was very unusual because all of the microcomputers of the day did not have any sort of error checking. The reason was that they used relatively small amounts of memory and it was relatively reliable. In practice you could check that the memory was working properly by running a test program at the start of the day and if it was then the chances were that it would continue to work properly. In other words, the probability of a memory fault actually developing during use was, and still is, very low.

Despite this IBM decided to include a parity error checking system. Now it seems fairly obvious that it only did this to make its PC seem like a real business machine. All of its large mainframes used parity checking and so the new PC would. I can remember people remarking that the IBM PC deserved to be taken seriously because it included parity checked memory!

So how does it work? Each memory location in a PC stores a single byte consisting of eight bits. Each bit can be a zero or one — so a pattern consisting of eight zeros or ones represents what is stored in each memory location. To find the parity of such a bit pattern all you have to do is determine if there are an odd or even number of ones in it. For example, 00001011 has odd parity because there are three ones in it and 100110100 has even parity because there are four ones in it.

You can make use of the parity of a bit pattern to detect errors by adding an extra bit — the parity check bit. By setting this appropriately you can always make the parity of a bit pattern odd. For example, the parity bit for 00001011 would be 0 because it already has an odd number of ones but the parity bit for 100110100 would be a 1 because you need one more 1 to make the number odd. Parity checking is implemented by the machine's hardware. When an 8-bit pattern is stored in a memory location a ninth parity bit is generated. This parity bit is automatically stored along with the data but the program cannot get at it or modify it directly — it is calculated from the data. Now if the machine's RAM is working properly the parity bit should always be appropriate for the data. When a memory location is read the parity bit is calculated again and compared to the stored parity bit. If the two aren't the same then the data has changed and we have a parity error.

It doesn't take a genius to work out that parity checking will detect a single bit change to the data but not a change to two bits. In practice this doesn't matter because single bit errors are by far the most likely.

What all this means is that if your machine detects a parity error a memory location has been changed and any further computation will be invalid. So serious an error is this that we generally refer to parity errors as "fatal" and it is standard practice for the system software to stop the machine. In some cases the BIOS can be set up to treat fatal errors as non-fatal and so you can arrange to carry on working after a parity error. In nearly all cases it is advisable to stop work!

Some users are puzzled by the way that a parity error vanishes when they switch off their machine and restart. However, remember that for a parity error to occur the faulty memory location has to be used by a program and this might not happen for some time after restarting the machine. It is possible for a real memory fault to be related to temperature or the mains voltage. This can make parity errors come and go seemly at random. If your machine crashes with parity errors in this way the best thing to do is to keep a log of when the errors occur. Record the time of day, how long since the machine was switched on and what program you were running. Unfortunately the only cure for a persistent attack is to replace the memory modules that are causing the problem.

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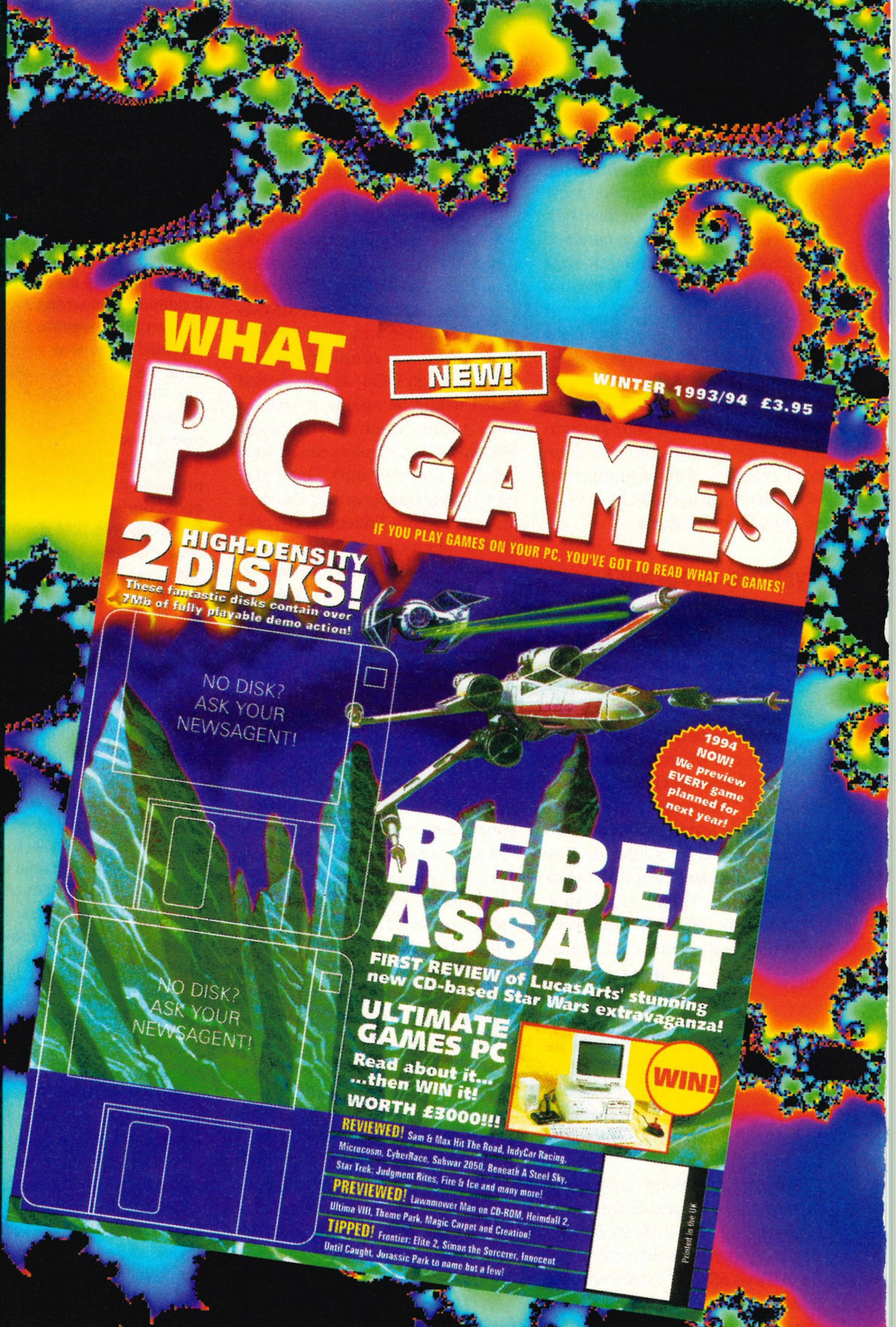




