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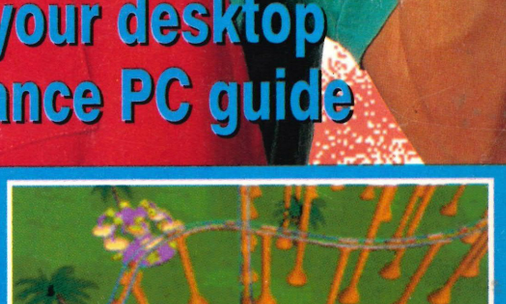
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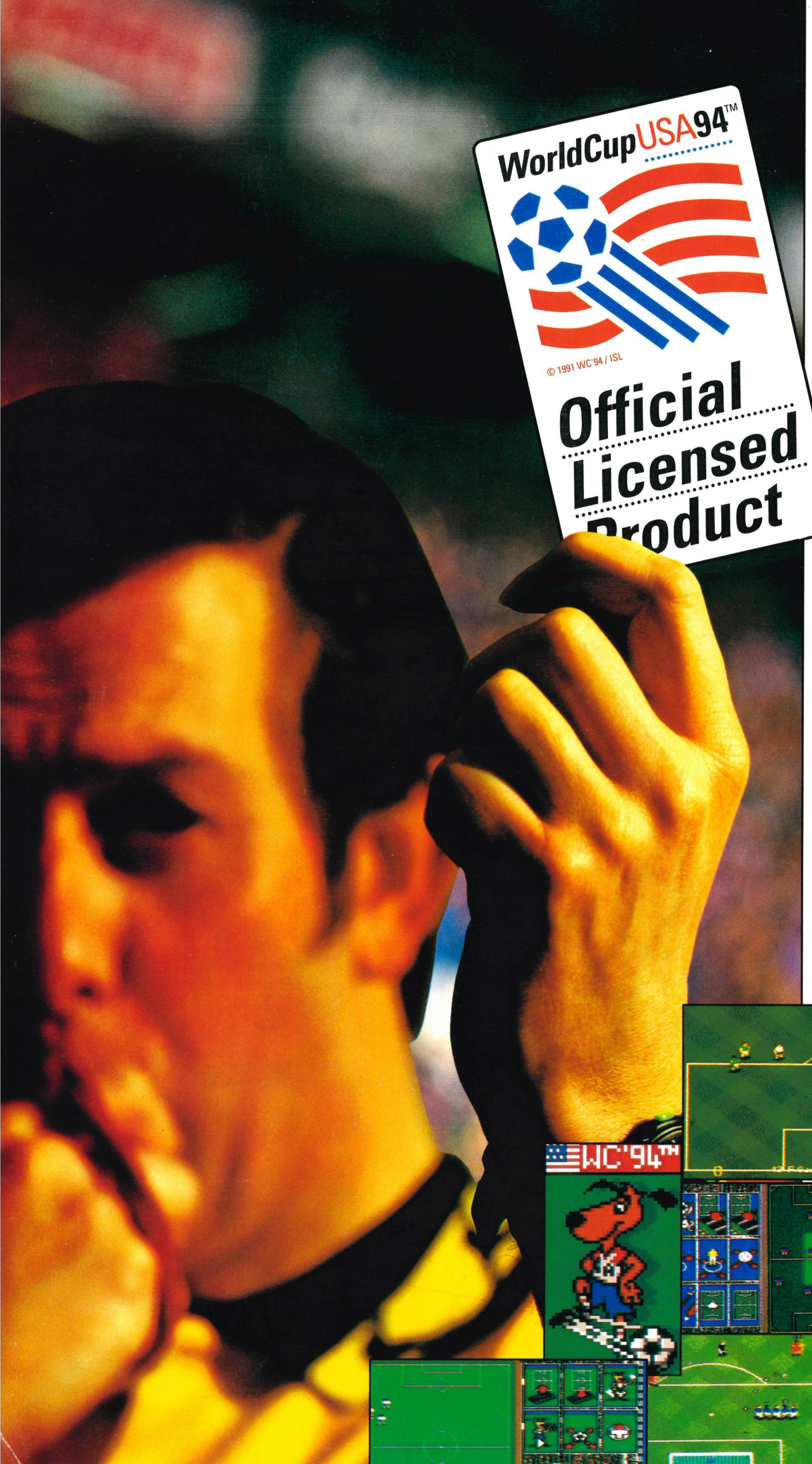
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enough to carry the



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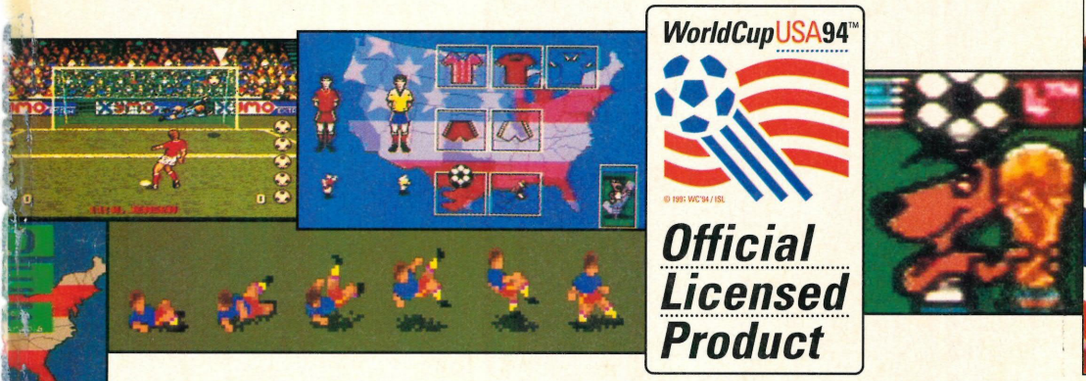
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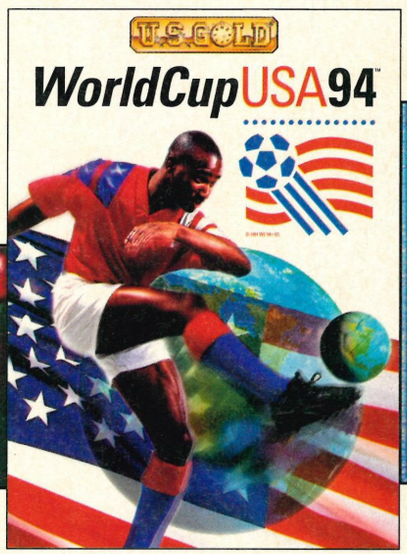
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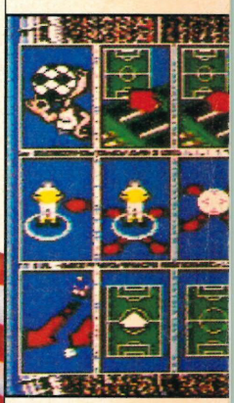
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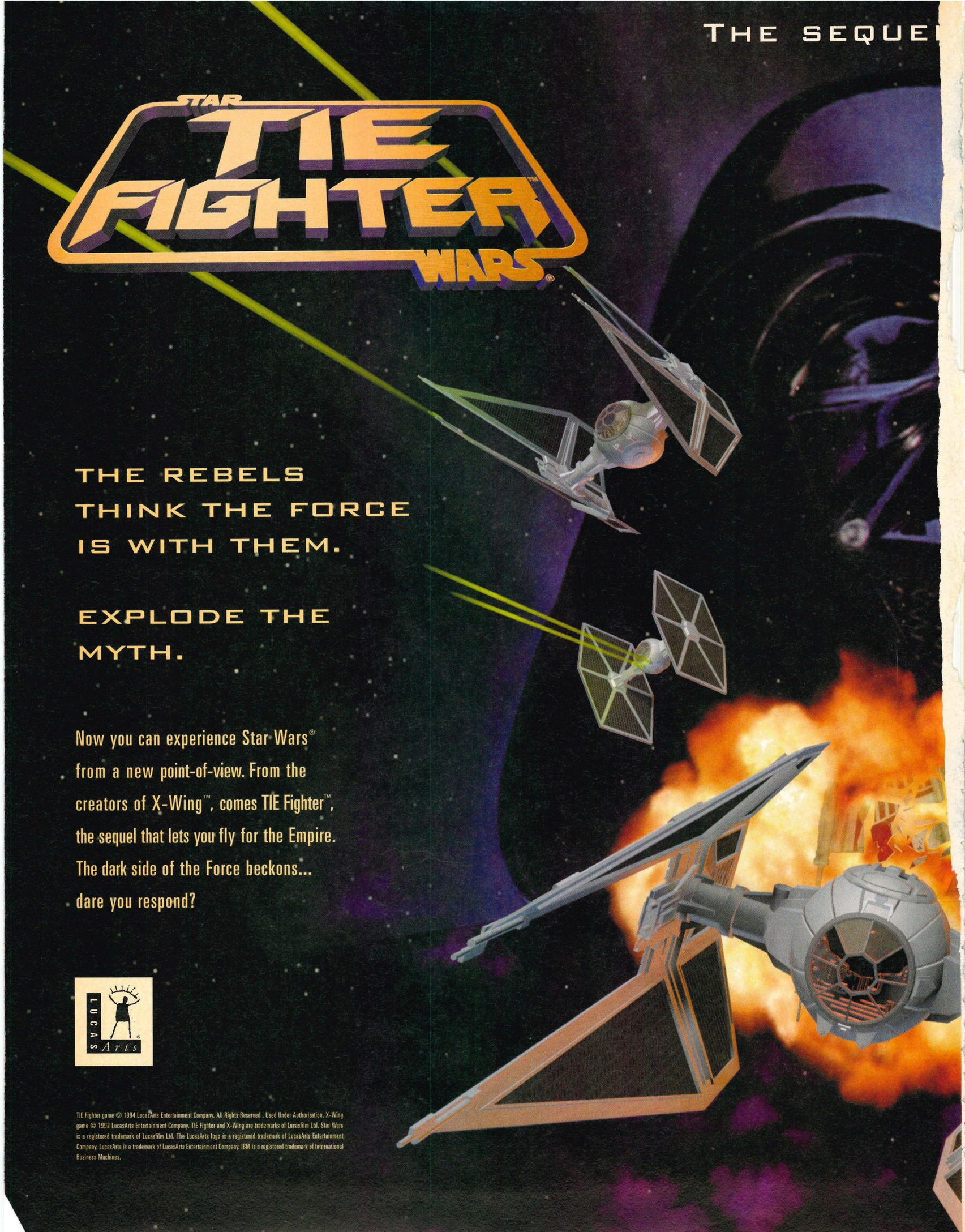
WorldCupUSA94™

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PC REVIEW

Issue 34

PC Review is published by EMAP Images, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU
Tel (071) 972 6700
Fax (071) 972 6710
E-mail: pcreview@CIX.compulink.co.uk
Printed in the UK

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Tower Publishing (0858) 468888

Page output and colour origination by Team Graphics, 105-109 Oxford Street, London W1.
Printed by Duncan Web, Farleigh Hill, Tovil, Maidstone, Kent
Distributed by BBC Frontline.

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SUBSCRIPTION RATES (PER 12 ISSUES)
United Kingdom and BFPO £47.40
Europe and Eire (airmail) £55.00
Rest of the World (airmail zone 1) £64.00
Rest of the World (airmail zone 2) £75.00

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Win Intel Overdrive processors

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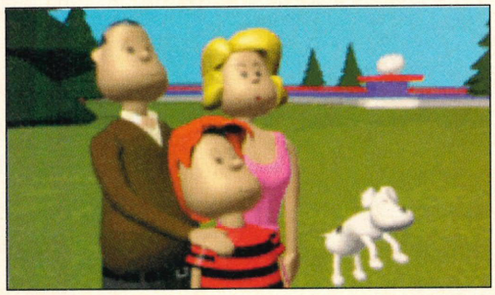




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Cover disks

On this month's PC Review cover disks there is literally something for everyone. First up is Tactical Manager, a football strategy game for all you soccer nuts; a Windows game, Rats! for you would-be rodent exterminators; and to round it all off, we've got playable demos of three top, Super VGA edutainment titles, namely Rock and Bach Studio, Wild Science and Mysteries at the Museums.

TACTICAL MANAGER

3.5" disks only

Tactical Manager is a football management game which thankfully concentrates on building up a quality team and playing the matches — you don't get bogged down with ground improvements, or negotiating with sponsors.

As such, it has definite leanings towards the psychological: your players' attributes concern their morale and attitude as well as their tackling, shooting and passing skills. A player's morale is boosted by scoring goals, receiving pay rises — and not being substituted too often!

Tactical Manager can be played by up to 46 people at once, and this demo preserves the multi-player aspect of the game, so bring your friends round for a PC Review cover disk party!

Tactical Manager will be welcomed by the football management purist, but it's also easy enough to get into for anyone not yet bitten by the fantasy football bug. This special abridged version of the game enables you to try out and play around with all the game's features over seven matches — these matches can be league games or cup games, or even European friendlies.

Tactical Manager also incorporates animated 'highlights' of the game during play. Whereas the full version of the game will contain over 50 different digitised animations; this demo of Tactical Manager, for reasons of space, is limited to seven.

Hardware required

At least a 286-based PC with VGA graphics and a mouse.

How to start

You need to install Tactical Manager to your hard disk drive from the cover disk. Put the disk in your floppy disk drive, log on to it and type PCR [Enter] to bring up the installation menu. The menu should be self-explanatory, but there are more detailed instructions, on the opposite page, if you have problems.

Once the program has been copied across to your hard drive and decompressed, simply log on to the directory in which you installed the Tactical Manager demo (the default directory is Tactman) and type

Tactman [Enter]



How to play

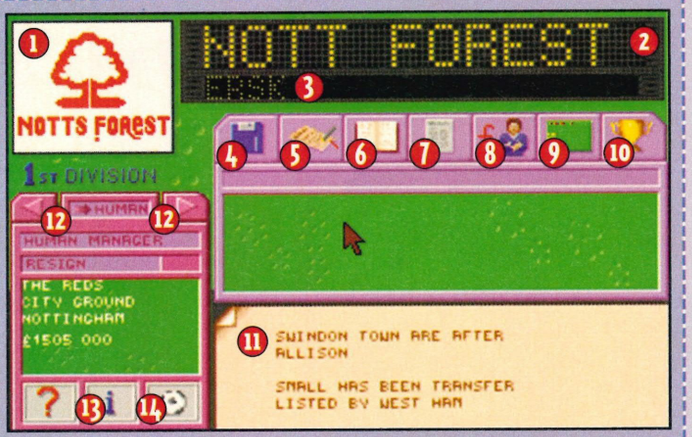
When Tactical Manager loads, this should be the first screen you see. Your first task is to select the team you want to manage. As with Gremlin's Premier Manager games, you can't initially choose from the full football league. You can select a team from the Endsleigh first division to start with. In the full game, you build up experience with this team to help you to get a job with one of the Premier League's glamour sides.

To choose your team and start playing, follow the steps outlined below:

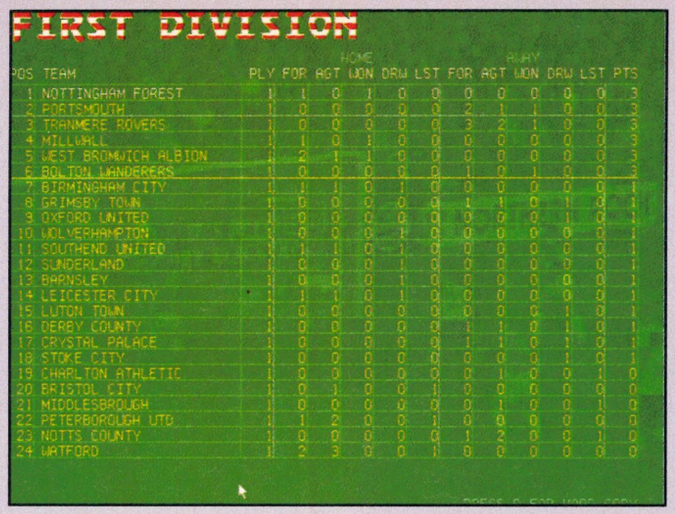
1. Click on the second icon from the left: the pen and paper. This will bring up a green screen which entirely consists of the words EMPTY.

2. Click on the top EMPTY slot. The word should vanish — type in your own name here. Press Enter to confirm.

3. Click the right hand mouse button anywhere on the screen to get back to the EMPTY slots screen. Notice that the top one now has your name on it.



1. **Team's emblem. If this is your team, you can click here to bring up all your player details and select your team.**
2. **Team name**
3. **Team manager**
4. **Click here to start a new game or exit the current one. The full game will have facilities such as saving and loading games here.**
5. **Set up the number of human players in the game.**
6. **View the league fixtures, results — and the available referees!**
7. **Player statistics: top scorers, most bookings, etc.**
8. **Transfer menus.**
9. **View league tables.**
10. **Cup match history and details.**
11. **'Teleprinter' of news of players, weather, etc.**
12. **Use these buttons to scroll through the available teams.**
13. **Options for fine-tuning game performance.**
14. **Play a match!**



4. Repeat steps 2-3 replacing other EMPTY slots with players' names for as many human players as are necessary for your game.

5. Click the right hand mouse button again. This will return you to the opening screen.

6. Locate the bar to the left of the screen which reads HUMAN. Click on the back and/or forward buttons on either side of it to move through the list of the available football teams. When you reach the team that you want to manage, click on it with the left hand button on the MANAGE bar.

7. This will take you to the EMPTY slots screen again. Click (left hand button) on your name at the top. You will now go straight back to the opening screen, but now your name appears as the team manager at the top of the screen.

8. Repeat steps 5-6 again to assign teams to the other players if more than one of you is playing.

From here on, we'll assume that it's just you playing against computer-controlled teams — the procedures, obviously, are the same for each player. Having set yourself up with a team, you need to look at the side you've just adopted and make sure you've got the right formation.

With your team and your name listed at the top of the screen, click on the team emblem in the top left corner to bring up your player details.

To switch players in and out of the team, click on the player to be replaced, then on the player who should replace him.

Some players are more versatile than others. If you like one player to switch from, say, a straightforward midfield role to that of centre-forward and he's capable of doing so, click on the second positional column — the 'role' column — to cycle through the options. This also goes for defender/sweepers, midfield/wingers/forwards, etc.

To the right of the screen are the player attributes. You can further fine-tune and assign roles to each player such as designating them as captain, penalty taker, etc, as listed to the top right. Below this is the list of traits and characteristics for each player. Unfortunately, you can't directly change these, but you can certainly improve their mental attitudes, which affects their playing talents.

Click on the right hand mouse button to go back to the opening screen.

And finally ... it's time to play a match! Click on the ball icon on the bottom left of the screen to see all the matches played. Each match will whizz by until you come to the fixture involving your team. Now you can follow the action via the on-screen commentary at the bottom of the screen and also by watching the animations, of which, in this demo, there are only a limited number.

You can also make tactical switches at any time during the game. Click on the left button to bring up your team details, or make a substitution, or change the overall tactics — options on the bottom left hand side. Click on the right button to bring up team details for your opponent, and assign players to be marked more tightly.

At the end of the match, you can view the remaining fixtures, your league position, the league's top scorers and men of the matches, etc, before it's back to some hard preparation for the next game.

Good luck ... and remember, it only takes a second to score a goal.

How to quit

From the opening screen, click on the disk icon. Then click on the word EXIT.

HOW TO USE YOUR COVER DISKS

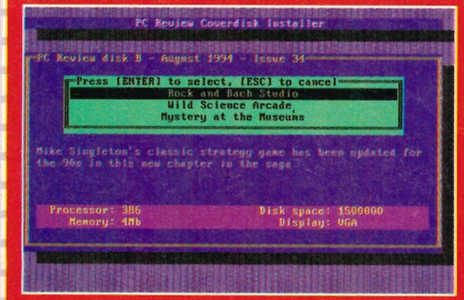
PC Review's cover disks are tested at each stage of production, and rigorously checked for all known viruses. However, if you are new to the magazine, new to PCs, or simply having difficulties using the disks, read on for full instructions of how to use them.

1. Put your PC Review cover disk into your floppy disk drive and log on to the drive, ie, type

A: [Enter]

Your floppy disk drive might be called B:, in which case substitute B: for A: above. We've used A: for convenience, since this is most likely to be your drive letter.

2. Type PCR [Enter] to bring up the installation menu (below).

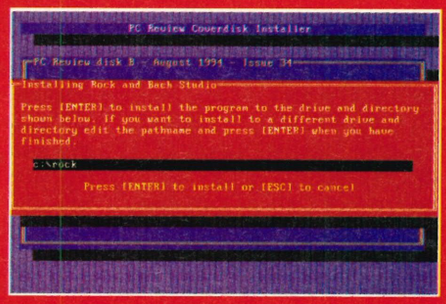


3. Using the cursor keys, select the program you wish to install from the on-screen menu. Check the disk and PC requirements listed at the foot of the screen; you will get an error message, for example, if there is not enough space on your hard disk to install the program. Press Enter to confirm your selection.

4. The programs on the cover disk are compressed, so that we can fit more information on the floppy disk. The installer will decompress these files and copy them to your hard disk. After choosing the program to install, you will be prompted with the name of the drive and directory that the installer intends to decompress the program you've selected to. There's no need to change this default drive and directory, unless, a) your hard drive is not called u.c.C.:, or b) you already have a directory with the same name as that suggested on-screen.

If you do want to change this default, just backspace over the installer's suggestion and type in your own preferred destination, eg, D:\MANAGER, instead of C:\TACTMAN for Tactical Manager.

5. The program files will now be decompressed and copied to your hard disk. After they have done so, you will see a screen explaining how to access the demo from your hard disk. There are also instructions for starting and playing each program on these pages. Press Enter to return to the PC Review installer menu.



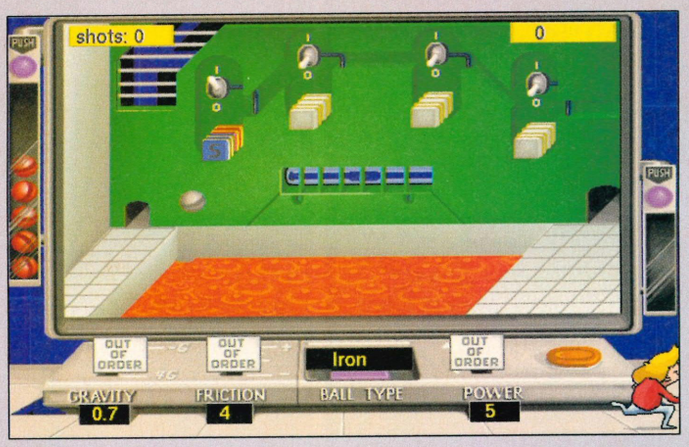
6. Either press Esc to quit the installer, or use the cursor keys to select another program, and run through steps 3-6 again.

Help! I can't get the disk to work

If you're having problems finding your way round the disks, or making them work with your PC, try the PC Review disk helpline.

Disk helpline: (0451) 860770

The helpline operates between 3.00pm and 5.00pm weekdays.



Transport yourself into an arcade game with Wild Science, a playable demo that entertains and teaches young children the basic principles of Physics at the same time. Beautifully drawn in high-resolution graphics, you must understand and master gravity, friction and other scientific laws in order to progress through several puzzling levels.

ROCK AND BACH

3.5" and 5.25" disks

Something for the kids? Well, with Rock and Bach Studio, young children can easily make their very own action-packed music video. This demo not only allows you to choose the line up of your band, but to choose the song, adjust the lighting effects and finally to watch your funky group thrash out a tune.

Hardware required

At least a 386-based PC with 256 colour VGA graphics, 2Mb of RAM and a mouse.

How to start

You need to install Rock and Bach to your hard disk drive from the cover disk. Put the disk in your floppy disk drive, log on to it and type PCR [Enter] to bring up the installation menu. The menu should be self-explanatory, but there are more detailed instructions on page 9 if you have problems.

Once the program has been copied across and decompressed, log on to the directory in which you installed Rock and Bach (the default is Rock) and type

RBDEMO [Enter]

How to play

To hear the band play a tune, firstly choose a song from the song list that is located in the bottom-left corner of the screen and then click on 'GO' to listen to the song.

Rock and Bach allows you to play any one of eight songs and you can adjust their speed and tempo by dragging the purple ball left and right on the speed bar at the top of the screen.

Clicking on the cartoons in the top-left of the screen enables you to change both the rhythm guitarist and the drummer. While clicking the cartoons on the right, swaps the bassist and lead guitarist.

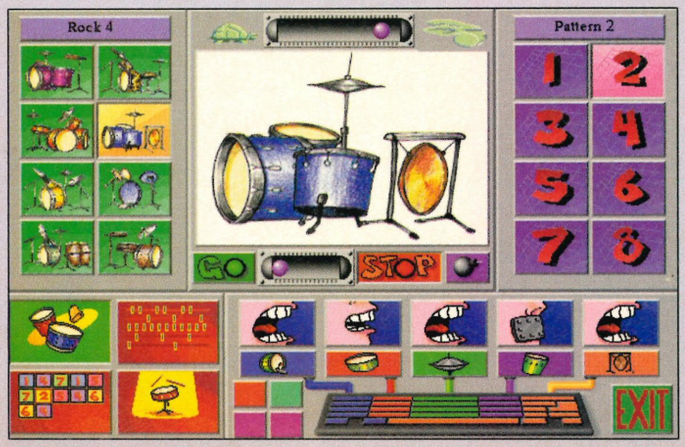
Finally, clicking on the spotlight icons in the bottom-right corner of the screen allows you to change the lighting effects — mixing colours and making them flash and cycle.

Controls

Every action in Rock and Bach Studio is controlled using the mouse.

How to quit

To end the demo, click the 'EXIT' icon.



WILD SCIENCE

3.5" disks only

Hardware required

At least a 386-based PC with 256 colour VESA graphics, 2Mb of RAM and a mouse.

How to start

You need to install Wild Science to your hard disk drive from the cover disk. Put the disk in your floppy disk drive, log on to it and type PCR [Enter] to bring up the installation menu. The menu should be self-explanatory, but there are more detailed instructions, on page 9, if you have problems.

Once the program has been copied across and decompressed, log on to the directory in which you installed Wild Science (the default is Wild) and then type

Science [Enter]

How to play

Wild Science features a helpful tutorial that takes you slowly through the options, but the idea of this playable demo is to use angles, gravity and friction to shoot a ball into various holes scattered around an electronic game-world.

For example, on the first level just click on the puck-like target and drag it to where you want to aim the ball, ie the hole. Next, simply click on the 'SHOOT' button and the ball will start to move.

On the second level the idea is to shoot the ball and to break all the green targets. Again, you must position the puck to aim the ball and if you calculate the correct angle, bounce the ball off the wall and smash all of the targets in one shot you'll get maximum points.

On the next level, you will have to play around with the gravity switch in order to shoot the rubber ball through the three holes on the left. Sorry, I'm not going to give you any clues this time. Have fun.

Controls

Every action in Wild Science is controlled using the mouse.

How to quit

Press Q at any time to end the demo.



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Out of the thousands of disks we duplicate every month, a very small number may get damaged during transit. If you think your disk might be faulty, we'll replace it. Just pop the disk(s) in a jiffy bag with a self-addressed envelope and postage to the value of 28p (55p from overseas) and the form below (filled in), and send the package to the following address:

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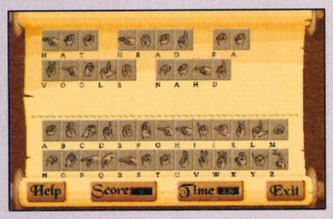
GAMETEK

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MYSTERIES AT THE MUSEUMS

3.5" disks only

Something very mysterious is happening at the famous Smithsonian Museum in Washington D.C. It appears that many priceless historical treasures have been misplaced and, as the authorities have asked you to help, you must search the museum, solving tricky puzzles in order to find them.

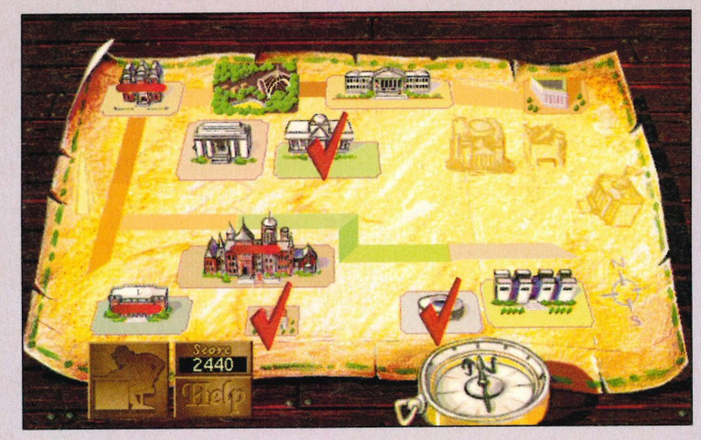


Hardware required
At least a 386-based PC with 256 colour VESA graphics, 2Mb of RAM and a mouse.

How to start
You need to install Mysteries at the Museums to your hard disk drive from the cover disk. Put the disk in your floppy disk drive, log on to it and type PCR [Enter] to bring up the installation menu. The menu should be self-explanatory, but there are more detailed instructions, on page nine, if you have problems.

Once the program has been copied across and decompressed, simply log on to the directory in which you installed Mysteries in the Museum (the default is Mystery) and then type

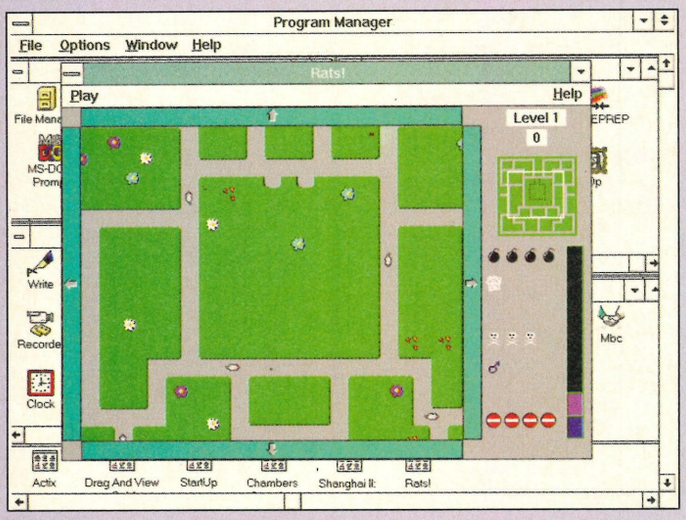
MSTDEMO [Enter]



How to play
When the map of the Smithsonian Museum appears (pictured above), click on any of the buildings highlighted with yellow, to play a puzzle.

Controls
Click on the pictures with the mouse pointer to move or reveal them.

How to quit
To end the demo, click the 'EXIT' icon.



RATS!

3.5" and 5.25" disks

Ugh! Rats! They're everywhere. Hundreds of these sewer-dwelling rodents have invaded your neat and tidy maze and in this six level playable demo it's up to you, as a top-class Verminator, to catch them, poison them and then blow them up. It's a dirty job, but somebody's got to do it. And that someone's you.

Hardware required
A 386-based PC, Windows 3.1, 2Mb of RAM and a mouse.

How to start
You need to install Rats! to your hard disk drive from the cover disk. Put the disk in your floppy disk drive, log on to it and type PCR [Enter] to bring up the installation menu. The menu should be self-explanatory, but there are more detailed instructions, on page nine, if you have problems.

Once the program has been copied across and decompressed, load Windows 3.1 and select RUN from the Program Manager's File menu. Now, you can do one of two things: in the RUN dialogue box type

C:\RATS\SETUP [Enter]

to create an icon for Rats! that you can double-click on to start the game at any time, or type

C:\RATS\RATS [Enter]

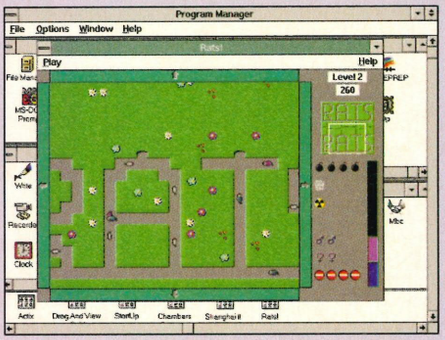
to start the game straightaway.

How to play
All you have to do is kill all the rats before they have a chance to mate and overrun the maze. To kill a rat, simply pick up the objects which appear at random on the right hand side of the window (bombs, poison, change, sex gizmos etc) and then place them in the maze.

The bar graph on the right of the window tells you how many male (blue) and female (pink) rats there are left alive in the maze and if the bar reaches the top of the screen you have been overrun and have lost the game.

If you kill one sex of rat you will then be given the maximum number of objects so that you can quickly finish off the unfortunate and frustrated remaining sex.

You can move around a maze by clicking on the scroll buttons, by pressing the arrow keys, or by clicking on the map of the maze shown in the top right hand corner of the window. Once you have reached the first level of a stage (Grass, Desert, Ice or Hell), you can start your next game from that level by selecting the stage from the Play menu, rather than starting right at the beginning.



How to quit
Click 'Play' on the menu bar and then choose 'Exit' to quit the game.

Please note:

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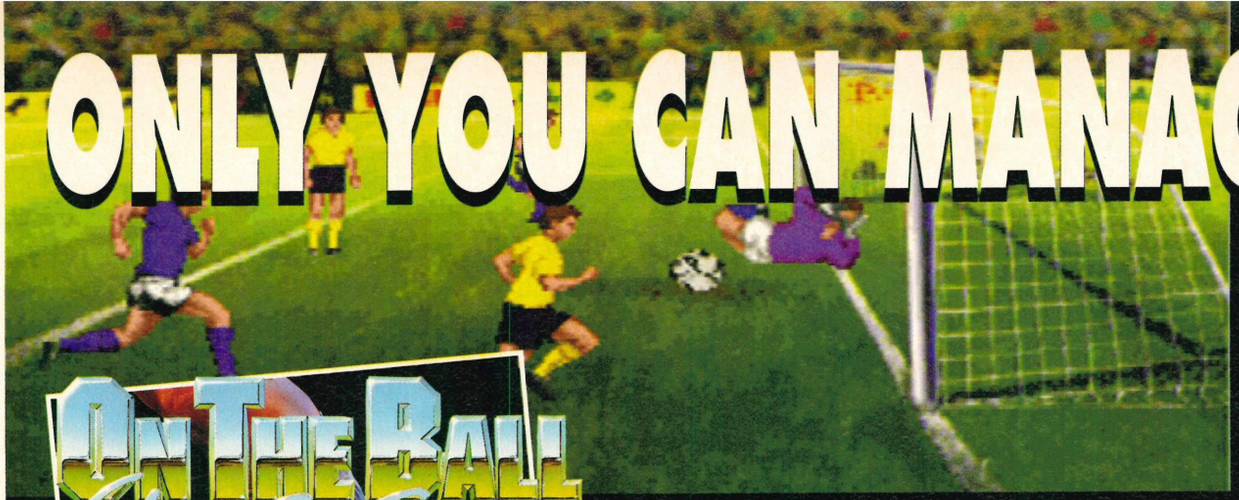
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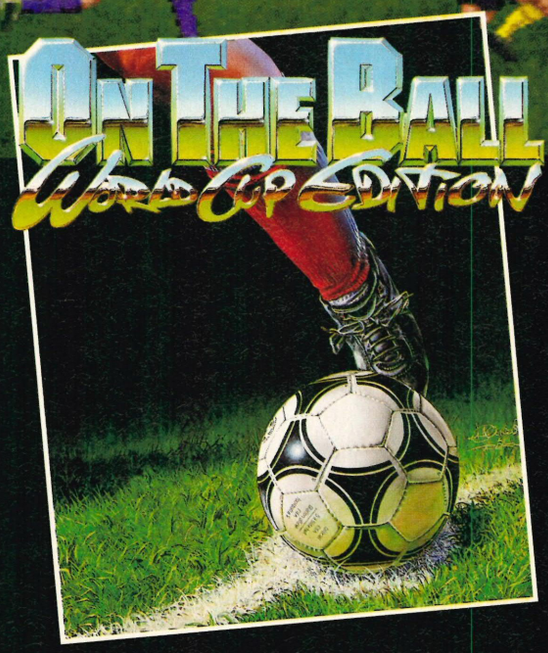
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**Problems with your cover disk?
See pages 9 and 10 for full instructions and helpline details**

ONLY YOU CAN MANAGE!

Sports

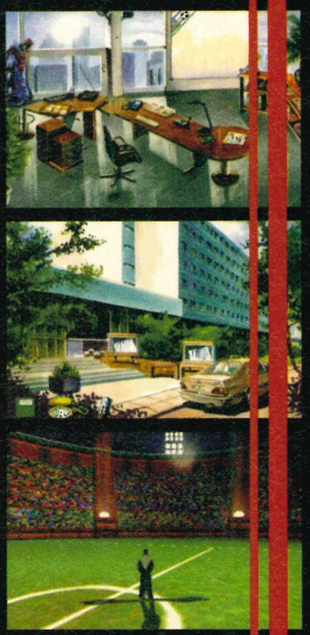




Stunning World Cup football management, you can even turn the clock back to the qualifiers, but this time you make sure England get through!

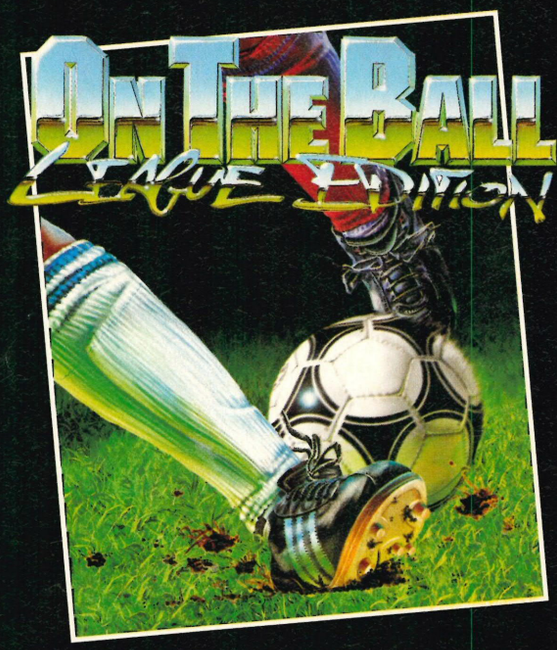
Featuring: Five difficulty levels: 1 - 4 players: full training sessions (18 styles): full World Cup programme, or start with qualifiers!: comprehensive editor for matches, groups, players etc.: group and individual pep-talks: strategy sessions: view your opponents matches: six playing styles: create your own weekly and daily schedule: animated match highlights: make in-match changes to team and playing style: in-match commentary (spoken on CD). And more!

Out: End June, PC, Amiga 1meg, Amiga 1200



COMING SOON

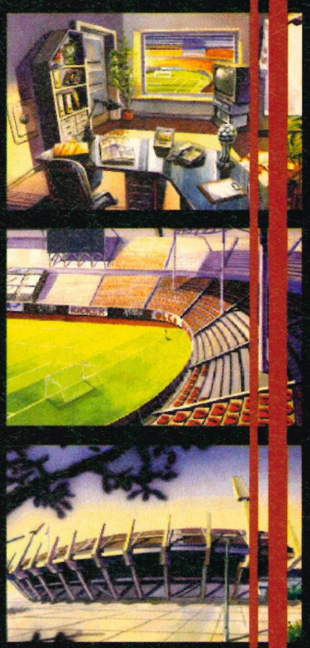




Combining meticulous detail and realism with sensational animated graphics and irresistible presentation, this game will inspire the football strategy genius in you.

Featuring: Unique digitised TV style match coverage: running commentary (spoken on CD): training seminars: sponsorship: home and foreign transfer lists: comprehensive data and statistics: team finances and morale: player and manager politics: expert opinions: press praise and criticism: cup conditions: uniquely accessible interface: 1 - 4 players. And still more!

Out: End August, PC, Amiga 1meg, Amiga 1200



EVERYTHING BEFORE WAS JUST TRAINING.



CD-ROM features both League and World Cup

ASCON

Daze Marketing. Tel: 071 328 2762

Thrills, spills and paying the bills

In Theme Park – the first of Bullfrog's Designer Series – you design and build a dream world. From the hairpin bends of the Race Car Ride to the gravity-defying corkscrews of your 100mph Roller-coaster, the aim is to complete the most jaw-dropping collection of thrill rides on Earth.

Trouble is, you have to run it in the real world, where every decision affects the profitability of your business. The salt on the fries, the cost of side-show prizes, the money invested in research – it's all vital. Three levels of difficulty let you choose between battling on the stock exchange, or simply admiring the view. But make sure the catering's up to scratch, or your customers could put a foot in the contents of every upset stomach!

So enjoy a day out at Bullfrog's Theme Park – it's a white-knuckle ride into the world of big business.



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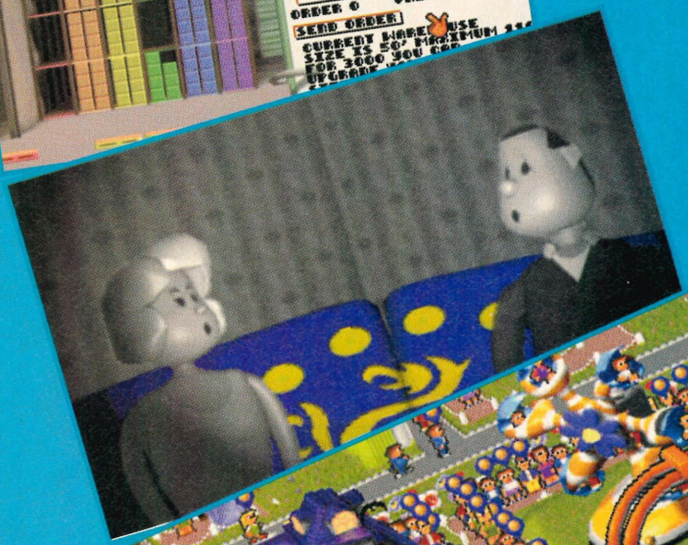
Theme Park is also available from EA Direct. For more information call 0753 546 465 or write to Electronic Arts, 90 Heron Drive, Langley, Slough, Berks SL3 8XP.

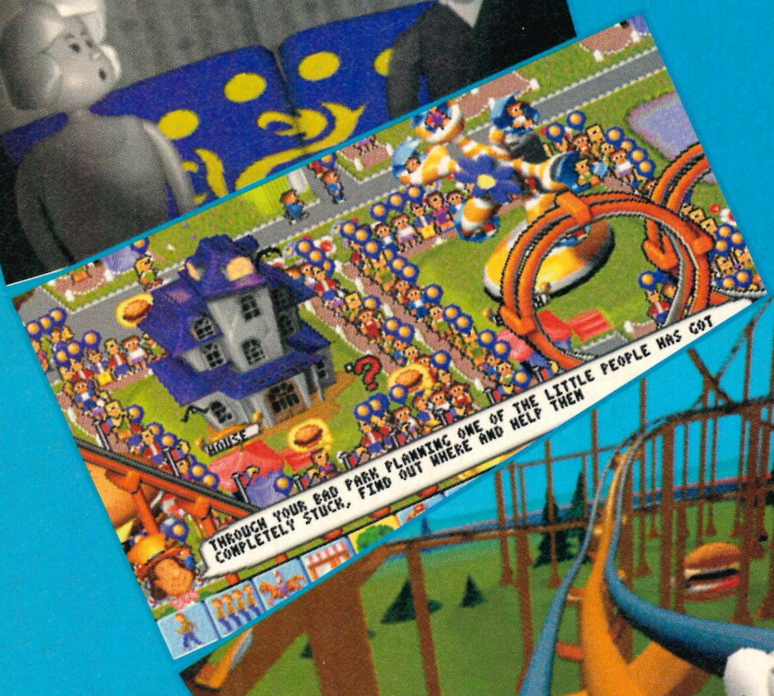
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News

Amstrad buys Viglen for £60m

In the next step in Amstrad's plan to build up a portfolio of stand-alone businesses, Alan Sugar has bought the PC manufacturer Viglen for about £60 million.

The two-part deal involves an immediate £30 million payment to Viglen's owners and another £30 million payment deferred for three years which depends on Middlesex-based Viglen making £27 million total profit over the same time.

Viglen, which employs 180 people and sells direct to the public, currently has sales of £72 million and pre-tax profits for the year to 31st March 1994 of £9million. Cash-rich Amstrad has already bought Danish mobile phone group Dancall and two-thirds of phone makers Betacom as part of its diversification plan.

Publish and be scanned

The Logitech ScanMan 256 hand-held scanner is to be bundled with Corel Ventura desk-top publishing software and sold for £249.

The 256 gray scale scanner offers virtual page scanning for up to A3 sized images as well as TWAIN, OLE and OCR compatibility. It comes with FotoTouch Color software which enables colour highlights to be added to gray scale and black and white images and also to produce effects such as smooth, sharpen, lighten, darken and negative effects.

Corel Ventura combines Ventura Publisher and DataBase Publisher and font, photo and clipart libraries.

Microsoft in sound deal with Creative

Microsoft, creators of MS-DOS and the Windows GUI, and sound specialists Creative Technology have formed a powerful alliance to develop PC sound capabilities.

The ultimate goal of the deal is to open up and develop audio standards and digital signal processing in both business and home computing. Areas of research will include voice recognition and text-to-speech interfaces.

This "strategic relationship" will also mean that support for the Creative Technology Sound Blaster 16 will be included in all future Microsoft products and Windows Sound System 2.0 software will be included with Singapore-based Creative's sound boards.

"This is a win-win opportunity for both companies," said Sim Wong Hoo, chairman and chief executive officer of Creative Technology.

Microsoft's Joachim Kempin, said: "We've been told by our customers that 100 per cent Sound Blaster compatibility is a market requirement. Sound Blaster is synonymous with compatibility to game developers and users."

Rock 'n' Goal

Rock band The Scorpions — probably best know for the UK No 1 single Winds of Change a few years ago — have written music to be featured on US Gold's World Cup USA '94 game.

"The band loves video games and we've been looking forward to be involved with this one," says Don Maggi, spokesman for the German band's management company.

"While we're touring the US during the World Cup, we will have our own tournament going on backstage and on the bus!" adds lead guitarist Rudolf Schenker.

The band's No Pain No Gain song has also been adopted as the official anthem for the German Soccer League.

Interactive Fringe fun

Writer and journalist Dan O'Brien is to present an hour long one-man show featuring the latest in multi-media equipment at this year's Edinburgh Fringe.

The show, Caught in the Net, documents the history of hacking and the wonders of Internet, the international data network, which has more than 13 million members worldwide.

O'Brien — who writes for The Guardian, Spitting Image, Radio 4's Week Ending and the technical pages of Personal Computer World magazine — will perform most nights from 10th August to 3rd September at Venue 33, The Pleasance, 60, The Pleasance, Edinburgh, from 12.15am to 1.15am. Ticket prices, top price £5.



Sega eyes up PC

Sega is believed to be considering developing some of its more adult-orientated console titles for PC CD-ROM. Tough times in the console market and increasingly expensive development costs are believed to have pushed the company to view the move as a way of boosting revenue without effecting its core business.

VR treatment for phobias

Virtual Reality technology is being used to treat people with phobias such as fear of heights. Doctors using the Provision 100 Virtual Reality System, made by Bristol-based VR applications specialist Division, created a café on an elevated patio with a plank leading to a bridge. Hills and water completed the imaginary world.

Wearing stereo vision head sets, 32 volunteers "entered" the café, crossed the plank and explored the bridge. Heart rate, blood pressure, stress and anxiety were all monitored. After experiencing the virtual encounter with heights and depth, the volunteers then experienced two real-life encounters — including going up in a glass-sided lift. Doctors claimed a 90 per cent success rate.

Dr Ralph Lamson, of the California-based Kaiser-Permanente Medical Group, said, "Virtual Therapy gives the individual an opportunity to approach the thing they're fearful of in a virtual environment.

"Being immersed in a virtual, feared situation is very close to the real situation. In addition, after the virtual therapy, the participants feel as if they have already had a success. This appears to be a strong confidence builder."

Following these preliminary results, follow-up studies are now planned.

Breaking TIEs

LucasArts, the US software house behind best-sellers such as X-Wing, Rebel Assault and Sam and Max, has parted company with its long-time UK distributor US Gold.

The Californian company's future releases, starting with TIE Fighter, the next program in the Star Wars series, will be handled by Virgin Interactive Entertainment. Virgin is widely recognised as a fast growing force in sales, marketing and distribution in Europe, since it already owns Westwood Associates in the US, and has a stake in Revolution Software. The screen saver Stars Wars Entertainment Pack will follow hot on TIE Fighter's heels, with the long-awaited Steven Spielberg collaboration The Dig now being postponed until next year.

The deal is obviously a blow to US Gold, having built up the LucasArts brand name in Europe over the past seven years, and especially as the company went public as part of the Centregold group of companies earlier this year.

US Gold's president and CEO, Geoff Brown, has already said that a potential conflict of interests was looming as US Gold furthers development work on its own CD-ROM specific titles. US Gold will, however, still handle LucasArts' back catalogue of software.

Real-Time price tumble

The cost of MPEG Real Time Compression has been slashed from £15-£20,000 to just under £900 by a new hardware board launched by multimedia software and hardware developers SAI Technologies.

The company claims that its MPEG RTE full length PC compatible ISA board will accept composite video input and encode the ISO 111722 MPEG1 Video standard in real time. It also supports video preview during capture and has PAL/NTSC inputs.

"This development represents a major revolution in Digital Video," claims Paraag Mehta, product manager at SAI Technologies.

According to Mehta, "Currently MPEG1 Real-time encoding solutions cost between £15, 000 and £20,000. We have cut that price to £895. "

"The quality on expensive encoders is obviously better, but for the majority of applications clients cannot afford to spend this amount of money. With our product, using MPEG technology has now become a reality for a majority of developers."

Playback can be achieved at 30 frames per second on 486-based machines by special MPEG software or, for instance, Sigma Design's specialist Reel Magic full-motion video playback card.



EDITOR'S COMMENT

Whatever happened to ...?

If I had a pound for every time a software house said, "It's slipped back another month, I'm afraid," every time we enquired about the whereabouts of a promised game, I'd be a rich woman. Actually, give me 50p a time and I'd probably be able to live off the interest. Slippage, in the software publisher's argot, or just plain old 'delay', seems to be the norm rather than the rule.

Currently topping the slippage charts are Rise of the Robots, previewed by PC Review in October 1993, and now not due out until October 1994, Inferno, which is also back to October (for the moment), Access's 'interactive movie', Under a Killing Moon — was March, was April, and still to make an appearance — Stonekeep, Interplay's RPG-cum-movie, and Steven Spielberg's The Dig .

Games most often 'slip' because the testers keep finding bugs, so they spend months in beta-hell. Sometimes the publishers decide enough is enough, and the game is released, warts and all — with a flurry of patch disks to follow over the next few weeks

But the five above have fallen foul more of the demands of the market. Robots is now subject to a corporate mega-agreement between the original publisher Mirage and Time-Warner, whereby it will appear on 13 different formats in October. Why October? For the same reason that Inferno is now coming out in October: once the game isn't going to make it by March, publishers regard the summer months as a sales desert, and feel they might as well hang on until the more lucrative months coming up to Christmas. The corollary to this is that if you do bring out a quality game in the summer, you can sell bucket-loads all summer and into the autumn. Smart money is on Theme Park to be still high in the charts come Christmas.

Under a Killing Moon and Stonekeep have succumbed to another tendency, that of programmers to keep going. Around February, Interplay decided Stonekeep would have to come out on CD, rather than a possible 22 floppy disks. Suddenly there's a lot more space to fill — all over again. Killing Moon was always on CD — now it's on three.

The Dig has suffered from the software equivalent of 'musical differences': Brian Moriarty has left LucasArts, the project is now scheduled for a CD release; its original co-designer has other things, such as winning a few Oscars, on his plate, and most recently, Lucas has parted with US Gold and teamed up with Virgin in the UK.

What annoys me most is that, almost invariably, games which go through the longest agonies to get released turn out to be the biggest disappointments. Since Inferno, for one, was by far and away the best game I had seen in years, and if The Dig isn't a true ground-breaker then someone should be taken out and shot, this is a worrying state of affairs.

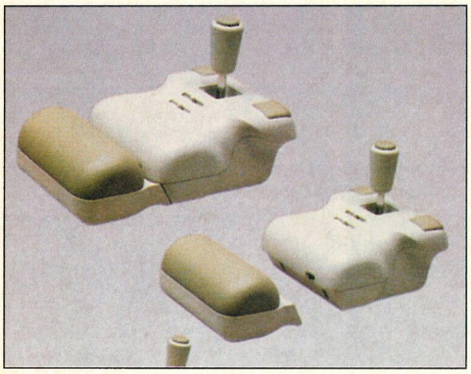
■ Christina Erskine

Fun on the mat?



A new line of £6.99 mouse mats containing "fun" images such as a pair of boobs, a male torso, a pig, a frog and an owl, has been launched by Mat Label.

Kildare Burrowes, from the Kidlington, Oxford-based company, said, "Let's get a bit of colour and fun on to these functional products which we have to use every day of the week. We do at home, so why not in the office?"



Support role for joystick

For gamers concerned with the dangers of RSI (Repetitive Strain Injury) from a long bout on the favourite flight sim or platform game, Suncom has launched what it believes to be the first joystick that comes complete with a removable padded wrist support.

The AXYS analog joystick has dual case-mounted buttons for left or right-handed use, plus a stick-mounted button. It also has X and Y axis trimmers for tight cursor centring. The joystick, which comes with a one year warranty, sells for £24.99 including VAT.

Dan Zemaitis, marketing manager of Suncom USA, said, "We wanted to design an input device that business people could feel comfortable about having on their desk.

"AXYS provides these professionals with a serious joystick that perfect for productivity, education and entertainment software, whether diskette or CD-ROM based."

PC video kit price cut

The MultiVideo System, the desktop video production unit, has been cut in price from £865 to £595, makers Vine Micros has announced.

The kit allows PC to video transfer and has genlock overlay, a digitiser and chromakey. Genlock allows you to combine live or pre-recorded video with computer generated images, graphics and text. Chromakey puts video images on PC-generated backgrounds.

"The number of PC users wishing to use enhanced video technology is already large and increasing rapidly," said Vine's marketing director Amanda Mallett.

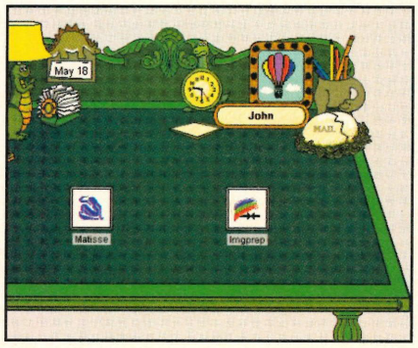
Meanwhile, Singapore-based Aztech Systems has launched the OSCAR MPEG Playback board, which allows you to play back full-screen, full-motion video at 30 frames per second.

The retail price has yet to be announced.

Kids on the line

Last month we reviewed KidDesk from Children's Computing, and we were so impressed we gave it a remarkable five stars out of a possible five. Unfortunately, we forgot to print the right telephone number for Children's Computing.

So, here's the number you need: (0869) 324324.



Merit lands Zeppelin

The dwindling number of UK independent software houses has further decreased with Durham-based Zeppelin being bought by US publisher Merit for an estimated $2.2 million. Zeppelin will be renamed Merit Studios (Europe) although the name may well be continued as a budget label.

Merit is a little known name here, although it has been an established publisher in the US over the past decade. The buy out is seen as first moves to get a slice of the burgeoning European PC and CD-ROM market and access to UK programming talent. Perhaps Merit's best known game was Sink or Swim which was licensed here by Zeppelin.

The last full price Zeppelin release will be Match of the Day and the first product out under the Merit name will be Alex Dampier's Ice Hockey, on PC and CD-ROM.





Doom 2: first pictures

The first pictures are starting to emerge from the CES tradeshow of ID Softwart's Doom 2: Hell on Earth — undoubtedly the most eagerly awaited game sequel of the year.

Doom 2 is due out in September, featuring 50 new levels, extra weaponry, monsters and all-new graphics.

Unlike the first version, Doom 2 will not be released as shareware — but there will be a CD-ROM version.

Pushing the limits





Maxis, creator of SimCity 2000, has produced a brand new city for the Science Museum's City Limits? exhibition.

It's called Scienceville and each game lasts seven minutes. As the Mayor of Scienceville, visitors to the exhibition get the chance to decide whether to build roads or railways to ease congestion; invest in nuclear, wind or hydro power; or spend taxpayers money on education or pollution. The game features a reworked and enlarged toolbar, enabling the game to be played with both mouse and touch screen.

The City Limits? exhibition at the National Museum of Science and Industry, Exhibition Road, London, was opened by Sir David Attenborough and runs through until 24th September 1994.

New launches and price cuts

Amstrad has launched a new 486 option to its range together with new multimedia configurations. The new 486SX-33 Mhz joins the existing SX-25, DX2-50 and DX2-66 models. A new 428MB hard drive option is also now available.

The multimedia system, previously available with a 486SX-25 processor and 130MB hard disk, is now available with a 214MB drive with the SX-33 or DX2-50.

The multimedia pack includes 4Mb RAM, 1Mb Video RAM, CD-ROM, 16-bit Stereo sound card, speakers and CD software.

Meanwhile, the price of entry level 486SX-25 with 130Mb hard drive has been cut by £50 to £799.99 and the top of the range 486DX2-66 with 428MB drive now sells for £1,199.99.

Naughty, but nice ...

A new series of "naughty" talking books for young children has been launched on the PC by Sherston Software.

The 12 stories feature animation, sound effects, human speech and a full-colour storybook. Titles include Bobby the Boastful Bird, Lucy the Little Liar and Tina's Terrible Trumpet. They sell for £9.95 (excluding VAT) or £49.75 (excluding VAT) for six.

Sherston says it does not publish "zap and splat" software is "non-sexist, non-racist and non-violent."

THE COOKE REPORT

Last month I introduced you to the Interactive Multimedia Musician. This month, it's the turn of the Interactive Multimedia Moviemaker.

The unique distinguishing feature of interactive entertainment is the interactive bit. Yes, you can have film and video in it. Yes, you can have music, voice-overs, oil-painted background scenery, whatever. But if it's not all knitted together with subtle game mechanics, seamless interaction, and (in most cases) some kind of player objective/reward, then it's just a mish-mash of different media and a masterpiece of none.

This is totally obvious to everyone except the Interactive Multimedia Moviemaker.

Of course, there's a grand tradition in our industry of claiming that games are somehow elevated by association with Hollywood, rather than the reverse. Ever since Legend endorsed the animated adventure Valhalla with the trade mark Movisoft in 1983, we've been buying interactive movies, playing them (briefly), and then consigning them to the wastepaper bin. Sometimes the wagger-pagger has had to swallow an entire company — Cinemaware being the most obvious example.

Nowadays, when a publisher goes on about how their game is just like a movie, we pay no attention, just as when Rex Harrison sings Why Can't A Woman Be More Like A Man in My Fair Lady. No-one in the audience thinks that he wants Eliza to sport a beard and a smoking jacket. We all know that the reason he's singing the song is that deep down inside he's in love with her and wants a bit of sympathy. This is the driving force of the plot and obvious to everybody. Why can't a game be more like a movie is a popular song with a similar tune, sung by games publishers in love with Hollywood budgets. No-one with any sense takes it seriously.

No-one, that is, except the Interactive Multimedia Moviemaker. The IMM thinks that Professor Higgins is gay and interactive movies really are the future of games. Meet three members of this illustrious band ...

Jerry Samso, Synaptic New Media Productions Ltd

After film school in the early seventies Jerry had a sudden hit with Chicks in Copters, shot on 16mm for a gullible French producer, which took the art houses by storm. His next big thing never appeared. After recently reading an article in Screen International about new media, Jerry has optioned the interactive rights to the new production of I Love You Mr Jones. He has full access to the set and he can even get stuff shot specially for the game. The game, explains Jerry, will be a branching system in which the player chooses and the plot changes accordingly! Nothing else he says makes much sense — Jerry isn't sure, for example, what you mean by memory constraints — but we gather the leading lady is apparently very interested.

Jean-Luc Gote-Brillet

Gote-Brillet first exhibited his Super8 work entitled Xd4P In Transience at the ICA in 1991. An astonishing work, in which Gote-Brillet manually retarded and advanced the stock as it passed through the gate, it clearly stated the tension implicit in a 2-dimensional medium that occupies both physically and conceptually four dimensional space. Gote-Brillet's assistant has now MPEG-encoded the entire sequence on a CD-ROM, which has been painted black, to prevent the laser beam from reaching the surface. It is, says Gote-Brillet, an affirmation of conflict between the plastic medium and projected light. M Gote-Brillet is now in receipt of a $1m grant from the Wuddentop Foundation.

Max Markowizt, Scout Productions

Max has been programming conversions of major arcade hits since 1985. His team have picked up numerous awards, including Best Shoot 'Em Up in 1989, 1990, and 1991. Max has now invested in a Silicon Graphics set-up and a CD-ROM development system: "The market has changed and we have to keep pace. Our next game will be a full interactive movie style product, with a strong storyline, and loads of characters to talk to. The script has been written by a Hollywood screenwriter." His voice is quiet, impressive, confident. He then hands you a game design packed with lists of weapons, power-up specs and end-of-level guardian designs.

Max is obviously sharper than he looks.



That concludes our tour of modern multimedia personalities. I hope you've enjoyed reading about them as much as I've enjoyed meeting them. If you have encountered other types worth a mention in this column, let me know c/o PC Review and we'll add them to the Rogues' Gallery in a future issue.

■ Steve Cooke

PC CHARTS



Disk Based Games

1 Pacific Air War *MicroProse*
2 SimCity 2000 *Maxis*
3 World Cup USA 94 *US Gold*
4 UFO *MicroProse*
5 Hexx/Innocent Until Caught *Psygnosis*
6 Cannon Fodder *Virgin*
7 Battle Isle 2 *Blue Byte*
8 The Settlers *Blue Byte*
9 D-Day *Domark*
10 Detroit *Impressions*

CD-Rom Based Games

1 TFX *DID/Ocean*
2 The Lovers Guide *Supervision*
3 Star Trek: 25th Ann. *Interplay*
4 The 7th Guest/Dune *Virgin*
5 Sam & Max *LucasArts/US Gold*



Rent a PC

Radio Rentals has launched what it claims to be a "risk-free" way of becoming a PC owner — by renting before you buy. The "Option 2 Own" scheme is being run in conjunction with Olivetti. The equipment is bought over 36 months at 0 percent interest and, if after six months you decide not to keep the computer, you send it back with no more to pay.

There are four PC systems to choose from:

- The Olivetti starter pack — 486SX 25Mhz, 4MB RAM, 170 Mb drive, 14" SVGA plus pre-loaded MS-DOS 6.2, Windows 3.1, MS-Works Version 3 and Lotus Organiser — costs £39.99 per month.
- The family pack is the same as above, except it is a 33MHz PC with additional software. The price per month is £47.99
- The Olivetti CD multimedia pack - 486SX 33Mhz, 4MB RAM, 170 Mb drive, 14" SVGA, pre-loaded MS-DOS 6.2, Windows 3.1, MS-Works Version3 and Lotus Organiser, plus a selection of CD-ROM titles — costs £57.99 per month.
- The Olivetti home office pack — 486DX/2 50Mhz, 8MB RAM, 210 Mb drive, 14" SVGA, pre-loaded MS-DOS 6.2, Windows 3.1, MS-Works Version3 and Lotus Organiser, plus Sage Moneywise Version 2, GST Presswords, GST Designworks — costs £67.99 per month.
- Printers are also available under the same scheme — a bubble jet for £10.99 per month and LED laser quality printer for £17.99 per month.

£10,000 brainwave

Get your thinking caps on. Watchmakers Timex is offering a first prize of £10,000 to the winner of a new nationwide technology innovation competition.

Entrants are required to submit not more than 100 words as to how they would use the top prize to put their talent for innovation to good use. Competition details should be available from watch stockists.

The Timex Indiglo Initiative — named after Timex's new Indiglo watch-lighting system — was launched by former England cricketer Ian Botham and Big Breakfast presenter Paula Yates.

In Brief

- **The heavy duty dot matrix printer BP5780 from Seikosha (UK) is now available with a bar code printing facility. It costs £1,599 plus VAT and comes with a 12 months on site warranty.**

- **The move to get entertainment software classified as to its suitability for different age groups would also apply to cover-mounted disks on magazines , according to European Leisure Software Publishers Association. ELSPA and magazine publishers have met to discuss the effects of mandatory and voluntary games classification systems.**

- **Using the Internet, a new guide to the world's largest computer network (£37.59), is one of a series new computer books in the QUE range out this summer. Other new titles in the "Using..." range include Netware 3.12, Unix, Access, Microsoft Works 3 and Word 6 for Windows.**

- **Olivetti has launched its first home multimedia PC — the PCS 40 SX/33 — with built-in CD-ROM drive, Sound Blaster 16-bit sound card, plus speakers plus a bundle of software, selling for £1,399.**

- **Dominik Diamond is set to return as presenter of Channel 4's Gamesmaster when the show starts its fourth series in September. The last series was hosted by actor Dexter Fletcher.**

- **A £10 million expansion plan for Virgin's Megastore in London's Oxford Street will turn it into the world's biggest entertainment store at 60,000 sq ft — 10,000 sq ft more than rival and current title holder HMV, also in Oxford Street.**

Sign of the Times

One year ago...

What was being hailed as the most interesting collaboration between the movie and interactive game world — The Dig — was unveiled at Summer Consumer Electronics Show in Chicago. The combination of Steven Spielberg and LucasArts seemed — and still seems — unbeatable. The Dig is now due out only on CD-ROM in October. Digital Integration's Tornado and Sensible Soccer from Renegade were also impressing our reviewers.

Two years ago...

Philips launched what considered by many to be a potential rival to the PC and CD-ROM — Compact Disc Interactive (CD-i). Two years later and the fight to win the multimedia battle of the homes is still on, but CD-i still has not won the hearts and minds of the interactive generation. CD-ROM remains the clear favourite.

Spectrum Holobyte's Falcon 3.0c, Virgin's Lure of the Temptress, Eternam from Infogrames and EA's Heroes of the 357th were the PC Review high scorers of the month.

SIMple Arithmetic



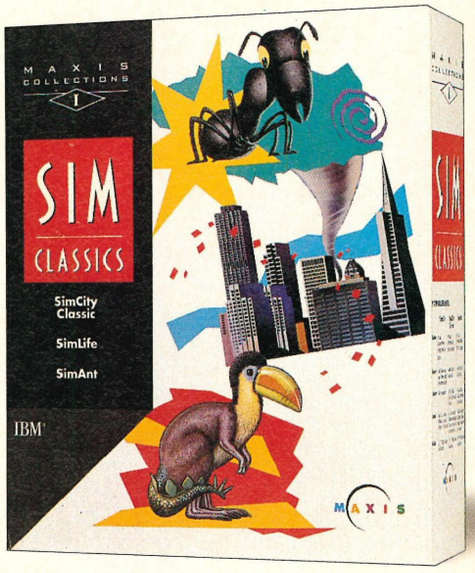




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SimCity Classic is the original version of SimCity that first started the townbuilding craze. SimLife is an incredible genetic laboratory that enables you to create new species and build your own ecosystem. In SimAnt, you'll view the world as leader of an ant colony, doing battle with spiders, lawn mowers and human feet.

These titles will also be available individually in September on the mid-price SimClassics label, along with A-Train and SimEarth. Maxis games always pack in the entertainment. With our three in one collection, we've never packed in more!

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Windows 4

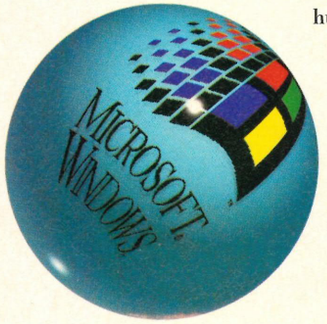
Makes your life so much easier?



These days, it's impossible to walk around the computer world without tripping over Windows. It's everywhere. With 50 million copies safely installed on PCs around the globe and, according to Microsoft, 15 million shipping each month, it is, without even the merest suggestion of a flicker of a doubt the most successful operating environment devised in the whole history of computing.

You knew this, of course. But here's something you might not have known, indeed, something that's difficult to remember in the prevailing mood of Windows fever: that it wasn't ever thus. Like an athlete who becomes an "overnight success" at the age of 30 after 10 years of anonymous obscurity, early versions of Windows struggled abysmally, even to the extent of causing embarrassment for Microsoft's boss Bill Gates.

Gates deserves his success with Windows, as it was born out of his visionary conviction that computing would never grow up into something commonplace and useful unless it evolved past the character-based stage into something that ordinary people could relate to. It now seems obvious that computers shouldn't be things that display screens full of letters and numbers, but it didn't in the mid-to-late 1980s. Gates received a lot of stick for the unwieldy versions 1 and 2 of Windows which were simply too demanding for the PCs of the time. But he stuck at it, the PC evolved faster than expected and suddenly, Windows 3.0 was a huge success. At last, the





To buy or not to buy? Steve Boxer goes Windows shopping for a look at Windows 4, the all new version of Microsoft's best-selling software.

hardware had caught up with the software. But the PC carried on evolving, and Windows only received an incremental tart-up and a few bolt-on extras. Windows 3.1 and Windows for Workgroups 3.11 were well received.

However, just as car manufacturers can only improve so much on a basic chassis before it has to be replaced by a completely new car, so Windows eventually reached the stage at which it would have to be recreated from scratch.

Chicago is the codename for the first all-new from the ground up, completely different version of Windows. At least on paper, it addresses all of the criticisms levelled at Windows 3.1 — and those criticisms were plentiful and, in the main, major. Unfortunately, we can't assess it in the flesh, as it were, since, at the time of writing, the promised first beta version has gone completely AWOL, and will appear at least a month later than Microsoft originally stated.

This, of course, is a very bad sign — the main problem with a major piece of software which is new and untried in a real-life environment is that of bugginess — as Microsoft will amaze me, for one, if the first shipping version of Chicago is free of major bugs, let alone minor ones. Although at the moment we don't actually have a copy of Chicago to test on a variety of machines and with a variety of software, we have had plenty of hands-on time and experience in the controlled environment of Microsoft's HQ in Seattle.

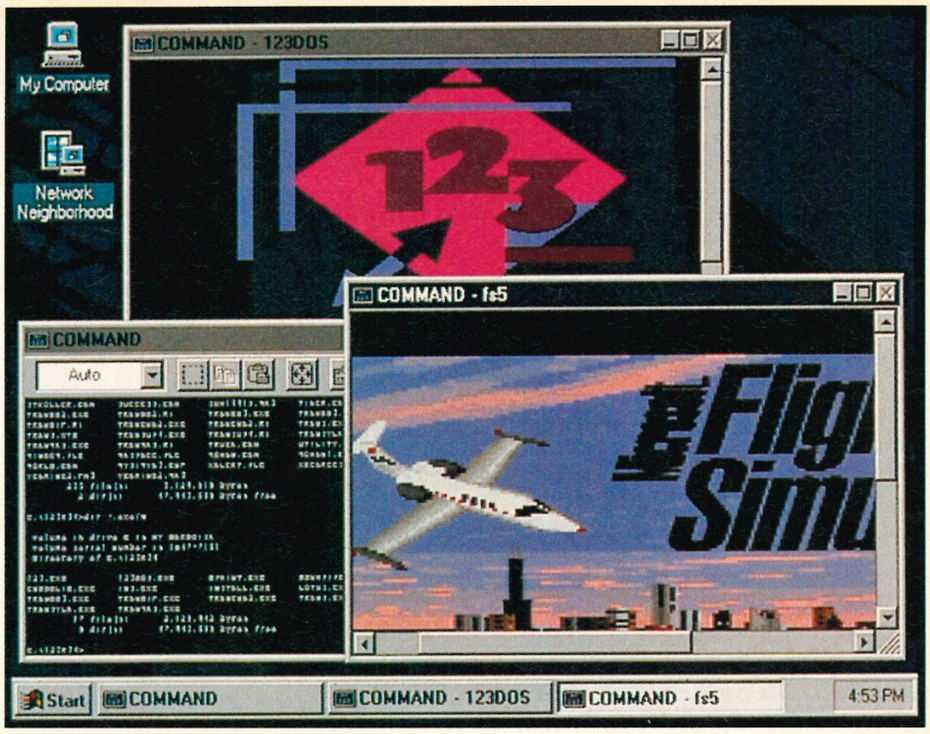
Chicago's key features

The most important thing to remember about Chicago is that its structure is totally different to that of Windows 3.1, and this, on paper, has an all-pervasive effect. A lot of Chicago's improvements over Windows 3.1 will be invisible to users, but no less welcome for that.

User interface

The most visible changes lie in the user interface. There have been mutterings that Chicago's interface resembles that of Apple's System 7, but these are rubbish — all operating system interfaces resemble each other to some extent. Both Windows and System 7 have their roots in research carried out originally at Xerox's legendary Palo Alto research laboratory, anyway.

Chicago's interface is certainly slick in appearance, with plenty of 3D sculpting and so on. A "tray" sits at the bottom of the screen, which can be moved around and resized and stays on top of applications unless instructed otherwise. This holds minimised applications and documents, and solves the problem of fiddling around with Windows in order to find minimised applications. To the left of this is a menu entitled "Start" which gives quick single-click access to commonly used application groups, system settings, Explorer (the File Manager replacement), recently accessed files and so on.



Games should present no problems under Windows 4 (in theory ..), and multi-threading helps you run multiple applications successfully without conflicts.

Happily, Chicago is much more document-centric than Windows 3.1; this is no surprise, as Microsoft is very keen to get the world using documents composed using several applications stuck together by OLE 2.0.

At last, it supports long file names, and Mac-style Aliases, giving access from the desktop to specific documents, folders and so on. Also Shortcuts can be created simply by dragging from the Explorer with the right mouse button held down, or using the right mouse button to get a context-sensitive Settings menu.

Shortcuts will prove useful in giving access to files hidden in obscure folders, but they really come into their own when used across a network. Right mouse button support is available almost anywhere, and Chicago obviously scores heavily over System 7 in this respect.

Another important aspect of Chicago's interface is that it has been designed in a more logical fashion than that of Windows 3.1. Everything is much more accessible — you no longer need the deductive powers of Sherlock Holmes in order to find out how to add a new printer, for example, and there are usually several different ways of accessing different parts of the system.

The Explorer resembles File Manager pretty closely, but it takes the idea a step further by adding elements of the system as though they were files, and likewise for applications. In other words, Explorer contains, for example, what looks like a sub-directory entitled Control Panel, and clicking on this brings up the Control Panel icons, allowing you to install printers and so on.

Although the Control Panel remains, its scope has been expanded, and Microsoft has worked hard to make it more intuitive — for example, double-clicking on the Printer icon brings up a folder showing icons representing each installed printer, and the Display icon gives access to a tabbed dialogue box which allows users to change pretty much any aspect of the display.

Another new concept to get used to is the My Computer icon. This groups together all the bits of Chicago concerned with the user's hardware, so if you want to change something, it's likely to be your first stop, at least until you become a Chicago expert. New users will undoubtedly find it useful but, apparently, it cannot be renamed. This is a shame, because it sounds like some tacky kiddies' toy.

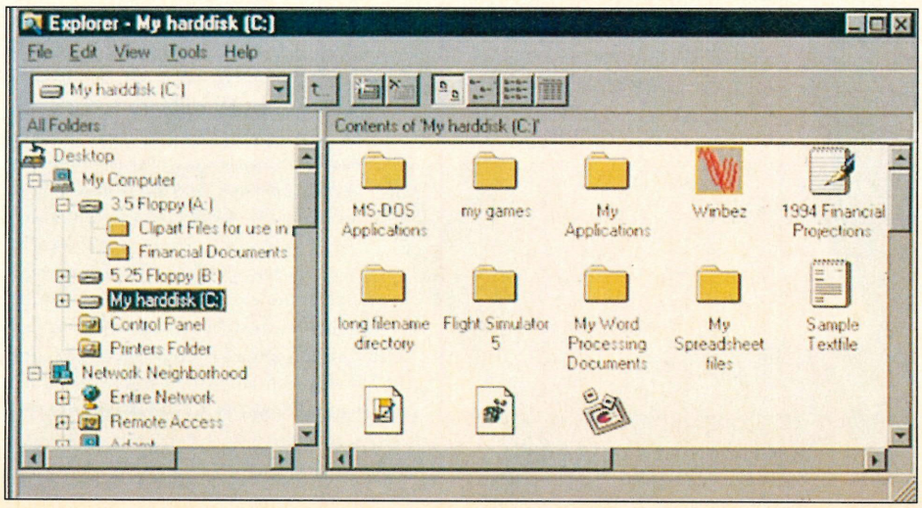
There are also hundreds of detailed interface enhancements, such as decent scaleable, anti-aliased system fonts and much improved Help which actually lets users launch whatever part of the system they seek help on.

Overall, the interface is very impressive — streets ahead of Windows 3.1 and System 7, for that matter.

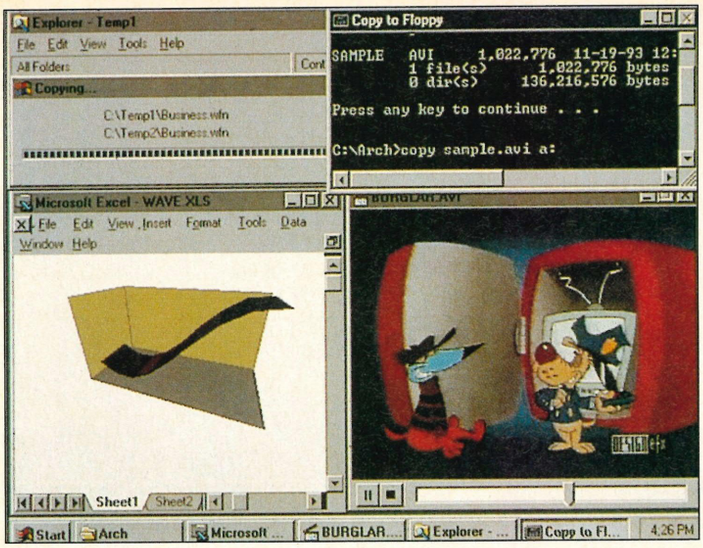
The system and structure

Right. Chicago's main strength is that it is a 32-bit multi-threaded operating system with full pre-emptive multi-tasking. Got that? Good.

The Windows 4 equivalent of File Manager is called Explorer, and it looks like a much more friendly, usable approach to your files.



FEATURES



Hopefully, the ability to perform multiple tasks simultaneously — here formatting a floppy disk while working with other applications — won't impose too many hardware demands. Minimum system requirements for Windows 4 are a 386DX with 4Mb of RAM. What's the betting that a 486DX with 8Mb turns out to be a more plausible setup?

Actually, it's as well to know the jargon, as it's more descriptive than you might think. The fact that it's 32-bit simply means that it will make better use of the processor (in conjunction with 32-bit software, which is as yet non-existent). Intel processors from the 386DX and upwards are all 32-bit, and a 32-bit operating system/software combination will be able to send twice as many tasks to the processor at any one time, so this will speed up your software.

Multi-threading is something that any Windows 3.1 user will happily give away body parts for. Basically, it allows applications (and parts of the system, such as the interface) to run separately although concurrently, so if one bombs out, the whole system won't — it's just a case of closing down the thread in which the bad application is running. In other words, we can wave goodbye to General Protection Failures and their ilk.

Pre-emptive multi-tasking effectively schedules what is happening in the various threads, making sure that all the tasks being assigned to the processor don't get in each other's way, and thereby using much more of the processor's actual processing capacity than, say, Windows 3.1. These things also mean that, for the first time, tasks such as printing or downloading files over a modem can operate properly in the background, rather than tie-up your PC.

Possibly the most important structural improvement over Windows 3.1 is that Chicago is no longer just a front-end for DOS; it's a grown-up operating system in its own right. But don't panic — Microsoft claims that *all* existing DOS software will run under Chicago, and, if this wasn't the case, it might as well just give up and forget about Chicago.

The good old DOS command line is still there if you want it, and DOS support is, on paper, actually better than the old Windows 3.1 and MS-DOS 6.2 combination.

That 'on paper' is a potential problem, though. Chicago's DOS support is so differently implemented that it's likely to be buggy and, if this is the case, it would be nothing short of disastrous for Microsoft.

Not having had a chance to test the beta, we have to assume that at this stage, there will be DOS programs which don't run under Chicago. By the time the package ships, of course, we'll know exactly what will and won't run, so keep your eyes skinned for Chicago bug reports.

Some general observations should be made about DOS at this point.

Firstly, there are two operational modes aimed at giving awkward DOS applications a better chance of running.

The first is called Exclusive mode, and this allocates more resources to foreground 16-bit DOS applications than the 32-bit Chicago system in the background. The most troublesome DOS apps have Single Application mode, which, in the words of Microsoft, "leaves Chicago hanging on by a fingernail". Single Application mode allows just one application to run and allocates nearly all the system's resources to that particular application, although it does leave an escape route back to Chicago.

DOS fans may find Chicago's absence of Autoexec.bat and Config.sys files worrying, but they shouldn't. If absolutely necessary, specific Autoexecs and Configs can be assigned individually to DOS applications, a feature that current Windows/DOS users would happily commit mass murder to obtain. Because Chicago is a proper 32-bit operating system, the system uses so-called protected-mode upper memory, and the way drivers have been implemented is, compared with Windows 3.1, inspirational (partly because of the Plug and Play support).

This means that messing around with memory managers will be a thing of the past, as the system (bar the odd extenuating circumstance) keeps its hands off conventional memory entirely, leaving it all free for your games. The drivers are "dynamically loadable", which means that they only load themselves into memory if required (and upper memory at that).

So if this all works — and that's a gargantuan if — you should actually find it *easier* to get games to run. In terms of design of aspects such as drivers and memory handling, Chicago knocks the stuffing out of any other operating system around. On paper that is ...

Plug and play

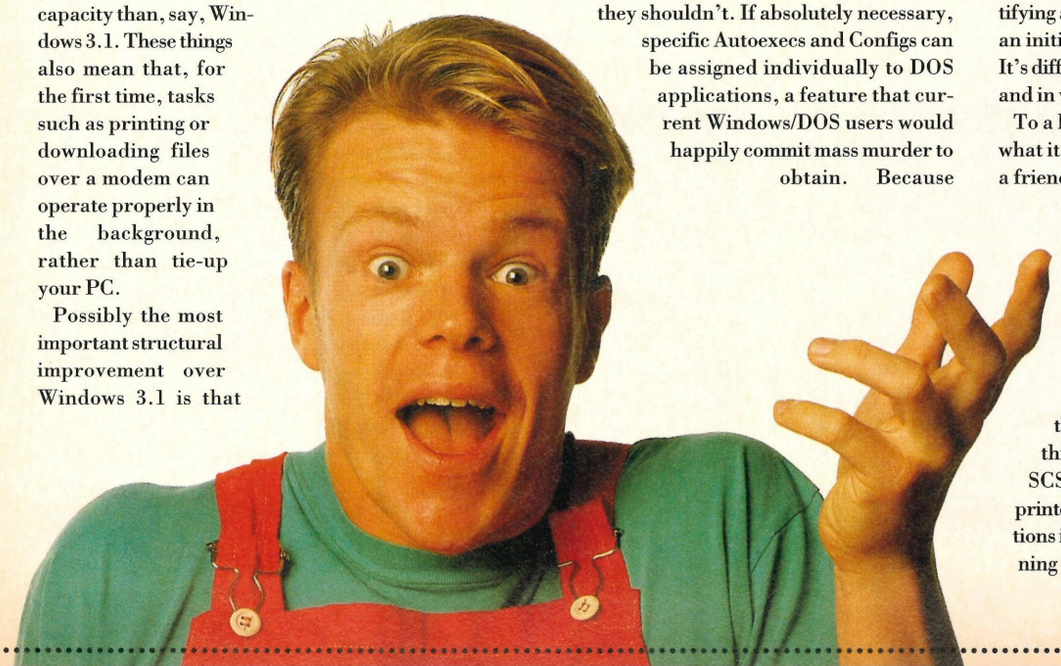
Plug and play is a buzzphrase which has been floating around the computer industry for some years without ever making that crucial leap to anything vaguely tangible. Chicago will help plug and play take its first tottering steps into the world.

Now, this is great news for you and me. The concept is simple. Say, for example, you want to install a combo sound/CD-ROM card. Today, you would install the card, install the drivers and then spend several days fiddling with jumpers, I/O addresses, IRQs and the like. And the damn thing still wouldn't work, more often than not.

In a plug and play system, you would install the card, and the system would sort out all those nasties for you. You wouldn't even have to alter a jumper. Add-in-card-freak heaven...

Chicago will be the world's first plug and play operating system, which is a major part of its appeal. However, an operating system alone can't render a PC plug and play-ready. A full plug and play system requires a special BIOS (major PC manufacturers are already starting to release such machines) and plug and play-ready cards, which are also already appearing. To take full advantage of Chicago's plug and play capabilities, therefore, you'll really need new hardware, although Chicago does at least make a stab at identifying and configuring new cards, and also makes an initial assessment of your PC on installation. It's difficult to say at this stage how well this works, and in which circumstances, however.

To a large extent plug and play is invisible, but what it means in practice is that when you install a friendly enough add-in card and switch on the machine, Chicago will come up with a dialogue box saying that it has detected a new device and making a guess as to what it is. At this point you can OK Chicago's choice or manually correct it by picking from a list. This doesn't sound too different, but you can also set IRQs, I/O addresses and so on if necessary at this point, although the chances are that Chicago will have done this for you already. Thus, installing, say a SCSI card will become rather like installing a printer under Windows 3.1 — follow the instructions in one dialogue box and you're up and running — only easier.



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The WinG engine

Chicago is the first Microsoft operating system in history to even acknowledge the existence of PC games. In fact, when Chicago was first unveiled, there was a lot of talk about games, which Microsoft was presenting as examples of the most troublesome DOS applications. This was very encouraging; even more encouraging was the fact that Chicago has a game engine, called WinG, designed to help games developers port games to and, particularly, write games for Chicago.

At this stage, little is known about WinG, as it exists well below the covers in Chicago. However, WinG is basically a graphics engine which has been designed to make it easy for games manufacturers to get decent performance for their games' graphics, without having to rewrite those games' graphics in an unaccustomed way.

In other words, games manufacturers won't have to learn new programming methods to bring decent-looking games out for Chicago, so we should see plenty of games for Chicago, and without too much delay after it ships. That's the theory, anyway.

Odds and ends

As far as your computing set-ups are concerned, that's the most important stuff you need to know about Chicago although, of course, its surface has merely been scratched (for a quick summary of its other features such as network support, see the 'And the rest' panel).

There are, however, a few odds and ends you should know about. System requirements are a minimum of 4Mb of RAM and a 386DX or higher processor; it is not yet known how much disk space Chicago will require, but it's likely to be more than Windows 3.1 — between 20 and 30Mb — depending on how much of the options, such as the networking, you install. And then there's the question of applications (see 'Should you buy Chicago and why?').

Microsoft has given developers the tools with which to make 32-bit versions of their applications, but it's vital that a critical mass of these applications appear before we can really recommend that you go out and buy Chicago.

Shipping is scheduled for the "second half of 1994". Judging by the delays to the beta, this is likely to mean some time around 31 December 1994, or possibly even early next year.

Pricing is also unknown, as, indeed, is the product's name (Chicago, sadly, is just a codename and has been ruled out already). Let's hope Microsoft gives it a more interesting name than just Windows 4.0.

The imminent appearance of the beta marks the beginning of a long and surely fruitful road for Chicago. On paper, it definitely has what it takes to be, perhaps, even more successful than Windows. That is, if it all works.

To be honest, it's likely to be bug-ridden even when it hits the streets. But Microsoft will sort that out eventually.

Chicago, when it appears, will be the first of a new generation of operating systems capable of taking much better advantage of modern PCs and offering a lot to almost all types of users, including, happily, games players.

For most of us, it's not a question of whether we should upgrade to it, but a question of when we should upgrade to it.

Keep your eye on PC Review to find out how quickly Microsoft irons it out after its launch.



SHOULD YOU BUY CHICAGO, AND WHY?

Like all operating systems, Chicago is a receptacle for applications — it's the applications you use which determine how useful a tool your PC is. To get the best out of your PC, Chicago needs to run 32-bit, rather than the current crop of 16-bit applications. Obviously, we all use 16-bit applications at the moment, but you should bear in mind that the first 32-bit Chicago applications will almost certainly be the big, popular corporate ones — the word processors, spreadsheets, databases and so on.

If you use any of these sort of applications, then Chicago is a must — 32-bit versions of Microsoft Word and Excel, say, will run much better on 486-based PCs than the current versions. But if you're a DOS-based user running a core of old, familiar games, then it's difficult to see much point in buying Chicago. The chances are, in this case, that you've sorted out all those nasty processes such as constructing different Autoexecs and Configs to suit your games, and you could do without having to learn a new operating system. So, unless you want an excuse to move to a more modern computing set-up, you'd probably do well to leave Chicago alone.

If you use the more modern, popular games and have started to look at games such as SimCity 2000 or Syndicate, then you'd do well to upgrade to Chicago, at least after waiting around to make sure that those games run under Chicago with no fuss. If you have a CD-ROM drive and are interested in Windows-based multimedia-type games, then Chicago is an absolute must — it has pretty good support for digitised video, and its 32-bit nature will make such games run much more smoothly. It's likely Chicago will breed some superb new high-tech games, but probably not until it has been on the market for about a year.

The 32-bit printing and communications engines (Windows 3.1 didn't even have a communications engine) mean that heavy printer and modem users will derive almost immediate benefits from buying Chicago. And finally, those with notebooks and those who have bought a plug and play-ready PC and intend to fill it with add-in cards would also be insane not to invest in a copy of Chicago when it appears.