Letters

PC Review welcomes letters on any subject under the PC sun. The editor will chop them to fit if need be, and we'll assume letters are for publication unless you state otherwise. Send your mail to Letters, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. Star letters win software prizes!

Four eight sick

I am confused about the current state of the PC market. Yes, I did read John Bennett's illuminating article about buying a 486 PC in Issue 26, but I still feel unsure. The problem basically comes down to price. John recommends several PCs but they are all very expensive and there is no really conclusive advice as to which he would buy especially on a limited budget. This sort of qualified, rather than general, advice would be a valuable addition to any article in your book. To be honest, with the rate of change in technology at the moment I don't want to have to shell out for a brand new PC this time next year, like I'm having to do now (I must have been one of the first fools to buy a 386SX only to see it outmoded before I even booted it up).

I have found a relatively cheap 486DX in a dealer near me but a 'friend' has warned me against it, claiming that the motherboard, hard drive and processors may not be up to scratch. Surely most of the major manufacturers must use the same basic components — certainly the plethora of British assemblers that grace the pages of magazines like PC Direct must do anyway. Who can I trust?

The real questions John Bennett could answer for me, and probably many other readers interested in an upgrade, are; a) is a cheap 486 necessarily a bad one (remembering that I will save even more money by transferring the SoundBlaster and joystick card from my existing machine) and b) if he does does recommend a more expensive one, how long will it be before I'm likely to need to upgrade again, as this will greatly effect my purchasing decision now.

Please tell John that these are general questions and I will not hold his answers up before him in a court of law (just in case he's nervous about looking into a crystal ball for them).

James Keane
Wilton
Wiltshire

John Bennett replies: to answer your first question — no, a cheap 486 is not necessarily a bad one. The components are largely the same in most cases, but the way they are put together varies enormously. Clone PC manufacturers make such small profit margins that they're always looking for ways to cut corners — this is where the problems come in. The more expensive machines tend to stick to hardware standards better, so they don't give you (as many) nasty surprises when you come to upgrade them later on.

My own machine is as cheap a 486 as money could buy at the time, and it's been great — apart from the fact that the manufacturer went bottom-up six days after I'd bought it. A year later, adding a new sound card, I ran into a problem — a, and I quote, "non-maskable interrupt conflict" to be exact. What on earth this is I have no idea, but it's peculiar to the design of my motherboard, and there's nothing I can do about it. This is typical of cheaper PCs, and also the main reason I tend to recommend the more reliable mid-range manufacturers — even if it does add £200 to the price.

As far as a tight budget goes, the 486 is still the only machine worth buying. Unfortunately, there's no surefire way round the problem of obsolescence.

In practice, you can't upgrade a budget 486 to a Pentium. All you can do is stave off the inevitable by getting a PC with as much expansion potential as possible: a) the processor should be upgradable to 66MHz, simply by replacing the chip. Zif sockets make this easier; b) The hard disk should be as large as you can afford; c) It should use standard SIMMs, and be upgradable to 16 or 20Mb of RAM; d) Take VL-bus machines with a pinch of salt. The standard varies dramatically and may soon be superceded by Intel's PCI local bus, making it obselete, and what's more, difficult to upgrade; e) Buy the biggest casing available

If you get most of this, and

upgrade along the way, your machine should have an effective life of three to four years before it looks dated.

Original sin?

I would like to describe a game from Origin. It has a limited variety of missions, the bartenders always say the same thing, there are few killing machines and everything looks just about the same. You would be forgiven for thinking that I'm describing Privateer but this is, in fact, a description of Autoduel, a game that I used to play on my lowly Apple II.

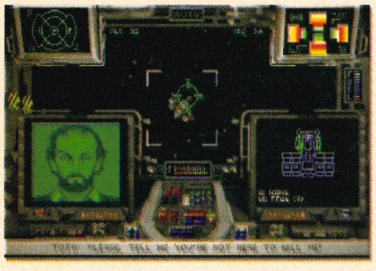
The similarities in gameplay are obvious, they simply have different locations. I would have expected Origin to come up with something better, in tems of gameplay, after all this time.

This is not to say that I did not enjoy Privateer, because I did, but there was always a feeling of unfulfilled potential when I played it.

My other comment is also to do with Origin. As far as I know, only Origin supply Speech Accessory Packs for its games. My real complaint is having to spend £20 for these disks.

Full speech is incorporated into CD-ROM so charging this cannot be to cover development costs. I'm not having a go at Origin but I just expect higher standards from them. After all, when was the last time they produced a really bad game (except perhaps Wing Commander Academy)?

R MacKenzie
Gerrards Cross
Bucks



Compression puzzle

I have studied letters recently published in PC Review regarding disk compression, and with regard to games in particular, but I honestly cannot see what all the fuss is about. Having examined the various machines, operating systems and software used by the complainants I find they are typical of the system and software I run — and yet I have had no problems. My machine runs MicroProse Formula 1 Grand Prix, X-Wing, Star Trek 25th Annniversary, Flight Sim 4 and numerous other games on a double-spaced hard disk.

I also don't have any difficulty running Windows 3.1, CorelDraw v3.0, Winword, Timeworks Publisher, Autoroute or Microsoft Excel.