AND THE REST

One of the impressive things about Chicago is its sheer comprehensiveness — as a desktop operating system, it lacks nothing. Here is a brief look at a number of areas in which Chicago outguns Windows 3.1, or where functionality has been added over and above that of Windows 3.1:

- **Networking. Chicago has built-in networking like that of Windows for Workgroups 3.11, only much more sophisticated. The networking has been designed to co-exist much easier with other network operating systems, notably Novell NetWare and Windows NT. It also has some quite sophisticated system management tools built in. Best of all is its ease of use — users should be able to log on to networks just by clicking on network drives in the Explorer, rather than having to run complex logon scripts.**

- **Portable computing. Chicago has a lot of features which will endear it to notebook PC users. The Suitcase allows people to take files off the office network, work on them on the road and then make sure that the originals are updated on returning to the office. Plug and play extends to PCMCIA support, and there's decent APM support, which could help squeeze out extra battery life.**

- **General structure. Almost every area of Chicago's structure is better designed than that of Windows 3.1. For example, the old INI files have all but disappeared (vestigial ones remain to satisfy the odd poorly designed existing Windows application). There's a proper comms engine, device drivers are better designed — Chicago itself takes on some of their responsibility, and the drivers, which are much smaller than for Windows 3.1, can load and unload themselves when they're needed. There's also no longer any need to section off part of the hard disk for a swapfile — Chicago uses a swapfile, but grows or shrinks it as required.**



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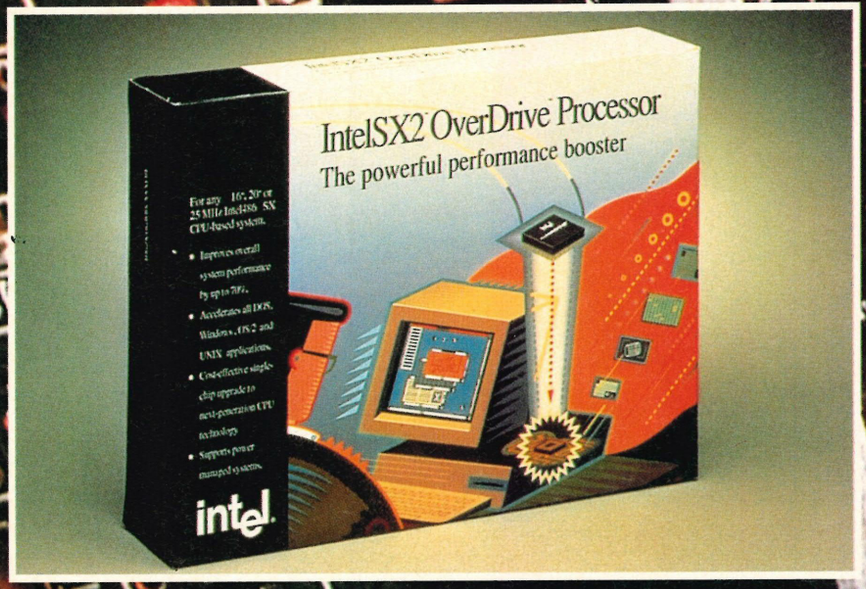
COMPETITION

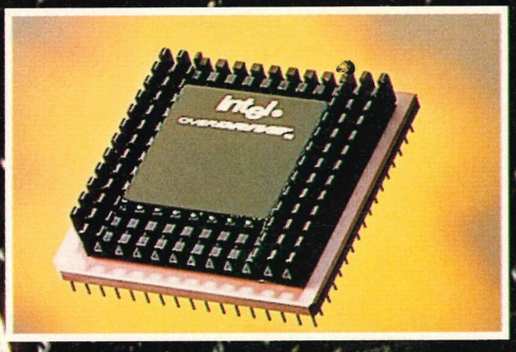
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And now you can win your very own. The first prize in our OverDrive Competition is a £370 Intel DX2/66 OverDrive. The DX2/66 is *the* state of the art upgrade for 486PCs. Short of shelling out several thousand pounds for a brand new Pentium or DX4 PC, it's the most powerful chip on the block and ideal for giving your 486 PC a real boost.

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- Employees of EMAP Images, Intel, their families and associates are not eligible to enter this competition.
- No multiple entries, please.
- No entries received after the closing date will be accepted.
- The editor's decision is final.

Remember, if you want to enter more than one competition in each edition of PC Review, you can put your entries in one single envelope. Please mark clearly on the front of the envelope which competitions you enter.

How to enter

If you want to be in with a chance of winning either the Intel DX2/66 processor first prize, or the SX2/66 runners' up prizes completely free and gratis, all you have to do is answer the following three excruciatingly simple questions correctly:

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   a) Lesson
   b) Co-processor
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2. What does an Overdrive processor do?
   a) Hang around the inside of your PC, smoking, drinking and chatting up the other chips ...
   b) Doubles the processor speed of Intel 486 SX and DX CPU-based systems.
   c) Not a lot

3. The Overdrive processor is manufactured by?
   a) Intel
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When you think you know the correct answers, mark them on the coupon opposite. Then complete the form, send it (or a photocopy of the form will do if you don't want to spoil your copy of the magazine) to:

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Your entry must reach us at Emap Towers by August 15th, 1994. This is the closing date and any entries which arrive after that will not be included in the prize draw.

Please note: The Intel Overdrive processors require a 486PC with either 20, 25 or 33MHz SX or DX Intel processor, and an Overdrive coprocessor socket (such as a ZIF socket)

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2 .....

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Closing date August 15, 1994 **PC Review Issue 34 August 1994**

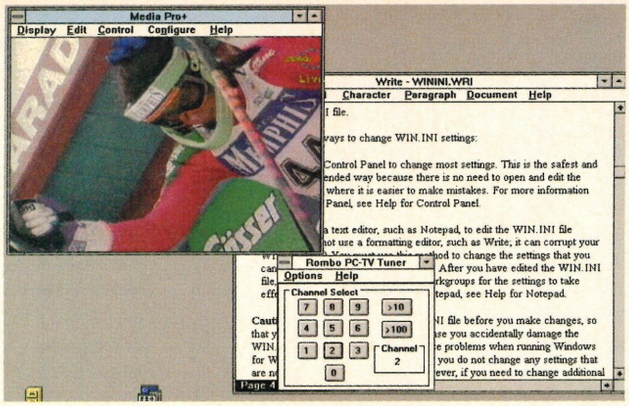
TIME...



Everyone knows you can already listen to the latest records and watch the biggest blockbuster movies on a multimedia PC. But did you know you could tune into the television too? Paul Smith turns a blind eye to the TV window on his PC screen long enough to bring us the latest on TV tuners for the PC.

Hello and welcome

So, it's like, Midnight Run — or the Stella final or The Bill or The ITV Chart Show — and I'm still on the first sentence. I know that I've got to finish this thing before tomorrow: but the TV is calling. What am I to do? In fact, it's not that tough. Obviously, the first casualty of good TV is deadlines, so I'm just going to have to leave the computer behind and sit in front of the box.



Getting to grips with the Rombo Media Pro+ and PC-TV tuner.

It makes you think: why should I have to move? Everyone is talking about multimedia and I can certainly have my computer make noises, play CDs and run moving video clips. But there has been relatively little talk about utilising that most significant of media, television. What I really need is a small television window adding to my PC multimedia set-up; one that I can re-size and move around my computer monitor while I carry on with whatever else it is I'm doing. In fact, what I really need is one of the three TV tuners that we're going to look at shortly.

A TV tuner is a card that goes into the PC and allows me to watch TV. There are at least three such cards, all for Windows systems (although one of them also allows viewing in DOS as well). Two of the cards are simply tuners: they require that you already have a video overlay card. The Win/TV Celebrity is a complete solution: it is a single card that provides both TV tuning and video overlay on one card. All the cards come with tuning software that allows you to tune into any number of TV channels and switch between them by clicking on the right buttons. Once you've decided which card you want, sit back and enjoy your own PC TV.

But what sort of quality will you get? How different is a monitor from a television. Ah, well: therein lies a story. In fact, although both your television and your computer monitor (at least the one on your desktop) are based on the same technology — the cathode ray tube — they present you with pictures in a completely different way.

The television works by repainting every other line sixty times a second.

The monitor, on the other hand, repaints each dot on the screen individually.

The result of this distinction is that there is very little similarity between an "analogue" television video feed and a "digital" VGA image.

So because of the difference between computer monitors and televisions, the picture is not going to be quite the same quality as you'd get on your television. But it is quite watchable still and comparable with something like, say, VHS.

Complications

Getting a television picture image onto your computer then is more complicated than just plugging an aerial into your computer. The video feed must be converted into a digital signal that the computer can understand.

The most common way of dealing with this is through use of a "video overlay" card.

Video overlay is a process that takes over a section of your monitor and displays a moving video image in it. It is also responsible for converting analogue information into digital form.

The hardware you need to perform this trick is called a video overlay card. It plugs into an expansion slot, much like a sound card, and then connects to your graphics card internally via the feature connector (see box overleaf for more details on this).

On the back of your computer, you plug the monitor cable into the overlay card, not the graphics card as before, and then attach a short cable from the overlay card to the socket where you used to plug the monitor into the graphics card. Setting up such a card is no more difficult than installing a sound card.

Make sure you have got all the right connections

Once you have the video overlay sorted out, you could plug in a camcorder or VCR, crank up the software and start watching a video on your own PC desktop.

In fact, as all VCRs have TV tuners built into them, you can get by without a TV tuner card altogether. But this would mean that you'd have to connect the VCR to your personal computer or to your TV, changing it back every time you wanted to use it for the other purpose. You would also have to tune it and change channels by fiddling with the VCR, rather than using the software provided with tuner cards.

If you are using the card at work, and you don't want a VCR sitting on your computer desk, then you might like to try one of the following:

to ... PC TV



The Feature Connector

The Feature Connector is a small plug on your graphics card that allows you to connect another card to it, thus giving you extra features. In the case of overlay cards, it gives you the ability to view a video source on your screen. There are two types of connector likely to be found on your VGA card. You must have one of these types on your card. Some older cards (and some newer ones) don't have them and, if yours is one of these, you will need to change it to one that does.

The two common types of feature connectors are the edge connector and the pin connector. The edge connector can be identified by its row of metal 'fingers' along the top of the card. The pin connector by its two rows of pins close together, usually near the top of the card in the middle.

All overlay cards that require connecting to the feature connector of your graphics card come with a flat ribbon cable that fits onto a plug on the overlay card. The other end of the cable then clips onto the feature connector.

When purchasing an overlay card, you will want to know whether it requires a feature connector on your card, which of the two connectors you have (if either) and whether the cable fits your particular type of connector: some only work with the pin connector.

The feature connector is actually a rather out of date connector and in many ways limiting. It is only 8-bit, supports up to 60Hz refresh rate and 800x600 x256 (colour) resolutions. If you normally use a higher resolution, you'll have to step down to use the card.

There are a couple of alternatives to the feature connector that are just coming about. Perhaps the most interesting is the VESA Media Channel. Brought to you by those awfully nice VESA people who created VESA Local Bus, this is a new type of connector that has a couple of key advantages: firstly, it supports any resolution that a graphics card can support; second, instead of being restricted to only one card being attached to your graphics system, you can 'daisy chain' up to 15 graphics devices on to the system. These could include a video capture card, an MPEG playback card, a video conferencing card, a TV tuner, and whatever else people come up with to enhance your video.

The final significant feature of VM Channel is that it uses a "shared buffer" system, which means that each card doesn't require its own RAM; the effect of this will be to bring down the cost of these types of cards.

Win/TV Celebrity

This is the only single board solution of the three: it's a video overlay and TV tuner all on one card, which saves an expansion slot for another card.

The Win/TV is a full-length, 16-bit card and it can capture video clips or individual frames to your hard disk. One useful feature of the Win/TV Celebrity is the TeleText option. This allows you to open a separate window in which you can watch the TeleText pages for the channel that you're watching on the TV. You can even create links between the data in the window and another program. This could be used, for example, to monitor live stock prices within a spreadsheet.

The Win/TV is also the easiest of the three cards to install. Firstly, it is a single card. Secondly, it has no jumpers or switches. Thirdly, it doesn't require a feature connector (See box above). I had some initial problems with the installation program: it caused a General Protection Fault but seemed to work if you ignored this fact. I was also shipped many versions of the software between the time that I received the card and the time that I finished reviewing it. It took two cards, five versions of the software and 43 new grey hairs before I got the TeleText option working. This may possibly be a valuable business tool, but it's also the weakest part of the program.

A unique feature of this card however, is that it doesn't require a feature connector at all. The implication of this is that it is not restricted to 800x600 pixel resolutions. A limitation of many capture cards is that you are restricted to a 15Mb memory limit. While this may not be a limitation for everyone, a lot of Pentiums are shipping with 16Mb as standard. The Win/TV doesn't suffer from this limit and will work on systems with more than 15Mb of memory.

While the hardware is great, some of the software leaves a little to be desired. For example, the Win/TV has an autoscan feature and the first thing that you need to do once you have the card installed is scan for the different TV channels. Once the scanner has found a strong signal, all you have to do is give it a name such as BBC1, BBC2 and so on. But you cannot rearrange the channels into a sensible order without renaming and retuning each one: a small but noticeable pain.

Because the Win/TV was built with TV in mind, the main window has a button bar on it, (unlike the Media Pro window) that allows you easy access to volume controls, channel hopping and taking a snapshot of the action.

If you click with the right mouse button on the window, you hide the title, menu and button bars so that you are just left with the TV window, which is resizable and can be moved around the screen. Clicking on the maximise button will provide you with a completely full screen picture.

Also, although it's not mentioned anywhere in the manual, there are a number of keyboard shortcuts that you can use. Plus or minus will scroll you up or down a channel. You can freeze a frame by hitting S, but you have to search in the help file to discover how to use the keys to change the volume (you use the PageUp and PageDown keys, by the way).

Another big software weakness is the TeleText software from hyperCOM. A cut-down version, it comes with no manual and no help file. The interface itself is similarly unhelpful: the menu items are completely mysterious to me and it was only by chance that I discovered that by typing in a number was how you change pages. I still don't know if it supports FastText.

There is no clue to how you use the program nor how to create links to other programs. This is a pity because it means that you could use it as a sort of stock market analysis tool, if you are into that sort of thing. Maybe it is some misguided encouragement to upgrade to the full version.

I was also sent another piece of software, a morphing tool called PhotoMorph Lite. It was sent zipped on an unmarked floppy with no manuals.

Once you get used to the software, however, you will be happy. The quality of the TV picture and that of the bitmaps and clips that you can capture, is very high. In fact, when capturing a video clip to disk at 30 frames per second, not one was dropped: a pretty good performance.

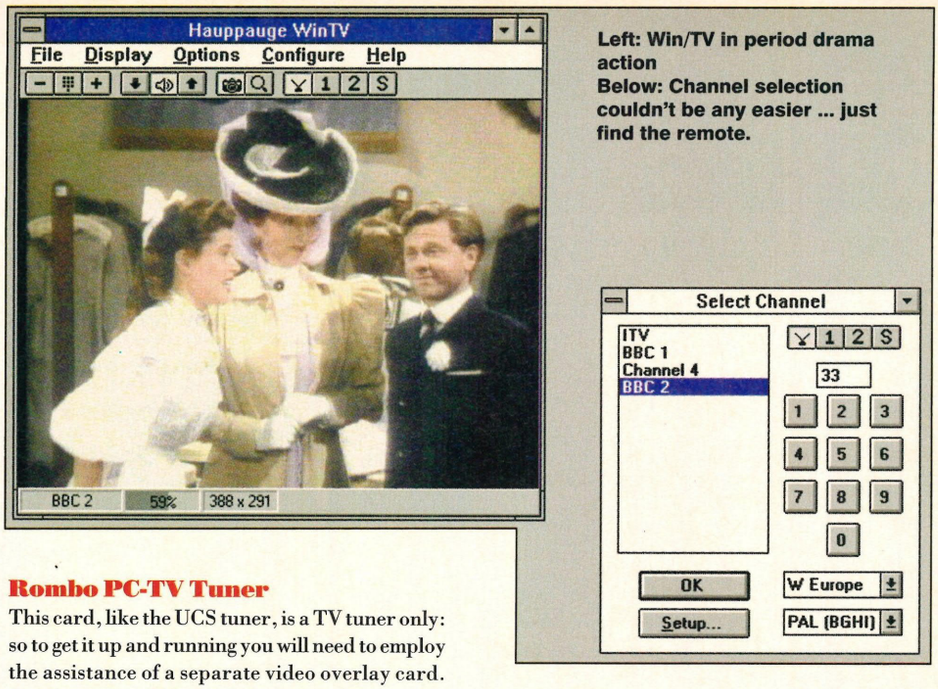
All in all, this is a great solution to those wanting TV on their desktop. There are serious weaknesses in the software: poorly written in parts and out of date in others. But once you get beyond that, it works a treat.

From: ODT UK Ltd
Price £299
Tel (071) 378 7309
Fax (071) 378 1108

★★★★







Left: Win/TV in period drama action
Below: Channel selection couldn't be any easier ... just find the remote.

Rombo PC-TV Tuner

This card, like the UCS tuner, is a TV tuner only: so to get it up and running you will need to employ the assistance of a separate video overlay card. For this review, I used the Media Pro HiRes card, available from Rombo. If you expected these two products to work together slickly, you'd be wrong.

Although we're not directly concerned with the video overlay card in this review, the MediaPro card is no joy to install. It is available in two flavours, the Media Pro+ and the Media Pro HiRes. The latter is for those wishing to use resolutions higher than 800x600 pixels and 256 colours. It requires a VGA card with the pin type feature connector. The HiRes is actually the Pro+ with a small 'VGA buffer' card that clips onto this connector. Unfortunately, this buffer card is so thick that it hardly fits between the graphics card (on which it sits) and whatever card is in the next bus slot. In my set-up, the SPEA video card was actually bent to fit into its slot.

Next comes the overlay card. This is a 16-bit card that is also quite thick. But there is also an internal cable with white plugs on it that connects the tuner to the overlay card thus making the overlay card even thicker. The tuner card itself is yet another one and a half centimetres thick, including another great white plug.

These three cards finally groaned their way into my machine. No thanks to the poorly produced and confusing manual that covered different versions of the card in different places. Or would have done if all the pages were included. And technical support is only between 2pm and 4pm weekdays.

Let's say you've got it up and running. Because the overlay card is not so closely designed with the TV tuner in mind, the interface is not nearly as useful as that of the Win/TV. It lacks a toolbar to switch channels or change volume. Instead you click on buttons in a separate window to channel hop which takes more screen space when open.

Once working, the TV tuner does a fine job of displaying television. The software is a simple telephone keypad-type window that allows you to assign channels to numbers (but you cannot name them). There is no auto-scan beyond jumping to the next strong signal. Neither are there any documented keyboard shortcuts for bringing up this keypad window or for changing channels.

Overall, this a more expensive, less satisfactory solution than the Win/TV. The version of the card that I was shipped didn't support more than 15Mb, but this was due to be changed. Performance is adequate but the manuals and support are not.

Supplier: Rombo
Price: Media Pro+ £299,
Media Pro HiRes £349, PC-TV £149
Tel (0506) 414 631
Fax (0506) 414 634

★★

UCS PC Tuner

Much like the Rombo PC-TV Tuner, Universal Control Systems' PC Tuner is a card designed to attach to an overlay card. Again, it's sort of thick because the tuner box itself is, but it doesn't support the great white plugs of the Media Pro. This means that the card is connected to the input plugs on the outside of the overlay card.

The manual is again a disaster: it even includes instructions for some strange product that wasn't even part of the package.

The software interface for the PC Tuner is, however, much better than the Rombo's. Not only can you control the volume level from the same window as the channels (the Media Pro needs two separate windows) but also the bass and treble. The window purports to support stereo but doesn't: it is two-channel output rather than a true NICAM decoder.

However, as with the Rombo, there is again no autoscanning of channels. And, again, you can't name the channels, only assign them to numbers. Worse, when changing the channel, you have to type in a two figure number, including if necessary a leading zero. That means twice as many keystrokes to change the channel as the other tuners.

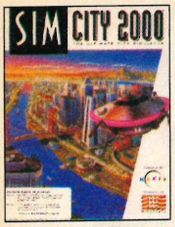
This is the only tuner of the three to support DOS TV: you just load up a TSR and up comes a window in DOS that you can move around and change the size of. The interface for this is awkward, but it is an option the others don't support, so it may be of value if you use DOS software.

The picture quality is high and the interface a little better than the Rombo, and comes at a better price. If you already have an overlay card, or you want TV in DOS, than this is the one to go for.

Supplier: Universal Control Systems
Price: £99
Tel: (0902) 286 88
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★★★

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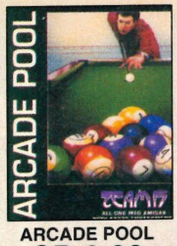
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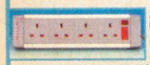

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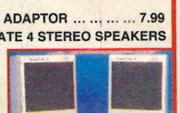
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The easy CD

IDE CD-ROM drive makes first appearance



An IDE CD drive makes so much sense it's a wonder no-one has done it before: double speed performance at a fraction of comparable CD prices, and without the installation or compatibility hang-ups to boot. Read on!

With all the fuss over which multi-speed CD-ROM drive to buy — double speed, triple speed, or whether someone will knock out an eight-speed CD-ROM drive by Thursday — the Bluepoint ICD 300 IDE CD-ROM drive (the IDE bit stands for Integrated Drive Electronics) has slipped in rather quietly. In fact, it's likely to have just as much of an effect on the type of CD-ROM drive we buy as any of the multi-spin arrivals, probably more.

The key words here are Integrated Drive Electronics (the IDE bit). In all other respects, the ICD 300 looks like and behaves like any well-specified double speed CD-ROM drive (internal, Philips-made engine, motorised tray loader, little green light on the front etc) that you might find in any multimedia bundle.

But because it's an IDE drive, the way that it hooks up to your PC is very different from a standard CD-ROM drive. Quite simply, it has no interface card. You cable up the ICD 300 in the same way you would an extra hard disk.

To explain that in more detail: the drive is connected to the ribbon cable which also connects the hard disk and floppy disk to the I/O card on the motherboard. Which means? Well, as I mentioned earlier, it means no seperate interface card for the CD-ROM drive. So, you get to free up one more slot in your PC, don't have to worry about IRQ and DMA settings (the bane of every PC owner's life) and the whole thing is that much simpler to install. Just slap the drive in to a free bay, connect the ribbon cable and power supply, and away you go. This, we like.

> "... easier to install and less fuss to have around ... best of all it costs less than £100."

And there's more ...

But so what? Admittedly this IDE business simplifies the process of installing a CD-ROM drive a few stages, but it's hardly a major technological breakthrough to cut out one bit of cable and a circuit board, is it ...?

Well, it goes a bit further than ease of installation. For a start, you can throw all those sound card compatibility problems out of the window. The ICD 300 drive and the sound card are connected solely by the audio cable — which is one of the few standard components you'll find hanging around on a PC — and you don't therefore need to have a sound card with a specific interface for the drive you want to buy.

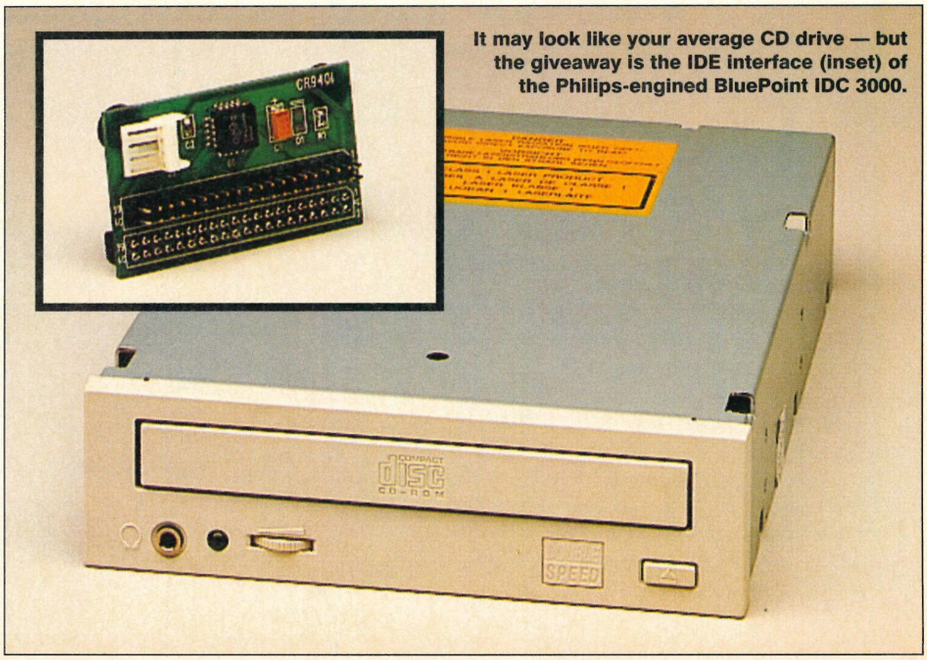
Then, of course, there's the cost factor. Not having to have a seperate interface card means that fewer expensive components are needed to produce the whole thing, so the cost of manufacturing the drive is considerably lower than normal. Which, in turn, means cheaper drives for you and me. This we also like. (Also, adding specific CD-ROM interfaces to a sound card ups the cost of producing a sound card, but if you were designing a sound card with IDE CD-ROM drives in mind, you wouldn't have to bother.)

To give you an idea of the costs involved: Bluepoint is setting a retail price of £99.95 for the CD2 (compared with £149 for double speed Orchid and Panasonic CD-ROM drives, and £169 for a similar Mitsumi drive) and expects that within a couple of months, maybe less, the usual competitive street pricing will drive this down to the point where you can easily find double-speed IDE CD-ROM drives for around £80.

And the company also plans to bundle a basic 8-bit sound card with the drive as well, which would mean a complete and perfectly competitive multimedia bundle for less than £140, or, if you prefer, a 16-bit quality sound card/CD-ROM drive bundle for less than £170. Attractive, no?

Spin those discs ...

Performance-wise I can't really fault the CD2. It's not refused to play anything I've thrown at it, it's handled everything smoothly, and it runs at much



It may look like your average CD drive — but the giveaway is the IDE interface (inset) of the Philips-engined BluePoint IDC 3000.

the same rates as one of the better quality double speed drives (data access of 300m/s and a 307k/ps transfer rate). Sure, a triple speed NEC 3Xi would eat it for breakfast, but it would also cost you more than three times as much for the privilege.

In theory, future IDE drives should be able to achieve massively better access times than a conventional CD-ROM drive, because it doesn't have the CD-ROM interface to act as a bottleneck for the data. The long-term goal has to be a CD-ROM drive from which you can drag the data as quickly — if not quicker — than the fastest hard disk drives. It's unlikely to ever get quite that good, but we can hope.

One more thing. Because the PC treats the ICD 300 like a hard disk, it should be possible to boot up your PC from the CD drive. Hypothetically speaking, if you have CD games designed with an install program to create the necessary boot up files — with a spot of help from you — you will be able to boot up your PC ready for whatever game is on that disc, sans memory problems, EMS hangups and IRQ squabbles. Unfortunately, this relies on the games industry being awake enough to notice the possibility and do something about it ... and the hardware manufacturers making the odd tweak to the BIOS in PCs so that the D: drive can be recognised as a bootable drive. Fat chance.

So what's the catch?

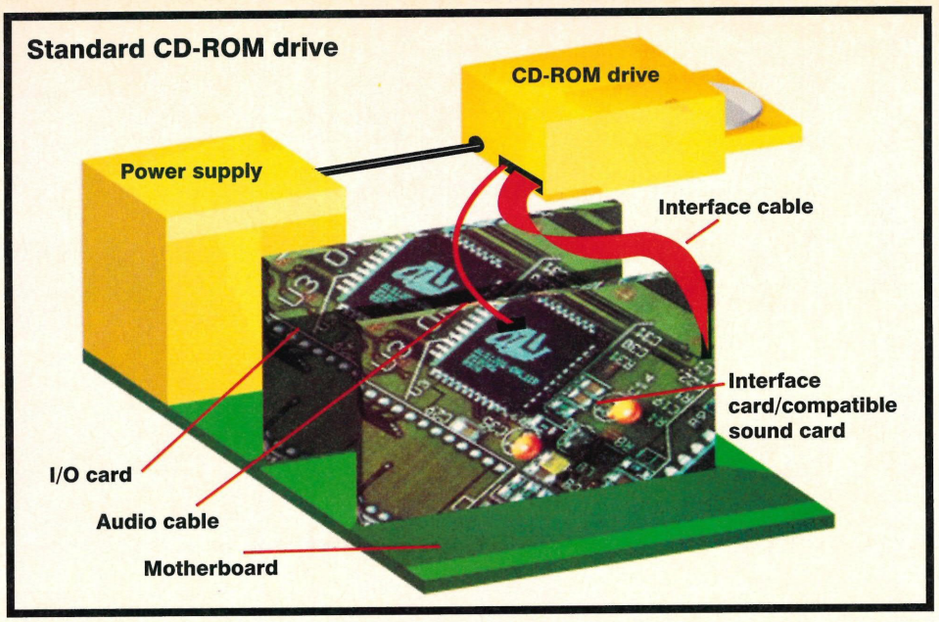
The only real catch I can think of — and I'm guessing here, I admit — with an IDE CD-ROM drive like the ICD 300 is compatibility, the eternal stumbling block for anything vaguely PC-related.

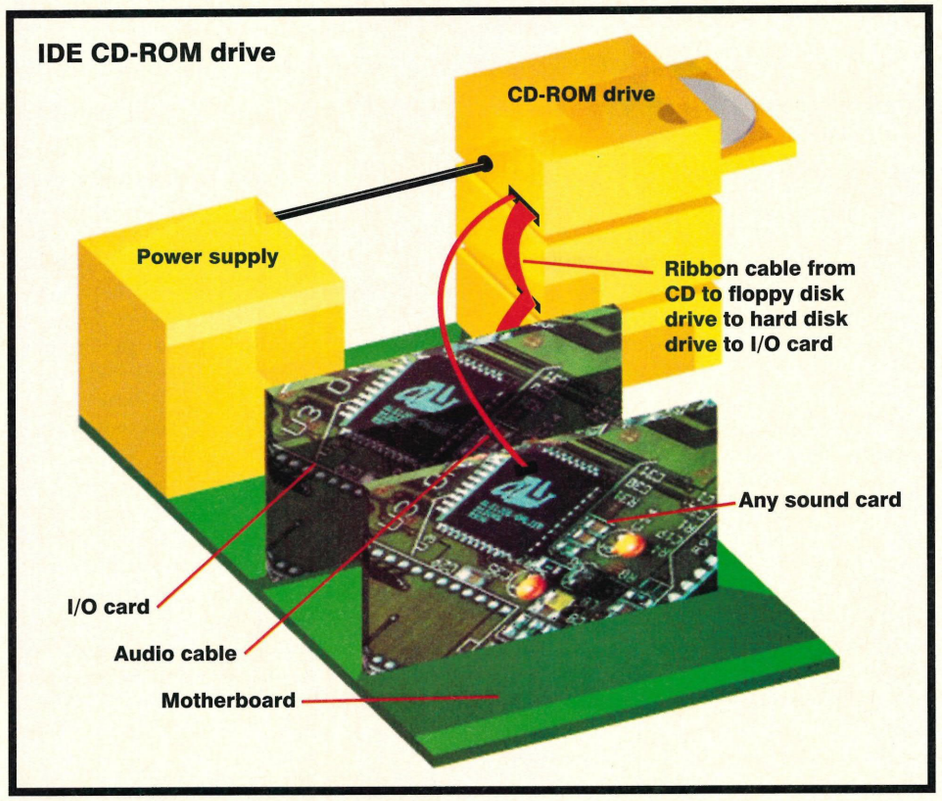
Since IDE operates at BIOS level on the PC, the system (poor deluded fool that it is) expects a level of consistency in the way the BIOS works on the PC. Unfortunately, that isn't always going to be the case with older PCs. So, if you have a 486 you should have absolutely nothing to worry about, but if you're using an old(ish) 386 PC it's worth checking it out very carefully.

Maybe I'm being unfair, because I haven't actually had any problems with the drive myself while using it on a motley assortment of PCs.

The bottom line is, simply, that the IDC300 hasn't given me a single problem since I started it running, it has the potential to outperform its rivals, is much easier to install, less fuss to have around, is more compatible with sound cards, and — best of all — it costs under £100.

■ John Bennett





IDE CD-ROM — from an industry perspective

Orchid

"The market will go the IDE route, no doubt about it. IDE CD-ROM drives will take over because it makes sense to work on the same basis as hard disk drives.

Orchid will probably have an IDE drive available by the end of the year, but we need to test thoroughly before releasing them, and we're really looking towards the Extended IDE standard.

IDE CD-ROM drives really need the Extended IDE standard — which is just coming through at the moment — to see the end of SCSI CD-ROM drives and allow triple and quad speed IDE CD-ROM drives to be produced. It's all heading towards the goal of affordable 400m/s (and then 600m/s) access times we need for decent video on CD.

Still, £99 for an IDE CD ... That's a good price indeed."

Bob Johnson— Sales Manager

NEC

"NEC is looking at all the possible CD-ROM interfaces, and IDE is definitely going to be the one for the retail and OEM markets. We're currently number one in the business market, and we intend to be number one in those markets as well.

The problem with IDE drives is compatibility at BIOS level. Once that's solved, IDE CD-ROM drives will start to appear in mass, probably in a couple of months."

Nick Byatt — CD-ROM Marketing Manager

Creative Labs

"We haven't heard of any plans to go for an IDE-based CD-ROM drive as yet, but I can certainly see the advantages of IDE drives and a standard like this would be a good thing for CD."

Ian Skelton — Technical Marketing Specialist

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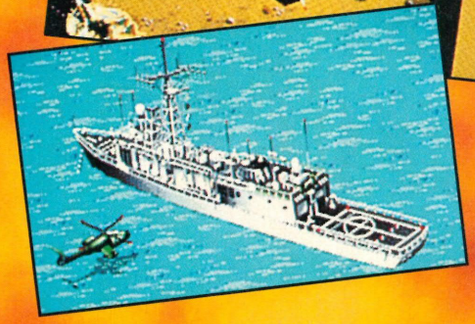
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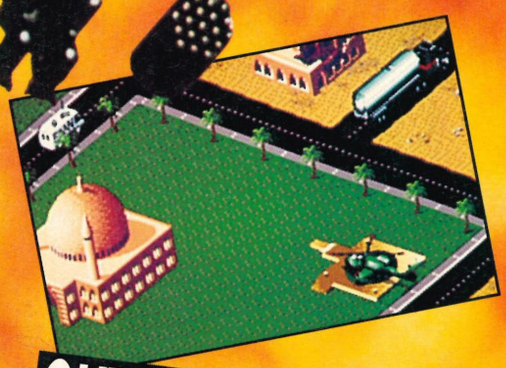


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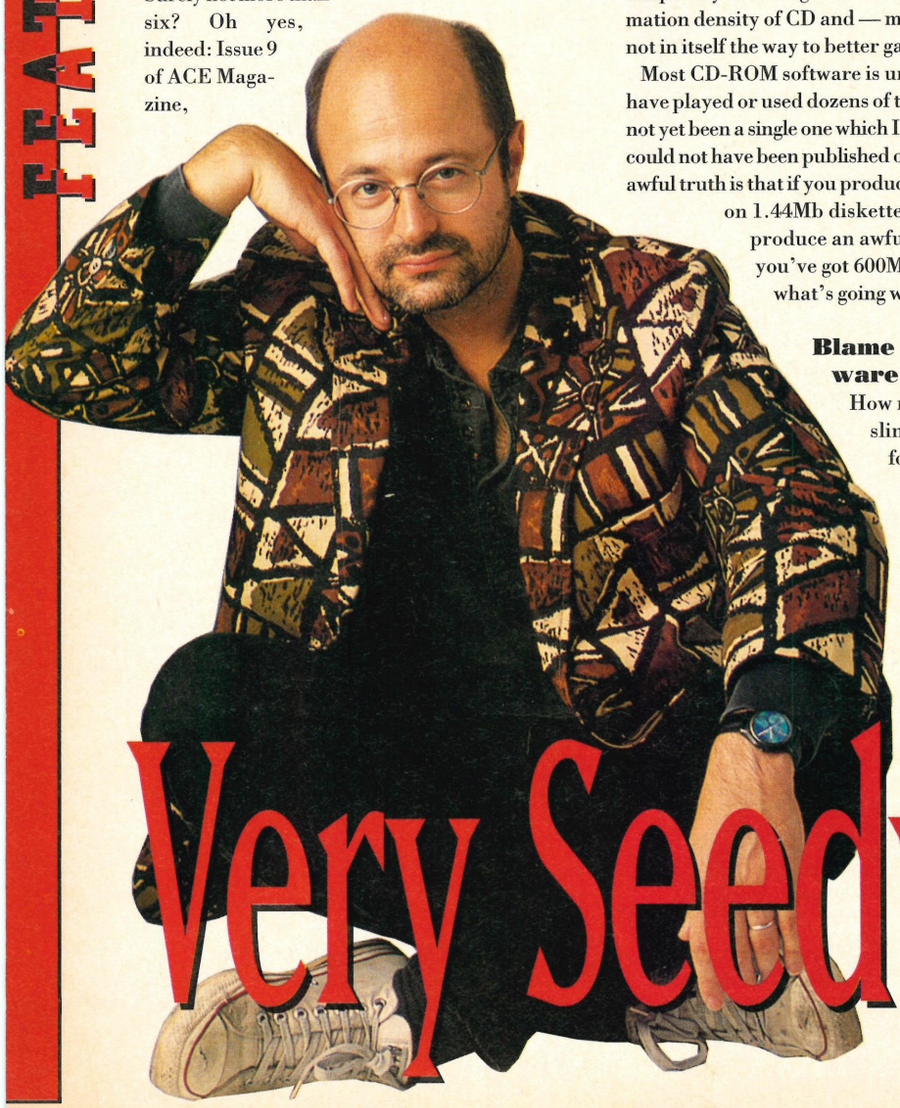
Very Seedy ROMs?

Want to make a million? Let me tell you how. I won't even ask for a percentage. Go to some small Eastern European republic. Buy a large plot of land and dig a deep, deep hole. Then fill it full of CD-ROMs, charging the West 10p for each one you dispose of. You can then retire to a tropical island, secure in the knowledge that you have done mankind a great service.

I'm not joking. The PC Review editor has given me carte blanche to be insufferably rude about CD-ROM, CD-i, 3DO, CD-TV, the Sony Playstation, and just about any other CD platform I can think of. It's a devastatingly easy assignment. And if you want to sue, save your money. My defence, m'lud, is that I speak the truth.

So let's go back to the beginning. Perhaps the most ludicrous suggestion is that this is the beginning, that CD-ROM software is so appalling because we haven't yet got the hang of this brave new medium. So here's a simple test. A back issue of a UK games magazine has an article entitled Interactive CD: The Future of Games, which begins, "Interactive CD is going to be the next big thing in home computer entertainment — at least that's what we've been led to believe over the past year." It assaults you with quotes from 3DO's Trip Hawkins (it's going to be a dynamic audio-visual experience) and gurus from Spectrum Holobyte and Activision on the future of CD gaming, plus screenshots of games in development for CD-i.

Now guess the date. Was the article printed one year ago? Two years ago? Three? Four? Five? Six? Surely not more than six? Oh yes, indeed: Issue 9 of ACE Magazine, printed in May 1988. So don't tell me we haven't had time to get it right. We have, and we haven't.



Before we go any further, perhaps we ought to tackle the subject head on and establish our bearings. There are two ways of looking at CD. You can regard it as just another medium, cheaper to manufacture and distribute (on a pound per byte basis) than floppy disks or cartridges. It may be a lot slower than these media, but it has the advantage of holding an astonishing 600 megabytes of data; except that 600Mb isn't astonishing anymore and you'll soon be able to buy a 600Mb hard disk drive without busting the bank.

That's the sensible way of looking at CD, because it's the honest, truthful way. The dishonest, false, silly way of looking at CD is as a new medium. It isn't. And that's the root of the problem. Computers are the medium. CD is is just one storage system out of many. So anyone expecting wonderful new programs on silver platters can forget it. There's no reason whatsoever why games should be intrinsically better on CD than on a hard disk. Of course, you can have more graphics and sound, but that's a temporary advantage offered by the higher information density of CD and — more seriously — is not in itself the way to better gameplay.

Most CD-ROM software is unmitigated crap. I have played or used dozens of titles and there has not yet been a single one which I would pay for that could not have been published on floppy disk. The awful truth is that if you produce crappy software on 1.44Mb diskettes, you're going to produce an awful lot of crap when you've got 600Mb to play with. So what's going wrong?



Blame the hardware

How much mud can we sling at the CD format? Bucketfuls, I'm afraid. Let's start with the discs and the drives themselves. The original CD system was designed by Philips for music and what's good for music is rubbish for computer data. Our ears have enormous in-built tolerance to inaccurate reproduction; microprocessors have none at all. As a result, information creeps off the disc at around 150k a second. And it takes perceptible amounts of time to find the information on the disc surface in the first place.

Double-speed drives are now commonplace and may become the standard soon; triple-speed and quadruple-speed drives are also readily available. The advantage of the higher speed is that it will make it easier to use CDs for video, without having to bolt on such powerful decompressing hardware. But that ushers in another problem. Space.

CD has an image problem, in more ways than one. People think that CDs mean interactive movies. And 600Mb simply isn't large enough for the interactive movie model. You need gigabytes of space for that, otherwise you're restricted to just over an hour's playing time per disk. Multi-disc products are the next step: Virgin and others are already spilling over on to two CDs for their latest titles. But disc swapping is a tedious business. True interactive movie-style products will not be viable until we can play them over the cable network, giving us access to massive on-line storage systems without having to invest in the hardware at home.

Then there's the problem of standards and implementation. Let's ignore the non-standard approach of 3DO and CD-i, which are obviously incompatible, and concentrate on PC CD-ROM. This is an absolute nightmare. There's the physical incompatibility, which Editor Erskine has already waxed lyrical about in a recent issue and

which involves ribbon cables that won't reach, cards that won't fit, lost caddies and so forth.

Then there's operating software incompatibility. There are hundreds of different drives, each requiring different drivers, different versions of Windows, different PCs, different everything. There is only one rule: if you need it, you haven't got it.

And finally there's file incompatibility. Since everyone knows how wonderful these CD thingies are with sound and video, they stuff them full of sound and video. And you get little messages like Quasimodo Sound Card Driver V1.2 Missing. Press Any Key, followed by a disc which is completely silent. And meaningless, because the designer left the text prompts off the interface (they used speech prompts, of course). And so on, and so on ...

Thinking about that big pit in Eastern Europe just yet?

Blame the designers

Let us assume, idealists that we are, that all these problems will have been solved by the time you read this. That when you shove your little discy into the drivey, it spins merrily and weaves a wonderful, interactive, multimedia experience just for you. What joys await you then?

The most common experience is the Incredible Multimedia Reference Work. This may be an encyclopaedia, a disk about animals, or some sort of history book. It will have a wonderfully imaginative title; if it's about animals, for example, it may be called The Animals! or — touch of bravado here — just Animals! If it's an encyclopaedia, it will be called Crumptons' Multimedia Encyclopaedia and so on.

Luckily, this level of imagination extends to the contents too. A disk called Creatures!, for example, might contain vast (maybe 100) numbers of photographs about creatures, together with some text about them. Undreamt of possibilities now await you. You can:

- List the creatures in alphabetical order
- List the creatures in other orders (eg, list the cats together)
- List the creatures in no order at all (clever use of the random generator!)

What the naive punter may not realise is just how much more exciting this is than a book. For example, you can click on a creature and see some text! In the book, this text is there from the beginning, but having it so accessible on the page is an insult to the modern multimedia designer. Information must be hidden until clicked for.

And there is more to come. Creatures! also features video clips of the creatures in action! Let's get one now. Click on the icon that looks like a meringue and wait a bit. Not long. No ...Yes ...Here it comes ...Is the drive light on? ...Hooray! There's the video see? Up in that little window on the top right hand corner. And ...yes ...here comes the second frame ...I think ...Oh ...That's it. Well, that was fun, wasn't it? Shall we do it again?

Sarcasm aside, 99 per cent of these products suck. Everyone seems to have forgotten why you buy a reference work. You buy it because it is comprehensive. How many encyclopaedias do you have? How many dictionaries? Unless you blew it, you have one of each and each one will tell you everything you need to know, when you need it. Products like Creatures! charge you a fortune for an astonishing 100 hi-res photos of creatures . The creatures included are the ones that the publisher could find cheap photographic material for. I don't want a disc that tells me what a tiger looks like. I know. I want one that will answer my questions about more obscure fauna. My paper-based Encyclopaedia of Natural History does that. My CDs don't.

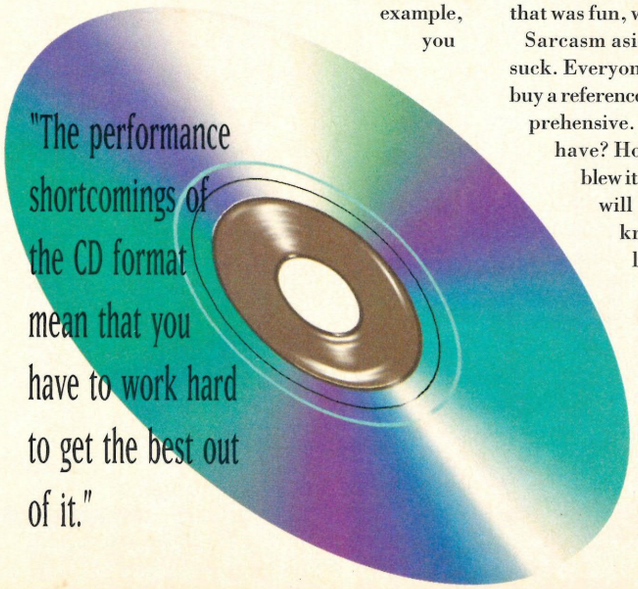
All this is to ignore other shortcomings, just as serious, in the design of CD product. Icon madness means that there has to be an icon for everything, however meaningless. A CD called How Things Work actually dares to put all the icons for all the things on a single screen. You can zip through them all in about one hour. Storylines are what one might expect from a six year old. Screen layout, for the most part, is pathetically awful.