It seems to me that many of the problems which occur in relation to disk compression may involve the way in which disks are doubled in the first place; coupled with the configuration of permanent or temporary swap files, the set up of Config.sys and Autoexec.bat files and the optimisation or otherwise of base memory — in other words how the computer is being told to interact with the software that is compressed.

I use Stacker version 3.0 (a well tried and virtually bug-free stacking system, which is easy to use and works brilliantly), in conjunction with MS-DOS 5. This and other software runs on a 40 MHz 386DX, with 8Mb RAM and an 85Mb IDE hard drive, which is not actually doubled but 'optimised' at a 1.77:1 compression ratio by the Stacker software.

Finally, I can also say that I have even loaded ten other games on to the compressed disk with absolutely no trouble, but in each case, once installed, I have run the disk de-frag programme before playing the game or games in question, so that Stacker can both re-compress and re-organise the stacked drive.

I have yet to see one failure to load, or even a mid-use crash of any game I have, while all of my Windows based software works perfectly every time I use it. Also, I have not noticed any deterioration, either in the loading or up-dating of screens in mid-game — at least not so as you'd notice!

A case perhaps for sticking with tried and trusted software and using just a little logical thought when configuring, and subsequently maintaining, a compressed disk on a computer system?

C W Cartwright
Louth
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Competition winners

Links Pro (Issue 24)

Our PC games trivia quiz generated an enthusiastic response, although 100% correct entries were a bit thin on the ground. Our first prizewinner — first out of the hat with all the answers right — is Kevin Lloyd, of Caernarfon, Gwynedd. Kevin will be off to play golf at the Belfry at a time of his choosing. He also gets a complete set of Links Pro with its accessory courses, which are the second prizes going out to A K Thacker, of Walsall, West Midlands; Ian Warren, of Worcester Park, Surrey; and Mrs K Watkins, of Blackfield, Hampshire.
The answers were: 1: a) Turnberry (not a Links course); b) Falcon 3.0 (others are helicopter sims); c) Legends of Valour (others are Ultima games); 2: a) Populous II; b) Ultima VII (part one); c) Laura Bow II; 3: a) Monkey Island; b) Legend of Kyrandia; c) Return of the Phantom; 4: a) 5; b) 7 or 8; c) 5; 5: a) Eye; b) Secret Weapons; c) Cruise; 6: a) Lost; b) Lost; c) Lost; 7: a) Secret of Monkey Island 2; b) Day of the Tentacle; c) Flashback.

PC Review Recommended (Issue 24)

Day of the Tentacle: Maniac Mansion is the game within the game. Copies of the game go to Roger Stafford, of Wolverhampton; Paul Bradshaw,of Warrington; Peter Andrews, of Glasgow; Steve Hardy, of Horsham, West Sussex; Michael Reid, of Petersfield, Hants.
Sensible Soccer: Coca-cola is sponsoring the League Cup again this season. Copies of Sensi to Richard Mastaglio, of York; Mr M Reidy, of Bushey, Herts; Daniel Taylor, of Lewes, East Sussex; Richard Wheeler, of Clane, Wilts; Gary Thompson, of Banbridge, Co Down.
Syndicate: the aim is world domination. Syndicate winners are John Hopkins, of Bracknell, Berks; M Ammon, of South Woodham Ferrars, Essex; Pete Bailey, of Woking, Surrey; Mr D Sedman, of Castleford, W Yorks; Mr P Chaplain, of Wolverhampton.
Tornado: a ground attack aircraft. Tornado prizes go to Chris Stone, of Colchester, Essex; Patrick Siu, of Stanmore, Middx; Robert Hunter, of York; Eliot Savage, of London SE13; Mr M J Dainton, of Cheltenham, Glos.
All winners shoud have their prizes by now

Review Recommended (Issue 25)

TFX: the three planes are European Fighter Aircraft (EFA), F-22 Superstar and F117 Stealth Fighter. Copies of TFX are off to A P Underwood, of Broadstone, Dorset; Paul Robinson, of Beverley, E Yorks; Chris Ward, of Andover, Hants; Ranjit Johal, of West Drayton, Middx; Peter Gardiner, of Falmouth Cornwall.
All winners shoud have their prizes by now

PC Review recommended (Issue 26)

Frontier — Elite II: Ross 154, Mars and Lave are the three start positions in Elite II. Copies of the game go to Michael Cox, of Welwyn, Herts; Paul Charlesworth, of South Harrow, Middlesex; Matthew Johnson, of Kendal, Cumbria; Martin Vickers, of Lodge Moor, Sheffield, and Anthony Shaw, of Harpenden, Herts.

ReelMagic competition (Issue 25)

We had a huge response to this high value competition to win a ReelMagic multimedia kit with all the trimmings: a Sony XA CD-ROM drive and the MPEG version of Activision's Return to Zork. The winner of this superb piece of kit is David Aldworth, of Caversham, Berks. There were also two runners-up prizes of the ReelMagic card plus software, which go to D Gordon, of Benfleet, Essex, and Mr G E McKoy, of Edgbaston, Birmingham. Congratulations to all three — your prizes should be with you now.
The answers to the three questions set were: 1) Paramount and Warner Bros; 2) MPEG; 3) Return to Zork.

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Classic golf Games

The PC is home to a number of classic, highly playable golf simulations. This month Dean Evans pulls on his nifty plus fours, borrows some aging clubs and walks out proudly onto the digital fairway

Nick Faldo makes it look so easy. Time after time he casually saunters up to the tee, places the ball, throws a few blades of grass in the air to check the wind direction, lines up, wiggles a bit, takes a practice swing or two, wiggles a bit more and then whacks the tiny ball up into the clear blue Autumn sky. Simple.

Now I find all the sauntering, grass-throwing and wiggling is just fine, but as for the hitting, well I usually end up whacking a huge, glistening divot into the air while the ball goes screaming off down the fairway barely an inch above the ground.

But regardless of whether you're good or not, golf can be an expensive business. After buying the clubs, the smart trousers, the shiny shoes and paying for the cost of a quick round or two, you're not going to get much change out of £100. Worse still the financial hole grows deeper and deeper if you're then going to spend the required hour-and-a-half in the bar discussing that missed putt on the 16th and how ridiculously slow the pair in front of you were.

So if you want to experience this gentlemenly sport without seriously denting your bank account there are a multitude of computer golf games around to satisfy even the most rampant golf-lust. For little more than the cost of a Marks and Spencer's woolly jumper you can recreate the excitement and the subtle skill of golf on your humble PC.

With a game such as Links 386 Pro you can now play 18 holes on, say, the Belfry, without leaving the warm, cushioned comfort of your favourite chair. There's no queuing, no weather problems, the computer is your caddy, the mouse your expensive golf clubs. Yes, with PC golf you too can perfect a flawless and professional swing without frittering away your money on the driving range and spending long hours on the baby par 3.

While we've had the obvious soccer, tennis and US Football conversions on the PC and also

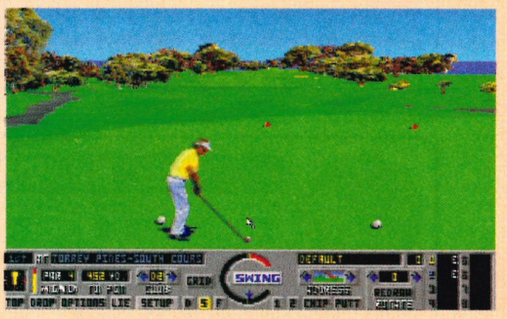
Fading, drawing and hooking computer style



The early golf games like Leaderboard and Mean 18 introduced all the features that are now considered essential features of the modern golf game. These included the three-click swing method, the power-bar putting control, the grid overlay for the greens, shot replays, bird twittering noises and a tiny bit of digitised speech. Almost all the games mentioned here contain these features. Well, perhaps not the bird song.



Although digitised pictures are much more aesthetic and pleasing to the eye, polygons do have their own distinct advantages. For example, in Ocean's Championship Golf the camera can track the ball using a variety of views, the main view can be smoothly rotated and best of all the entire hole can be previewed with in a zooming flypast view which flies a camera from tee to flag and back again.



But digitised golf games like Links 386 Pro offer the most realistic golfing experience to date. With its tremendous attention to detail, wealth of options and library of add-on courses (currently including Mauna Kea, The Belfry, Innisbrook, Pinehurst and Banff Springs; there are many more on the way), Links is the state-of-the-art golfing sim. This game is an absolute must for anybody's game library.

some niche sports too like bobsleigh, ten-pin bowling and my personal favourite in the oddball stakes, Jack Charlton's Match Fishing (I kid you not). But golf games remain the most popular — helped enormously by the fact that PC football games aren't usually very good — and arguably the most successful sporting conversions. It's also golf games, more often than not, that find their way on to the networks in offices for that quick nine holes at lunchtime.

Like most PC sports games, computer golf began very simply, with crude polygonal graphics, stick men sprites and square balls that obeyed twisted laws of physics and psdeuo-gravity. But since those early days, when games such as Mean 18 and Leaderboard were considered state-of-the-art, computer golf has come on in more leaps and bounds than Skippy the Bush Kangaroo. There are now games (or golfing simulations) on the shelves that cater for the casual player and serious golfer alike.

Some golf games now feature faithfully digitised courses, multi-player capabilities and more in-game options than you could ever want or hope for. But what makes a good golf game? Do you go for digitised graphics or fast drawing polygons? Does it offer different courses? Can you adjust your foot stance? Is there a shot replay facility with five different camera angles? As you might have guessed, in the end it all comes down to the options.

There hasn't really been a *classic* golf game since Links Pro, although almost every software house has tried to do one. Digitised graphics, Gouraud shading, course fly bys and even the odd innovative swing interface have made brief appearances. But if you strip away all the options and the fancy gimmicks, golf games are pretty much the same. Of course no matter how *definitive* the box blurb claims the game is, above all it must be fun to play. But if you take away, the



And the future? A number of in-town golf 'simulators' have opened up in the US, Japan and, more recently, in the UK. In this sort of establishment you stand in front of a huge screen and play your golf shot with a real club as if you were standing on an equally real course. After hitting the ball the power, angle and direction of your shot is calculated on computer and the resulting lie is depicted on the screen.

Golf Glossary

Albatross
Three under par, ie, taking only two shots to complete a par five hole. Quite an achievement.

Bogie
One over par.

Birdie
One under par.

Caddy
Often a poor young lad trying to earn some extra pocket money, but on the professional circuit the golfer's caddy is an invaluable source of advice and information. Oh, and they also carry your bag.

Draw
The ball is hit slightly to the left.

Eagle
Two under par.

Fade
The ball is hit slightly to the right.

Fore
Duck, suckers! The crowd is often used by professional golfers to keep the ball on the course.

Grid overlay
Once you've got on to the green it's often very difficult to gauge the lie of the hole. Obviously in real golf you can walk around or even lie on your belly and stare down the length of your golf club. Computer golf uses a grid which can be handily superimposed over the green, showing at once all the dips, ridges and hollows on the neatly cut grass surface. Doesn't help me at all but, there you go.

Hole-in-one
Traditionally any golfer who manages to get a hole-in-one must buy a drink for everyone in the clubhouse when he/she has finished the round (see 19th hole).

Hook
The ball is hit hugely to the left.

It's in the hole
A highly irritating shout. Apparently there is one guy who follows players all round the world and shouts, "It's in the hole" as the golfer tees off on a 600yd hole with a seven iron. It's never going to get there. You know that. I know that. But does it stop him? Nope.

Mulligan
In computer golf, some games offer you the Mulligan option which allows you to retake a particularly bad shot.