Even if the conception and design is up to scratch, the execution isn't. The performance shortcomings of the CD format mean that you have to work hard to get the best out of it. Disc geography (grouping related files close to each other to reduce access times), buffering (preloading related information), compression software, and painless installation routines are all essential, and all too often missing.

Blame the publishers

Perhaps we shouldn't blame the grunts: the people who do all the work. Maybe the bosses are to blame. When film and information companies spend hundreds of millions of pounds on buying software companies, some poor minion is going to have to generate discs galore to keep up the interest payments. No wonder that there's so much rubbish around.

Publishers have brains and ought to use them. Most either haven't or don't, it seems, consider the resources required to produce a game. You need a programmer (maybe two); a computer graphics designer for the sprites and backgrounds,



FIVE GREAT CDS THAT BELONG ON YOUR SHELF!

1. The National Biographic Multimedia Guide to Breast Tattooing

The perfect gift for your worst male enemy. This disc features over 1,300 high resolution photographs, giving intimate glimpses of a mysterious native art form practised by the women of South Lubianka. Booting up the disc, however, gives the message 'Cannot display PICTO files without a Guggheim Video Card' . The frustrated punter rushes out to buy said card at vast cost, whereupon he gets another message, demanding another piece of hardware. Continues ad infinitum, or ad bankruptcy, whichever comes sooner.

2. Norbert Utilities CD ROM Installer

Isn't it infuriating when you buy a new CD drive, but no matter what disc you put inside, you can't access it? This happens because you have not correctly installed your drive. Insert the Norbert Utilities CD and follow the on-screen instructions to help solve the problem.

3. The Crumpton's Multimedia Directory of Telephone Numbers

An essential utility for the hard-pressed modern businessman. This disk lists every telephone number in the world. Numbers may be sorted in many different ways (e.g. list all five figure numbers; all numbers with a 2 in, and so on).

If you can't find a number, this disc may be just what you need. Lists all numbers between 0 and 99999999999999.

4. Rusty Nail Multimedia Screensaver

Actually, this isn't a CD at all, but don't tell anyone! If you haven't got a CD-ROM, you can still keep up with the Jones' with this handy little utility from Rusty Nail Software. A 360k single-sided diskette holds 10 different screen images, each of which mimics a well-known multimedia application. Switch between different applications by pressing the space bar. Simple to install.

5. Stars!

How many stars can you see at night? Millions. And everyone tells a story. Using the latest compression technology, Mooresoft has succeeded in storing a picture of every single star in the night sky on a single CD-ROM. For the first time, you can see each star on its own, without the distraction of its neighbours. Some of the old favourites even come with their own potted biographies .

and a music programmer for the catchy tune. Similar teams are now being press-ganged into CD development. This new medium, however, demands approximately twelve different skills ranging from artistic direction (does the 2D artwork suit the music), to tools maintenance to video editing. People in our business are learning these skills on the trot. And guess who's paying for the lessons: you and me. You'd be shocked if I told you how many publishers in the last two years have told me that they're developing such-and-such a title to gain some CD experience, without ever stopping to consider what that might mean for their customers.

Other sins we could mention here include absurd packaging, most of which consists of air. Appalling manuals. Misleading claims on boxes (Requires Windows 3, when it needs 3.1). Ridiculous prices. Misleading descriptions...etc...etc...etc...

Eastern Europe never looked so good, eh?

Blame ourselves

I've left the most painful bit until last. Because in the end, it's really you and me who are to blame. We've been had, but we should have known better. It's been over four years since Chris Crawford caused a stink in the industry by writing an article saying that CD would never work for games. He argued that the only thing which CD offered was more data storage, and the best games were never designed around data storage. He was right. CD, I will admit, can make a good game better, by adding some graphical and musical enhancement. But it makes everything else worse.

We should have known better. We knew that CD was slow; we knew that 600Mb wasn't enough space for films on discs; we knew that we couldn't even standardise our sound cards, let alone our video cards, CD controllers, multimedia interfaces, MPEG boards; we knew that multimedia required different development skills; and above all we knew that a new storage device wasn't going to change the face of interactive entertainment.

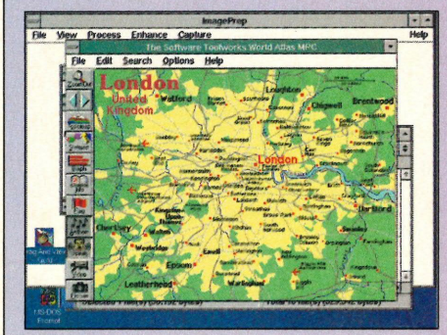
Except it has. For the worse. And we've capped it all by going out and paying good money to help the cause.

I leave you with one last, sour note. Don't you think it's suspicious that the two applications which are generally reckoned to be the most important for the CD industry — music and film — are both entirely non-interactive media?

The number of the Rumanian People's Republic Legation is (071) 937 9666.

SO YOU THINK I'M JOKING?

Oi! Oi! I hear you cry. This CD-ROM stuff isn't as bad as all that!
But it is. Even the better titles fall flat on their face in one department or another. Either the design is great, but the programming awful; or the code and design are superb, but the content stinks. The permutations of ghastliness are endless. Here are a few for you to sample...

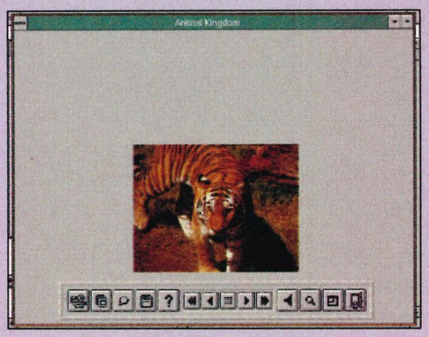


World Atlas
Software Toolworks

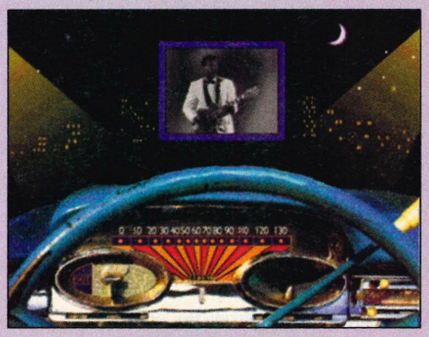
Just imagine! You'll be able to take a picture of the earth, click on the States, zoom in, click on New York, zoom in, click on Queens, zoom in, click on your street... and so on, until you're clicking on the stale doughnut under the kitchen table. This common fantasy — popular with techno freaks in the late 80s — is rudely shattered by World Atlas. Less of an atlas, more of a catalogue of basic demographic and geographic info about each country, World Atlas is the prime example of consumer expectation laid low by the realities of CD. For some reason, most people interpret 600Mb as meaning unlimited amounts of space . You'd need 600 gigabytes to do justice to the popular conception of World Atlas. In reality, click on the Caribbean and the program says Caribbean. It zooms in. Click on Jamaica. The program says Jamaica. It zooms in. Click on Kingston. The program says Kingston. It does not zoom in. You've reached the bottom level, and now there's nothing left to do except access a massive 350 characters (yes: characters, not words) about Kingston's population, rainfall and other data. It doesn't even mention Bob Marley.

Animal Kingdom
Aris

A classic CD monstrosity, this program boots up with a beautiful picture of a tiger and a strip of meaningless icons. No text whatsoever. You have to access help to find out what the icons mean. That done, you are free to browse through the pictures of animals (about 100 out of umpteen million species), with their short New Age music clips. There are also some wonderful movies of animals doing their thing.



Each one lasts for a few seconds, with a stuttering music track (16Mb of RAM for audio buffering might conceivably help). Even a baboon could do better.



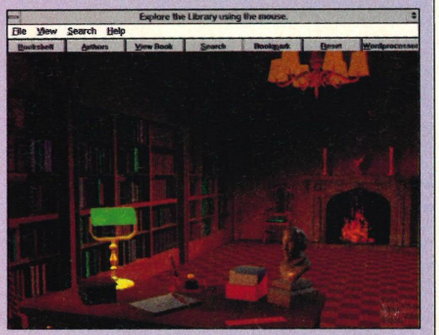
The Rock and Roll Years
Supervision

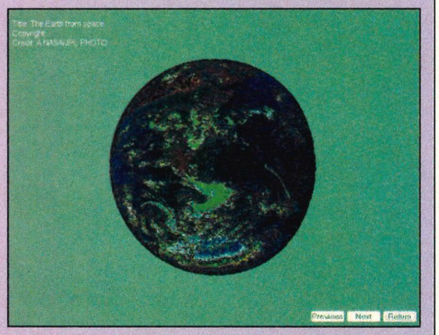
Another monstrosity. You expect loads of info on bands, tracks, managers, radio stations and so on. You expect music. You expect a smattering of video. You get a tiny fraction of all this. Around 30 minutes (all told) of the most appallingly compressed video flickering in a tiny window with tinny sound, no search engines to help you find info, and a trivia game (probably the most inefficient way of finding things out yet devised). The best bit, however, is the interface. Someone obviously said, "Let there be icons". So icons there were. You look at the screen and then press help to get an explanation of the icons, each of which can be summed up in a single word (eg, Quiz). You then go back to the icons and click the one you want. It obviously didn't occur to anyone to put single word instructions on the screen; or maybe having to cater for different languages is what causes the problem.

In short, this is a perfect example of a multimedia product that succeeds in offering you less than a traditional music CD with accompanying printed material.

Classic Literature
Andromeda Interactive

Here's a half-way sensible idea. Text is ideal for CDs. It is easily compressed and can be decompressed on the fly. It can be indexed, searched, even read aloud by a software Dalek. This disc doesn't have a Dalek, but it does have 2,000 great works of literature. I discovered, for example, in about three seconds (the search algorithm is astonishingly quick) that Oscar Wilde was one of twelve writers in the collection to use the word seneschal. Despite this good foundation for students and dictionary compilers, however, Classic Literature is hampered by poor displays for text and insufficient background detail about each word. The Aeneid, it says, by Virgil, before splattering it across the text window. But when did Virgil write in English? And the interface is the most extraordinarily gratuitous bit of window-dressing I've ever seen; a fully-rendered 3D library interior. Click on the books and you get ... a listing of the books!





Red Shift
Maris Multimedia

Just to prove that my cheek harbours an inch or two of tongue where this article is concerned, here's an example of a truly excellent CD title. It uses the space appropriately (to store information on every star, asteroid, planet, and comet you're likely to see in the sky above). It uses the technology appropriately, to display hi-res colour images of certain planets, and to compute planetary positions and movement as seen from any point on Earth (or on other planets, come to that). It doesn't say Venus when you click on, gosh, Venus. It's icons are necessary and (mostly) well thought-out. It does *more* than you would expect, rather than a lot less.



D-DAY, The Allies' daring push against the Nazi invasion, the largest manned landing in history, a day for liberty, a day for freedom. Yet D-Day would never have happened had Germany's air, land and sea-power not been diminished.

It is your job to succeed in destroying the German forces occupying Northern France, in Operation OVERLORD the air campaign leading up to D-Day. Overlord gives you the opportunity to fly the Typhoon 1b, the Mustang III or the Spitfire IX. The game features the revolutionary INSIDE COMBAT LOCK system, the cinematic VIEW MATRIX and most realistic graphical portrayal of aircraft and gameworld, in any historical flight simulation to date.

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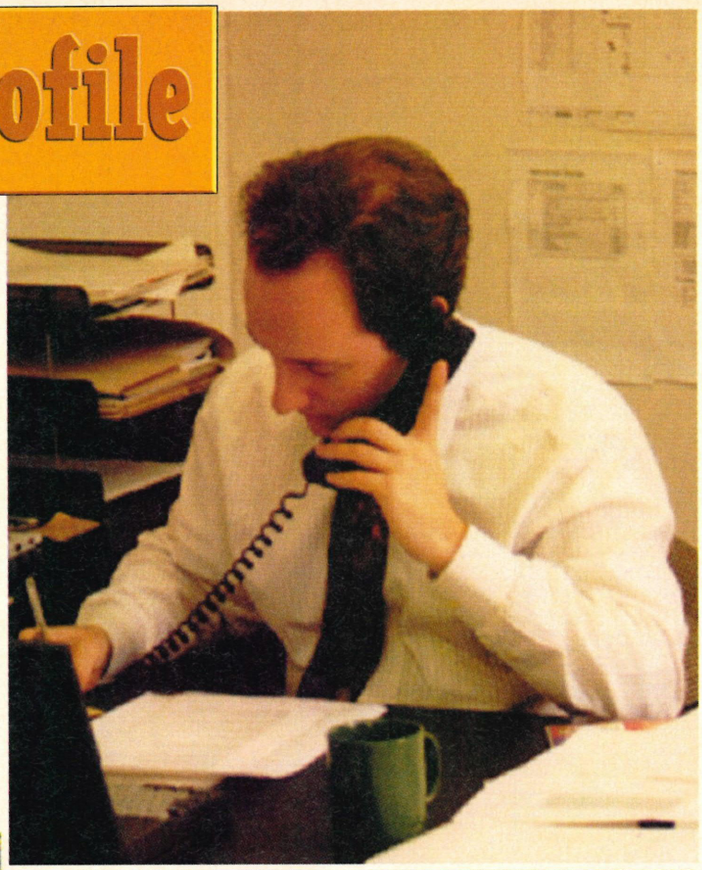
The PC Review profile

Cal Jones goes looking for life in deepest, darkest Chelsea and finds it in the form of software developers, Intelligent Games.

Intelligent Games

Based in a small office in the back streets of Chelsea, Intelligent Games is a young company with a big future. Rumour has it that the office, which overlooks houses belonging to pop stars Bryan Adams and Simon Le Bon, was once occupied by the Rolling Stones. "I wasn't sure whether to believe it until I started getting mail addressed to Mick Jagger," says managing director Matthew Stibbe, who moved into the premises in March 1993. Since then he has managed to stamp his own personality on the place: the walls are decorated with Star Trek memorabilia, and for some reason, Stibbe's desk is covered with Lego.

Intelligent Games used to be something of a cottage industry, operating out of Stibbe's kitchen and comprising only of Stibbe himself and graphic artist Richard Evans. Just over a year later the company employs 17 people, and there are plans to expand still further.



Right: Managing director Matthew Stibbe spends a lot of time on the phone, building good relationships with all the companies who will publish Intelligent Games products.



Below: The Intelligent Games team. According to Stibbe, the photo was something of a public humiliation. "There were a lot of people in the park at the time." Stibbe, in the front row, is wearing the cricket jumper and shorts.

King of Wall Street

King of Wall Street, is one of Intelligent Game's products which will be published by Virgin. It is an interesting mix of stock market simulation and role-playing game. Unlike Interplay's stock market game, Rags to Riches, you don't just buy and sell stocks and shares with the aim of making a fortune. In fact King of Wall Street is closer in spirit to the Wall Street movie than Rags: you can choose from a selection of different characters, each of whom has their own personality, grudges and aspirations and so on. In the game, not only are you trying to survive in the cut-throat world of the New York stock market, but you're also aiming to grind your arch-enemies into the dust. A typical day could involve making or losing money in speculation, dealing with the press over allegations of fraud, insider trading or even dining with a politician who's offering you political favours in return for funding his campaign. King of Wall Street promises to be a tense game of intrigue, ruthlessness and revenge, with top-notch graphics to boot.

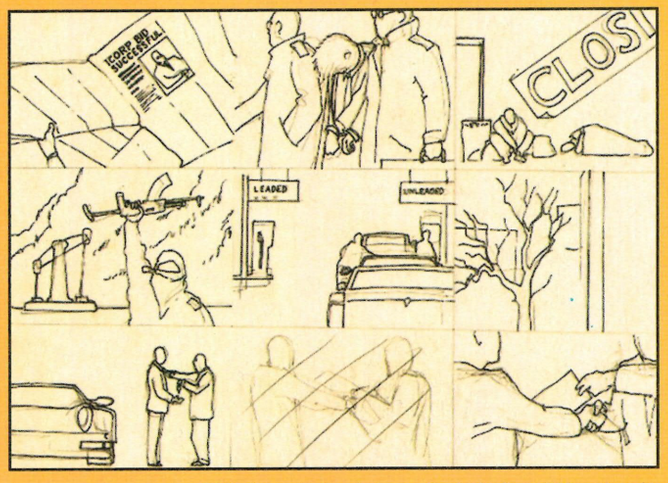


A lot of time has been spent creating many of the graphical screens for King of Wall Street. The carefully painted drawings of underground liason points and scene setters add immensely to the tense atmosphere of the game.



A screenshot from the game shows your plush office. The office is fully interactive — you can look at stocks and shares on the computer, peer inside your briefcase and even play with your executive toy.





This piece of artwork shows shady dealings taking place in an underground car park.

Early sketches of the three end game scenes: losing, retiring and winning.





Working titles

The team is working on four titles at the moment: Ticonderoga (Software Toolworks), a naval warfare simulator; King of Wall Street (Virgin), a stock market game; Sim Rainforest (Maxis), which is self-explanatory, and a project for Electronic Arts which will probably be called Deadline News. All the games will be CD specific. "CD is going ballistic," says Stibbe. "Popularity is increasing while prices are coming down all the time."

However, Intelligent Games is trying to get away from the old criticism that CD games are often beautifully presented but sadly lacking in the gameplay department. "We'd rather have people say 'great game, love the graphics' than 'great graphics, shame about the game'," he adds.

To ensure that gameplay takes precedence, games are carefully worked out on paper (as if to illustrate, Stibbe produces a couple of large binders, one for Ticonderoga and one for King of Wall Street, which are filled with ideas, storyboards and sketches) before being transferred to PC. That's not to say that the games won't look good — both Ticonderoga and King of Wall Street have all the aural and visual pyrotechnics you'd associate with a top of the range multimedia product.

It's good to see a company making an effort to produce games which are playable *and* attractive. The downside is that you'll need to own a pretty scary PC to be able to run any of them. "Intel said that at the end of 1995, all home users would have a Pentium PC and a double-speed CD-ROM, so that's what we're planning for," says Stibbe. He means it, too. Sim Rainforest, for example, will run on either a fast 486 or a Pentium, with a 486DX4 being the ideal. Gulp!

In any case, Intelligent Games will be concentrating on the PC for the next couple of years. "We'd rather write for PC which has nine or 10 million home users worldwide, than high-end consoles such as the Sony PSX which, even if it was released now, would take about a year to season," says Stibbe. "We can make money writing for the PC so that's what we do now."

In the pipeline

It's fairly unlikely that we'll see any Intelligent Games products on sale before the end of the year, but Stibbe already has two games under his belt: Imperium, a space strategy and empire building game which was published by Electronic Arts, and 'Nam (Domark) which he completed during the final year of his history degree at Oxford University. "I still managed to get a 2:1," he says, making me feel rather inadequate.

> "We'd rather write for PC than high-end consoles such as the Sony PSX."

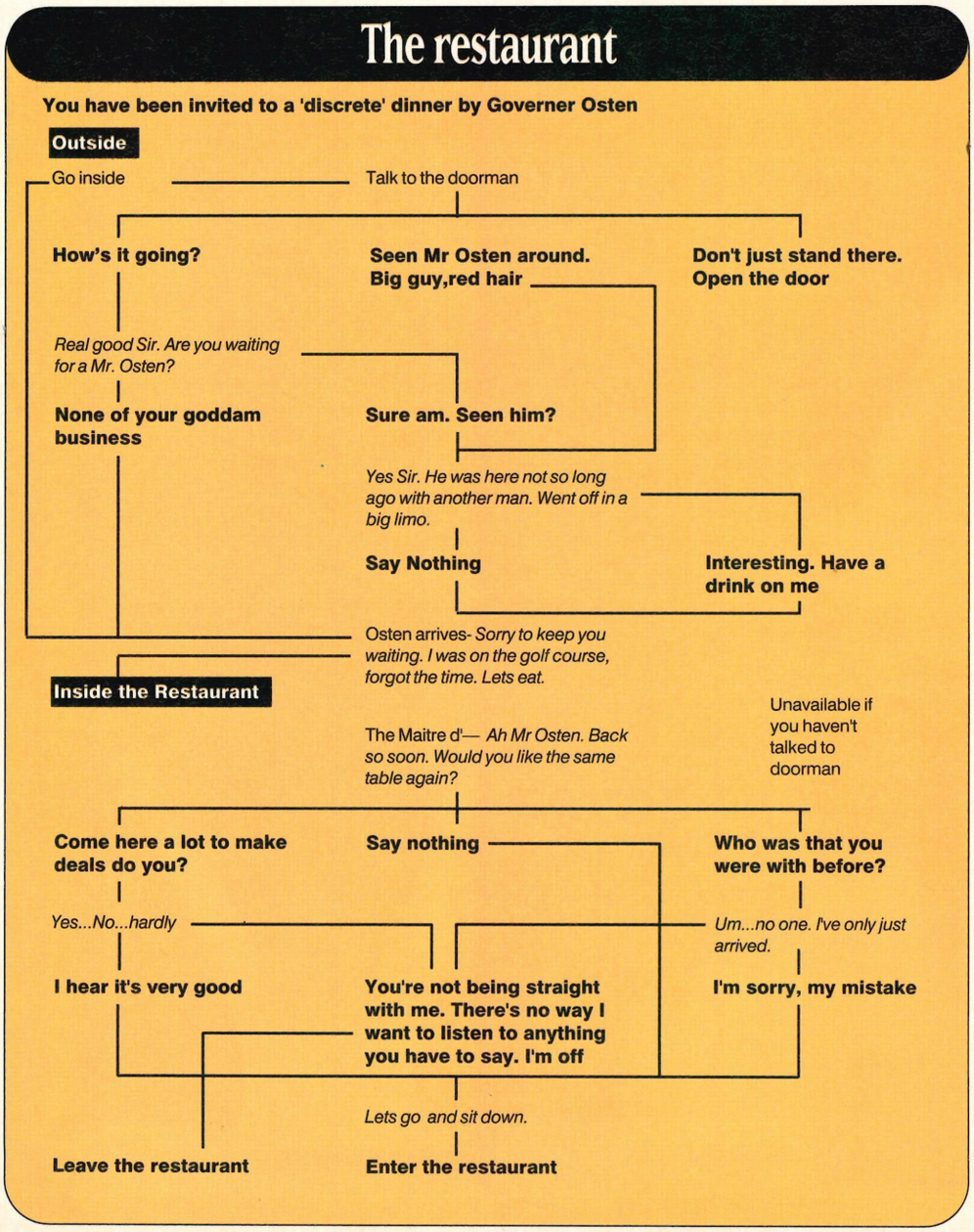
Stibbe has been involved in both the design and coding of games, but now sticks to a mainly managerial role. His goal is twofold: to keep Intelligent Games running smoothly and to get it known more widely. He does, however, keep an eye on the games to make sure that they're progressing the way he envisaged, although he doesn't like to interfere too much: "I don't want to trample on people's creativity," he explains.

Passion before experience

Not everyone who works at Intelligent Games has had experience in the games industry before, but they do have to be passionate about games. "I like to see them playing games after hours — I count it as revision," says Stibbe. Not surprisingly, network Doom is the current office obsession. In addition, potential Intelligent Games programmers need to be good at, well, programming. All the current team members have degrees in computer science, and all are put through a difficult "C" test ("C" being a popular programming language) as part of the interview. It's a tough selection process, but it does ensure that only the best people are chosen for the job.

Choosing programmers is one thing, but choosing who will publish a game is quite another. Some development houses prefer to stick with one publisher, whilst others use more. Intelligent Games falls firmly into the latter category, with games being published by Software Toolworks, Maxis, Electronic Arts and Virgin. "We're a bit promiscuous, aren't we?" Stibbe admits, and I can't really argue with that. Still, it seems that using a number of different publishers has several advantages. It avoids the problem of putting all your eggs in one basket: if you've signed up to do a series of games with a publisher and they go down, it's far more difficult to recover than if you were doing just one game with them.

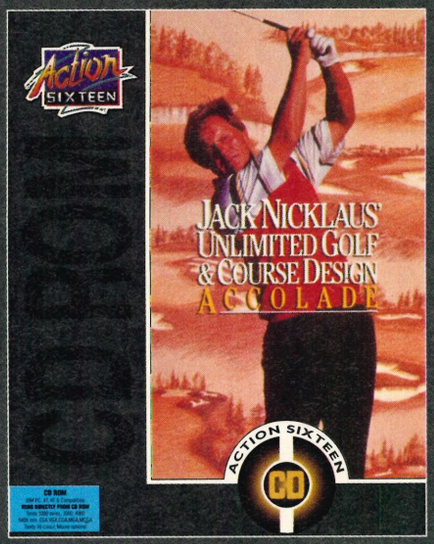
It's also true that some publishers may be better at publishing certain types of game than others. "We take a game to the publisher who we think will do the best job with it," says Stibbe, who believes that being independent has given Intelligent Games more artistic and creative freedom. It is possible, though, that Intelligent Games will enter into a "monogamous" relationship with a publisher in the future. Because Intelligent Games is using different publishers at the moment, Stibbe has a good idea of who he prefers to works with and what their various quirks are. Until then, Intelligent Games intends to produce quality games on its own terms. I look forward to seeing the first.



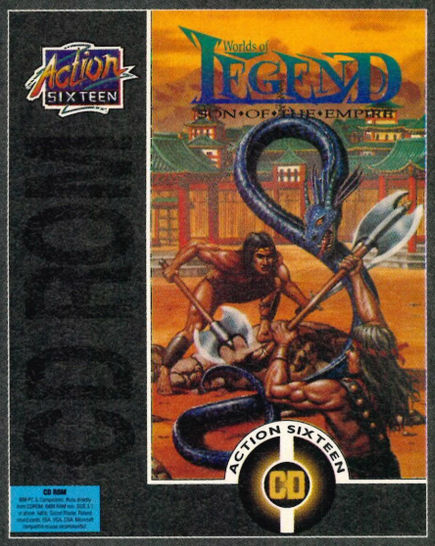
Different options are worked out on paper before being included in the finished game. This one involves meeting a governor in a restaurant, and allows you to choose what you will say and do.

Action SIXTEEN

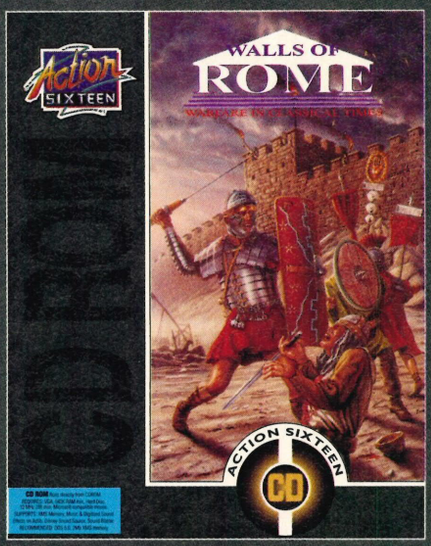
CD ROM PC



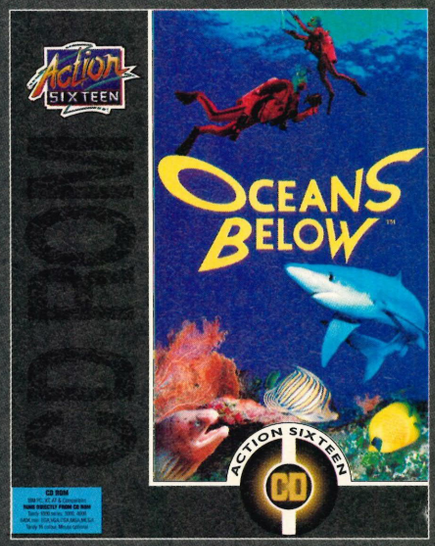
JACK NICKLAUS' GOLF - CD, PC & AMIGA



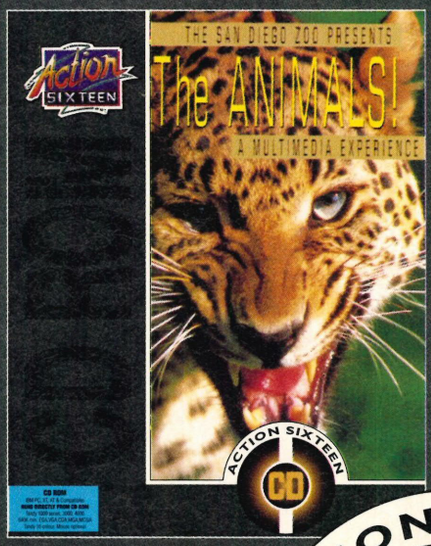
WORLDS OF LEGEND - CD, PC & AMIGA



WALLS OF ROME - CD & PC



OCEANS BELOW - CD ONLY



THE ANIMALS - CD ONLY



SPACE SHUTTLE - CD ONLY

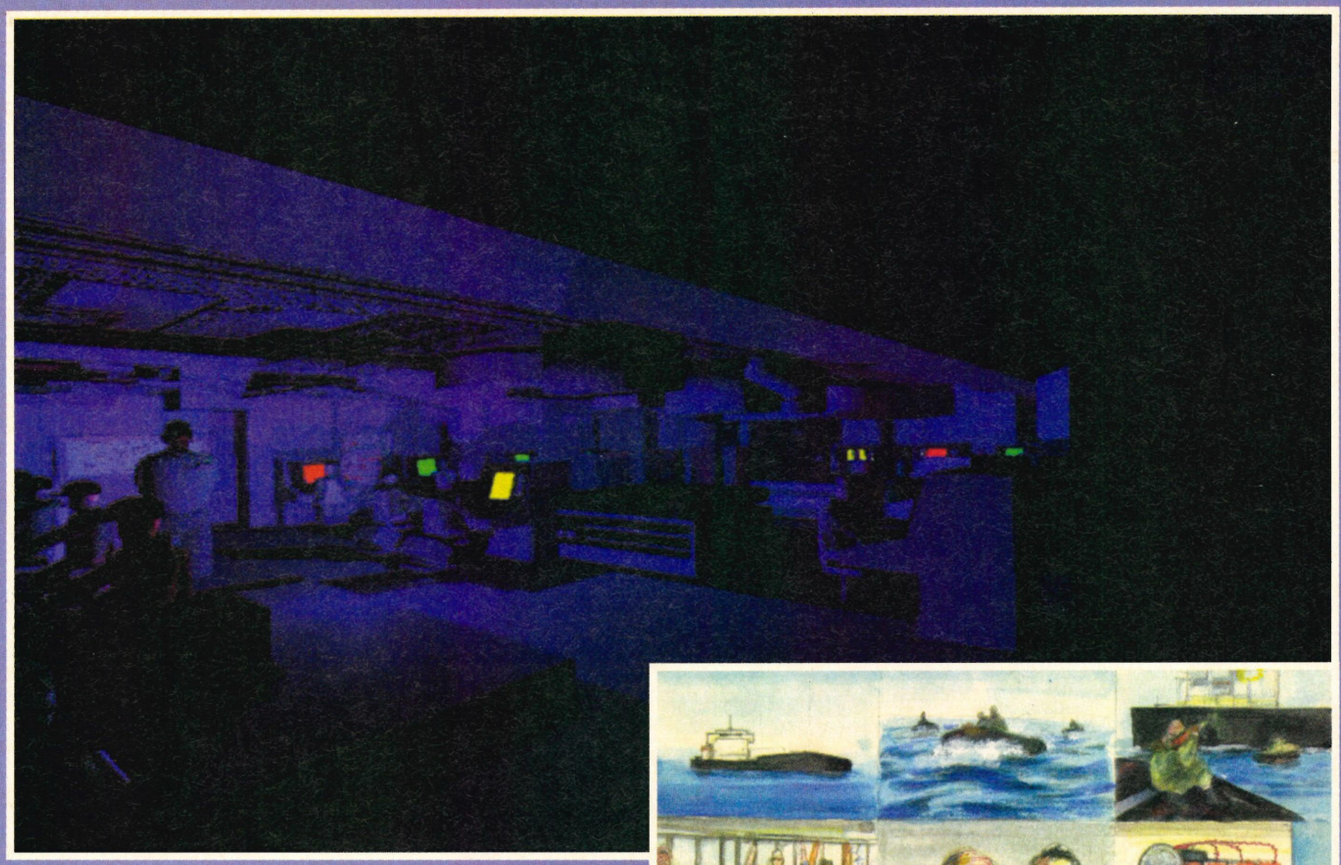
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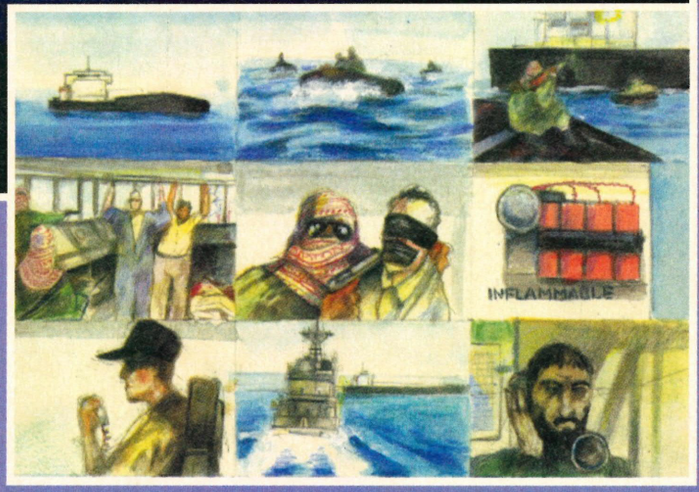
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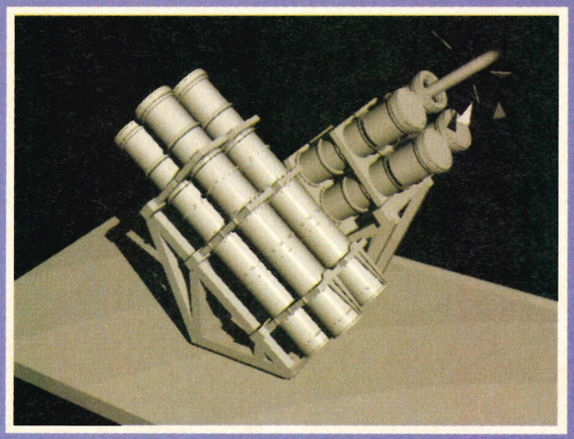
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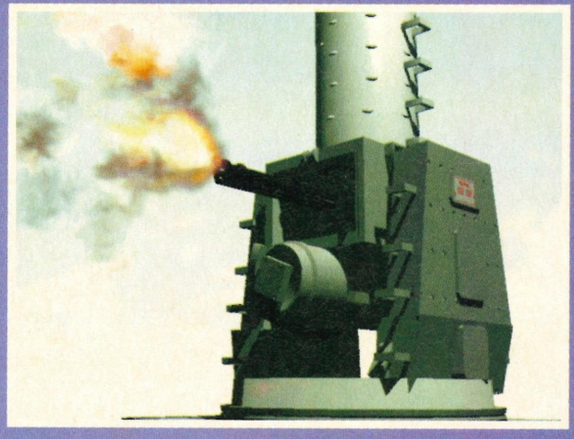
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Ticonderoga









Above: Terrorists take over an oil tanker in one of the missions, shown here in story board form. Where's Steven Seagal now that you need him?

Naval simulators are usually uninspiring affairs, but Intelligent Games could well change this with Ticonderoga. The title, which refers to a type of cruiser, will be published on CD-ROM by Software Toolworks, and although it will have a high strategy content, it is visually very different from other games in the same genre. The player takes the role of a US Fleet captain and will tackle enemy ships, submarines and planes over a series of different missions. Unusually, the game works in first-person perspective, and the interior of the ship has been reproduced in smooth-scrolling 3D. Matthew Stibbe toured the USS Shiloh as part of his research, so you should expect a high degree of technical accuracy. Wonderful SVGA graphics, animations, music and digitised sound effects will ensure that the game is attractive and atmospheric, but this is just the icing on the cake.

Intelligent Games is concerned with producing games which are extremely playable as well as good looking.

Ticonderoga class ships are used to patrol the world's trouble spots, and the diversity of the missions reflects this. One day you could be involved in recapturing an oil tanker which has been boarded by terrorists; the next you might find yourself defending US military bases from a ruthless South American dictator. Mission success depends not just on your ability as a tactician, but also how you interact with other characters. Like King of Wall Street, Ticonderoga contains an element of role-playing, so you're dealing with people as well plotting courses and firing missiles. Ticonderoga has the potential to be the best naval simulator yet, and I think it will appeal to a far broader audience than other games in the same category.



KICK OFF 3



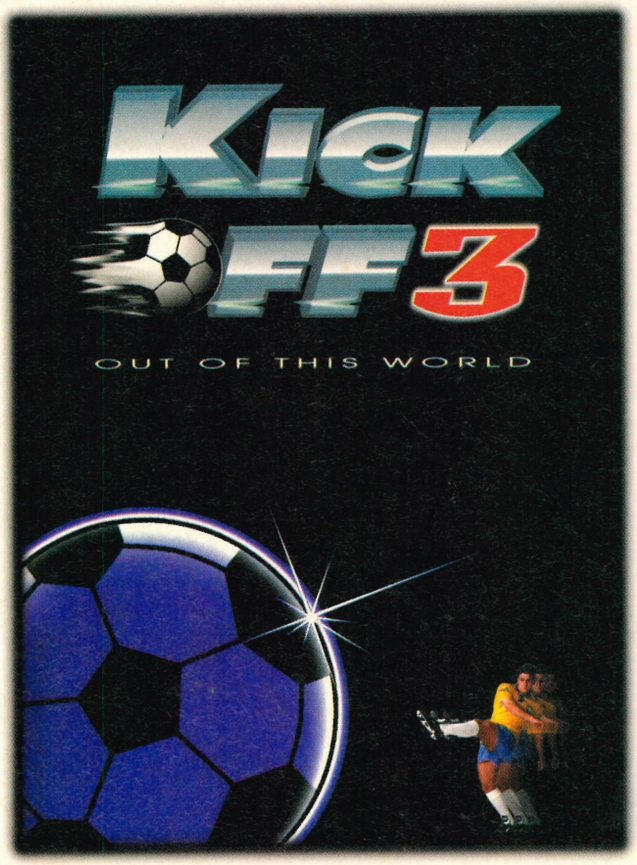
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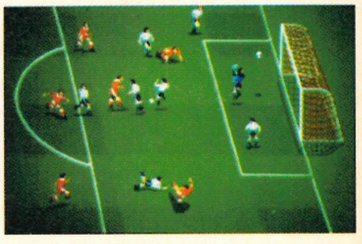
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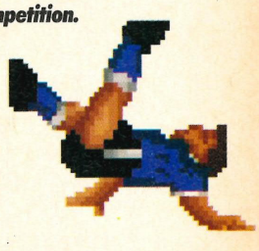
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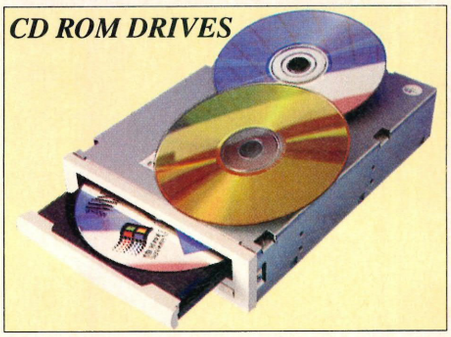
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Warm up time	<45 secs	<90 secs	<34 secs	<15 secs	<35 secs
First page of text output	<15 secs	<20 secs	<34 secs	<34 secs	<19 secs
Layout document description language included	YES	-	-	-	-
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Scaleable resident fonts - in HP LJ III emulation	8	13	26	8	-
Resident bit-mapped fonts	14	18	-	7	7
AGFA Intellifont scaleable font technology	YES	-	YES	YES	-
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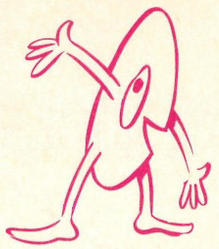
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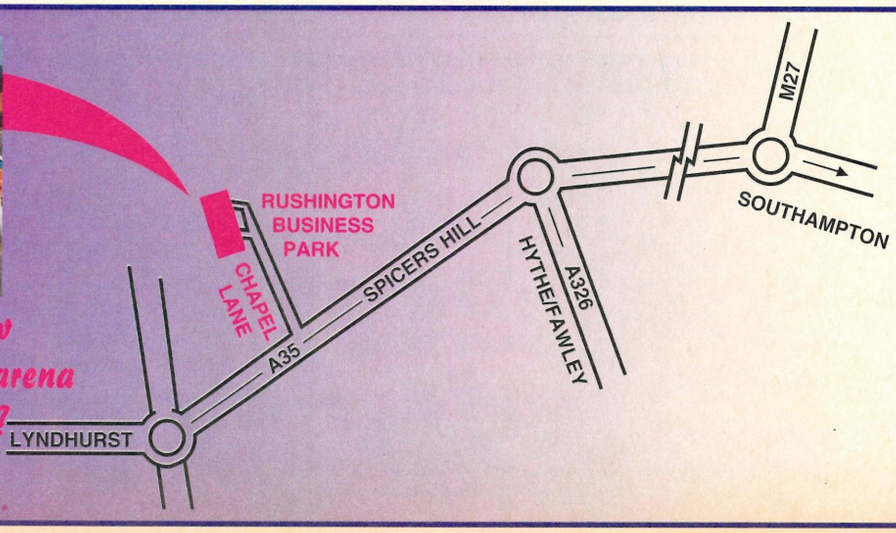
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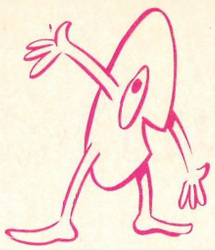


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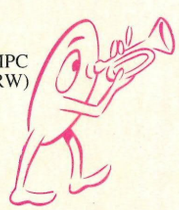




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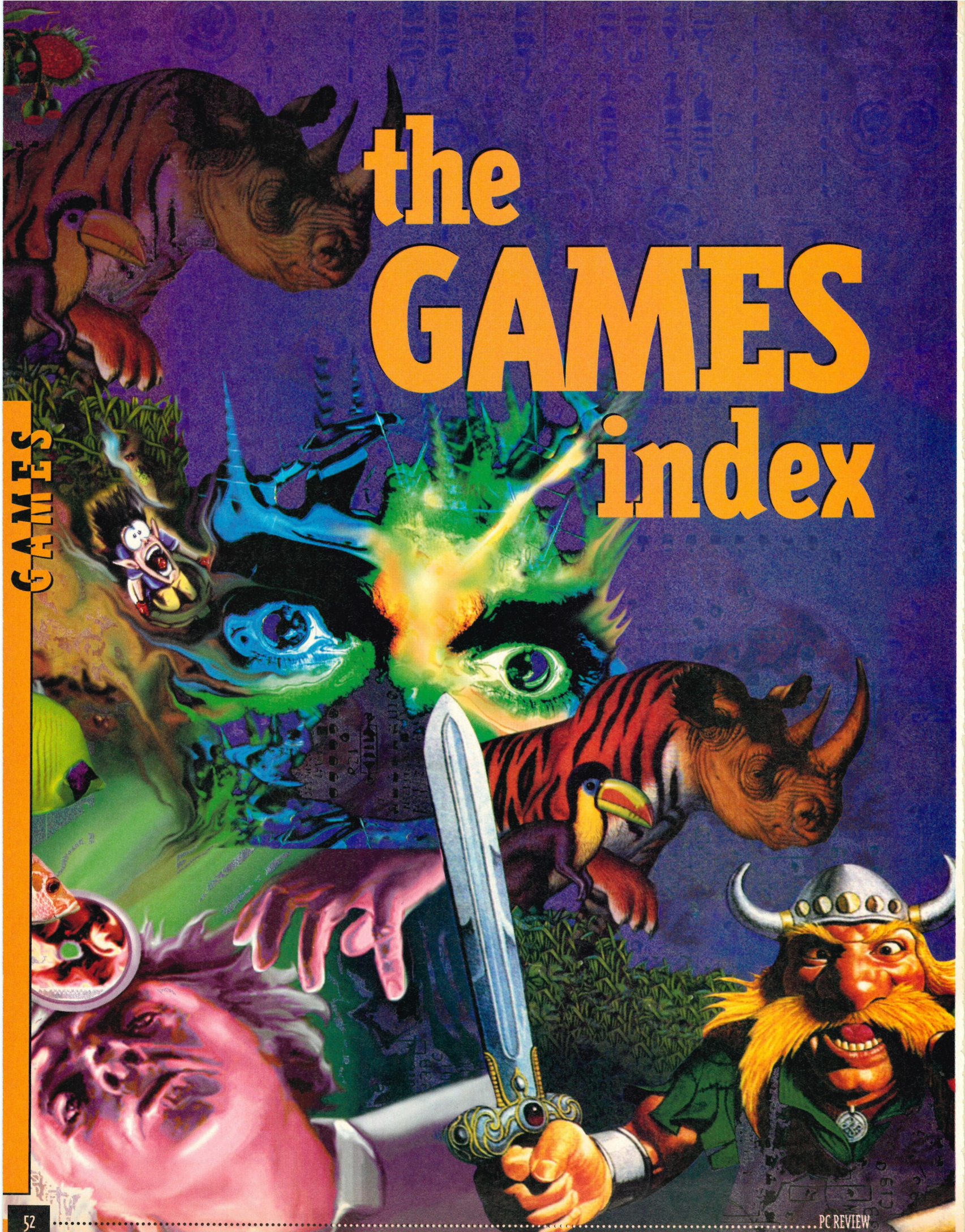
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the GAMES index



Reviewed this month GAMES

Welcome to PC Review's games section, 50 pages of reviews, news, previews and tips covering absolutely everything that's happening in the world of PC games.