Par
Each hole has a rating, or par, which is the number of shots it should take for the golfer to complete it. For example a par three is normally a short hole and means that it should take one shot to get to the green and two shots to sink the putt. Holes are either par three, four or five.

Plus fours
An interesting fashion accessory for the serious golfer. Like eighteenth century britches, Plus fours are trousers that end at your knees and are best worn with long, bright red socks.

Power bar
Used for club control (see The three stage swing), especially putting. The strength of the shot is determined by how much power is applied on the power bar.

Slice
The ball is hit massively to the right.

Tee
The small plastic pin used to hold the ball above the ground and the starting point for the current hole.

The three stage swing
The backswing/power/connect method is by far and away the most popular golfing control method. Clicking the mouse button to start the power will increase and the golfer will draw back his club. When it has reached the desired level, a second click starts the downswing motion. A third click is needed to stop the downswing (normally on a small line) to get an accurate shot. If you miss and stop to the left or right the ball will veer off in that direction as a result.

You're the man!
A strange, often off-putting shout yelled mostly by a hardcore of keen American golf fans when a golfer has made a particularly nice tee shot. Roughly translates in the Queen's English to, "Oh, very nice shot sir."

19th hole
Often the most difficult hole on the course to master. Many a golfer has been known to spend hours at it.

multitude of game types, the digitised graphics and the speech all you're left with is a game where the aim is to hit a small white ball into a small hole in the least number of shots. As Sir Winston Churchill put it: "Golf is a game whose aim is to hit a very small ball into an even smaller hole, with weapons singularly ill-designed for the purpose." How right he was.

So if you fancy a quick 18 which computer simulation do you choose? You're spoilt for choice with the digitised splendour of Links, the polygons of PGA Tour, the cheap and reasonable Wilson Golf or even Mean 18 which has just appeared as a budget title. Out of the current crop of golf games though, I have no hesitation in recommending Links 386 Pro. It's by far the best golfing game around, with a wealth of add-on disks and devoid of any tacky big-name endorsement. Pure perfection.

As for the future there doesn't seem to be a Links-beater anywhere on the horizon. It seems to me that the actual golf part of the game can't really be improved. Of course there'll always be room to tweak the graphics and the control interface (the power bar routine isn't the be-all and end-all of development you know) but as for wholesale changes, I can't see anything radically different on the way — even with more speech and improved sound the changes are likely to be cosmetic at best.

As for real change, there might come a day when you can swing a real golf club and the computer simulates the result on a huge screen. And then there's Virtual Reality ... but by the time you've gone this far you might as well put on your smartest trousers, grab your old clubs and go and play the game for real.

Yes, get outside, get some fresh air. Real golf doesn't strain the eyes and it's far more sociable (the only two golf games to offer outside competition are David Leadbetter's Greens which has a modem link-up, and Links 386 Pro which now has a bizarre play-by-mail network). Anyway, computer golf can't simulate the delights of the 19th hole, the beer, the sparkling chat, the company. Come on, admit it, sitting around your PC with a few friends and a crate of John Smith's isn't really the same thing.

The computer golf playing interface is remarkably standard — most games use a similar combination of mouse buttons and a power bar arrangement to play a shot. The emphasis these days is more on providing PC renditions of real-life courses.

However, there are a couple of new golf games to look out for this year.

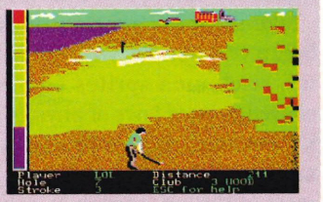
Ocean is to release Ryder Cup Golf, an improved version of International Open Golf Championship (reviewed in PC Review, Issue 22) and there's the distinct possibility of an all-singing, all-dancing Links 486 Pro coming out later this year as well.

Whatever happens, if you're a golfing fan you're well catered for. So load up and shout FORE!

Classic golf games



Links 386 Pro ● Disk £39.99
● US Gold (021) 625 3366
Links 386 Pro is without doubt the best, the prettiest and the most comprehensive golf game on the market. With digitised graphics, high-resolution images and options coming out of its ears, Links has set the standard that other golf games must follow. Absolutely superb.



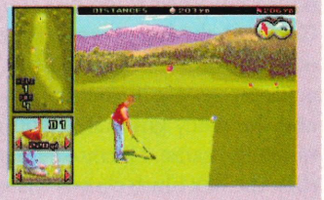
Mean 18 ● Disk £9.99
● Hit Squad (061) 832 6633
This game is so old it could be drawing a pension and claiming its bus pass, but as one of the founding fathers of computer golf Mean 18 might be worth a look. It's now available for under £10 and although it looks ancient it's not bad value for money.



Jack Nicklaus Golf Signature Edition ● Disk £39.99
● Accolade (081) 877 0880
Not as complicated as Links, but a sophisticated golf game in its own right. Runs quickly, is more playable than most, but best of all it includes a course editor so you can build your own courses from scratch. A good Links alternative.



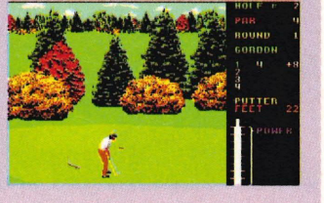
PGA Tour Golf (Windows) ● Disk £39.99
● Electronic Arts (0753) 549442
Also an oldie, PGA used fast-drawing polygon graphics to create an excellent golfing experience. PGA was the first game to feature a course flyby preview and although it now looks dated, PGA Golf Tour is still an extremely good game.



Wilson Prostaff Golf ● Disk £29.99
● Gametek (0753) 553445
Some games have options galore but Wilson Golf avoids doing anything radical or silly and keeps it all nice and simple. It's a good, solid, no-nonsense game, nicely drawn and at an attractively low price. It's nowhere near as good as Links though.



David Leadbetter's Golf ● Disk £44.99
● MicroProse (0454) 325532
Polygon-based golf game that has more camera angles than a BBC outside broadcast unit. Despite using Gouraud shading it retains a slightly murky look which might put some people off. Not as complex as Links, or as playable as Jack Nicklaus.



World Class Leaderboard ● Disk £12.99
● Kixx (021) 625 3311
A blast from the past this one. I spent many a happy hour with this game when it first appeared on the Commodore 64. Like Mean 18 it looks positively ancient compared to the digitised splendour of Links 386 Pro, but at the time it was outstanding. Most fun when you've got more than one player.



Nick Faldo's Championship Golf ● Disk £45.99
● Grandslam (081) 680 7044
Polygons, Gouraud shading and the endorsement of Mr Faldo himself all come together to make a good if uninspiring golf game. There's nothing truly innovative about it but it's very user-friendly, plays well and looks very sharp.

PC SOUND CARDS

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SOUND GALAXY

At last, the first 16-bit STEREO PC Sound Card with 6 sound standards for under £100! That's just one of the Sound Galaxy range from Silica. The range also includes 8-bit mono and stereo cards with several CD-ROM and sound standard options. And, the BXII and NX PRO EXTRA 8-bit cards, plus the Business Audio 16-bit card from Silica, come with a Dynamic Microphone FREE OF CHARGE!

8-bit COMPARISON

	MONO		STEREO	
	AZTECH SOUND GALAXY BX II	CREATIVE SOUND BLASTER VERSION 2.0	CREATIVE SOUND BLASTER PRO II	AZTECH SOUND GALAXY NX PRO EXTRA
No Of Sound Standards	2	2	3	5
AdLib	●	●	●	●
Sound Blaster Version 2	●	●	●	●
Sound Blaster Pro II		●	●	●
Covox Speech Thing			●	●
Disney Sound Source			●	●
FM Synthesiser - OPL2	●	●		
FM Synthesiser - OPL3			●	●
Manual Volume Control	●	●	●	●
Digital Software Volume Control			8 STEPS	16 STEPS
Digital Bass & Treble Control			●	
Sampling Rate, Recording Up To:	23KHz	15KHz	44.1KHz	44.1KHz
Sampling Rate, Playback Up To	44.1KHz	44.1KHz	44.1KHz	44.1KHz
Game Port, With MIDI Option	●	●	●	●
Dynamic Filtering For Better Sound	●			●
CD Audio In	●			●
Can Use Microphone And CD During Digital Playback	●		●	●
SMT Board For Better Reliability	●		●	●
Free Speakers	●			●
CD-ROM Interface (AT-Bus)				●
Panasonic Interface				●
Mitsumi Interface				●
Sony Interface				OPTION
CD-ROM Interface (SCSI)				OPTION
Microphone AGC Amplifier	●		●	●
Stereo Microphone Input				●
Software Selectable IRQ, DMA & Address Setting Configuration Retained When Power Off				●
Mixer Support From More Than One Source During Recording	●			●
Built-In Amplifier	●	●	●	●
Stereo Lines In And Out			●	●

16-bit COMPARISON

	STEREO				
	AZTECH SOUND GALAXY NX PRO 16	AZTECH SOUND GALAXY BASIC 16	CREATIVE SOUND BLASTER 16 ASP	AZTECH BUSINESS AUDIO BOARD	MICROSOFT M'SOFT WINDOWS SOUND SYSTEM
No Of Sound Standards	6	6	2	2	1
AdLib	●	●	●	●	
Sound Blaster Version 2	●	●	●		
Sound Blaster Pro II	●	●			
Microsoft Windows Sound System	●	●		●	●
Covox Speech Thing	●	●			
Disney Sound Source	●	●			
FM Synthesiser - OPL3	●	●	●	●	●
Digital Software Volume Control	●	●	●	●	●
Digital Bass & Treble Control	●	●	●	●	●
CD Quality Sampling Rate, Record & Playback Up To:	44.1KHz	44.1KHz	44.1KHz	44.1KHz	44.1KHz
Game Port, With MIDI Option	●	●	●		
Dynamic Filtering For Better Sound	●	●	●	●	●
CD Audio In	●	●	●	●	
Can Use Microphone And CD During Digital Playback	●	●	●	●	●
CD-ROM Interface (AT-Bus)					
Panasonic Interface	●	●	●	●	
Mitsumi Interface	●	●		●	
Sony Interface	OPTION	OPTION		OPTION	
CD-ROM Interface (SCSI)	OPTION			OPTION	
Microphone AGC Amplifier	●	●		●	●
Stereo Microphone Input	●	●		●	●
Software Selectable IRQ, DMA & Address Setting Configuration Retained When Power Off	●	●			
Mixer Support From More Than One Source During Recording	●	●	●	●	●
Option For Upgrade To 16-bit Wave-Table Synthesis	●	●	●		
Stereo Lines In And Out	●	●	●	●	●

ACCESSORIES

FREE DELIVERY

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SONY ADAPTOR

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SCSI EXTENSION BOARD

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FREE DELIVERY

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8-bit MONO

2 SOUND STANDARDS



SOUND GALAXY BXII EXTRA

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- *2 Sound Standards*
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- *Dynamic Filtering:*
  For Better Sound Reproduction
- *CD Audio In:*
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- *Mixer Support:*
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8-bit STEREO

5 SOUND STANDARDS



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- *Software Configuration Settings in Eeprom*
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16-bit STEREO

2 SOUND STANDARDS



SOUND GALAXY BUSINESS AUDIO BOARD

- *16-bit Stereo Sound Card with CD ROM Interface*
- *2 Sound Standards*
  AdLib, Microsoft Windows Sound System
- *FREE Headphones & Personal Microphone*
- *Ideal for the Serious Business User*
- *CD-ROM Interfaces (Built-In) For:*
  Panasonic & Mitsumi Drives - Optional Upgrade to SCSI. Optional Sony Connector (See Above)
- *Software Control of Volume, Bass & Treble*
- *Built-In Amplifier*
- *6 Software Titles Included*
- *FREE Dynamic Microphone from Silica*