We know from our surveys and correspondence that you consider the reviews not only the most important part of the magazine, but also the best games reviews in the business. That's why we take the trouble to include additional information such as the Alternatively panels which are there to place the title being reviewed in context. We'll tell you about similar types of game which may be more – or less – to your taste. We also include playing guides to many of the games we reviewed, designed to give you a feel for what the game is really like.

The ratings

PC Review gives a single mark out of ten to rate games. We chose ten because it's succinct, simple and because there's little point in haggling over the odd percentage point between an arcade game and a war game which can't really be directly compared anyway.

We can be pretty tough on games when we put our minds to it – since 'five' is the average mark, any rating above five means the game is above average and vice versa.

0 A game without absolutely nothing to recommend it to anyone.

1-2 Poorly implemented game, badly programmed, very disappointing.

3-4 A game with some good ideas but serious drawbacks: poor controls, poor animation, maybe just plain tedious.

5 A solidly average game. Competent without being anything special, probably enjoyable in the short term.

6 Won't disappoint any fans of the genre; an above average title but probably one which doesn't break any new ground.

7 Good, imaginatively programmed game which should appeal to the majority of players.

8 Very good indeed — a game will need something special in the way of gameplay, innovation, graphics or sound to worth an eight.

9 Outstanding as an all-rounder. Few, if any, failings, in graphics, sound, atmosphere, playability, ease of use, etc.

10 Sheer perfection.



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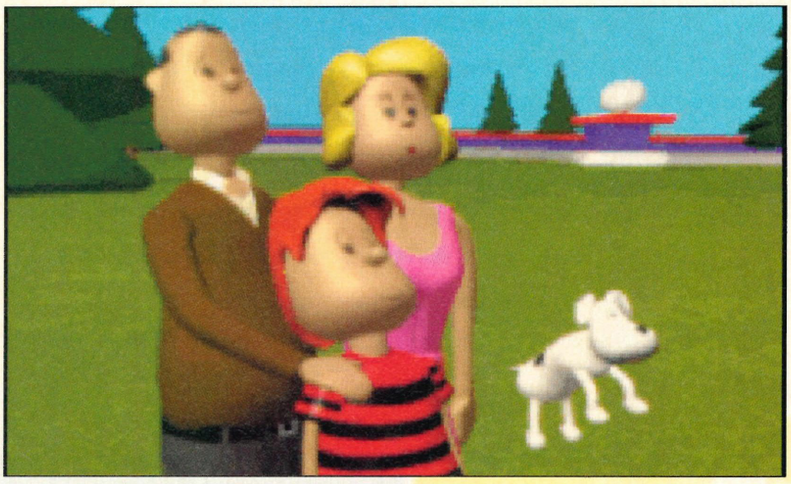
PC Review Recommended 98

Ciarán Brennan 99

Theme Park

Roll up, roll up (and other fairground clichés), Bullfrog is about to take your imagination for the ride of a lifetime, in its brilliant new game.

Theme parks are dangerous places. Rides explode, roller coasters derail, fairground yobs cause havoc and you might even be unlucky enough to twist your ankle after slipping in a puddle of vomit. Yes, there's plenty of scope for carnage in a game like this, but strangely enough, Bullfrog, whose previous release was the splendiferously violent Syndicate, has chosen to make this a nice, family game. When a ride explodes or someone is flung from the top of the roller coaster, they don't turn into strawberry jam as soon as they hit the ground but pick themselves up, have a quick blub and then wander off in the direction of the nearest burger stand. Has Bullfrog gone soft or what?



No, as it happens. Theme Park is one of the most entertaining games I've ever played and if it lacks Syndicate's blood and guts, who gives a damn? After all, not only does it fall into one of the most popular games categories (the world builder genre), but it comes from Bullfrog, creator of some of the most original games seen on the PC and it covers a subject close to everyone's hearts (well, mine anyway): fun fairs. So it can hardly fail really.

The idea is simple: you start with some money and a plot of land, and using your business acumen, you build the best theme park you can.

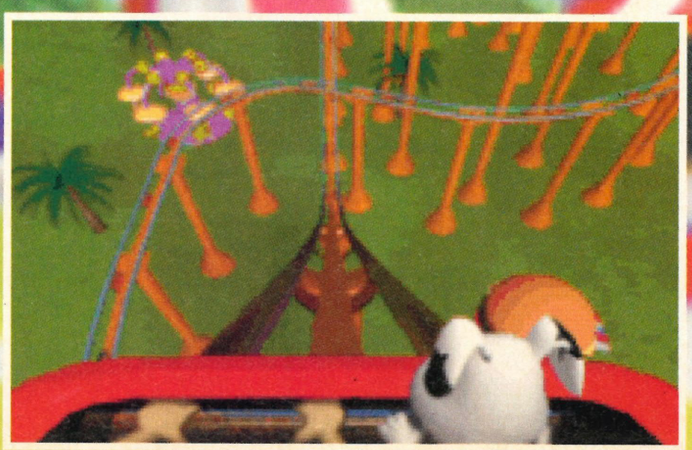
Not only do you have to construct the rides which form the basis of your park, but you must also provide paths, toilets, food stands, sideshows and features such as trees and lakes which turn your park into an attractive environment. You must also employ mechanics to fix the rides, handymen to mow the grass and keep the place clean, entertainers to amuse the punters and security guards to throw out trouble makers. That's a lot of stuff to remember — keeping your theme park running smoothly is like juggling chainsaws (only not so painful).

Swings and roundabouts

On the most basic level, 'sandbox', you have to construct the park and set prices for admission and food. You start with only four rides and a couple of shops but new attractions become available at the beginning of each year. Your financial astuteness determines whether or not you'll be able to afford them, of course.

Right, below, below right: The opening sequence of Theme Park gives you an idea of some of the fun in store for you after booting up the game.







On the middle or 'sim' level, you don't just get the rides handed to you each year — you need to research them instead. Research costs money (well it would, wouldn't it?) so you have to be very careful: spend too much money on making improvements and you could find that you can no longer afford to build all those new and exciting rides you've developed.

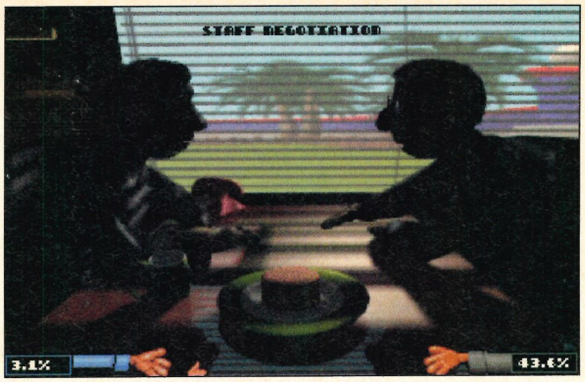
Research money can be allocated to different projects. New rides fall under one category, and are a good place to start because they are the attractions which draw people to the park. You can also spend money on upgrading existing rides, making them safer and improving their capacity so that more people can use them. Food stands and sideshows fall into yet another bracket. You start the game with a Mr Whippy ice cream stand, a coffee shop, a balloon store and a duck shoot stand. These are fine for the time being, but burger bars, steak restaurants, saloon bars and video arcades are more profitable in the long term.

"I built a roller coaster so dangerous that people were flung from it with alarming regularity."

The other thing which happens in the 'sim' level is that you will occasionally have to negotiate staff payments and stock prices.

When this happens, you move to the negotiation screen and must reach an agreement before the pile of chocolate biscuits run out. If you fail, your staff will strike — it may be amusing when Shark Man and Chicken Man start picketing the gate with placards, but it's not so funny when your rides start catching fire because there are no mechanics to fix them. Likewise, if you fail to come to an agreement during a goods negotiation, the company providing the goods will simply stop supplying them, and the punters will go hungry.

The most complex (and most rewarding) level is 'full', which includes all of the above plus more. You have to order goods to keep your shops supplied, and you can also buy shares in rival parks. Conversely, rival park owners will be able to buy shares in your park, which means you'll get a smaller share of the profits.



In the full game, you'll often find yourself involved in pay negotiations. You must come to an agreement before the choccy biscuits get eaten, or it's strike time.



If you fail to reach a compromise during pay negotiations, your staff — including Shark man, Teddy man and the rest — will picket the gates of your theme park.



Accidents happen when a ride is too fast or too dangerous — and provide hours of amusement for sadistic bastards like me.

Lavatory humour

Then you have park features. These include ornamental trees, lakes, cute little fences and, er, toilets. The punters will be much happier when the smelly little bog you start with has been replaced by a shiny new super toilet, and a bit of shrubbery is always a winner (especially if you happen to be visited by the Knights Who Say "Ni!"). It's also a good idea to invest in staff training, which helps motivate your employees so that they work harder for their wages. Finally, you could opt to upgrade facilities, namely the size of the warehouse where you store the food and drink sold by your shops, and the capacity of the bus which brings the punters to your park. This is the least glamourous option, but you can't afford to ignore it because the bigger your buses, the more people will come to visit your park, and owning a large warehouse means that you can buy in bulk at cheaper prices.



MONORAIL
The monorail is a good way to tour your park, but isn't very exciting.

BURGER BARS
Burger bars are a cheap place to eat — if your punters are hungry but can't find any food, they'll go home.

UPGRADES
Upgrades, such as the splash on the big dipper and loops on the roller coaster can be added to make your ride more exciting.



MECHANICS
Mechanics are vital for fixing rides and keeping the park safe, but will often sneak in a quick tea break when they think you're not looking.

SALOON
Don't water down the beer in the saloon too much or the park inspectors will give you a good ticking off.

VOMIT
Fast rides plus fast food equals pavement pizza. Make sure that you have plenty of handymen around to clear up the mess.

CUSTOM RIDES
You can custom build some rides, such as the rubber tubing, race track and big dipper.

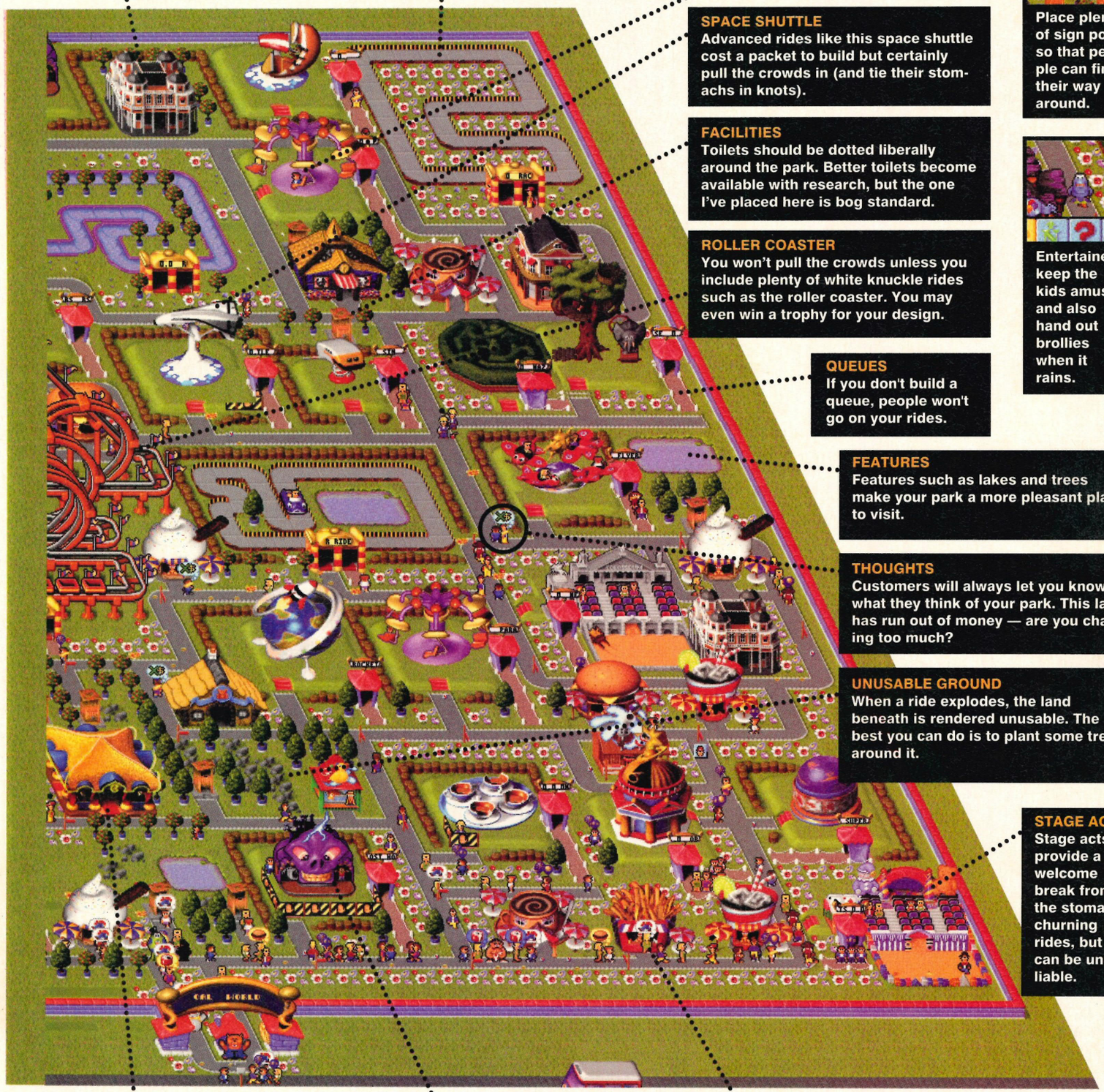
HANDYMEN
Handymen clean up rubbish and vomit and mow the grass — this keeps your park pleasant.

SIDE SHOWS
Shoot the duck, coconut shies and other sideshows are good money spinners.

BUSES
Buses take people to and from your park, and you increase their capacity through research.

HAUNTED HOUSE
This is the most expensive ride you can build, but it's very exciting and extremely reliable.

PATHS
You can make paths one way to regulate crowd flow. Handymen and mechanics can ignore the arrows.



GIFT SHOPS
Gift shops are a good source of revenue, and are most profitable when placed next to an exciting ride.

RACING TRACK
Don't make the track too complicated or you'll have lots of crashes.

SMALLER RIDES
Small rides like the parasol chairs keep the punters happy when the queues get too long for larger attractions.

SPACE SHUTTLE
Advanced rides like this space shuttle cost a packet to build but certainly pull the crowds in (and tie their stomachs in knots).

FACILITIES
Toilets should be dotted liberally around the park. Better toilets become available with research, but the one I've placed here is bog standard.

ROLLER COASTER
You won't pull the crowds unless you include plenty of white knuckle rides such as the roller coaster. You may even win a trophy for your design.

QUEUES
If you don't build a queue, people won't go on your rides.

FEATURES
Features such as lakes and trees make your park a more pleasant place to visit.

THOUGHTS
Customers will always let you know what they think of your park. This lad has run out of money — are you charging too much?

UNUSABLE GROUND
When a ride explodes, the land beneath is rendered unusable. The best you can do is to plant some trees around it.

STAGE ACTS
Stage acts provide a welcome break from the stomach churning rides, but can be unreliable.



Place plenty of sign posts so that people can find their way around.

Entertainers keep the kids amused and also hand out brollies when it rains.

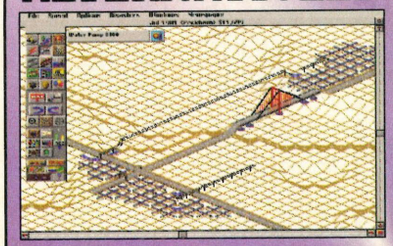
ARCADES
Arcades are a good way to part the kids from their cash, although they're expensive to build and need a fair bit of researching.

BREAKDOWNS
Some rides are more reliable than others, but all break down eventually. Make sure there's a mechanic on hand to fix them before they explode.

FOOD
Put plenty of salt in the chips and the punters will rush next door to the drinks stand, thus ensuring a good profit.

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ALTERNATIVELY



Sim City 2000
Maxis, £44.99
Rated 9, Issue 31
The ultimate city building sim, SC2000 is a mix of planning, design and money management much like Theme Park. The aim is to construct and maintain a city on a tight budget, making sure that your citizens don't leave for neighbouring towns where life might be cheaper or better. If you want cute, get Theme Park; if you want a more serious sim, try this .



The Settlers
Bluebyte, £33.99
Rated 8, Issue 33
Settlers is basically a cross between Civilization and Populous a game in which you have to build up your population, expand your territory and conquer your neighbours. Attractive graphics, challenging gameplay and a two player option make it a good buy, although it's somewhat complex and takes time to get into. A fine addition to the god sim genre though.

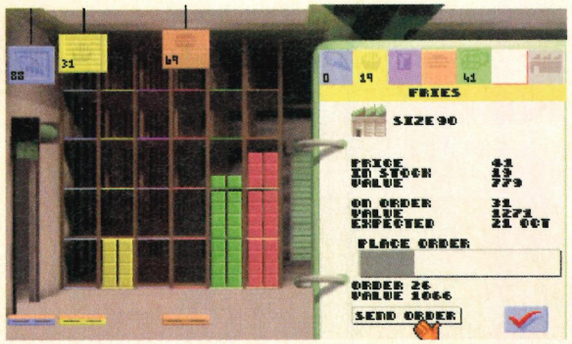
Once you've successfully built up one theme park, it doesn't just stop there. In Sim City 2000 (the nearest rival) you build one city and, er, that's it. With Theme Park, you can sell your creation (hopefully for a profit) and then start again at a new location. You always begin in Britain (it's the only site you can afford), but you can then go on to build parks in America, Europe, Russia and even Antarctica. There are 22 sites in all, each with different conditions varying from the weather to the spending power of the local population. It's far harder, say, to build a successful theme park in Antarctica (for obvious reasons) than it is in England or California. Consequently, the game is no push-over and it'll keep you going for a long time.

All the fun of the fair

Whichever you choose, you also have the option to decide how many rival theme parks you'll be competing against, how tough the rivals will be, how fussy your punters are and how much money you get to start with. There are endless permutations to try out, which means that once you've conquered the game on one level, you can up the difficulty and start again.

Not that it's easy to beat it on any level, you understand. Theme Park is tough. I played the full game with all the other options set to easy and I still found it hard to avoid going bankrupt. If you do go bankrupt, it's game over and you're treated to a nice animation showing you jumping out of a window. Aieeeee!

"Theme Park is one of the most entertaining games I've played – even if it lacks Syndicate's blood."



The stock screen is where you purchase all that lovely ice cream, chips and beer for your shops.

At the end of each year you can see how well you've done against your rival theme parks.



Technicolour yawn

Looks-wise, Theme Park is appealing and attractive. The intro sequence, in all its ray-traced magnificence, is suitably impressive, and the in-game graphics are colourful and cute. Cute, that is, in a funny way rather than a sickly way. All the little people have their own personalities — they get scared, they cry, they give you the thumbs up, they yawn and they puke. Your park could even be overrun by thugs who vandalise the rides and beat up the entertainers. You will have to keep an eye on your public — too many yawns and sobs means you aren't doing your job properly.

There was one thing which I did find a bit odd. Now I'm probably the last person you'd call politically correct (PC means personal computer in my books) but I couldn't help noticing a lack of darker skinned people in my parks. I'm not just talking about the park I built in Britain, either: my South African, Nigerian and Indian parks were visited solely by white people. Apparently, Bullfrog wanted to include different races, but it would have used up too much memory.

The park is seen from a semi-isometric viewpoint, but unlike Sim City 2000, you can't rotate the map to see behind things. This would have made it difficult to build behind large objects, but you can miniaturise everything to make it a bit easier. This doesn't, however, get round the problem of building roller coasters, which you design yourself. If you make the nearest track very high, it's hard to tell what's going on behind it.

Building big roller coasters is good fun, though. You can make them as long, tall and twisty as you like, and when you've done further research you can add things like loops, corkscrews and water splashes. You have to be careful that you don't make them too violent, however. I built a roller coaster so dangerous that people were flung from it with alarming regularity. You pays your money, you takes your chance.

Theme Park is great. It's attractive, addictive and thoroughly mesmerising — get the caffeine supplies in now! If you get the CD version, you can even go on all your rides — bouncy castle and all. I love it, but if you're more the serious sort, you might find it a little frivolous for your tastes (you boring person). Still, I think it will appeal to most of you. Can Bullfrog ever do anything wrong?

■ Cal Jones



TECHSPEC 9 RATING

Compulsive stuff – I couldn't leave it alone.

Publisher: EA/ Bullfrog
Price: £44.99 disk/£39.99 CD
Contact: (0753) 549442

Minimum PC: 33 MHz386 MS-DOS 5.0,mouse
Minimum memory: 4Mb
Minimum graphics: VGA
Sound: Sound Blaster, Orchid,

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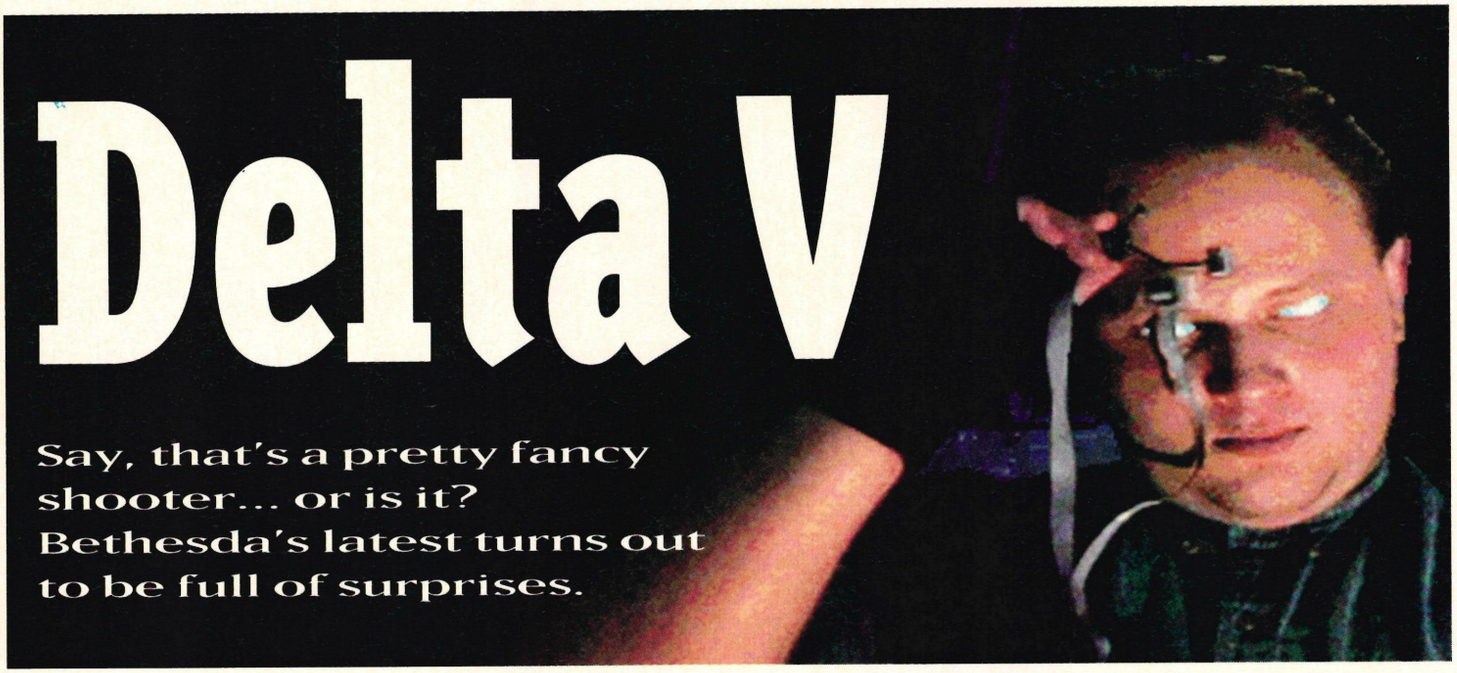
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MICROPROSE

SUBJECT TO AVAILABILITY

Delta V



Say, that's a pretty fancy shooter... or is it? Bethesda's latest turns out to be full of surprises.

In the future, we won't have food, drink, music, social contact or That's Life, because all human physical and emotional needs will be satisfied by a daily dose of pills, and the BBC have just cancelled That's Life anyway. So they say. Likewise, we won't have computers operated by keyboards, mice or even speech recognition systems because you'll be able to have a little jack socket planted in your skull so that you can plug your head directly into the nearest mainframe.

And such a glorious, Cyberpunky future world is just the scenario you find yourself materialising into in Delta V.

This fancy-pants 3D shoot 'em up casts the player as one such hole-in-the-head hacker (a 'Net Runner') who has just joined the industrial espionage department of a multi-national corporation. The corporation employs hackers who plug their brains into rival corporations' computer systems to steal their secrets or sabotage competing projects. But cast from your mind all visions of typing in passwords and trying the G-cipher, because this is all done in the virtual world of the SenseNet.

Caught in the net

Encased in a virtual assault craft, you have to fly your consciousness down a 3D comms canyon, which represents a data path into the opposition's system. Instead of using some old-fashioned multi-level password system, the bad guys have protected their data by filling the canyon with all sorts of spiky obstacles, blockages and gun turrets, and it's patrolled by their own squads of Net Runners, who also have their minds clad in little virtual spacecraft.

Luckily for you, you're equipped with a pair of forward-firing cannon and a torpedo launcher, which do a reasonable job of clearing the way.

It is only a reasonable job, mind, because the shots don't seem to fly fast enough for you to be able to effectively target enemy ships. By the time the shot has reached their airspace they've flitted out of the way, so you have to keep up a constant stream of fire, and if you do hit anything it's more by luck than judgment. The ship's targeting computer keeps telling you that it's acquired a target or it's locked a weapon on to something, but this didn't seem to make any difference to the probability of a shot landing on target.

Exploding brains

Not surprisingly, colliding with enemy ships or enemy fire depletes your ship's shielding and if the shields go completely, your brain blows up, or something... it's Game Over, that's for sure. The in-game instructions advise you to stay in the canyon and ride its twists and turns because if you pop your head over the rim the bad guys spot you in a trice. However, you don't actually get much of a feel for where the ship is in relation to the walls so negotiating the bends feels very vague. The only evidence you have of your wings snagging something are tiny flashing indicators which aren't terribly noticeable when





Below: The boss' office serves as the options screen. Choose a mission, a practice run or a briefing.

Right: It's easy to avoid the spikey bits by simply flying over them, though that can take you right into the enemy's sights.

ALTERNATIVELY



Mega Race
Cryo Mindscape, £44.99
Rated 8, Issue 31
Another 3D shoot 'em up in a futuristic setting. This time you're in a speedy, gun-toting motor racing all sorts of Sooper-Looper highways, blasting everything out of the road.

The action is simplistic but the spectacular ray-traced graphics and the big guns gameplay make it more exciting than Delta V. CD only, alas.



Rebel Assault
LucasArts/US Gold, £39.99
Rated 9, Issue 27
If it's a shoot 'em up you want, you can't do much better than LucasArts' classic CD arcade game. With impressive graphics and music you can't really go wrong — the gameplay is good, too. Whilst you might complete the game in a few days, it's certainly replayable, and has enough excitement for anyone. CD only.

you're concentrating on hazards appearing centre-screen.

The same problem makes flying around the obstacles in the trench an uncertain and annoying business. Sometimes when it looks like you're sure to crash you fly straight through them, and sometimes when it looks like you're completely clear — SPANG! — you hit them and get catapulted back down the trench so that you can run into them again.

The strange controls can result in this continuing for two or three spangs, so after the first one it's usually best just to pull the nose right up, fly out of the trench, go over the top of the obstacle and, as it happens, suffer no penalty.

You might think that if you were to switch from the cockpit view to the external chase view you'd get a better idea of where your ship is in relation to the rest of the virtual world, but, aha-ha-ha, you'd be wrong.

What you do get though, is a much better idea of how bland the graphics are. The texture-mapped canyon looks decent set against the atmospheric plasma-effect sky, but the rest of the vector graphics look like they were programmed two years ago. The enemy ships are simplistic collections of pointy polygons, the targets you have to destroy are pairs of pyramids joined by a stalk and the wings of your craft are reminiscent of luxury garden paving stones.

The power of Zzzshhwipp!

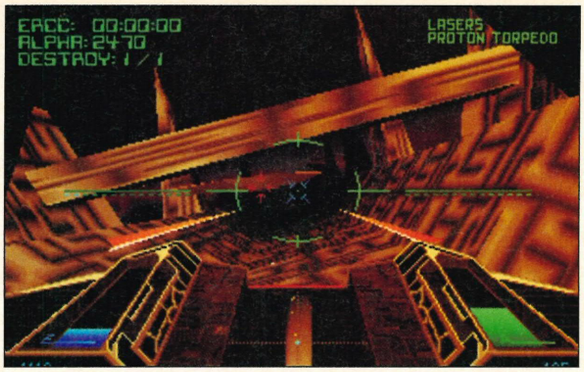
Without much to get excited about in the graphics and gameplay departments, Delta V's most attractive feature turns out to be its presentation. The cut-scenes of ray-traced spacecraft taking off and landing are brief but pretty. The control panels draw themselves first in vector graphics then, with a bit of arcing and a ' Zzzshhwipp!' sound effect they materialise in full colour. Very cinematic. Very Tron.

But all the ' Zzzshhwipp!'s in the world aren't enough to prop up Delta V's confused gameplay and homely looks.

It's dull. It's repetitive. It's really a lot less fun than I was expecting it to be, and in fact, I don't even think I want to keep the free review copy.

And that can't be good.

■ Paul Glancey

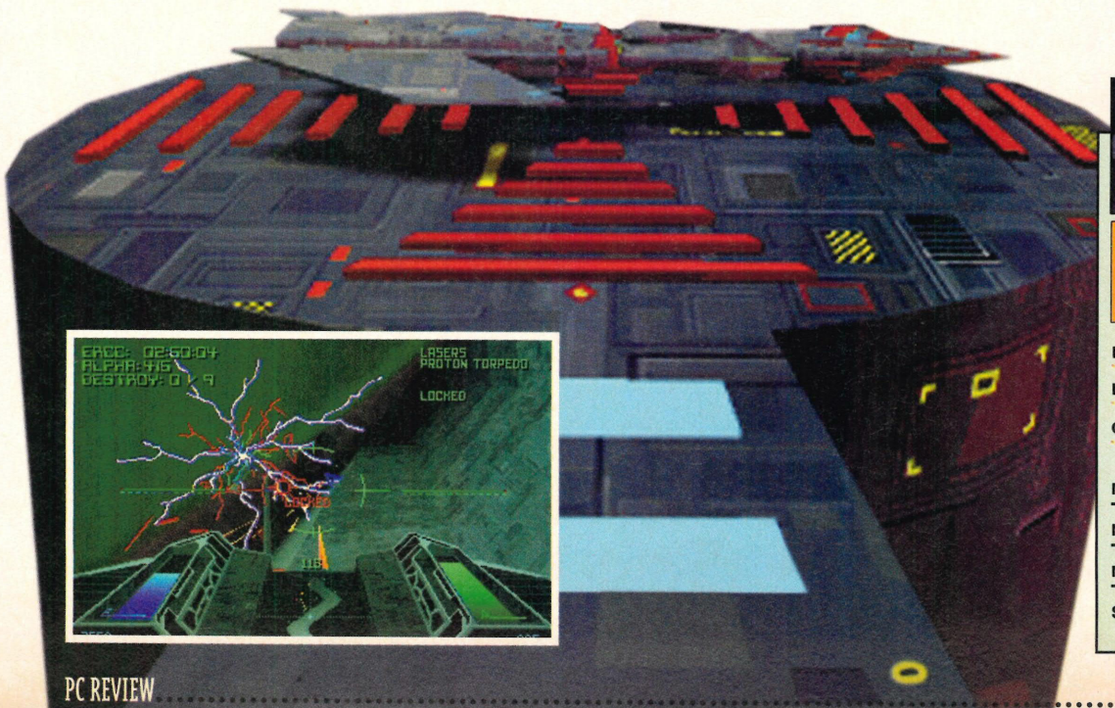




"All the Zzzshhwipp!'s in the world aren't enough to prop up Delta V's confused gameplay."

Above: Doesn't this look great? Shame that it's about as much fun as a tonsillectomy then. Below: Loading up with particle cannons in the pre-mission set-up screen.





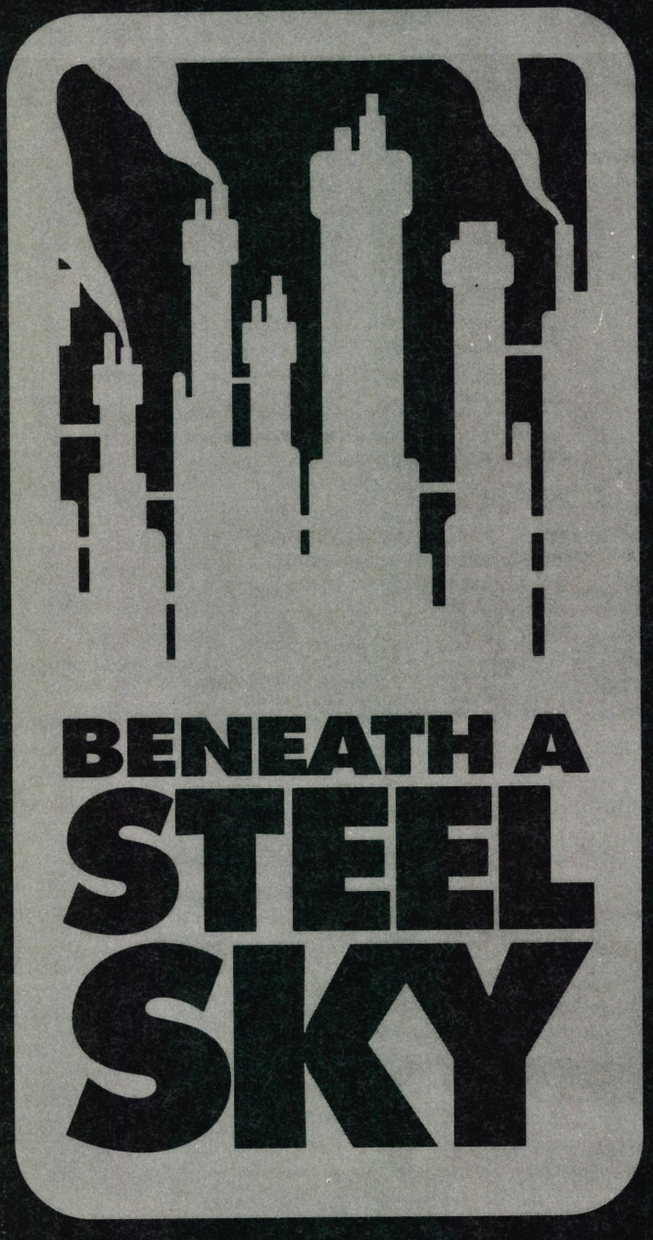


·TECHSPEC· 5 RATING

Promises much but comes up with little.

Publisher:	US Gold
Price:	£45.99
Contact:	(021) 625 3366
Minimum PC:	386 (486 recommended)
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Sound Blaster, Gravis Ultrasound,

Now released on CD Rom...



FEATURES

Digitised comic book intro and background art generated by acclaimed artist Dave Gibbons.

Full voice overs from Spitting Image Artists.

Developed using the fully updated Virtual Theatre game engine.

REVOLUTION SOFTWARE

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Virgin

Zool 2



He's back, he's still an ant, but this time he's bought his dog. Who else could it be but Zool, making his return to the platform arena in the cunningly named Zool 2?

The original game with the Ninja Ant from the Nth Dimension proved to be the best out and out platform game to hit the PC yet (the catch being, of course, that the PC is hardly renowned for its platform games ...).

So, not surprisingly, Zool 2 treads very carefully in its predecessors' footsteps. Formula game? Zool 2? Never ...

True enough, as platform games go it's very, very slick indeed, looks even better than the original, and comes with lots of moves, excellent animations and plenty of fast paced, smooth scrolling, brightly coloured action.

Still, it would have been nice to see a bit more inventiveness for this sequel, perhaps even a risk or two. Sadly, no. A female ant-type character called Zooz and a two-headed ninja dog by the name of Zoon (who crops up in later bonus levels) are about as far as it goes.

Otherwise, you've got the same multiple worlds to bounce, climb, shoot and run around, plus traditional end-of-level obstacles, hidden rooms, bonuses to collect and so on. Oh well.

Still, if we have to have formula games, they might as well be good ones — and I can't fault Zool 2 on that score. It's a very classy example of the platform genre, and you're getting plenty of entertain,m,ent for your money. So, if you're a Zool fan in particular, or a platform addict in general, I guess you're not likely to be disappointed with this one: Zool 2 is going to be, as they say, right up your alley.

■ **John Bennett**





Above: Zool meets Zooz for platform romps. Left: Boing, bounce, shoot, jump, boiiing, collect bonuses ... And on. And on. And Ariston.

· TECHSPEC ·

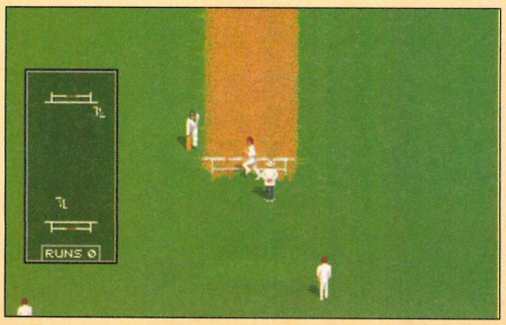
Minimum PC:	PC 386
Minimum memory:	1Mb
Minimum graphics:	VGA
Sound:	Sound Blaster, Ad Lib
Publisher:	Gremlin
Price:	£34.99
Contact:	(0742) 753423

RATING 6

Graham Gooch: World Class Cricket

There are some sports that are intensely difficult to simulate. Take cricket, for example. There hasn't been a game so far on the PC that has managed to recreate the artistry, the skill and the sheer, sit-in-the-rain-and-listen-to-Geoffrey Boycott excitement of the real thing.

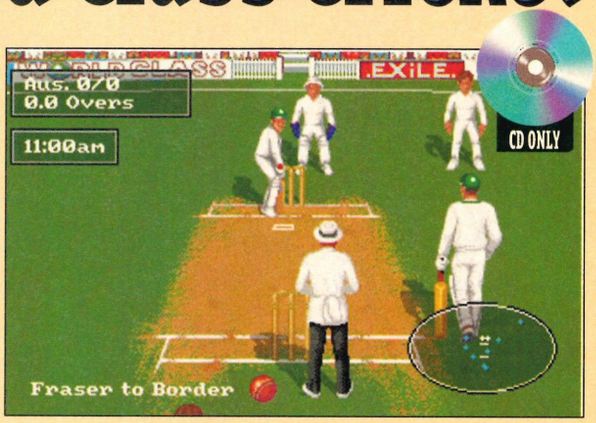
To be fair, Audiogenic's ageing Graham Gooch: World Class Cricket has a fair bash at trying to rectify this situation. Besides giving you the chance to play any of the world's top cricketing nations, the game also features some pleasant but hardly inspiring 3D bits, allowing you to get right out there onto the hallowed Lords grass and bowl, bat and even lose by an innings and six wickets, just like a true England captain.



Although cricket can be complicated, the game interface is extremely basic. Bowling is a simple matter of positioning a rectangular 'target' square where you'd like the ball to land, pressing fire and then hammering the left/right keys like a maniac to build up some bowling speed. For seam and spin bowling the process is the same, but this time your frantic keyboard pounding adjusts the amount of swing and spin you put on the ball.

Batting is just as simple. While the bowler makes his run-up, you — as the batsman — can elect to play one of nine shots, including cover drives, square cuts and leg glances. Once you've decided which shot you're going to play, all you then have to do is tap the relevant key and time your shot to almost David Gower-like perfection.

There are times when the game is depressingly realistic. In only my second game, Merv Hughes ripped mercilessly through the England openers and before Richie Benaud could say "Morning everyone", Atherton, Gooch, Hick and Stewart had been dismissed for a total of four runs. It's very unforgiving.



For all that, World Class Cricket isn't really that bad a game, but unless you're a dedicated cricket nut, I suspect that it will probably excite you about as much as the prospect of yet another Police Academy movie excites me.

I admit that it was actually fun for a while in two-player mode, but sadly World Class Cricket gets very dull, very quickly. Just like real cricket, in fact.

■ **Dean Evans**

Above and below left: World Class Cricket gives you two views of the action.

· TECHSPEC ·

Minimum PC:	386
Minimum memory:	640K
Minimum graphics:	VGA
Sound:	Sound Blaster, Ad Lib
Publisher:	Audiogenic
Price:	£29.99
Contact:	(081) 424 2244

RATING 5

Right: Access to radio and TV stations is vital if you want to get your message across. You may need to steal the right equipment in order to make a broadcast, and you'll almost certainly have to bribe someone as well. Just like the BBC really.

Below: The main map of Sao Madrigal. Click around the icons and squares to access locations and characters. The menu strip at bottom right will take you to places like the prison.

Central Intelligence is a strategy game. In the bad old days before Sid Meier reinvented the genre, the word 'strategy' was more or less synonymous with 'dull'. Of course this doesn't have to be the case any more, but sadly no one's got round to explaining things to Ocean. CI puts the clock back years.

Blue is the colour

The main screen shows a map of the island, divided into hundreds of tiny squares. Many are uninhabited, but others contain buildings, either single structures like farms or railway stations, or denser towns and villages. These are the principal areas in which you operate, setting up stakeouts, scouting out resources, gathering intelligence. At the start most islanders are neutral, but as the game progresses you'll see little coloured shields appear next to them, blue to indicate they're now aligned with your side, red for the baddies. They're a fickle lot, and may change allegiance at the drop of a sombrero. A spot of palm greasing will aid your cause, but funds are very limited.

"Central Intelligence is challenging. The problem is that it's also baffling and irritating too."

I-Spy

You have three teams of agents at your disposal. The first team consists of your political agents, who are best used for intelligence gathering purposes. Second is the propaganda team, equipped with printing or broadcasting materials: these can be used to whip up anti-government feeling. And lastly you have a squad of military agents to put the boot in when all else fails. Each team has its own obvious area of expertise, and your job is to juggle them about to achieve the best results. Your aim is to win over the population of the island and get your man (or woman) back into the Presidential Palace. It's a long and tortuous process, and there's no doubt that Central Intelligence is challenging. The problem is that it's also baffling and irritating in equal measure.

It's baffling because even after a hard weekend's slog I'm still not 100 per cent sure what's going on. The manual's full of absurd waffle like "CI is a go anywhere do anything totally non-linear game." Wow! But how exactly do you play it? There is an on-line tutorial, but it's the least instructive I've ever seen. Although I did eventually get to grips with the game mechanisms, I couldn't believe how clumsy they were. As a small example of the inadequate design that bedevils the game, I should point out that I haven't been able to find a way of exiting the tutorial without rebooting my computer. Now that's what I call irritating.

Clickety-click

CI is meant to be intuitive. Instructions aren't spelt out in black and white,



The action of Central Intelligence takes place on a fictional Caribbean island called Sao Madrigal. Sinister anti-western forces have seized power, and all that's preventing another triumph for the global bad guys is you and your trusty band of secret agents.

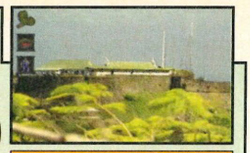


Intelligence

TECHSPEC

4

RATING



Start the revolution without me.

Publisher:	Ocean
Price:	£39.99
Contact:	(061) 832 6633
Minimum PC:	386 with CD-ROM
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Roland, Sound Blaster

because the fun of the game is supposed to lie partly in decoding it. There is, however, an essential pre-condition for a design like this to function effectively: the game has to be interesting and tantalising enough to hook you and make you *want* to find out how it works. I'm afraid, however, I just couldn't keep my eyelids propped open for long enough.

I think the chief problem is that it's over-scaled. There are 1,360 separate characters, and hundreds of locations. It's hard to get a grip, partly because there's too much undigestible information, and partly because the interface is downright user-hostile. There's endless clicking on icons with both left and right mouse buttons, and not a single sensible main menu in sight. As a result, gameplay is unfocused and needlessly confusing.

The design of Central Intelligence seems to me a classic case of an over-egged pudding. All the ingredients for simulating a potentially interesting third-world flare-up are there, but the wrong proportions have been thrown together in the wrong order.

It's a pity because it's an interesting idea — but, alas, you can't play an idea.