16-bit STEREO + CD ROM INTERFACE **£79**

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16-bit STEREO

6 SOUND STANDARDS



SOUND GALAXY BASIC 16

- *16-bit Stereo Sound Card with CD ROM Interface*
- *6 Sound Standards*
  AdLib, Sound Blaster v2, Sound Blaster Pro II, MS Windows Sound System, Covox Speech Thing, Disney Sound Source
- *FREE Headphones*
- *CD-ROM Interfaces (Built-In) For:*
  Panasonic & Mitsumi Drives. Optional Sony Connector (See Above).
- *Software Configuration Settings in Eeprom:*
  Card Doesn't Reset on 'Power-Off'
- *Software Control of Volume, Bass & Treble*
- *Built-In Amplifier & MIDI Interface*
- *14 Software Titles Included + Utilities & Drivers*
- *Wave Power Upgrade (See Above)*

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16-bit STEREO

4 SOUND STANDARDS



SOUND GALAXY PRO 16 EXTRA

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- *4 Sound Standards*
  AdLib, Sound Blaster v.2, Sound Blaster Pro II, MS Windows Sound System
- *FREE Headphones & Personal Microphone*
- *CD-ROM Interfaces (Built-In) For:*
  Panasonic & Mitsumi Drives - Optional Upgrade to SCSI. Optional Sony Connector (See Above).
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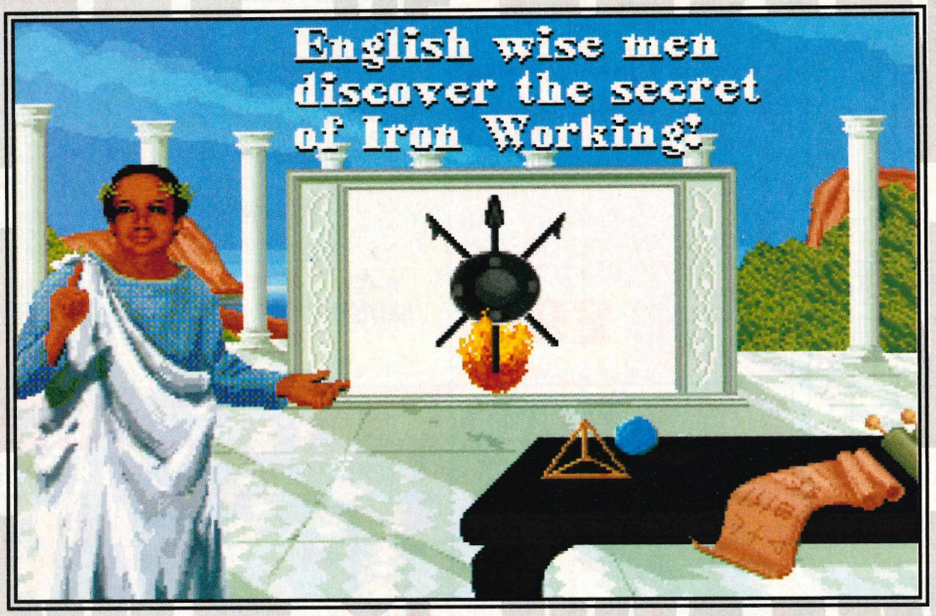
Martyn Brown's *Classic game of the month*



Civilization



"Civilization just left me awestruck. The attention to detail and the feeling it generated that it really was YOUR civilisation, YOUR country, YOUR people, etc, was fantastic. I'm a huge fan of Sid Meier games and I loved Railroad Tycoon too — perhaps because it is so completely different to the games I'm used to co-ordinating."

This is the second time that Sid Meier's classic world conquest game has been featured on this page.The object of Civilization is to advance your primitive tribe by making technological advances, exploring the world and conquering rival nations. It poses the old 'guns or butter' question: building libraries and colosseums in times of war is not a good strategy, while putting all your resources into armies and weapons won't keep your citizens happy during more peaceful times. The game can be won either by wiping out all enemy civilisations or by being the first nation to win the space race and colonise Alpha Centauri. When you complete the game, you are given a rating, according to how successful you have been, so there is always plenty of incentive to go back and try to better your score.

While Civilization is not the most graphically splendid game around, it is certainly one of the most addicitive. It's extremely absorbing, interesting and even educational. You also don't have to be a strategy expert to enjoy it — Civilization will appeal to almost anybody.

PROFILE

Martyn Brown started programming Basic on Clive Sinclair's 'door wedges' in the early eighties, although he began designing board games and writing stories at an earlier age. He taught himself Z80 assembler code and 6502 at college and first got into 16-bit machines with the Atari ST, followed by the Amiga in the mid eighties. Since forming a PD library and Team 17, Martyn has been involved in producing more than 10 games, most notably the Amiga versions of Alien Breed, Alien Breed 2, Project-X, Body Blows and Super Frog. On the PC, Team 17 have just converted Alien Breed (reviewed last month), and Body Blows (PC Review's October cover disk demo). Although they intend to release more PC conversions next year, Martyn considers it to be a development minefield because of the variety of machine specifications: VGA cards, sound cards, etc. However, Team 17 will be launching a new breed of exciting games in the future, of the sort people wouldn't normally associate with the PC.