■ **Simon Shaw**





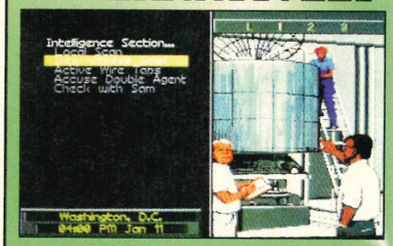




Top: Victory is near! The map is covered with blue and white squares, only the Presidential Palace and an army base remain in government hands. The rebel forces are mobilised and we're ready for the final assault.

Above: Intelligence is a priceless asset and the students are apparently a good source of information. If they're aligned to your faction you can click on the book icon to get an update.

ALTERNATIVELY



Covert Action
MicroProse

Sid Meier's classic game of espionage may lack visual frills (it's in humble EGA) but it makes up for it in terms of gameplay.

As a fearless CIA agent you have to close down the world's leading terrorist organisations, and this involves phone-tapping, car chases, code-breaking and snooping around enemy HQs.

It's a challenging and satisfying game to play, and even though it's showing its age, it's a lot of fun still.



Syndicate
Bullfrog/EA
Rated 9, Issue 33

There's espionage and violence galore in Bullfrog's highly acclaimed Syndicate, a game where you take control of up to four genetically enhanced agents on a variety of ultra-violent missions across the globe.

Using a 3D isometric view your task is to take your fledgling corporation to the top, kidnapping enemy agents, disrupting meetings and laying waste to entire buildings.

There are no morals here. Just lots of death..

SOUND FX Classic 3000

Reality sounds like this !



PC FORMAT *recommended*

"This card exudes quality, both in terms of build and performance"
PC Format, April 1994

Sounds so real, you'd think you were there. The Sound FX Classic 3000's PCM Wavetable Synthesiser (in hardware) gives you amazing true-to-life sounds enabling you to recreate reality on your PC.

The Classic 3000 is compatible with Adlib, Soundblaster. Microsoft, General MIDI, Roland MPU-401, Sound Canvas, Roland GS, and MT-32 instruments. If that's not enough, the Classic 3000's on-board 8 M-bit ROM contains over 300 samples of real sounds and instruments making it the most compatible card on the market today – and we mean really compatible – see PC Format, April 1994.

But the fun doesn't stop there. The Classic 3000 samples and plays sound at up to 16-bit 44.IKHz crystal clear CD quality. And there's more . . . the Classic 3000 incorporates a MIDI interface, a joystick port, multiple CD-ROM interfaces, an on-board digital stereo mixer, line in/out and microphone sockets, a 4-Watt amplifier, wave editor and multimedia software. . . all this for £199+VAT RRP.

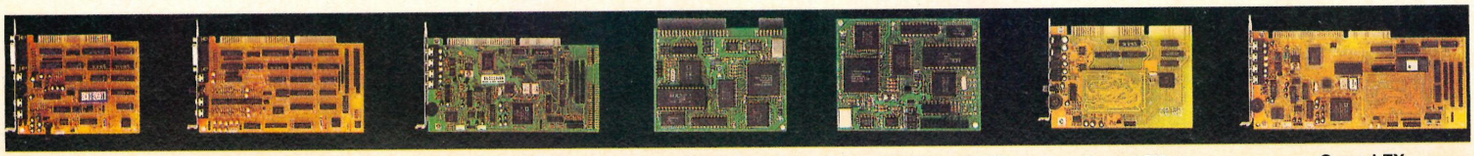
So whether you're a professional musician, an avid games player, or someone trying to find multimedia's missing link, the Sound FX Classic 3000 will give you every sound you'll ever need !

MT "the 3000 contains some of the best sounds I've heard on a PC card"
Music Technology, March 1994

Bluepoint Tel# 0908-277007

Bluepoint Monitor Corporation (UK) Ltd. 17-19 James Way, Milton Keynes. MK1 1SU

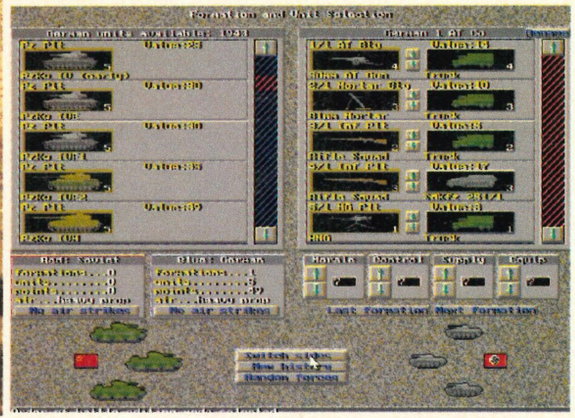
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Sound FX · Sound FX Pro · Sound FX 16 · Wave FX Plug, n' play · Wave FX Upgrade Kit · Sound FX Classic 1000 · Sound FX Classic 3000

WARGAME CONSTRUCTION SET II: TANKS

This latest war sim from US Gold promises much for fans of the genre.



This is one of the best war games I've ever seen on the PC, and it's also one of the most enjoyable. So if you're a fan of military simulations, this is a 'must have' purchase. Particularly as it does something I particularly loathe in war games — aims to cover much too much historical ground — yet manages to do so.

It's very obviously a board game with knobs on, something else which usually turns me off, but that doesn't seem to matter either. Possibly that's because it plays like a cross between Panzerblitz and Squad Leader, two of the best board designs ever. Add in some clever original touches, and you have what amounts to a really stunning package.

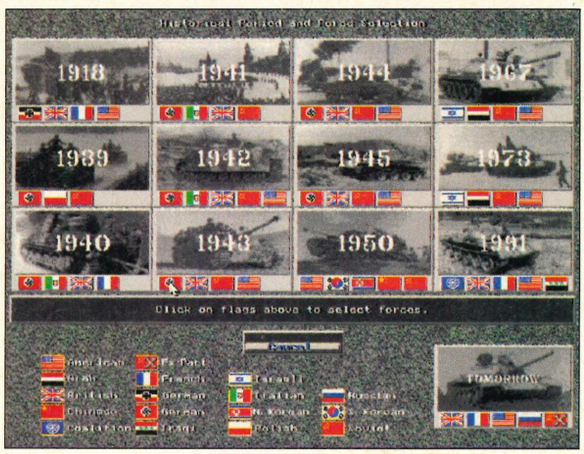
Tanks is played at platoon level on a nicely detailed map with a concealed hex grid. Scenarios vary from trench warfare in Flanders to hypothetical flare-ups "tomorrow", and there's also an excellent game editing facility.

Let's say you want to design a game from scratch for example: first off, load up a map. Maps can be randomly created, or you could select an existing one or even fill out the blank screen yourself using the tiles provided (of which there are hundreds). You're limited only by your imagination. Next load the army editor, choose a period and two opponents. Now you create orders of battle from the comprehensive database, and if you get stuck you can again fall back on the random generator. Deploy the forces on the map, set some objectives, save, load, and you're ready to play.

The game is turn-based, but if you opt for the advanced rules things become quite complicated. Your units have individual command control ratings, and you can't always get them to do what you want them to do. Although it's probably fair to say that some realism has been sacrificed in favour of playability, nonetheless you still get a very real sense of the fog of war.

Reduced to its simplest, the designers claim, this is a sophisticated version of "Capture the Flag". This may sound absurd when you consider the amount of material that's been packed in, but one of the main reasons why the designers succeed so well is that they've managed to avoid getting bogged down in needless routines. The interface is clear and user-friendly. Indeed, everything about Tanks is remarkably intuitive, and I picked most of it up without reference to the manual. If only all war games were this straightforward! What more can I say, except buy it! You won't be disappointed.

■ **Simon Shaw**



This is the force selection screen, where in DIY scenarios you can pick and mix opposing forces from 1918 to the present day. Tanks works well as a 2-player game.



Left: Although not all 20th century conflicts are represented in the scenarios and database, there's still a fair selection. This one's Korea, 1950. The massed red hordes are assaulting the thinly held American position.

DISK ONLY

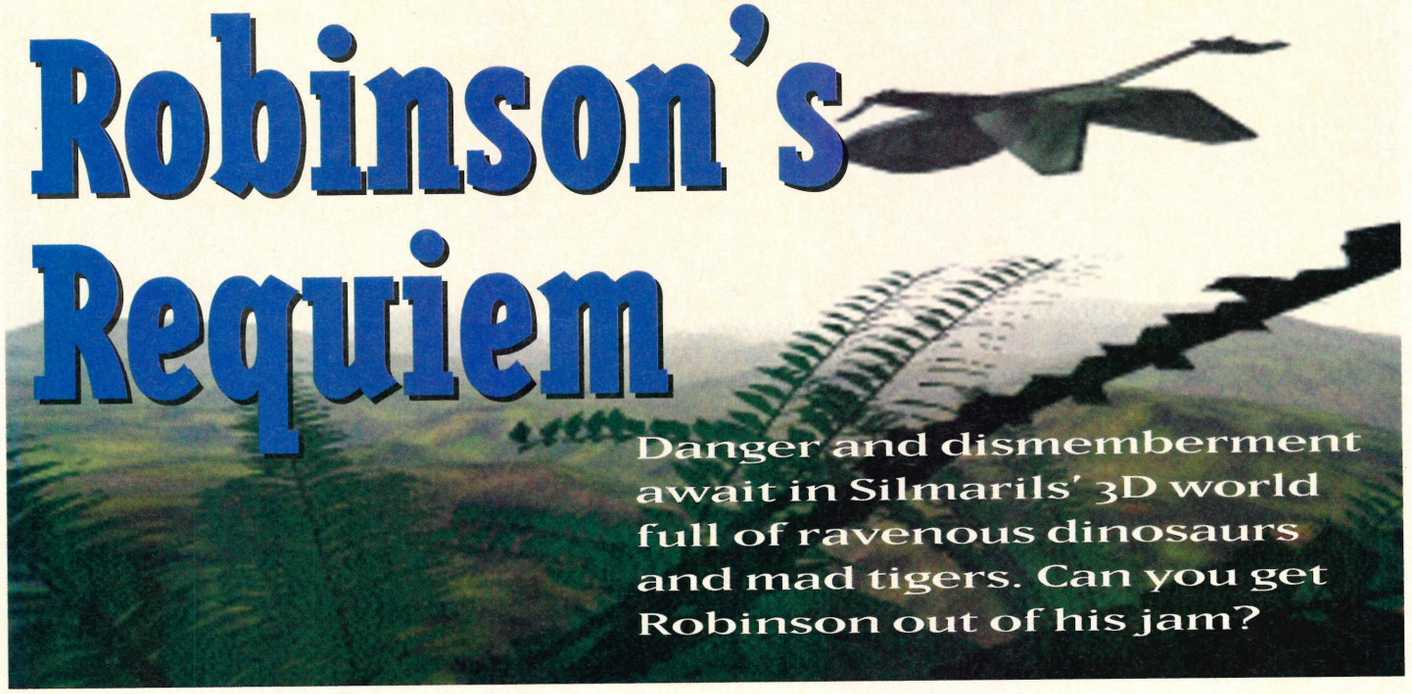


TECHSPEC 8 RATING

Decisively a war game winner. Buy it.

Publisher:	US Gold/SSI
Price:	£39.99
Contact:	(021) 625 3366
Minimum PC:	386 (486 recommended)
Minimum memory:	2Mb RAM
Minimum graphics:	VGA
Sound:	Sound Blaster, Gravis, Thunderboard

Robinson's Requiem



Danger and dismemberment await in Silmarils' 3D world full of ravenous dinosaurs and mad tigers. Can you get Robinson out of his jam?

It's a good life being a secret space agent. Flick a switch and your fish tank turns into a starship. Flick another and you can drill sneering despots with the particle howitzer secreted in your propelling pencil. And every mission ends in a romantic clinch with just you and the attractive rival agent in the drifting escape shuttle.

Of course all good things come to an end, as Mr Robinson has just found out. Robinson isn't his real name, because for security reasons all agents in this division of the Secret Space Agent Force are called Robinson. It's also for security reasons that all agents eventually end up being marooned on savage and uncharted planets by their spy-masters.

We join our Mr Robinson just after he's bailed out of his downward-spiralling spacecraft and landed on the surface of one such planet. With no food, no water, no weapons and only the clothes he's standing in, Robinson has to survive his sojourn on this world, find out what happened to all the other Robinsons and hopefully discover a way off it so he can give his bosses a taste of his propelling pencil.

Voxel viva

After Robbo picks himself up and dusts himself down he finds himself in a valley, filled with lush jungle flora and surrounded on all sides by unclimbable mountains. He rubs his eyes, not realising that the chunky look to his surroundings is all down to the fact that he's in a Voxel Spaced 3D landscape.

Chunky it may be, but this is an undeniably clever use of the Voxel Space technology. You may need to squint a bit, but it all looks surprisingly realistic. In fact it's all the more impressive because, unlike other Voxel Space games such as Comanche or CyberRace in which the scenery just zips past, you're actually walking through it, checking out rocky niches and trying to find a way through the slopes and inclines.

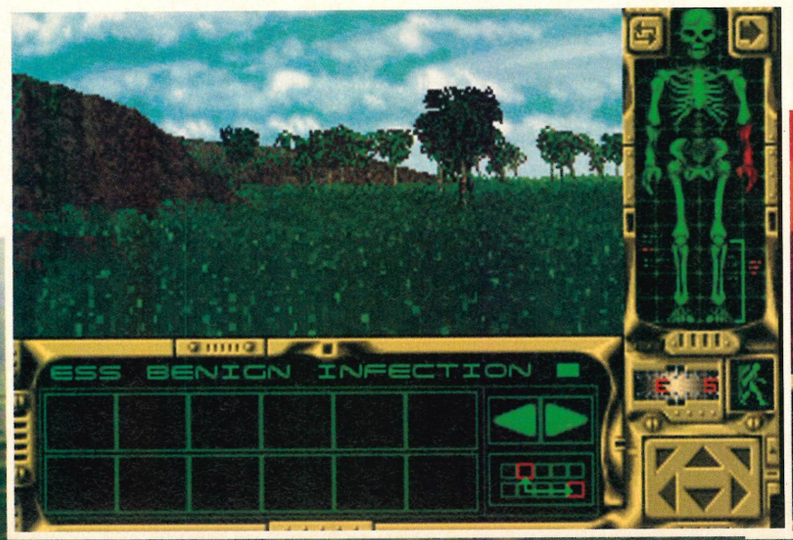
For the first 20 minutes of play I found myself getting back to nature, steering Mr Robinson around the valley, checking out the hills, the lake, the waterfall, while in the background the SoundBlaster was playing sampled crickets (the insect kind). The outdoor atmosphere generated is genuine and I've got to say I felt like... like Grizzly Adams!

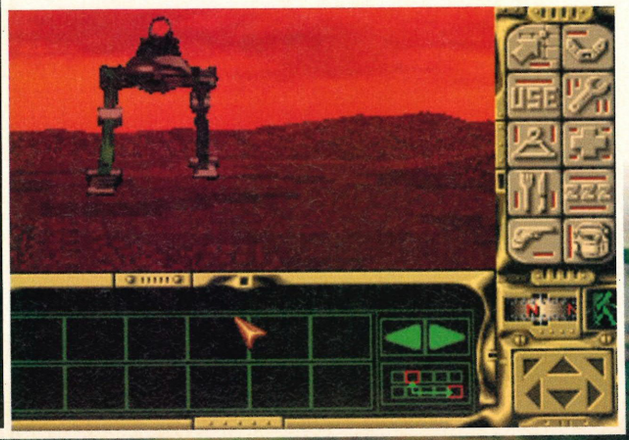
Survival of the fattest

There's no time to look at the scenery, though, because after about an hour of play night starts to fall and it starts to grow colder. I soon discovered that unlike regular adventure-type games in which the problems are usually to do with finding keys to open doors and stuff like that, Robinson's Requiem really puts you in the shoes of a guy who's lost in the middle of

Below right: Help! I'm being attacked by the Tripods! Actually, these 'cyborgs' are quickly dealt with if you have a Molotov cocktail in your inventory.

Below: One day, dear reader, all this will be yours. Unless that infection in your broken arm turns nasty.





ALTERNATIVELY



Ultima Underworld II
Origin, £39.99
Rated 8, Issue 18
With its scrolling, 3D wide-open spaces, superb graphics and atmospheric sound, this is the game that I was reminded of while playing Robinson's Requiem. Unfortunately for RR, Underworld sets a far higher standard in terms of keeping the player occupied while they wander around the different worlds.



Elder Scrolls
Bethesda/US Gold, £45.99
Rated 8, Issue 31
Elder Scrolls is a huge game which has much in common with Robinson's Requiem: you have a vast world to explore, which includes towns, dungeons and wide-open countryside. It has a fantasy mediaeval style theme, but you're never restricted to the storyline and can explore at your leisure.

the countryside. The problems are almost all ones of survival.

As you'd expect, Robinson gets hungry and thirsty and he can't carry everything in the game on his back. But if, for example, you don't feed him, the game doesn't just say, "Robinson is hungry". He starts seeing stars (flashing in the 3D window) and he keels over in a dead faint. Likewise, if you make him wander around in the rain for long enough he'll catch flu. Make him drink lake water without boiling it first and he'll eventually die of food poisoning. Let a wound fester for long enough or leave a broken limb unsupported and he could well end up having to amputate. No, really!

Hunting and gathering

Fortunately there's a well-stocked first aid kit to be found near the start of the game, but apart from that you really have to rough it as very few helpful items come to light. However, use a bit of ingenuity and the Construction icon and you can build your own objects. Put together a branch and a creeper and you've got a bow, then stick some feathers to a stick and you've got an arrow. It's easy to get to grips with.

The icon control system itself is very user-friendly, especially in the way it handles objects. See something in the 3D window and all you have to do is click the pointer on it to pick it up or search it. A picture of the item appears at the cursor position and you can either drag it to a slot in the inventory or just hit the right mouse button to stash it in the next available slot.

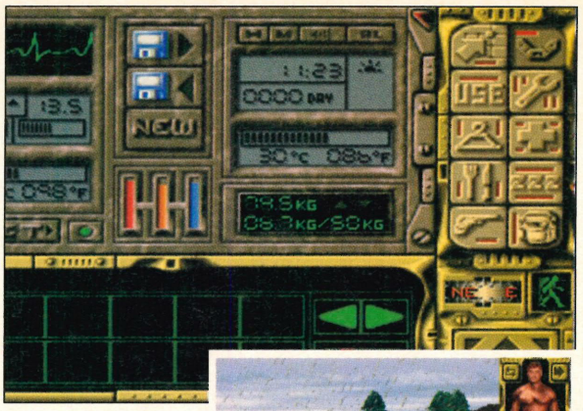
The main inventory is helpfully divided into different sub-screens, so if you click on the first aid command, it automatically displays all the drugs and medical equipment you're carrying. Click on the fight icon and you're shown your weapons.

Should you run across anything hostile, fighting is just a matter of facing your target and repeatedly clicking on the weapon you want to use. Ranged weapons have to be aimed, but it's simple to do.

There's no command to let you engage in conversation, though you do run across other Robinsons and characters who talk at you, giving away clues as to how to escape and other information. Also when you send Robinson to sleep someone visits him in his dreams to tell him what's going on and what he should do next.

The downfalls

All this would add up to a terrific game, but somehow Robinson's Requiem doesn't quite make it. For a start the action/danger ration is a bit off-beam, perhaps because it's actually too realistic. In most games you'd expect to come a cropper if you start looking for action, by, say, charging into battle against a salivating cyclops with a large axe, but in Robinson's Requiem the fighting is mostly a piece of cake and you're more likely to cop it by eating a dodgy pear or tumbling down a gully in the dark. Death like this comes unexpectedly because (a) Robinson never actually says, "Hey guys, that pear tasted a bit nasty and I'm about to die of food poisoning unless you give me some medicine" and (b) because those pixelly Voxel Spaced graphics can sometimes be deceiving about displaying narrow but sheer drops.





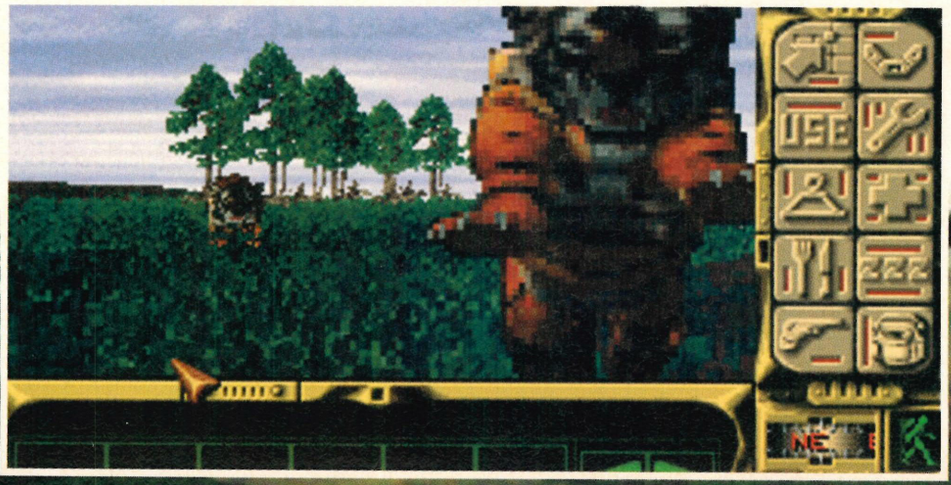


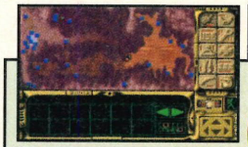
Crawl stealthily past tigers or you risk being pounced on and mauled into a steaming pile of offal. Mind you, if you can construct a bow and some arrows they're not so dangerous — and you can make some attractive pants out of the skin.

It can also be deceiving about displaying impassible obstacles, so Robbo often gets caught on corners or rough ground and you have to keep nudging him around to get him moving again — a big problem if a huge tiger is bearing down at the time.

When it comes down to it, I don't think I'd buy Robinson's Requiem. The sound and visuals combine to make the environment very convincing, and I would like to see more RPGs using a similar system, even if it does take a 486DX to get it running smoothly. But ultimately, Robinson's Requiem does a better job of being a hiking simulation than it does of being a sci-fi adventure and that's where it falls down and twists its ankle.

■ Paul Glancey





TECHSPEC 6 RATING

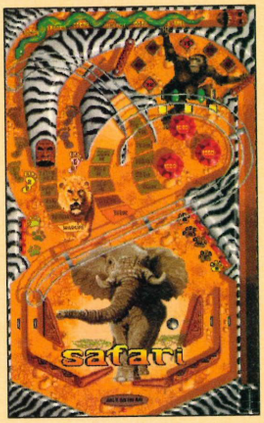
Too much hiking and not enough action.

Publisher:	Silmarils
Price:	£39.99
Contact:	(071) 328 2762
Minimum PC:	33 MHz 486
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Sound Blaster, Graphis Ultrasound,

Pinball Dreams 2

DISK ONLY

Pinball Dreams 2 is a bit of a confusing title. It isn't, in fact, the sequel to Pinball Dreams (that was Pinball Fantasies) but an add-on disk comprising of four extra tables. Why 21st Century has chosen to release an add-on for Dreams instead of the more recent Fantasies is beyond me, because Fantasies is by far the better of the two. However, Pinball Dreams is still a good game, so if you bought a copy, these extra tables should help to extend its life.



Dreams 2 plays almost identically to the original Dreams. Other than the tables, the main differences are improved sound and 256 colour graphics. Of the four tables, two (Safari and Revenge of the Robot Warriors) are good, one (Stall Turn) is average and the fourth (Neptune) is pretty dull. None of them are a patch on the Nightmare table from the original Dreams. And although Pinball Dreams 2 is by no means an essential buy, you should enjoy it if you are fanatical about the original.

■ **Cal Jones**

· TECHSPEC ·

Minimum PC:	286, MS-DOS 3.3, Pinball Dreams
Minimum memory:	640K
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster Roland
Publisher:	21st C Entertainment
Price:	£19.99
Contact:	(0235) 851533

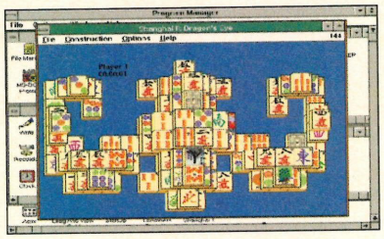
RATING 6

Shanghai II for Windows

DISK ONLY

Shanghai is often thought of as a computer version of mah-jong, but although it's played using on-screen versions of the mah-jong tiles, the game itself is more like a cross between the old card game 'pairs' and Ker-plunk.

The 144 tiles are arranged and piled up in preset layouts. Your job is to find exposed pairs of identical tiles and remove them from the layout until you are either stuck — there are no more exposed pairs — or the layout is cleared. It's very simple, and surprisingly addictive.



This is the Dragon's Eye version of Shanghai, with 12 different layouts, eight tile sets and construction kits so you can devise your own layouts.

The game installs without too much fuss and puts its own icon in a Shanghai program group. Aside from Windows extras such as changing the screen size and having it running dormant in the background (but be warned: the clock will keep ticking if you play in the time-limited mode), it's exactly the same as the DOS version. Recommended.

■ **Christina Erskine**

· TECHSPEC ·

Min PC:	386/25MHz, running Windows 3
Min memory:	4 Mb RAM, 3Mb free hard disk
Minimum graphics:	640 x 480 colour VGA
Sound:	Media Vision, Sound Blaster
Publisher:	Activision
Price:	£29.99
Contact:	(081) 742 9400

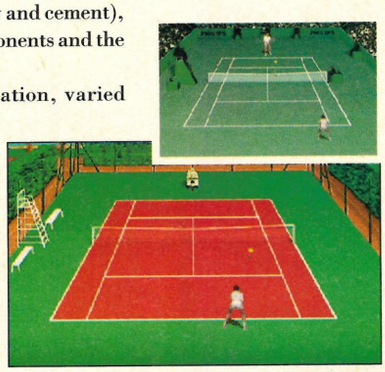
RATING 8

International Tennis Open

CD ONLY

As far as tennis games are concerned, CD-ROM offers huge potential for televisual presentation, digitised graphics and speech. International Tennis Open doesn't let you down in this respect, but it is disappointing when it comes to the tennis simulation itself.

The main menu allows you to take part in a one or two player game, enter a tournament, train (service and return), choose one of nine nationalities and modify a limited number of options. There are three types of surface available (grass, clay and cement), three difficulty levels, four opponents and the usual range of shots.



But television-style presentation, varied commentary and digitised artwork fail to mask what is actually a pretty run-of-the-mill simulation. There are no one-set matches, no doubles or mixed doubles, no female players and no direct option for a one-off game. Nor can you create your own character or alter player statistics to suit your natural game.

UbiSoft's Pro Tennis Tour 2 is a better tennis simulation with masses of options and a more conventional presentation. International Tennis Open may get to the quarter finals, but it won't win the championship.

■ **Gordon Houghton**

· TECHSPEC ·

Minimum PC:	386, MS-DOS 5.0, mouse, joystick
Minimum memory:	640K
Minimum graphics:	256-colour VGA
Sound:	Ad Lib, Sound Blaster
Publisher:	Philips
Price:	£44.99
Contact:	(081) 689 4444

RATING 5

Simon the Sorcerer



Simon the Sorcerer was a damn good stab at the Monkey Island style comic adventure — with a naive, slightly nerdish 'hero', colourful detailed graphics, a jaunty score, and some nice one-liners which made it great fun to play. This CD version includes speech throughout the game, which gives this already polished adventure an extra gloss.

CD ONLY

This is the 'talkie' version — the disk version was released last autumn.

This "talkie" version of the original may not have an all-star cast, but it does have Chris Barrie, and he's exactly right for Simon: he manages to make him sound thoroughly put upon (being a sorcerer is just such an *effort*).

But it isn't all Barrie. The swampling, who was quite a character in the original, threatens to steal the whole show in the CD version. His voice is provided by novice actor Jon Haines, and the portrayal of the pathetic, but ultimately endearing creature is a delight.

Where the talkie version scores is that it enables you to appreciate the humour better. Where you might not bother to read a screenful of text because you want to get on with the game, sitting back and listening to it gets you much more involved in the story, and when it's this well done, it's all so much more enjoyable. Definitely worth at least a look, even if you played the original to death.

■ **Christina Erskine**

· TECHSPEC ·

Minimum PC:	386SX(DX or 486 recommended)
Minimum memory:	4Mb RAM(more recommend
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, Roland
Publisher:	Adventure Soft
Price:	£44.99
Contact:	(021) 352 0847

RATING 8

Origamo



Origamo claims to be the most addictive puzzle game since Tetris. Addictive it can be, a puzzle game it certainly is, but it isn't even in the same league as Alexei Pajhitnov's classic tumbling tile game.

The main aim is to escape from the maze of eternity. This labyrinth is divided up into 113 different rooms, each with a unique background and an overlaid origami figure. The gameplay falls somewhere between Tetris and Klax (the Atari coin-op): seven different kinds of tile are released on a conveyor belt at the foot of the screen, and you have to manipulate them so that they slot into the origami figure. Tiles can be rotated up to four ways, but even if after this, they still prove unsuitable, you can dump them.

There are four different types of game: basic (you work through the maze with infinite lives, no time bonuses and are required only to complete a limited number of rooms), random (arbitarily selects puzzles for you), master (bonuses for beating the average time) and adventure (only three lives and no time bonuses). Additionally, you can select any puzzle room you like directly from the main menu.

The scoring system is quite simple: complete a screen and you are awarded points appropriate to the difficulty level; fail to complete a screen and points are deducted, sometimes quite severely. Origamo keeps track of up to three hundred different players (that is of course, should you know that many people intimately enough to share your PC with them) and twelve hundred different saved games.

Origamo is an unusual puzzle game which relies on the urge to beat your own high score for its addictiveness. The action itself can be quite dull, particularly on easy screens or the basic level; however, the speed and difficulty of the later stages and higher levels provide a genuine challenge. The action never grabs you by the throat, but it does give you the odd menacing look.

Visually it's quite pretty without ever being stunning, the music is bland enough not to be annoying and you can switch off the sound effects at the main menu (they aren't worth bothering with). If you're looking for something which can be alternately soothing and frustrating, and which has good potential for long-term playability, you could do worse than this.

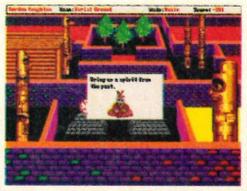
■ **Gordon Houghton**

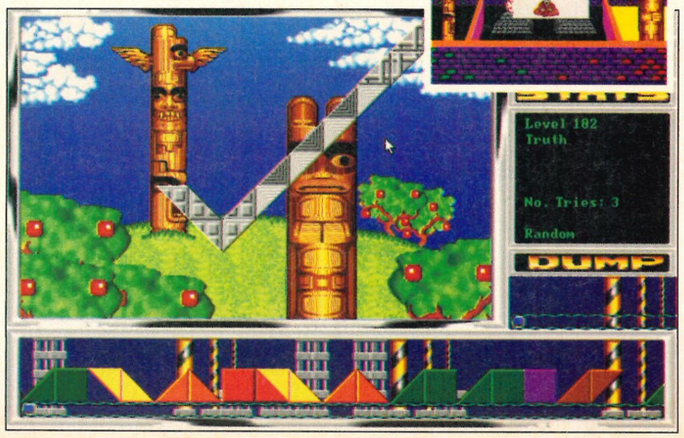
· TECHSPEC ·

Minimum PC:	386SX, MS-DOS 5.0, hard disk,
Minimum memory:	1Mb
Minimum graphics:	SVGA only
Sound:	All major sound cards
Publisher:	Mirage
Price:	£39.99
Contact:	(0260) 299909

RATING 6

With over 100 rooms and four different ways of playing, Origamo doesn't lack depth.





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DIGITAL IMAGE DESIGN

D-Day

DISK ONLY

TECHSPEC	
Minimum PC:	286
Minimum memory:	640K
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, Roland
Publisher:	Impressions
Price:	£39.99
Contact:	(071) 351 2133

RATING 5

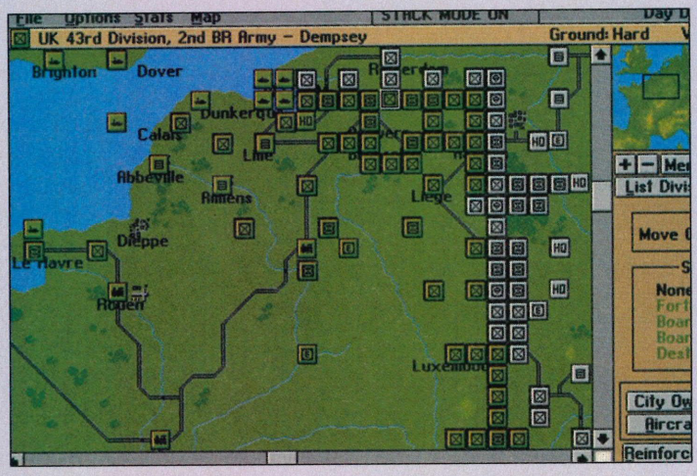
For anyone with any energy left after wading through the tons of commemorative newsprint last month, Impressions are on hand with a well-timed simulation of *those* landings. The words "bandwagon" and "jumping on" spring irresistibly to mind.

There are two problems with this game, one is that it's very similar to Impressions American Civil War simulation, The Blue and the Gray. This was pretty good, but it wasn't perfect, and more work should have gone into the artificial intelligence and the interface before it was dusted down for a second outing.

The second, much more serious problem, is that it uses Impressions' wretched Micro Miniatures Battles System. When, oh when, is it going to junk this thoroughly irritating program and redesign something decent from scratch? At least in the ancient or horse-and-musket eras (Cohort, TBATG), you could get some kind of passable if over-simplified battle going. But this system is utterly unsuited to modern warfare, and tacking it on here undoes all the thoughtful good work that's gone into the strategically-oriented side of the game. It's like setting up a beautifully designed collection of model soldiers, then using a toy cannon with matchsticks to knock them all over.

My final mark is an average between a three for the tactical and a seven for the strategic sides of the game. If you're a fan of the Micro Miniatures System (and I suppose there must be some), then you should adjust my score accordingly.

■ **Simon Shaw**



The main map shows the historical situation on December 15, 1944.



Above: Theatre of Death has plenty of nice gory touches — exploding corpses, dismemberment ... and man-eating sharks (Right).

DISK ONLY

Theatre of Death

Theatre of Death is a simple, mouse-controlled, top-down combat game, where you plan and fight with small platoons through a series of reasonably varied missions on different terrains.

It uses a combination of manually controlled fighting and a passable attempt at a strategic overview — which basically means having to control more than one squad of troops and dropping out to a map screen to give them general instructions, call in air strikes or ground support when they're available and generally keep tabs on what the bad guys are up to.

The trouble is, in many of the missions you don't need to bother with any of this. It's a lot less aggro just to leave the squad in a quiet spot, then wade in with an individual soldier, do as much damage as possible and stay alive as long as you can, then move on to the next guy when the first one snuffs it.

This is, a) effective, but, b) eventually rather aimless. Brainless, even. And that is the major problem with the whole game. It's nice enough, but just not that interesting once you get bored with seeing your men drowning in a swamp or eaten by sharks (fresh water sharks, too ...?). Even the welcome variety of weaponry to play with, like helicopters, grenades, rocket launchers, tanks, boats and jetpacks can't help the fact that the landscape is all rather samey, the buildings are identical and the objectives too similar.

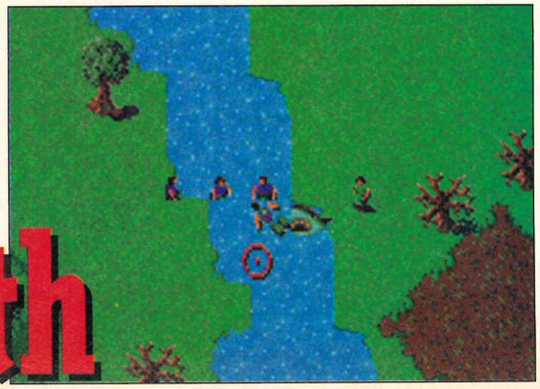
There's an obvious comparison to make, and that's with Sensible Software's Cannon Fodder. And, frankly Theatre of Death comes off second best. Cannon Fodder has more character, is graphically more polished and the gameplay is far more interesting.

For all that it's not a bad little game. A poor man's Cannon Fodder, it's still worth a look, but I'd be happier if this one was about £10 cheaper.

■ **John Bennett**

TECHSPEC	
Minimum PC:	386
Minimum memory:	570k base mem. 1Mb EMS
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, Roland
Publisher:	Psygnosis
Price:	£34.99
Contact:	(071)709 5755

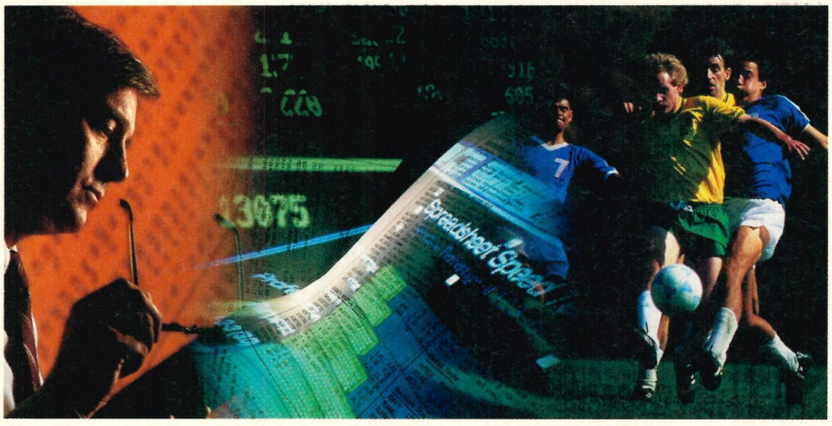
RATING 5



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Soccer Special

Every four years, the whole world seems to go football crazy... and if the whole world's doing it, then who are we to disagree? Over the next seven pages, we take a look at the many World Cup offerings scheduled to make an appearance over the course of the next few months. We've star appearances from FIFA International Soccer and Planet Football, World Cup USA '94 and Sensible Soccer International Edition amongst others. We've put them all through their paces to see how they measure up to match play.

Fifa International Soccer

Ever since the dawn of computer football games (which didn't come too long after the dawn of computer games in general), silicon soccer has consistently come in one of two varieties — either the side-on variety, or, of course, the top-down variety.

Now, however, it looks as though that time-honoured tradition is about to come to an end, as the two conventional views may soon be joined by a third — the FIFA viewpoint.

FIFA International Soccer made its debut just prior to last Christmas, when it took the Sega Megadrive market by storm. Despite the fact that it was launched at roughly the same time as a number of other good quality Sega footie games — not least of which was the excellent Sega incarnation of Sensible Soccer — it went on to stake a strong claim to being one of the biggest hits of Christmas '93.

Now, a few short months later, here is almost exactly the same game in PC form. And, most unusually, it seems to have suffered very little in the transition from cartridge to disk.

Apart from the understandable hassles presented to the programmers by the enforced transition from three-button joypad to two-button joystick, FIFA on the PC is almost exactly the same game as the one which took the Sega world by storm only six months back.

Maybe to be this good doesn't have to take ages

Anyhow, so much for the history lesson, what about the game?

Despite its unusual 'over the corner flag' viewpoint, FIFA is essentially a straightforward arcade footie game. The human player controls one of his on-screen counterparts at a time, using the two joystick buttons to perform a variety of kicks, tackles and headers depending on the situation.

Before the first of these kicks takes place though, there are a variety of user-definable options to be ploughed through. All of the usual suspects make an appearance: choice of team (with, you guessed it, Germany leading the way in just about every department), choice of competition (exhibition, league, cup competition etc), level of fouls allowed, whether the referee recognises the offside rule or not, and so on.

One of the more unusual options offers a choice between 'arcade' and 'simulation' modes — the



100% LEGAL - 0% FAIR?



And here's that cheat goal in full ... Stand just in front of the opposition goalie as he's about to get rid of the ball.



With luck, the ball will bounce off your head or torso and drop invitingly behind the hapless keeper's back.



Disable your conscience for a moment, round the keeper and tap the old pig's bladder into the invitingly empty onion bag.

main difference between these two being that the on-screen players 'tire' in the more realistic setting. Like most of the options offered in FIFA, this one makes a subtle, but very important, difference to the on-pitch proceedings.

Where in a lot of football games this kind of customisation is little more than window dressing, it really does seem to add an extra dimension to FIFA. This should be no surprise to any of you who are familiar with EA sports games in general, as they have consistently smacked of polish and quality (in fact, FIFA borrows some of its features — including the 'star' control icon — from its previous sports games). But what might come as a surprise is that this was designed on the wrong side of the Atlantic — without suffering from too many of the the usual 'time out', 'first period, second period' translation difficulties.

Ooh, aah . . .

As ever though, the proof of the pudding is in the kicking, and the elaborate set-up functions are only a precursor to what really matters — the agony and the ecstasy that is Association Football.

To recreate this agony and ecstasy, the EA development team have attempted to introduce a high degree of realism into the proceedings — and, here in the PC Review offices at least, there are some mixed feelings about whether they've succeeded or not.

Perhaps the greatest criticism levelled by other members of the Review team (that's one of the great things about reviewing football games — you're never short of help) is that, while there are a lot of fancy flicks, kicks and tricks being executed, you're not quite sure if it's you or the computer who's executing them.

At first, this is a valid criticism, but as you get deeper into the proceedings — and more familiar with the controls — you a better degree of control



FIFA International Soccer contains all the action of the real game, including some spectacular diving skills from some players.

and this criticism tends to become irrelevant.

Others, however, don't. For example, the players still sometimes appear as if they're running in the wrong direction along a moving pathway — and worse still, the ball sometimes reacts when it's not quite at the player's foot. Both of these traits tend to detract from the all-important realism factor.

Other quibbles which I have with the game are the lack of an on-screen clock (how can you make tactical substitutions when you don't know how much time is left?), the fact that substituted players simply run to the touchline, turn around and return under a new name (very silly) and the absence of real-life footballers' names.

This last point in particular is quite important, as part of the beauty of computer football games is that they allow you to fulfil your footballing fantasies — which is difficult to do when you're in control of a German ace called Mark Norman! Okay, maybe there were contractual reasons for this policy, but surely EA could have included an option to allow players to enter their own team and player names.

Still, as you can see, I'm starting to scrape the bottom of the criticism barrel — and it's a mark of FIFA's overall quality that I have to dig so deep to find points to criticise. However all of the above are put into the shade by the game's one unforgiveable failing ... there's a near foolproof way to score a goal.

Goaaaaaal!

This may not sound like too much of a disaster at first, but when you do master this little manoeuvre, it tends to make progress through the championship that much easier. And worse still, it takes away that awful bitter-sweet sinking feeling that should greet the moment when the opposition goes one up — you simply think ,"Ah... I'll just pop up the other end and score the equaliser."

And here's how it goes.

When your opponent's keeper is about to kick or throw the ball back into play, simply press the second fire button to gain control of the player nearest the ball and run into a position just in front him. If you position your player correctly (this only takes a little practice), the keeper's attempted clearance rebounds straight off your player leaving you only the simplest of tap-ins to finish the job off.

Admittedly, you can choose not to adopt this tactic — but imagine that you find yourself, as I have done, a goal down to Chile in the semi-final with 10 seconds left on the clock and the keeper about to kick the ball out. Quite.

Having repeated the process twice in the first period of extra time, I found myself lining up against Mexico in the final with only the occasional pang of guilt to spoil the party.

(After the last of these shameful efforts, the scoreboard flashed the cruelly appropriate message "100% legal — 0% fair" — ostensibly just another of the many in-game adverts for the new Adidas Predator boot, but I got the feeling that the game knew what I'd been up to.)

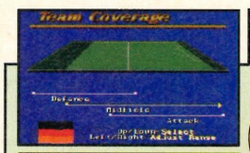
This guilty conscience almost cost me the trophy next time around, however, as I spurned a chance to repeat the 'trick' in the last few seconds of extra time in a thrillingly close contest against Columbia. Luckily though, things went my way in the 'sudden death' phase (wait a second... sudden death? Isn't this game supposed to be sponsored by FIFA?), when an appalling mix-up between the Columbians' keeper and one of their central defenders resulted in an own goal worthy of any Danny Baker video.

But hang on a minute, what's going on here? I'm actually relating anecdotes from a computer football game! Surely that's enough of a recommendation in itself.

Though FIFA may not have quite the feel of a real life game, perhaps its greatest accomplishment is that it gets close enough to even allow us to imagine such riches.

It may be some way short of perfect, but FIFA International Soccer will do nicely until perfection comes along. In FIFA 2 perhaps?

■ Ciarán Brennan

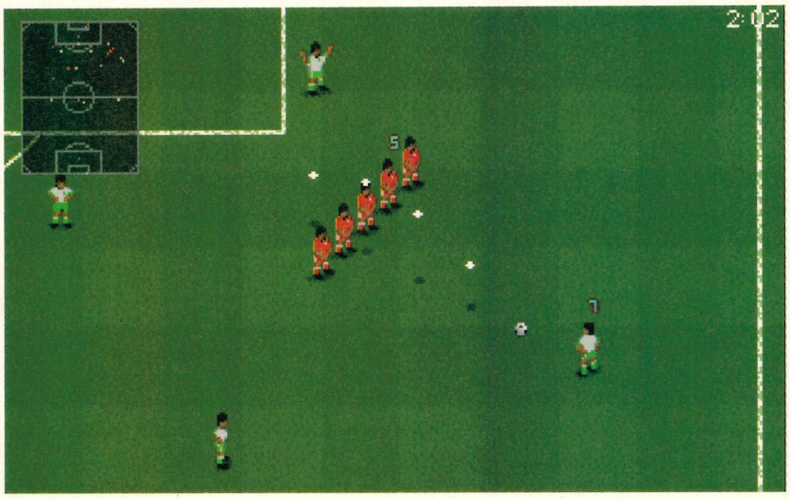


A great new footie game to add to your collection.