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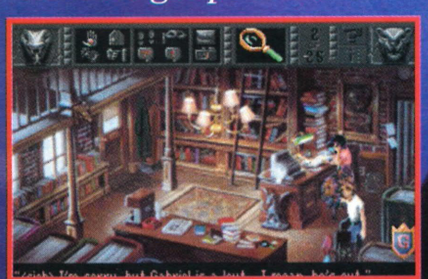
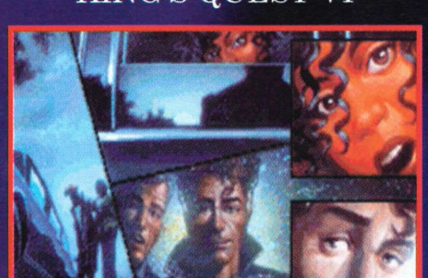


A nightmare comes to
life in modern-day
NEW ORLEANS



Written by JANE JENSEN
Co-Author of
KING'S QUEST VI



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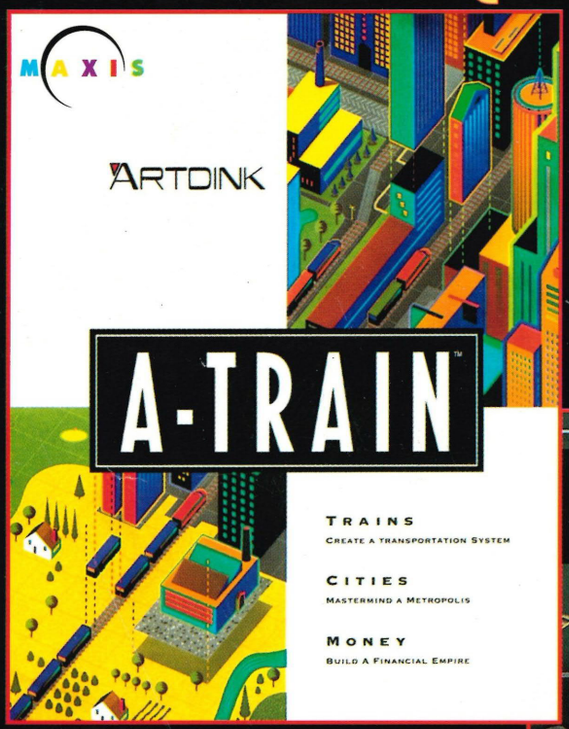

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Cities all over the world are masses of idling, polluting, honking cars. We need mass transit - but local, state and national governments haven't been able to make it work. If you can create and operate a successful privately held mass transit operation, you'll do the world a service and reap huge financial rewards - but that's only the beginning...

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"One of the best strategy games available." PC FORMAT

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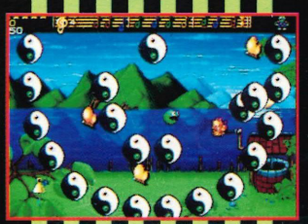
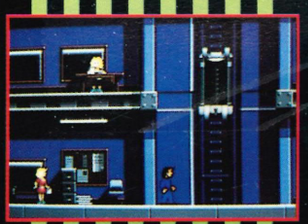
A-TRAIN



JOHN MADDEN FOOTBALL



WIZKID



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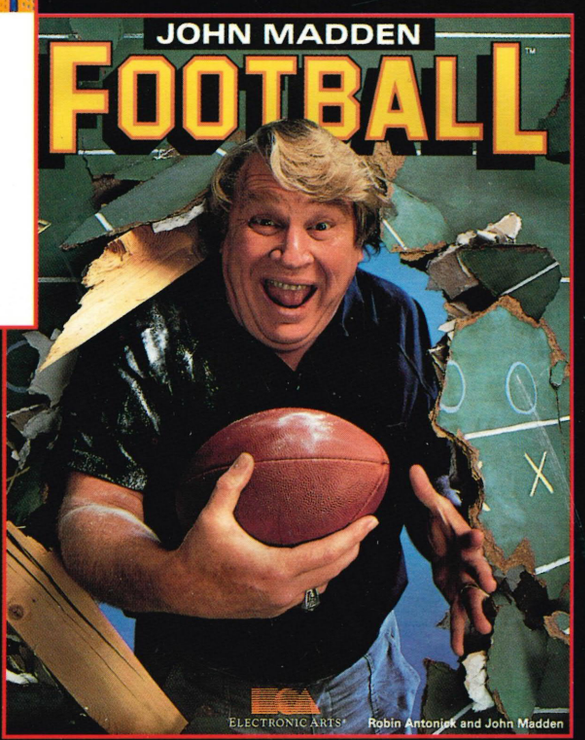

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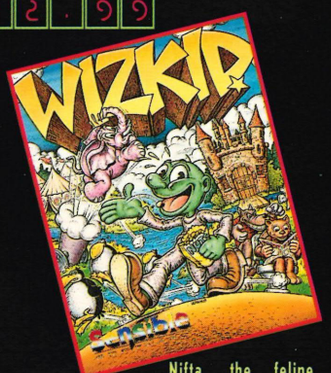

Nifta, the feline family friend, has been catnapped, along with Wizball and Wizard. They've all been thrown into the dungeons of Zark's castle - except Nifta, who has been imprisoned in the Turtle Jail. Got all that? Good, and that is just the start of your adventure. Go for it!

Gorge yourself on a feast of crazy, zany graphics and a gameplay that will have your joystick pleading for mercy.

"Skilful, slick, bags of humour."
PC FORMAT

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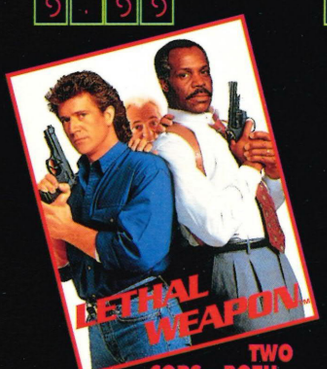

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It's mean, fast and...LETHAL !

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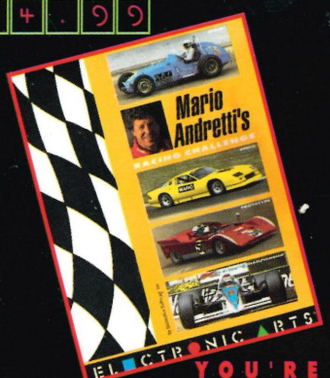

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