•TECHSPEC• 8 RATING

Publisher:	Electronic Arts
Price:	£39.99
Contact:	(0753) 549442
Minimum PC:	386
Minimum memory:	586K
Minimum graphics:	VGA
Sound:	All Sound Blasters

World Cup USA '94



Free kicks, corners and other dead ball situations are handled in this simple, but effective, manner: the player uses a dotted line to roughly direct the height and direction of the ball, then simply press fire to put his or her plan into action.

In the months leading up to what has become the footballing feast of World Cup USA '94, the average non-American football fan feared that the world's favourite game was about to be irredeemably harmed by FIFA's handing the four-yearly tournament to a nation that knows absolutely nothing about the game.

After all, they call it soccer!

Rumours abounded that the game of two halves was about to become a game of four quarters, throw-ins were to be replaced by kick-ins, the goals were to be made bigger and penalty shoot-outs were to be replaced by 'sudden death' extra time.

Of course it turned out that we needn't have worried. None of those rumours turned out to be based in fact, most of the games have been played before packed houses and some of the football has been remarkably good. What's more, with America's most popular religion being the pursuit of money, 1994's event has been marketed more than any before.

There are officially licensed soft drinks, fast food, clothes — in fact, if you can name it, they've probably licensed it (the Irish team even has an official beer, but you can forgive Jack's lads just about anything really).

Which brings us along to this, the officially licensed computer game, which has been released across something like nine separate formats to coincide with the tournament.

The beauty of producing a game based on a sporting event rather than one based on a film or whatever is that there's no need to devote any time to designing the game's core — after all, football is football, and the event's structure has more or less been predetermined.

This leaves the designers free to beef up what we game reviewers call the 'front end' — and here there's more beef than you're likely to find in a truckload of McDonald's official World Cup burgers.

Using a neat graphic system which relies on Sprint (the Snoopy-ish dog who's this year's mascot) in a variety of poses, World Cup USA '94 allows its player to customise just about everything, from the competing teams (that's right, all of you Graham Taylor fans can kick Ronald Koeman and the rest of his Dutch team-mates out of the tournament and bring in the English if you really want to) to the colour of the South Korean's sock trims. Honestly.

You would forgive me if I exaggerated a little here, but it's true — you can do all of that and a whole lot more. This game's designers have obviously decided that what computer football players want is options and lots of them, and have consequently thrown in everything but the dressing-room sink to cater for this need.

I, however, tend to think that what computer footballers really want is non-stop on-screen action, and here the designers haven't been quite so generous.

Looking for all the world like a cross between Sensible Soccer and the Kick Off/Goal games, World Cup USA also makes use of a lot of the options which appeared in those games: the quick-fire passing movements (achieved by pressing fire button two) are very reminiscent of certain Sensi movements for example.

However, while this game has made good use of the experiences built up by designers of other games, its whole doesn't quite match up to the sum of its parts. For all of its pre-game adaptability and fluid gameplay, it somehow lacks the depth of gameplay which sets truly great football games apart from the crowd.

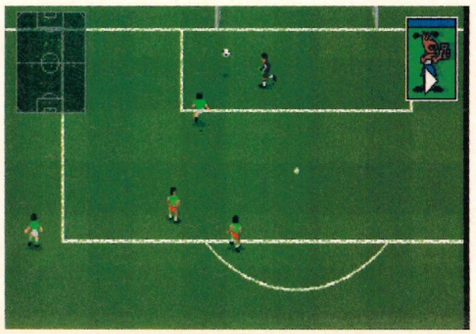
And it's exactly this lack of depth which will probably work against World Cup USA '94 in the long run.

However, that won't stop it from being a nice alternative for younger players and those who can't be bothered to devote the time to mastering the infinitely more complicated FIFA.

■ **Dean Evans**

DISK ONLY





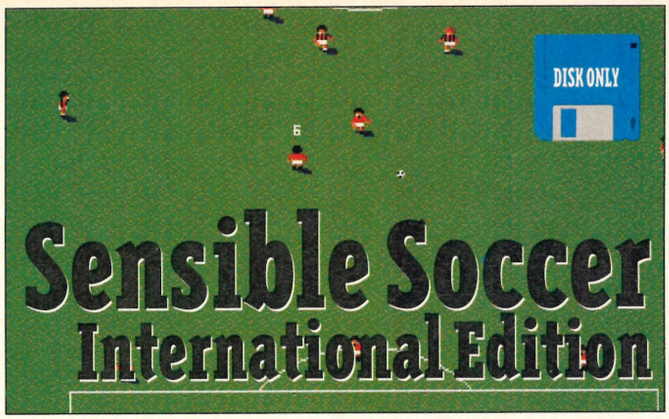


TECHSPEC

7 RATING

A good alternative for younger players.

Publisher:	US Gold
Price:	£32.99
Contact:	(021) 606 1800
Minimum PC:	386
Minimum memory:	2Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster







Sensible Soccer International Edition is, simply, an updated version of the game released last year, and presumably aimed at getting some mileage out of the World Cup. There are a number of changes and extra options, the most notable being the inclusion of a complete and up to date World Cup tournament, revamped team data, some extra beginners events, the 'no backpass' rule, and so on.

Fair enough, an update's an update, and this one serves its purpose. Still, it's a shame that the publishers didn't also take the opportunity to iron out a few of the teething problems with the original PC game, though.

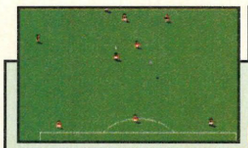
It probably seems completely irrelevant to PC owners, who couldn't give two hoots about other games formats, but Sensible Soccer on the Amiga, is — and probably always will be — my idea of the perfect football game. The tiny, beautifully animated characters just oozed character and the simple 'aftertouch' control system broke free from the rigid, set moves of your average arcade football game. A dream of a game.

Sadly the PC version fails to reach quite the same giddy heights because it's too fast to allow much in the way of touch and control on the ball (you're probably better off if you have a really knackered old PC ...), because the ball flies very strangely, because it's difficult to get two joysticks working with it, because you can see less of the pitch, and because, well ... because it's just not as good.

This update would have been the ideal opportunity to sort some of that out and give us a PC version of Sensible Soccer that's every bit as good as the Amiga version. I guess we're going to have to wait a bit longer until that happens.

For all that, it's still a first rate football game, certainly the most inventive of all of them, and the ideal alternative to all those arcade-style footie games

■ John Bennett



First rate and inventive alternative to the rest.

•TECHSPEC.

7

RATING

Publisher:	Renegade
Price:	£19.99
Contact:	(071) 481 9214
Minimum PC:	386
Minimum memory:	1Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, Roland

PC REVIEW

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TECHNICAL WRITER

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Empire Soccer '94



DISK ONLY

When, in the last few months leading up to the beginning of the World Cup, a clutch of adverts for, and previews of, forthcoming footie games began to clutter up the pages of the games magazines, there was one in particular which caught my eye.

Maybe it was the attractive packaging; that picture of 'Wor Jack' surrounded by the cream of the world's footballing talent which was ready to strut its stuff on the global stage — Romario, Baggio, Valderrama and Ince (hang on a minute!).

Or maybe it was the cute cartoony images displayed in the screenshots. Sure, these screens only showed a tiny part of the pitch, but the characters looked good in still form and I was looking forward to seeing them in action.

No, we haven't trimmed the picture down to fit — that's as much of the pitch as you're allowed to see at any one time. You can't even see the entire 18-yard box in a single screen, and if you wait until you can see the goal before shooting, then it's already way too late. Oh dear!

Great expectations

Perhaps this gleeful anticipation also had something to do with the fact that I knew that Empire Soccer '94 was in the capable and creative hands of Graftgold, one of the most respected and successful independent development teams in the business.

Whatever the reason, I was halfway to being sold on this one before I'd even kicked a ball. Okay, the fact that the entire program came on a single disk and the (ahem!) minimalist options which presented themselves on first loading were minor confidence denters, but I was still full of the joys of pre-footie fest glee when the first two teams ran out onto the pitch (well, sort of ran).

And that's where it all went terribly and horribly wrong.

It transpired that those screenshots hadn't only shown part of the play area after all — that laughably small patch of turf was all there was to it! And worse still, those cute still characters animated like something out of Captain Pugwash when they eventually got moving.





Sick as a parrot

What a terrible disappointment.

Four years ago, just prior to the beginning of Italia '90, most software publishers could have sneaked a turkey like this into most PC gamers collections. After all, there wasn't a great deal of attractive opposition about, and besides nobody really knew any better about PC game design in general and PC football games in particular.

Nowadays, however, in these post-Sensi months, releasing a game of this standard is at best náive and at worst a cynical attempt to cash in on the current footie fever.

Empire Soccer '94 suffers from dreadful faults in just about every department. The options are sparse to the point of being non-existent (nowhere, for example, does it say how any team in the list compares to any other), the gameplay is sluggish and unexciting and the presentation is infuriatingly amateurish — why does the player have to inform the computer that he or she is using a joystick (as opposed to the default keyboard) before each consecutive game?

The slim (but admittedly functional) manual promises all sorts of magical fun and trickery — speed bursts, super dribbles, overhead kicks and the rest are all on offer, at least in theory — but very few of these actually manifest themselves within the game, and those that do, usually pop up when you least expect them to.

The manual also sets itself up for a fall by proclaiming that "Empire Soccer '94 has been developed with two features very much in mind; playability and fun." These may have been in mind, but they never made it anywhere near the box.

Perhaps the most unforgivable paragraph in the manual, however, is the one which suggests that a lot of practice will result in the appearance of hitherto hidden depths to the gameplay. Like a fool I believed this and put many valuable hours into trying to make something out of this whole dreadful experience.

Don't make the same mistake.

■ Ciarán Brennan

TECHSPEC 4 RATING



Small playing area and poor animation - dull.

Publisher:	Empire
Price:	£39.99
Contact:	(081) 343 7337
Minimum PC:	386 with CD-ROM
Minimum memory:	570 K
Minimum graphics:	VGA
Sound:	Roland, Ad Lib, Sound Blaster



Have you ever noticed how people suddenly take up tennis when Wimbledon is on the TV? One week your local courts are empty, the next week they're booked solid. Before you realise it, there's tennis on the TV, tennis on the radio, tennis on the roadside billboards and Andre Agassi selling Bic razors and leg wax on Channel Four.

Swap Jack Charlton for Agassi and leg wax for high-fibre breakfast cereal and you soon find that it's the same with football. For the past month it's been everywhere and despite the fact that World Cup USA '94 is building up to a glittering finale, the computerised World Cup bandwagon keeps on rolling along with yet another tournament inspired football game.

Infogrames' Planet Football is also based around this years sun-soaked World Cup competition and, like many of the pretenders to the football throne, it not only features the 24 qualifying teams but gives you the option to train, play friendly matches, customise your own tournament (ie you can sneak England into the draw) or battle it out in the World Cup proper.

But, as you may have noticed, the unusual thing about Planet Football is the choice of viewpoint. Infogrames has opted to use an innovative, ground-level pitch view, very reminiscent of the old MicroProse International Soccer game. And with a combination of this close-up football action, some nice player animation and the all-important pitch radar, Planet Football looks pretty damned impressive.

However, despite the attractive visuals, Planet Soccer is quite a difficult game to get the hang of because, sadly, the 3D pitch viewpoint tends to hinder and inhibit the gameplay. Unfortunately, when you're playing up the pitch, ie south to north, you can't successfully defend because you can't see where your players are, and when you're playing the other way, you often miss the goal because you can't see it until it's right on top of you.

Because of these visual limitations, it's difficult, in fact it's nigh on impossible, to develop a successful passing game. As a result the gameplay in Planet Football simply involves getting the ball, charging your player up the field on a solo run and finally trying to hoof the ball into the back of the net. If you miss the goal then your opponent tries to do the same, then you do and so on.

At times, it all becomes very frustrating and although the charge-and-hoof strategy is a criticism that can be levelled at FIFA Soccer, the EA game is a far more playable game. In addition to the viewpoint problem, Planet Football is also let down by some very basic background graphics and while it may adequately recreate the mechanics of football, it doesn't generate or inspire any of the atmosphere or excitement.

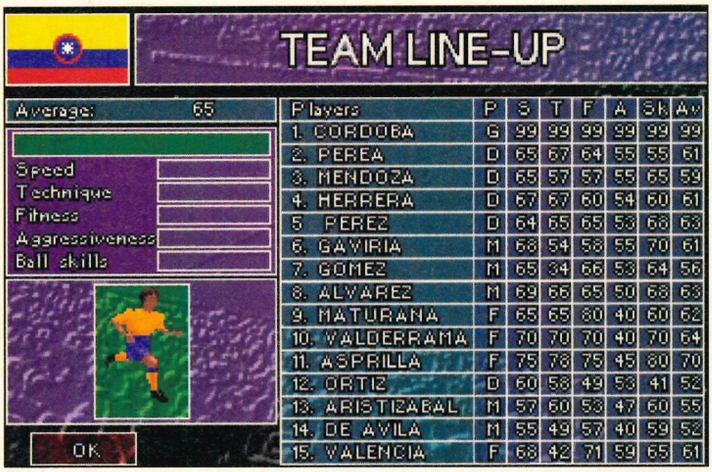
But despite the criticisms, Planet Football is a game that has a lot of potential. It's a beautifully presented game, though there could probably be a few little tweaks regarding the graphics in some places, and once you get used to the pros and cons of the pitch view, the game plays a passable game of football.

Compared to FIFA Soccer, Planet Football may not have quite the style and playability. But it's still a good game to add to your footy collection nevertheless.

■ **Dean Evans**

DISK ONLY

Planet Football features all the correct player names, so you can accurately recreate Columbia's stunning World Cup run...







TECHSPEC

6

RATING

Potentially very good but sadly flawed.

Publisher:	Infogrames
Price:	£39.99
Contact:	(071) 738 8199
Minimum PC:	386
Minimum memory:	4Mb
Minimum graphics:	VGA
Sound:	Pro Audio Spect,Ad-Lib, Sound Blaster

FOOTBALL SPECIAL

And the rest...

Here are a few more World Cup offerings which, for one reason or another, didn't quite make it into the final play-offs. Nevertheless, they are worth a mention.

World Cup Challenge

From: Winsport
Type: Management Simulation

As far as the chaps from Winsport are concerned, there's more to the World Cup than just a bunch of sweaty footballers chasing a synthetic pig's bladder around a converted American Football pitch. Working in a similar style to the league management game Premier Manager, World Cup Challenge allows its player to direct the proceedings from the touchline and training pitch.

Obvious advantages
It works in Windows and you can edit just about any of the parameters — so England truly can try for the prize (and you can even partner Alan Shearer up front if you like).

Obvious disadvantage
The limited structure of the World Cup means that this can't have the kind of longevity usually associated with games of this type.

Kick Off 3

From: Anco
Type: Arcade Action Game



Ask a cross-section of Amiga owners about their computer footballing preferences and they'll probably end up divided between Sensible Soccer and Kick Off 2. And while Sensible may just get the majority vote, Kick Off 2 can be proud of even being in the running as it was first produced way back during Italia '90.

Unfortunately, the joys and thrills of Kick Off 2 never made it to the PC, where the attempted 'port' was something of a disaster. However all of that may soon be put right with the launch of the third game in the series, which should be around soon after the end of this year's tournament.

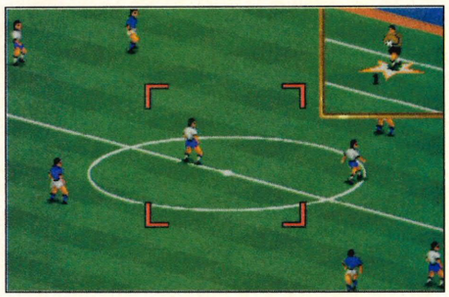
Obvious advantage
The Kick Off heritage.

Obvious disadvantage
Original Kick Off programmer Dino Dini has split from Anco to produce Goal! for Virgin.

World Cup Year '94

From: Empire
Type: Compilation (Sensible Soccer, Goal!, Striker and Championship Manager 93/94)

Dubbed "The No. 1 Soccer Challenge Of The Year" by publisher Empire, this compilation goes quite a long way towards living up to that billing. A mixture of arcade action and management strategy games (there are three action games and just the one management effort), WCY '94 really does have something for everyone. The arcade efforts are all of a high standard, and offer enough



subtle differences to make owning all three worthwhile, while Domark's Championship Manager '93 (here, complete with its 1994 update disk) is so addictive that the Government should really consider bringing in legislation against it. Best of all though, at £34.99 it's better value even than Tony Cascarino's free transfer from Chelsea.

Obvious advantages
The software and the price.

Obvious disadvantage
It includes a rolling demo of Empire Soccer '94 .

THEY THINK IT'S ALL OVER... IT IS NOW!

Things have certainly progressed on the digital football front over the last four years. Where Italia '90 was only marked by the release of one related game — the official game of the tournament from Virgin Mastertronic (now Virgin Interactive Entertainment) — the USA event has resulted in a near embarrassment of riches.

However, there is one game which stands out from the rest — Electronic Arts' FIFA International Soccer. Throughout the time that all of the games featured in this round-up were being played in the PC Review offices, a constant and often furious debate raged as to their various merits and drawbacks.

However, as the team slowly lost interest in one game after another, it soon became clear as to which of the games was going to keep its place on the hard drive for weeks to come.



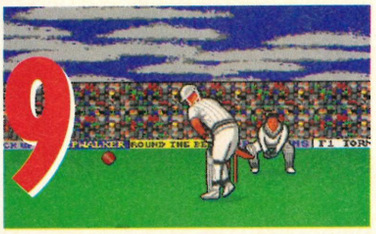
A word of caution though, FIFA's complicated control method means that it really does have to be learned in a way that most computer football games don't — but if you're willing to put in the practice then you'll no doubt be rewarded by many hours of varied and complex footballing action.

MATCH



MATCH ~ the football mag that matters! Get it every week!

Hits for Six Vol 6-9





All volumes are available on 3.5" disk at £25.99, and on CD-ROM at £29.99

The chances are that Prism will cover just about the whole market sooner or later if it keeps up its Hits for Six output. With four new packages released this summer, that's 24 games, being dusted down and repackaged by the software publisher.

Each of the four follows a similar formula: one lead program, a couple of second features, and three duffers.

The track listing for Volume 6 reads Silent Service II (the "main event"), 3D World Tennis, Stormlord (the support groups), plus World Cricket, Graeme Souness Soccer Manager and Maya. These three are the also-rans.



Volume 7 comprises Special Forces (OK-ish), 3D World Boxing, Nebulus, Millemiglia, an Italian racing game, Blade Warrior, 1000 Mile Classic, and Windsurf Willy.

Volume 8 kicks off with Railroad Tycoon, and if you can't be bothered with the rest of the CD, you can of course, pick up RRT for £16.99 on the Kixx label. It's accompanied by Football Manager, International Tennis, Netherworld, Targhan and Big Game Fishing. And on to Volume 9: Super Tetris, Football Manager 3, Athletics, Fruit Machine, Basket Play-Off and Genghis Khan. This is probably the weakest of the lot.

The manuals for each of the volumes have been thrown together as abridged versions of the originals with little thought for the current packaging. Hence we have instructions for loading Atari ST versions, even MSX and Commodore 64 cassette versions in some cases.

I can only think of three programs out of the 24 here that could conceivably be worth picking up if you missed them first time around — Railroad Tycoon, Silent Service II and Nebulus — and the other programs are either ancient or so appalling as to be embarrassing. Certainly none of these packages is much of an advertisement for the capabilities of your shiny 486 PC.

■ **Christina Erskine**

· TECHSPEC ·

Minimum PC:	XT/AT with HD or CD-ROM
Minimum memory:	640K
Minimum graphics:	EGA/VGA
Sound:	Any
Publisher:	Prism Leisure
Price:	£29.99
Contact:	(081) 804 8100

RATING **3**

Companions of Xanth



Above and right: The new CD version of Companions of Xanth features great graphics and speech too.



The floppy disk version of Xanth was reviewed back in Issue 28 (February 1994). Using an intuitive point-and-click interface, it marked the end of Legend's concentration on text-only adventures. This CD version is exactly the same game apart from one important feature: speech.

The plot begins with two demons who want to rule Xanth. To do so each must find a human being to help them find an obscure object somewhere in the land. The framework for this story means that you end up playing a game within a game — a conceit which is regularly referred to and ultimately becomes boring.

The action is based on the series of fantasy novels by Piers Anthony (his book, Demons Don't Dream, is included in the packaging). True to the spirit of the author, Xanth relies heavily on punning for its entertainment. Some of these puns, such as a character named Fairy Nuff, can be excruciating.

The speech adds a touch of atmosphere but is also annoying if you read much faster than the characters speak. Apart from this the graphics are adequate and the interface has no serious drawbacks. If you're looking for a mildly interesting diversion, this will do.

■ **Gordon Houghton**

· TECHSPEC ·

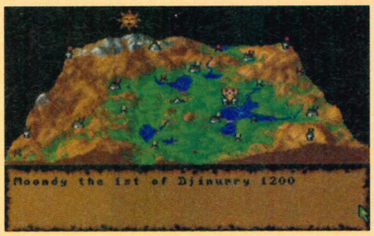
Minimum PC:	386, MSDOS 5.0 with CD-ROM
Minimum memory:	1Mb
Minimum graphics:	VGA
Sound:	Ad Lib, Sound Blaster, MT-32
Publisher:	Legend Accolade
Price:	£39.99
Contact:	(081) 877 0880

RATING **5**



Budget Games

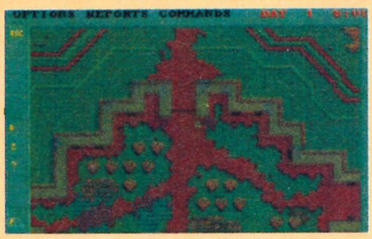
This month's crop of budget bargains includes role-playing, strategy and sports simulations.



The Worlds of Legend — Son of Empire
Action Sixteen
£16.99

Vengeance for murder is the motive behind this nifty if rather traditional 3D role-playing adventure. You control four characters — Assassin, Berserker, Troubadour and Runemaster — on the trail of the killer, the Sorcerer Ti-Mann Mochun. This is a standalone game or you can import characters from Mindscape's original Legend game — which was first released back in the summer of 1992.

***

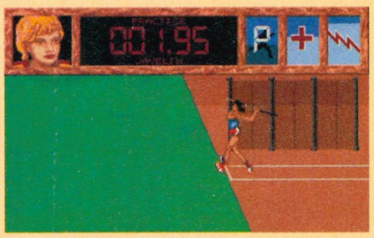


Walls of Rome
Action Sixteen
£16.99

Classical warfare simulation with the conflict — single battles or prolonged campaigns — ranging from Britain to Carthage, in North Africa, to Greece, Persia and Rome.

This is one of those wargames that afficionados will probably drool over having months of fun, while others will completely fail to see the attraction of the genre and will be put off by the drab graphics.

***



The Games (Espana)
Hit Squad
£12.99

Step back in time for the Olympics in Spain and instant nostalgia with this game. It includes track and field sports, statistical databases, management and training. There's certainly enough to keep you occupied but not obsessively so. The graphics are average and the action isn't that exciting. Add to that some difficulty in controlling some of the athletes and you end up with a so-so game.

**

GAMES

Jack Nicklaus Golf and Course Design



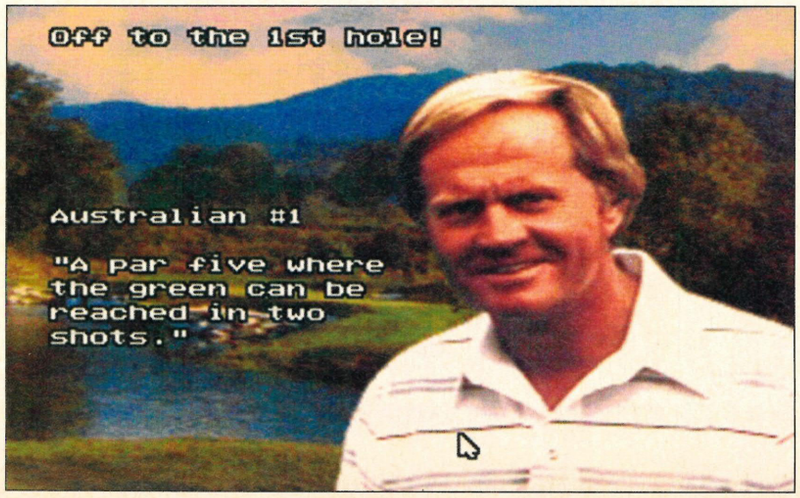
There can't be many better ways to learn golf than under the tutelage of the legendary Jack Nicklaus, and in this classic simulation the great man pops up at every tee to talk you through the hole. More excitingly, the designers have been able to computerise his swing, so you actually get the chance to play against him. Who could resist the challenge? I know I couldn't, and my glee at finally taking a hole off Jack (what do you mean, a fluke shot?) was tempered only by the realisation that having lost all the others at $1000 a hole I'd been well and truly stuffed. The cheque's in the post, Jack. Honest.

This is easily the best aspect of a golf game which, although competent in the main , never quite scales the heights, by which I really mean that it doesn't come up to the standard set by Links. Graphics and animation are only moderately good, and the all-important quality of perspective is decidedly poor. The game is controlled by the familiar arcade-style horizontal bar, and while this is easier to pick up than the Links method, it's much less subtle. The putting, in particular, is very hit or miss (hit AND miss in my case).

The package comes complete with an easy-to-use course designer, so when you've tired of playing the generous allocation of sixteen real courses you can have a go at throwing together one of your own.

This is certainly a good value golf package, but it's not up there at the top of the leader board.

■ **Simon Shaw**



And here's a word from our sponsors ... Jack's always on hand with his topical tips, take note of them if you can.

· TECHSPEC ·

Minimum PC:	286
Minimum memory:	640K
Minimum graphics:	VGA/MCGA
Sound:	Ad Lib, Sound Blaster, Roland, Tandy
Publisher:	Accolade
Price:	£19.99
Contact:	(081) 788 0200

RATING 6

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- PUTTY SQUAD
- CRICKET MASTERS
- JAMES POND 3 CD32
- KICK OFF 3 A1200
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- CLOCKWISER
- KID VICIOUS
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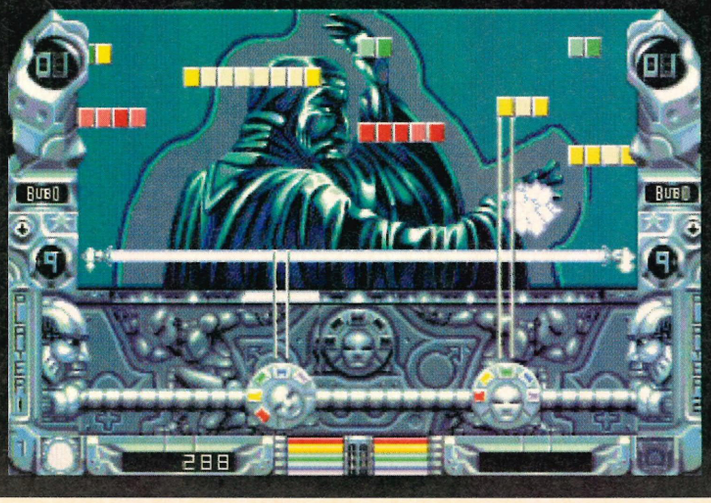


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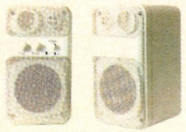
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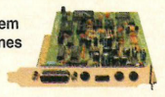
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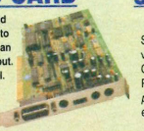


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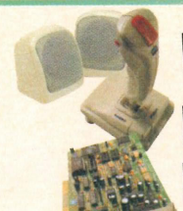
Please note that the bundled software does not feature full retail packaging.

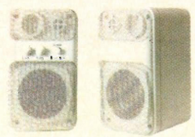
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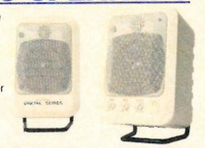
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WIN! A day out at The American Adventure theme park

PLUS

10 copies of Theme Park to give away

As a stupendous first prize in this competition, PC Review, in conjunction with Bullfrog Productions, purveyor of the mighty fine game Theme Park, is sending one first prize winner (and family or friends) on a day out to the American Adventure theme park. The American Adventure park is in Ilkston, Derbyshire and features the cinematic Motion Master, the world's highest triple drop log flume, Nightmare Niagara and the Rocky Mountain Rapids among its hair-raising rides. You can choose the date, you can choose who to take with you, you can choose exactly what to do when you get there — all you have to do is enter this competition.

And if you don't win that exciting first prize? Well, we've got the next best thing: 10 copies of Bullfrog's Theme Park will be going to the runners-up.

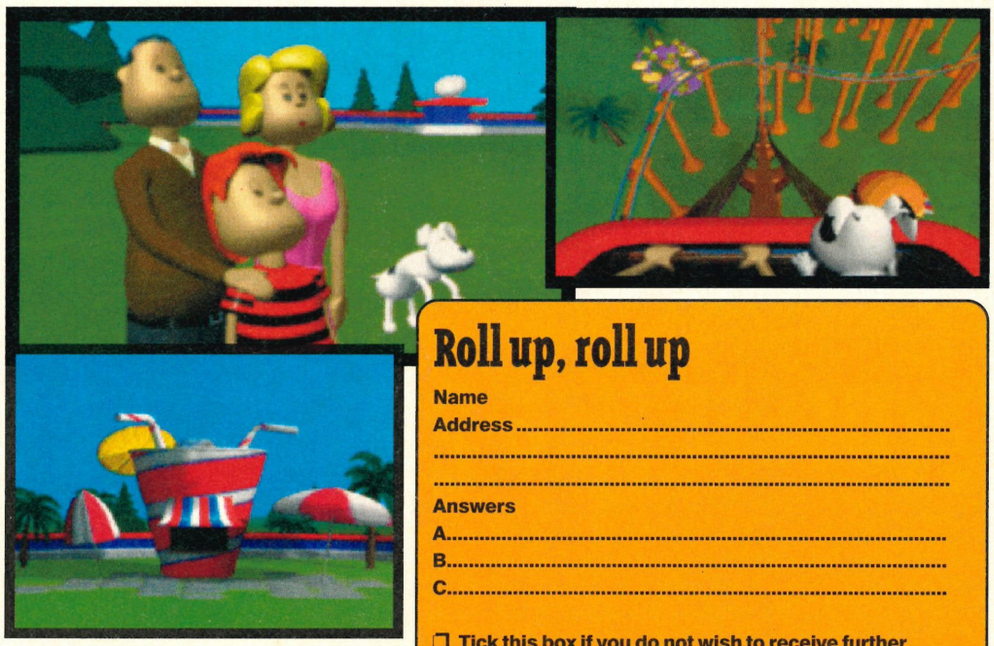
Theme Park is an all-embracing strategy-cum-simulation game in which you must build your own theme park, complete with shops, merry-go-rounds, ghost trains and roller coaster. Unconvinced? Turn to page 54 for the definitive review of one of the freshest, most enjoyable games released this year.

How to enter

If you want to be in with a chance of winning one of these great prizes, you need to do a bit of fairground ride-spotting.

Pictured on this page are three of the amenities from Bullfrog's very superb Theme Park.

All you need to do, using your judgment (and peeking at the Theme Park review on page 54 if needs be), is to identify which rides and/or stalls these are. Thus, if you think A shows a picture of a merry-go-round, put "merry-go-round" next to A on the entry coupon.



When you think you know the answers, mark them on the coupon opposite.

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

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It must reach us by August 15th, 1994. This is the closing date and any entries which arrive after that will not be admitted entry to our very own theme park.

Roll up, roll up

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

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

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

Closing date August 15, 1994
PC Review Issue 34 August 1994

Rules

- **Employees of EMAP Images, Electronic Arts, Bullfrog and Granada Theme Parks and Hotels and their families and are not eligible to enter .**
- **No multiple entries, please.**
- **Entries received after the closing date will not be accepted.**
- **The editor's decision is unquestionable.**

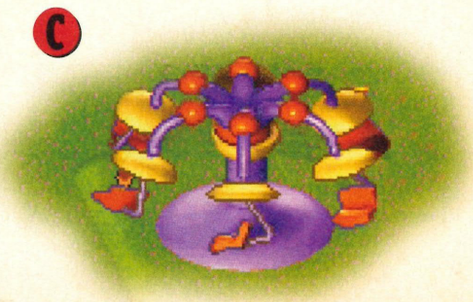
A



B



C



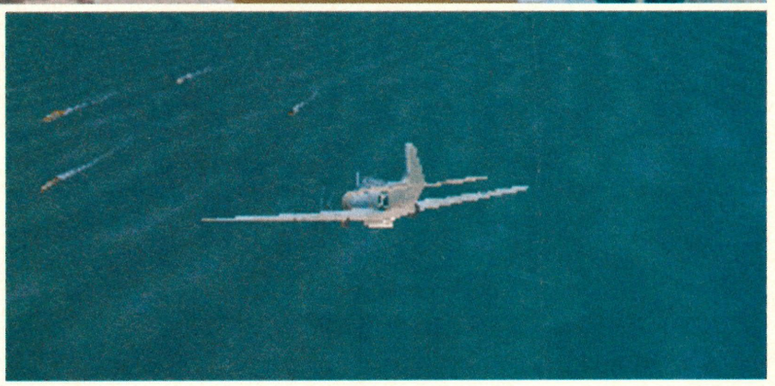
COMPETITION

1942: Pacific Air War

Become a top gun at 1942: Pacific Air War by following our handy hints and tips.

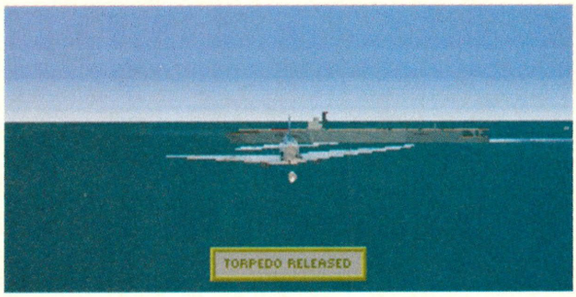
During the Second World War, American torpedos were about as reliable as a steam powered cuckoo clock. The Japanese torpedos weren't much better off. Get the angle wrong, get the speed wrong, and the damn things would vanish into the sea without a trace.

This feel is faithfully recreated in 1942 PAW. So we thought we'd give you some hints and tips to help you get that attack run right,so that launching a torpedo will be one of the most effective and satisfying moments in the game. So, assuming that you want to attack a carrier in the centre of a defensive ring of destroyers, here's a basic run-through for dropping your load on the enemy.

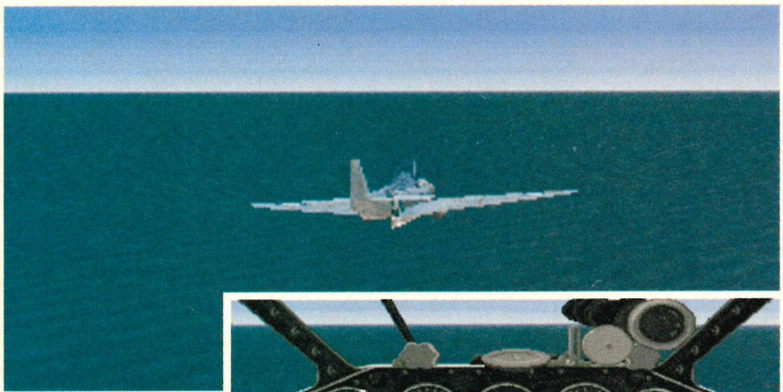


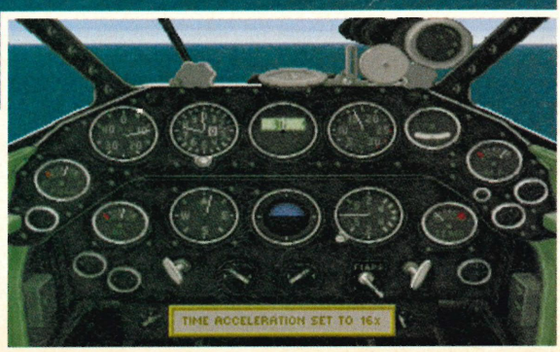
1 Below: Use the external view (F6) to keep an eye out for the target. Start your approach at just under 1,000feet, at full speed (not what the textbook says ...). Begin a steep dive as the nearest ships disappear off the bottom of your screen.

3 Above: The ship will start to turn as soon as you release the torpedo, you'll have to allow for this and adjust your approach to allow for the forward motion of the ship. I find it helps to attack just short of 90 degrees to the ship, coming in slightly from behind. This also allows you to veer away at the last possible moment.



4 Above: Ignore the flak and stay perfectly level and as low as possible — preferably under 150 feet — before you hit the button. Release the torpedo as close as you can to the ship, but leave enough room so that you will still be able to pull up. Aim at the bow of the ship.



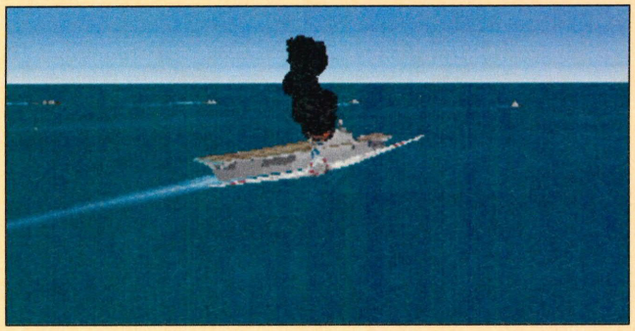


2 Right: Level out at 150feet, and drop your speed right down to 4.



5 Above: Pull pack hard on the throttle, bank away from the ship and climb hard. Don't stall, and don't hang about. Hit the F8 key to swap to the next plane and repeat the process.

IT'S JUST NOT CRICKET ...

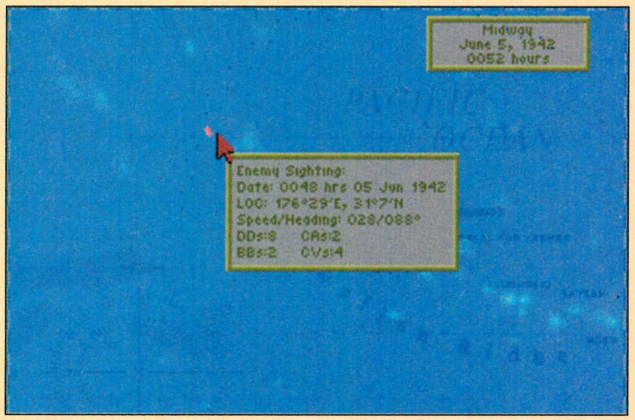


You can always play the carrier battles in a less than serious, underhand, kick 'em where it hurts kind of way if you're fed up with losing your fleet time after time.

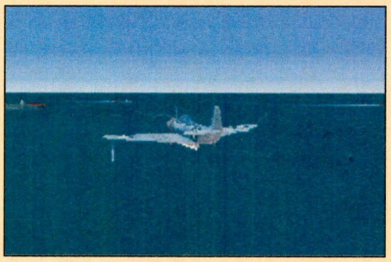
The first thing to remember is that only the carriers really matter from a winning or losing point of view. It makes no odds whether the enemy has the meanest destroyer task force ever to sail the seas, they won't do you any damage. In fact they'll just sail past and the worst they're likely to give you is the finger.

So, back to the carriers. Well, take a leaf out of the Japanese guide to aerial combat — and ram the carriers kamikaze-style. All it'll cost you to put each carrier out of action is three or four planes at most. If you sink the carrier completely you don't even have to worry about the air cover that's already up there — just retire to a safe distance and wait for them to try and land ...

Take out the opposing carriers and they've got no more air cover, and no offensive potential (so much for simulation/realism, MicroProse ...) whatsoever, then you can simply take out the enemy ships one by one.



GENERAL TIPS:



1 Press F6 for the external view before taking off. Why? If you're parked in the middle of a squadron and don't go for the 'mirror, signal, manoeuvre' approach, chances are you'll cause a rather messy Branson-style pile-up.

2 If you're climbing to a higher altitude, do it gently in these crates. Go too steep and you'll stall easily. The same goes for sharp turns at altitude — if you do need to pull a fast turn, point the nose of the plane downwards first.

3 To make dive bombing easier, look for a ship that's already been hit: fly over the length of it to get the line right, then let 'em rip as you enter the cloud of smoke from the previous hit.

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AMIGA SCREEN STAR

Sim City 2000

Joe Twyman of Wivenhoe, Essex (nice place — do you frequent the Black Buoy, Joe?) has sent in a cheat for Sim City 2000 to give you lots of cash. This is how he describes it:

1. Start the game and create a new coastal city with 0% hills, 0% water and 100% trees.
2. Save straight away and quit out.
3. Load a hex editor and call up the saved game.
4. Change the values as follows:

Address	Original Value	New Value
00027	01 (usually)	0F
00029	4E	FF
0002A	20	FF

5. Load Sim City 2000 and your saved game. You should now have in excess of $242,000,000.

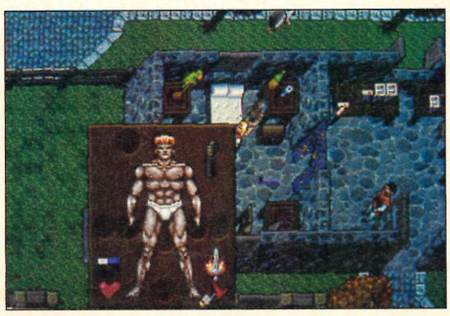


If you're not confident enough to edit your files, you could try this cheat instead, supplied by Ben Partridge of Newport, Gwent. You'll need a copy of Sim City 2000 plus a copy of the original Sim City too.

Using the original Sim City, start a city and, before you build anything, turn caps lock on and type FUND. This will give you more money. Repeat until you have as much money as possible. Then save the game and load it into Sim City 2000 — you won't have billions but you will have a little extra cash to chuck around.

Ultima VII: The Black Gate

Greg Johnson has written to us all the way from Australia with this tip for Ultima VII. If you're strapped for cash but already have a ship, go to the casino in Buccaneers Den. Put an equal amount of money on each lane — the maximum bet is 500 gold pieces per lane. You never lose, apparently.

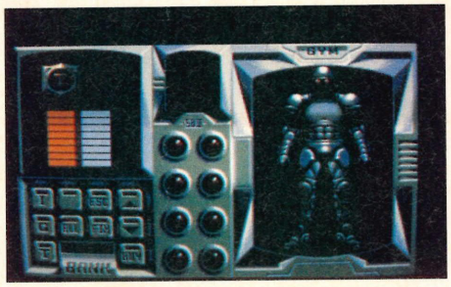


Speed Ball II

Paul Newman (lawks! I never knew we were read by the stars! — Ed) of Stoke-on-Trent has been hacking away at Speed Ball II to build the ultimate team.

1. Start a new league and instead of playing the first game, save it.
2. Exit and load up a Hex editor such as XTree. Edit LEAGUE.SAV.
3. On line 000000, change the fifth number from the left from 4C to FC. Then change the sixth letter from the left from 04 to FF. On lines 000010 to 000090, change every 64 to FF.

This will raise your team's power to a full 255 and your credits to 65532.



Litil Divil

London's Chris Ackerman has a cheat for Gremlin's Litil Divil which you may find useful. Typing the following to start the game will give you different advantages (the capitals are necessary):

divil KmCiNpOckKeT — you can now skip stages by pressing F1.
divil Nicole — you can walk through rooms by pressing shift-P.
divil MEANING — you get more energy by pressing shift-T.
divil Donkey — you can now get more treasure by pressing 1.
divil Grumpy — press K to get more keys



Epic

Chris Ackerman has also provided the level codes for DID's Epic:

1 AURIGA
2 CAPHUSAPUS
3 MUSCA
4 PYXIS
5 CETUS
6 FORMAX
7 CAELUM
8 CORVUS

Populous 2

Terry Chocolaad of Eindhoven in the Netherlands says if you want to use lightning without using any mana, use lightning as normal, then when it appears on screen, hit F10 (pause). Place your mouse pointer to the side of the screen and hit F10 again and the lightning will continue without using up mana.



PUBLISHER'S HELPLINES

Hopelessly stuck in a game? Many software publishers run games helplines to help out hapless souls with hints and tips.

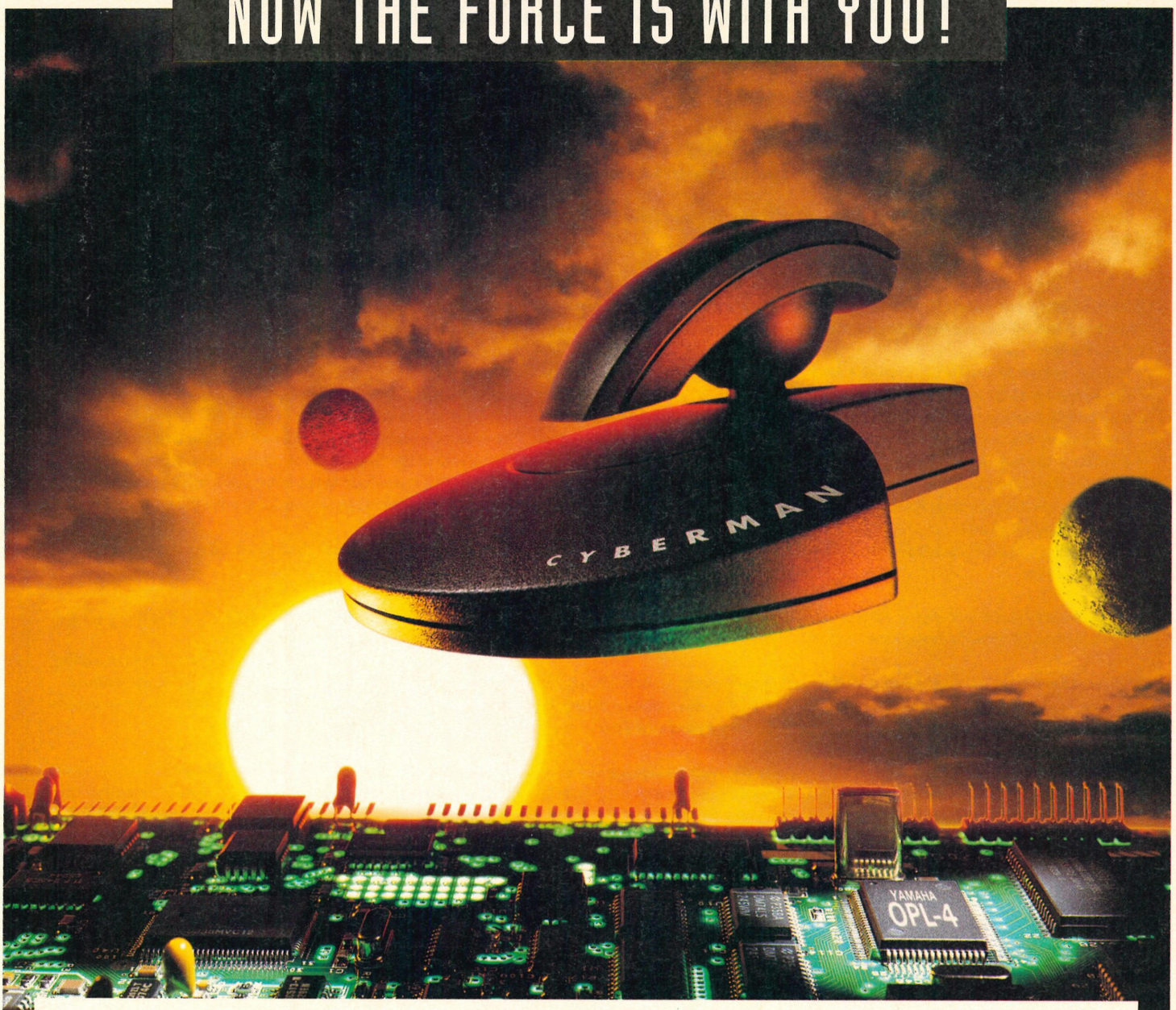
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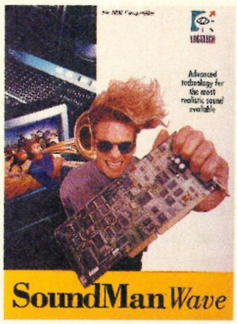
QED GUIDES

We've stopped doing QED Guides but Maurice Mariotti has hints, codes and solutions for the following games: King's Quest I to VI, Space Quest I to V, Quest for Glory I and II, Monkey Island 1 and 2, Heart of China, Castle of Dr Brain, Batman Countdown, Civilization (hints), Dune 1 and 2 (hints), Codename Iceman, Elvira 2, Indiana Jones and the Fate of Atlantis. If you're interested, send a blank 3.5" disk along with your address to:

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HELP WANTED

I need help for Alone in the Dark: How do I get past the pirate with the wooden leg? If I do manage to get past him, can I get through the door as there doesn't seem to be a key?

Secondly, how do you get back into the room with the spiders? And is it possible to get under the house? Finally, how do you use books against the monsters?

Steve Henson, Australia

Answer: Firstly, you need the sabre or sword to fight the pirate. The sabre may break but it will continue to be an effective weapon nevertheless. Just remember to pick up the blade as you'll need it later. The pirate is hard to kill but it is possible, and he will drop a key which will let you get into the ballroom.

You can get the sword by throwing the very heavy statue at the suit of armour in the hall.

You only have to go into the spider room once. When you've got the arrows from the statue, run back through the door. The other door leads to the ballroom, but you can't get out unless you've killed the pirate and unlocked the main ballroom door.

To get under the house, ignore the secret entrance in the cellar (you can't get past the slug monster). Go to Jeremy's study (next to the room with the cigar) — the key to this room is behind the clock (push the clock) in the bedroom at the end of the gallery. In the study is a coat of arms with one sword missing. Use the sabre on it (it doesn't matter if it's broken) to open the secret passage. But don't go down unless you have the key from the mantelpiece in the ballroom, the cigarette lighter, the lamp and the talisman from the secret room off the library because once you're inside, you can't get back out again.

The books are there to provide clues and add a little background colour to the game. Some, however, are harmful to you, but you can't use them to kill monsters.

I am hopelessly stuck in Infogrames' Eternum. I have entered the pyramid and set up the three statues so that the roof above them opens but I get killed by the sand. How do I progress further?

Marc Shreeve, Dyfed

Answer: This one's a bit odd. You'll need the rackets which you can find in an alley on the French island. Use them when you arrange the statues and you should be able to climb up the sand pile to the trap door above. Why this stops you getting killed (the rackets are on your feet whereas the sand falls on your head) is anyone's guess, but that's the French for you.

Help! I bought Beneath a Steel Sky and I am hopelessly stuck. I have the video tape, the grappling hook, light bulb, ID card, metal bar and spanner. I have a Shriebmann port and a jammer on the ID card. I know you're supposed to swing across with the grappling hook, but can't get through the lift into this building. Also, how do I get into the lift going down to the park, how do I get into the lift in the security building and do I need to join the security services and shut down the reactor in the factory?

Brian Pennells, West Sussex

Answer: Blimey! You don't half want a lot, don't you? We ran a solution to Steel Sky in the July issue of PC Review, but in case you missed it, here are a few pointers to get you on the right path. I presume you've already made the grappling hook from the anchor and cable. Go to the building where Hobbins works and walk upstairs and right to the fire escape. Use the hook on the security sign which is on the wall of the building opposite. This will get you inside. You now have to enter LINC Space. Pick up all the objects, decompress them if necessary and open any files you find. Exit LINC Space. You can now view the files using the terminal, plus you'll have access to other information and you'll be able to use the lift to the park. You won't need to shut down the reactor until much later, but again, this is done using the terminal and isn't difficult.
Oh, and don't worry about the WD40 or joining security.

In our June issue, Edward Zuccollo of New Zealand wrote in to say that he had been having trouble getting Largo's spit off the wall in Monkey Island 2. Ian Govan of Scotland, Mark Patterson of Newbury, Neil Barker of Sutton Coldfield and someone called "The Mole" of Plymouth have all come to the rescue. Thanks, guys.

Answer: Go to see Wally the cartographer (second door on the right after crossing the bridge into the village). To the right of Wally's table is a pile of paper. Look at it, take a piece and exit. Go downstairs to the bar on-board the ship opposite Wally's and talk to the bartender. Largo will walk in, order a drink and then spit (no accounting for manners) on the wall. When he leaves, use the paper on the spit. If you have all the other ingredients, take them to Madame Jo-Jo so that she can make the doll.

Does anyone out there have a game called Planet's Edge — Point of no Return? If so, how do you get into the main complex on Ascella 2, the Secundus Base. I've tried everything.

The Mole, Plymouth

Answer: OK, here goes. The death robots won't hurt you unless you hurt them. Go to the computer just west of the door and use the escape code on it. Kill the robot guarding the door and enter quickly. Once your entire party is inside, step on the tile slightly west of where you entered to close the door. Head east through the corridors to the computer in the north central area. Blow up the computer — you may need to try this several times. Then stand on the east side of the room and blast through the wall as many times as you need to. Enter and blow up the next computer. Now enter the previously locked door to the south. All you need to do now is pick up what you need and return to base.

Miss PM Wigley wanted some help on Laura Bow II in our May issue. Kartik Nathan (sorry if I've spelt your name wrong but I couldn't read the writing!) has the answer. Thank you.

Answer: The answer to the question "What room do you leave which you have not entered?" is WOMB. Rameses will then ask you "What room do you enter without leaving?" to which you must reply TOMB.

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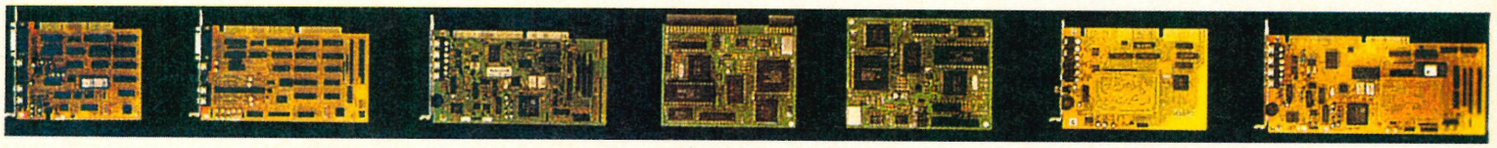
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Creature Shock



Creature Shock is a CD-based, first-person perspective shoot 'em up featuring 3D Studio rendered graphics, lots of alien nasties and over an hour of full-motion video.

Creature Shock is set in the year 2023, where famine and disease are running rampant on a blighted Earth. Faced with the imminent prospect of war, the wealthy nations have spent billions of dollars on a huge survey-ship, the SS Amazon, which has been launched out into the solar system to seek out a new world for mankind to escape to.

Unfortunately, as the ship passes Saturn, it is attacked by a strange alien spaceship and all contact is lost. As a member of a crack commando squad, the player, that's you, is charged with the simple task of finding the ship, unearthing what has happened and finally killing everything in an orgy of high-tech, fully rendered 3D carnage.

Like Doom, Creature Shock is an interactive 3D adventure and the aim of the game is to wander around dark, claustrophobic tunnels, trying desperately to stay alive. Of course, this isn't easy. There are aliens to avoid.

Unlike Doom, Creature Shock hauls stunning, pre-rendered images from the CD, to give an added edge. It's not just running about in tunnels either, there is a Rebel Assault-style 3D flying section too, where you get to dive dramatically into canyons, shoot Starfish Mine Launchers and collect valuable power ups.

Creature Shock looks like being a CD game with some playability. And about time too.

■ **Dean Evans**

The tunnels that you must traverse in Creature Shock are infested with all manner of tentacle-wiggling, slime dripping aliens.

FAXBOX

CREATURE SHOCK	
Developer:	Argonaut
Publisher:	Virgin Interactive
Release date:	November
Genre:	Arcade
Price:	£TBA

Simon the Sorcerer 2



After a Tentacle and the mysterious AFKAP (Artist Formerly Known As Prince), probably the third biggest selling product that features the colour purple must be the highly acclaimed graphic adventure, Simon the Sorcerer.

Since the huge success of the original game, developer Adventure Soft has been busy working on the sequel, subtitled The Lion, the Wizard and the Wardrobe, and even though the game is still at an early stage, it still looks much, much better than the original.

Veterans of Simon 1 will know that the game's climax involved the 14-year-old hero pushing Sordid the Sorcerer into a pit of bubbling lava. In Simon 2, Sordid returns as a ghost and, desperate to wreak his revenge on the young Simon, he creates a time-travelling wardrobe to go and pick him up. Unfortunately, things don't go as planned and Simon ends up outside a shop belonging to Calypso the good Wizard. Hilarious consequences follow.

Like the first game, Simon 2 is stuffed full of humour, familiar quotes and literary references. For example, to get the time-travelling wardrobe going again, Simon must find some Mucosade to generate 1.21 gigawatts of power, the Swampling has opened a chain of fast-food restaurants — McSwamplings — there are pirates, Kings, Goldilocks and the three Bears and even the Lady of the Lake makes a wet-suited appearance.

Simon 2 also promises to be even more difficult than the first game, with the plots and sub-plots fiendishly interwoven. If you thought Simon the Sorcerer was tough, it's going to take you a hell of a long time to finish Simon 2.

The sequel has been developed with CD-ROM in mind from the beginning, and Adventure Soft has a huge library of sound effects including comic crashes, boings and kabooms, that were sadly missing from the original. For all you Red Dwarf fans, Chris Barrie is also expected to return to provide Simon's voice for the CD-ROM version of the game.

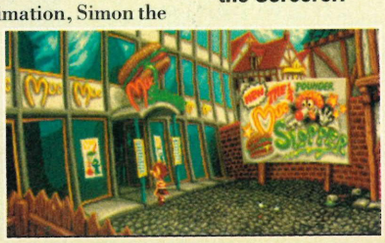
With improved graphics, better sound and some detailed animation, Simon the Sorcerer 2 will compound the fact that it's not just LucasArts who can make funny graphic adventures. We're not bad at it either.

■ **Dean Evans**

FAXBOX

SIMON THE SORCERER 2	
Developer:	Adventure Soft
Publisher:	PDQ
Release date:	September
Genre:	Graphic Adventure
Price:	£TBA

More humourous adventuring in the second outing for Simon the Sorcerer.



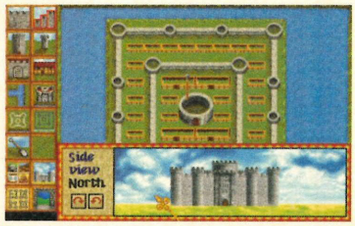
Lords of the Realm



If the word "strategy" is enough to send you to sleep, chances are you're not terribly familiar with Impressions who specialises in that genre. Lords of the Realm, however, is probably the most widely accessible game Impressions has produced, with the possible exception of Detroit. Set in Norman England, you take control of one of six lords struggling to take possession of the vacant English throne.

As with most games of this type, you start by controlling a small area, which you try to expand until you rule the whole of England and Wales.

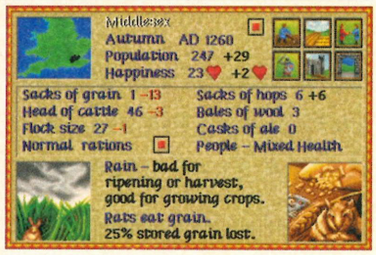
This involves everything from designing and building castles to fighting battles, sieges, farming, mining and trading. If this sounds rather daunting, don't worry because you can get as involved as you want to get. If, for example, you aren't too interested in the farming side of things, you can concentrate on other matters instead.





Impressions has obviously spent quite a bit of time on presentation, because Lords of the Realm boasts 256 colour graphics, animation sequences and digitised video sequences.

The result is a game which will appeal to a wider audience than most strategy or empire building games. As a bonus, you also have the option to compete against up to five players via a modem, although it's perfectly enjoyable as a single player game.



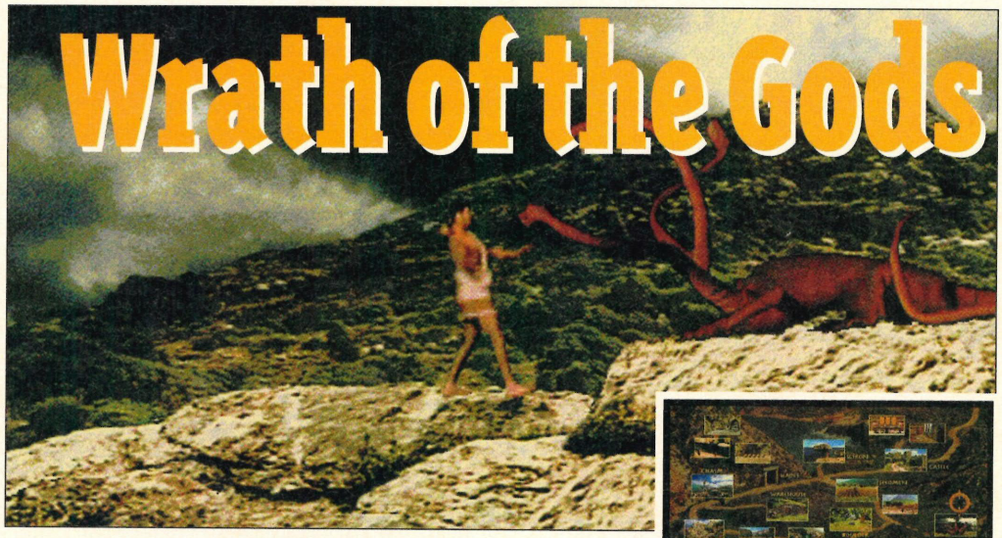
Lords of the Realm has the potential to be the best thing Impressions has done — I'm looking forward to seeing whether this turns out to be the case.

■ **Cal Jones**

FAXBOX

LORDS OF THE REALM	
Developer:	Impressions
Publisher:	Impressions
Release date:	September
Genre:	Strategy
Price:	£TBA

Wrath of the Gods

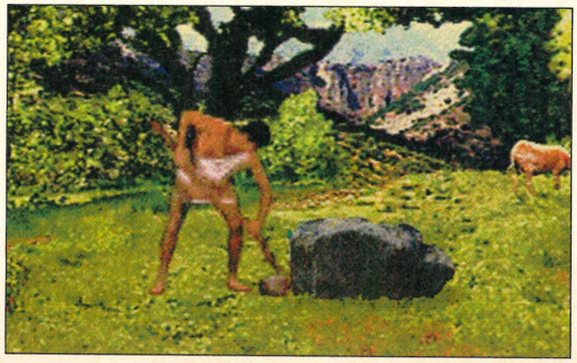


Wrath of the Gods, due out towards the end of August, takes you on a very American journey through the myths and legends of Ancient Greece.

It's aimed at the 14 to adult market and bases a variety of moderately difficult puzzles, both object-based and conversational, on your knowledge of Ancient Greek mythology. While some of the puzzles can be approached easily by any experienced adventurer, the majority require knowledge of Greek myths and culture if you're to successfully deal with 60 digitised characters, including the Cyclops, Hydra, Styx and Medusa.

The game has comprehensive text screens, video footage and still images to provide the background information you need — making it part game and part learning tool as well.

If you get really stuck, then it's time to consult the Oracle (AKA the hint button) in exchange for points off your score.



Created by Luminaria in Quicktime — a Macintosh-based multimedia authoring package which is becoming increasingly popular in the creation of CD-ROM adventures — Wrath of the Gods also boasts stunning photo-realistic backdrops taken from original photographs of Greece, and a very tongue in cheek sense of humour.

Gross Americanisms crop up in the most incongruous places and some delightfully hammed-up acting, but all this ultimately adds up to an impressively detailed adventure with a different feel.

■ **John Bennett**

FAXBOX

WRATH OF THE GODS	
Developer:	Maxis
Publisher:	Luminaria
Release date:	August
Genre:	Adventure
Priceß:	£TBA

Sim Analysis

It's the final month in our Sim City 2000 competition, which means, of course, that Cal Jones dons her white coat for the last time to sift through the entries.

It's the very last month in our Sim City 2000 competition. It all began back in the April issue when we asked you to send in the best cities you could build within the set time limit of 50 years. In return we would print the most interesting, be they incredibly successful, absolutely dreadful or just plain weird. As a bonus, our resident psychopath, er, psychoanalyst Cal Jones would analyse all the entries we published. Here's her verdict on the the final crop of contestants.

Subject one: John Tapper of Garway, Herefordshire



Archie's Pelago (nice pun) is one of the most original cities we've received. The land has been edited to form a sort of spiral — could it be that John has artistic leanings? There's an awful lot of water, and according to Freud, water represents, er, sex... I'll leave you to draw your own conclusions.

The population isn't huge (though at 22,250 it's respectable enough), which tells me that John prefers interesting detail to sheer size. Moreover, the water, trees, parks, low crime and low pollution has sent the land values soaring up to an unprecedented 200 — the best I've seen yet. Even the education level is very good. Which means that in turn, the quality of life here must be very good. What's more, John has achieved this without issuing bonds and with disasters left on. Good stuff, John, and top marks for originality.

Subject two: Sieu Ngu of Peckham, London

Some people are very sad, aren't they? Sieu Ngu is a prime example, having based his town on Ultima VII. There's a Lord British Castle, two Serpents Holds, a Fellowship, a Guardian's house and heaven knows what else. At least Sieu can laugh at himself — he has called his creation Oh Dear Indeed!! — most appropriate.



Unfortunately, the city is really pretty bad. The population is small (9,370), unemployment is sky high and land values are the lowest I've ever seen. There are derelict buildings everywhere, which doesn't bode well for the future. More to the point, the city (or should I say shanty town?) has failed to blossom even though Sieu has taken out a $10K bond and turned disasters off. Don't go into business, Sieu, whatever you do! You may just win one of our sought-after booby prizes, though.

Subject three: Richard Shearman of Sandhurst, Surrey



Richard has sent in umpteen entries over the course of the competition, so he must, at least, be determined. I imagine he's someone who will try and try again until he gets what he wants (even if it is only his name in print).

The terrain has been edited somewhat, but I'm not sure if he has tried to write something on the side of the hill in water — if so I can't read it. The population is suspiciously high at 108,230, but then Richard has taken out a $70K bond and he has the disasters switched off. You're not playing ball, Richard!

The city scores well in most departments, but pollution is high (despite relying on hydro power only) and the crime rate is ridiculous. This suggests a lack of attention to detail. However, the city seems to work well as a whole, and it's nice to see a bit of original landscaping. Maybe Richard should consider following in the footsteps of Capability Brown.

Subject four: Ian Lenton of Northampton



Ho hum, it looks as if we've got another saddo on our hands. Ian, you see, is a trekkie (I bet he's got a boxed set of Star Trek Micro Machines. And one of those "Teach yourself Klingon with Michael Dorn" tapes) and his creation, Trek City, is obviously inspired by this obsession. Everything in his city has been named after parts of the Starship Enterprise. The parks are called "holodecks", the marinas are "shuttle bays", the airport is the "transporter room", the hospital is, of course, "sickbay", and the mayor's house is "captain's quarters". And the zoo? That's "Riker's quar-

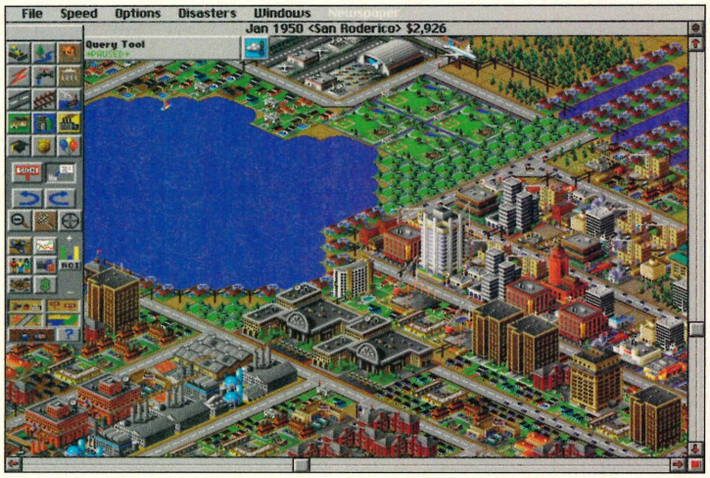
We're sorry if your city has not appeared in PC Review, but we didn't have the space to print them all — don't take it personally! Thanks for sending in your entries — we had a lot of fun looking at them.

ters." I have a sneaking suspicion that Ian is trying to be witty here. Oh dear.

Well, I may sneer but Trek City is actually quite good. It's big without being huge, the economic outlook is promising and the layout is neat and regular. Unemployment is zero and the people are well educated, but crime is high. You need to employ a few more of those security guys in red jerseys, Ian.

More surprising is the fact that pollution is running riot despite the fact that Trek City is powered entirely by Dilithium chambers (well, that's what Ian calls his hydro power plant). Still, not bad. I'm looking forward to your Deep Space Nine version, Ian.

Subject five: Roderik Hylkema, The Netherlands



San Roderico is a very flat city, which comes as no surprise when you realise that Roderik comes from Holland. At first sight it's a successful town, with a population of 79,290 and a high standard of living. As Roderik says in his covering letter, it's a city where you and I would want to live. Look closer, though, and you might change your mind. It seems to have been slapped together with little thought for the citizens' convenience. Zoning is haphazard — housing is placed next to industrial zones, amenities are grouped together (eg, you get five schools in a row at one end of town and no schools at all at the other), some zones have no water and the road layout is scruffy and irregular. I imagine that Roderik rarely thinks things through, makes the rules up as he goes along and has a tendency to be messy.

WINNERS

Brian Yip, Hatfield, Hertfordshire
John Tapper, Garway, Herefordshire
Stewart Pinkerton, Rempstone, Leicestershire
Paul Carter, Melton Mowbray, Leicestershire
Ian Lenton, Northampton
Richard Shearman, Camberley, Surrey
Ian Cowie, Unst, Shetland
Frank Borresen, Moss, Norway
Angus Morrison, Dundee
James Thompson, Grantham, Lincolnshire
Catherine Anderson, Cheltenham, Gloucestershire
Marcus Hawkins, King's Lynn, Norfolk
Roderik Hylkema, the Netherlands

We also have prizes for James Browne of Worcester Park, Surrey and Stephen Higgins of Sale, Cheshire, but we've, er, mislaid your addresses. Oops. Please send your details to Sim City Winners, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. We can then despatch your goodies.

AND THE WOODEN SPOONS GO TO:

Kevin Adams, Chelmsford, Essex
Sieu Ngu, Peckham, London

Coming soon



Scavenger IV from Psygnosis is a fast, frantic shoot 'em up. Using a Rebel Assault-style chase view, you take to the skies in an agile space-fighter, zipping over smoothly scrolling landscapes and zapping swirling alien targets. Released on CD-ROM only, Psygnosis claims that its 3D game engine blows Rebel Assault away. But you can decide for yourself when the game is released in November.



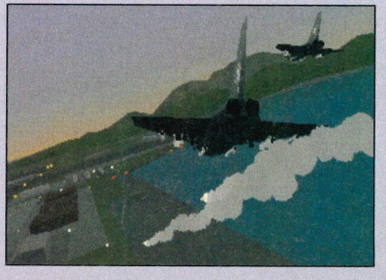
Ever fancied stomping around a futuristic wasteland in a horribly beweaponed robot, blowing up other horribly beweaponed robots? Well, give Dynamix another couple of months and you'll be able to play Earthsiege, a Gouraud-shaded, texture-mapped robot simulation that features multi-player modes and a suitably in-depth campaign option. Look out for Earthsiege when it appears sometime in September.



Are you disappointed that Richard O'Brien has left the Crystal Maze and that they've replaced him with some bloke called Tent Pole or something? Yes, me too. Anyway if you've ever fancied running around the Aztec Zone or have shouted rudely at the TV when the accountant from Leicester fails an easy mental game, why not play the PC game based on the TV series? Due for release in September from Sherston Software.



There's a glaring lack of good shoot 'em ups on the PC. There's Xenon 2, er, Raptor and that's really about it. Fortunately, however, Team 17 is poised to release the PC version of the highly acclaimed Amiga classic, Project X. The game is a sideways-scrolling space blaster set over five different landscapes and features frantic arcade action, intelligent enemies, power ups and massively powerful mega-death weapons. The game is due to be released in July.



Notice the extra EFA fighter aircraft in this TFX screenshot? No, it's not TFX 2 but TFXtra, a TFX add-on disk that promises multi-player options (network, serial and modem links), new weapons, new scenarios (the North Atlantic battle, the Korean Attack etc) and possibly even an SVGA mode too. TFXtra is packed with new features and enhancements and will be available for a mere £19.99 sometime in September.

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.

The Recommended scheme

Not only do you have the advantage of knowing that Recommended games are currently the best in their class, but we give you the chance to win a copy of each PC Review Recommended title. We have five copies of each newly Recommended game to give away to the winners of this competition.

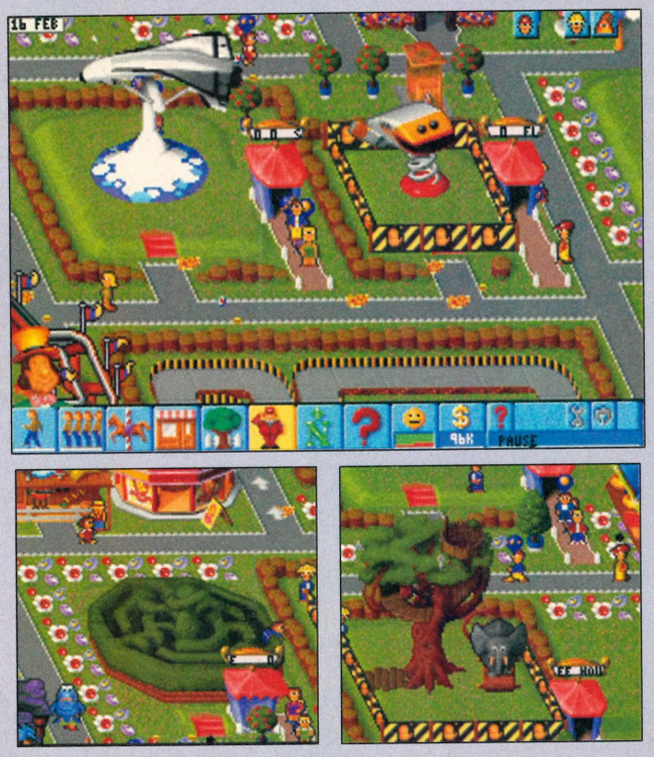
How to enter

If you'd like to win a copy of Theme Park, this month's Recommended game, simply answer the questions printed on the entry coupon and send your entry on a postcard or on the back of a sealed envelope to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

The closing date is August 10, 1994, and any entries received after that date won't be eligible for the prize draw. The winners will be the first five correct entries drawn at random after the closing date.

All normal competition rules apply — particularly the one about not sending in multiple entries.

Win Theme Park WIN



Answer the questions below and send this form (or a photocopy if you don't want to spoil your magazine) to PC Review Recommended, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU, to reach us by July 10, 1994, and your entry will be placed in the prize draw.

Q1: What upgrade can you add to a big dipper?
A1:.....

Q2: What is the most expensive ride you can build?
A2:.....

Q3: What do handymen do?
A3:.....

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

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

THE PC REVIEW PLAYLIST

We've ranted about a fair number of games this month, and raved about a very select few. But what are the titles currently taking pride of place on our hard drives, and keeping us at work late into the evenings?

Christina Erskine



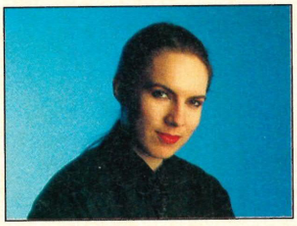
This month, Christina has been thoroughly mesmerised by Shanghai 2, but she found time to listen to Chris Barrie's dulcet tones on the Simon the Sorcerer CD, as well as sneaking in the odd game of Theme Park.

John Bennett



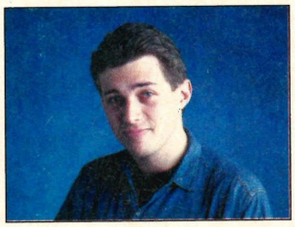
John is still hooked on MicroProse's excellent 1942: Pacific Air War, and has been hard at work compiling tips for QED on page 88. Oh, and there's Doom, of course. Some things never change.

Cal Jones



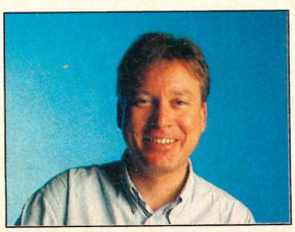
Cal is completely smitten with Theme Park — in fact, she seems to have done little else this month. That is, apart from visiting promising new company Intelligent Games, whom we profile on page 42.

Dean Evans



Dean has been getting into the spirit of the World Cup with FIFA Soccer and Planet Football. His favourite time waster, however, is MicroProse's UFO, which he has been playing to death at home.

Paul Boughton



Paul has been taking a break from games to read through 80 shelves worth of books in the Classic Library CD, and has also been getting into holiday shape with Fitness Partner.

REVIEWED THIS ISSUE

ON DISK

Theme Park	9
FIFA International Soccer	8
Shanghai II for Windows	8
Tanks	8
World Cup USA '94	7
Origamo	6
Pinball Dreams 2	6
Planet Football	6
Robinson's Requiem	6
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D-Day	5
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International Tennis Open	5
Theatre of Death	5
World Class Cricket	5
Empire Soccer	4

ON CD-ROM

Simon the Sorcerer	8
Companions of Xanth	5
Central Intelligence	4
Hits for Six Vol 6-9	3

PC REVIEW RECOMMENDS

THE BEST OF THE LAST THREE MONTHS

1942: Pacific Air War
MicroProse, £44.99 disk



Probably the most comprehensive and absorbing World War Two flight sim around, Pacific Air War features Gouraud-shaded aircraft, a virtual cockpit and an extensive campaign option that allows you to control the movement of your aircraft carriers and to plan your own air strikes. An imminent add-on disk will also enable you to play the game over a network, serial link or modem.

Myst
Electronic Arts, £44.95 CD-ROM



Visually stunning, mentally taxing, utterly absorbing adventure set on Myst Island and four different worlds. The puzzles tend to be logic-based, but they are by no means easy. This is a highly sophisticated game with a surreal atmosphere, and one of the few around to offer a proper challenge on CD-ROM and to make real use of the multimedia elements in the game.

Gabriel Knight: Sins of the Fathers
Sierra, £39.99 disk, £44.99 CD-ROM



A ghost story centred around voodoo cults, and set in New Orleans. Not for the faint-hearted, Gabriel Knight is an adult game dealing with adult themes, which manages to pull off that most difficult trick in computer games: creating strong believable characters. On CD-ROM, the roles are spoken by professional actors such as Mark Hamill and Tim Curry, which adds enormously to the atmosphere.

CIARÁN'S RANT

A funny thing happened to me the last time I loaded up a PC game... or rather it didn't. Which brings me nicely to the point of this month's diatribe. Why is it that games aren't funny? Before we get to that though, let's hear from Ocean's development director Gary Bracey. In a recent interview, Mr. Bracey (who happens to be one of the most knowledgeable and far-seeing observers of the games business) offered his thoughts on the way forward for the makers of games.

"I believe a major factor in the games market's current slump is that there are so many derivative games on the market," he said, "and people can only stand so many platformers and beat 'em ups. If the appearance of improving technology just means that publishers produce faster and louder platformers and beat 'em ups, then Heaven help us. It's no good just sticking to a style that you know works — that's not the way to make progress. That would be like movie studios only producing Westerns."

A worthy enough point, I'm sure you'll agree. But is there any real chance that game developers are ever going to make anything other than the digital equivalent of Westerns? OK, maybe they'll make the occasional whodunnit, war story or fantasy feature, but to get back to our original theme here, who would bet on them ever making a comedy?

The sad fact is that, in general, computer games are about as funny as a wet August Bank Holiday Monday (OK, maybe not that funny). Perhaps it's a congenital problem, maybe it's something to do with the fact that games are, by their very nature, repetitive (but who's to say that repetition isn't funny?), or maybe it's something to do with the fact that games are, by their very nature, repetitive.

Come on, think about it. When was the last time your computer made you laugh? Unless you're one of those sad and lonely souls who finds Windows dialogue boxes hilarious (I say, I say, I say, my wife has no printer connection...) then the answer to that last question was more than likely never.

Even games that make a great deal out of the fact that they are 'humour based' (you know the sort, the Monkey Island series and their ilk) are rarely as amusing as they think they are — and their humourous appeal is never, ever, lasting.

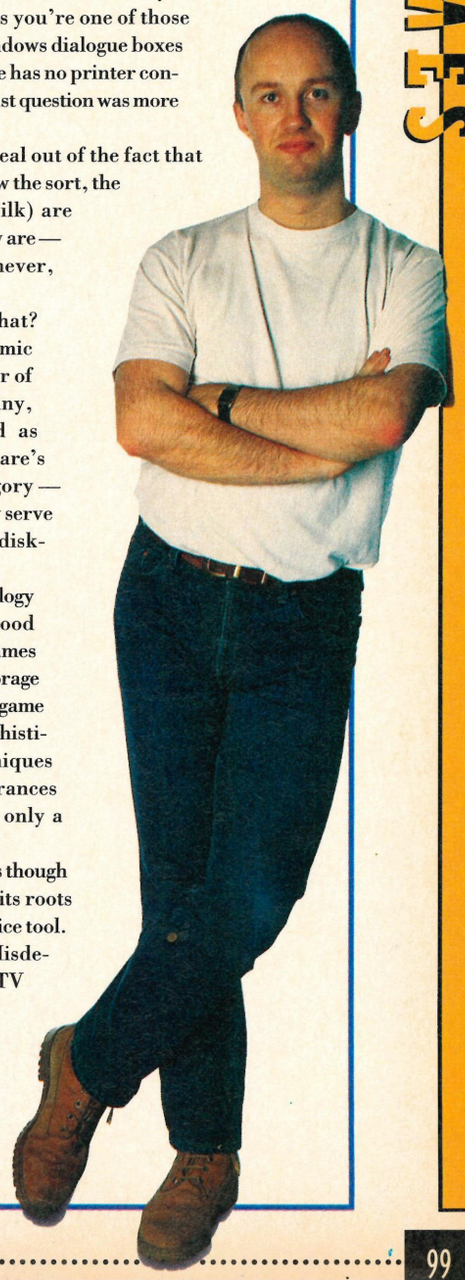
But does it have to be like that? Despite the dearth of truly comic games, there are already a number of titles which, while not exactly funny, could realistically be described as amusing — most of Sensible Software's output already fits into this category — and the advent of FMV should only serve to increase the opportunities for disk-based humour.

With the merging of silicon technology and Hollywood creativity ('Siliwood anyone?) there is some hope that games just might become funnier — CD storage is bound to reduce the amount of in-game repetition, and the increasing sophistication of video rendering techniques might just mean that guest appearances by the likes of Steve Martin are only a budget increase away.

For the moment though, it looks as though the PC is bound to remain true to its roots as a straight-faced, humourless office tool.

In Woody Allen's Crimes and Misdemeanors, Alan Alda's obnoxious TV producer character explains the secret of comedy as follows: "If it bends, it's funny... if it breaks, it's not funny."

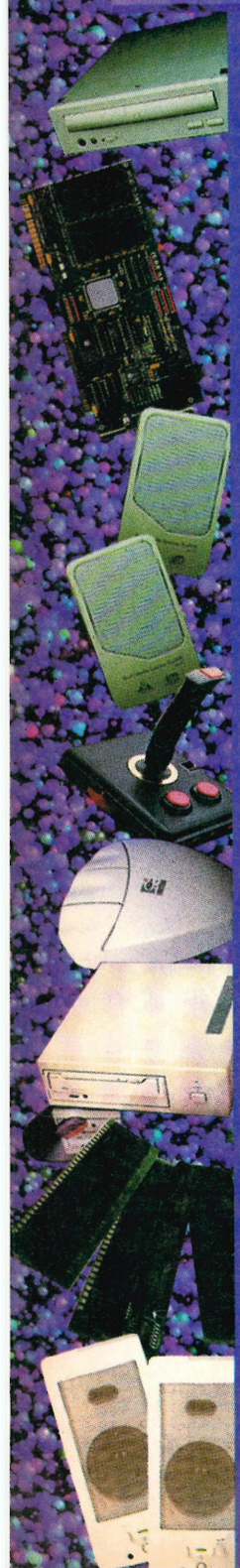
As far as I can see it, all contemporary computer games break.



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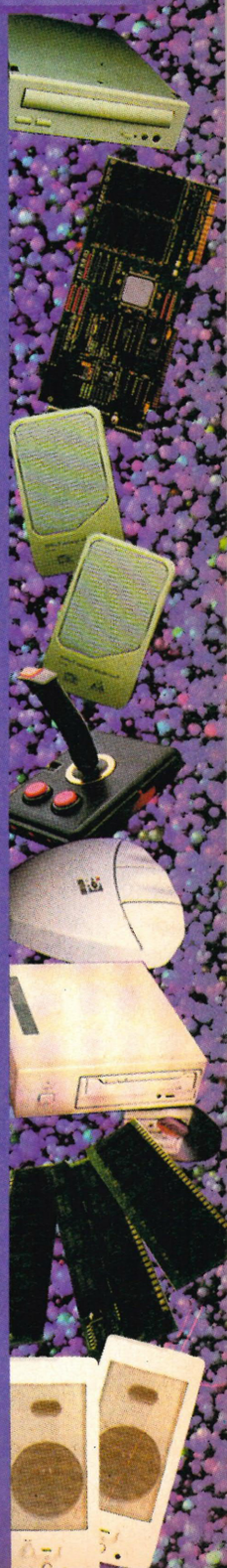
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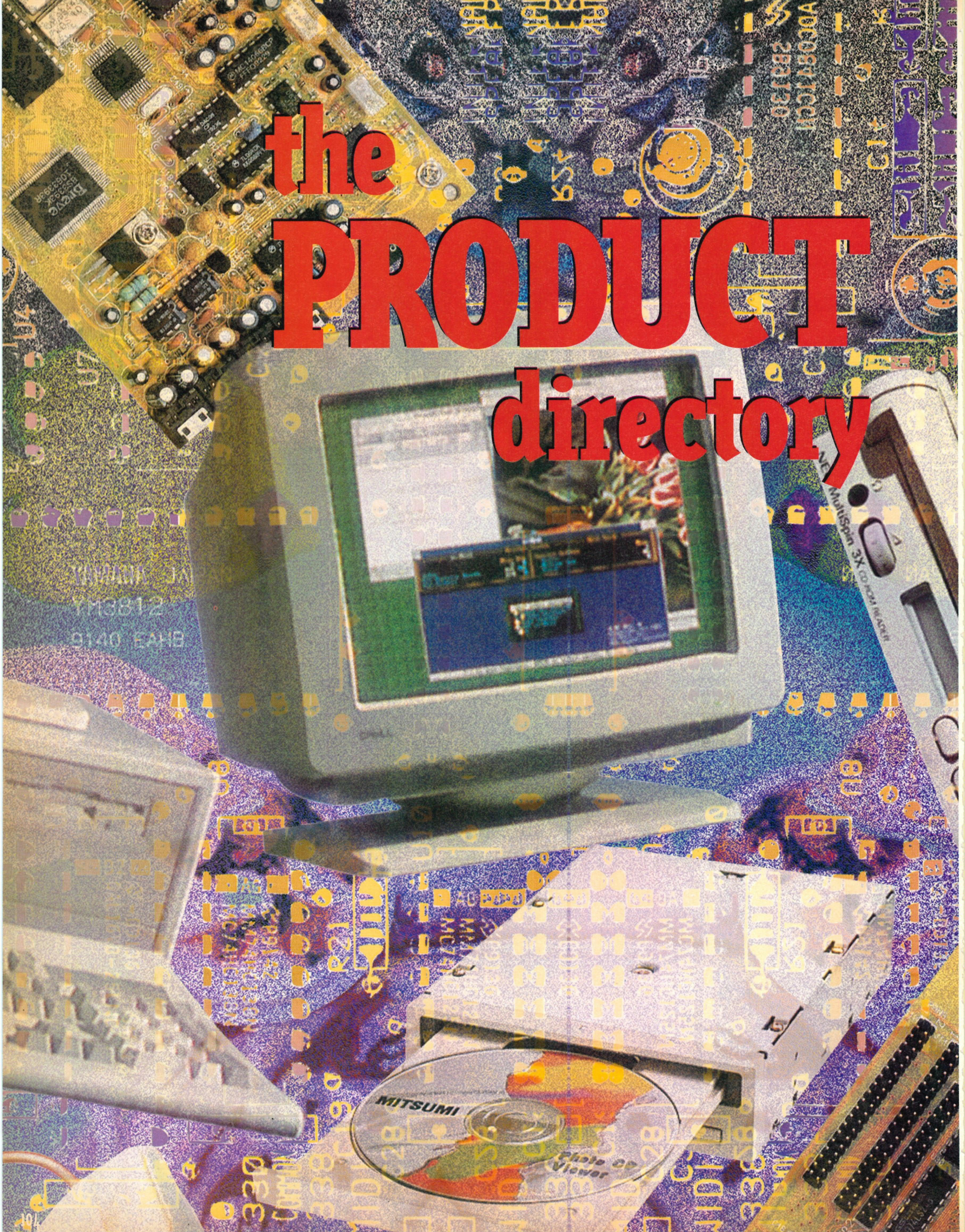
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the
PRODUCT
directory
MITSUMI



Reviewed this month PRODUCTS

It may not be on the scale of a house or a new car, but the home PC makes a sizeable dent in any wallet. However, the sheer enjoyment and convenience of the PC is enough to justify the initial outlay, and the extra hardware and software you suddenly find you just have to have.

That's fine. Nobody minds spending money on something worthwhile. On the other hand, if you make the wrong decision you could end up throwing good money away on something you don't want, don't need and certainly won't like. With the sheer number of PC products arriving daily, usually to a fanfare of technical gibberish, it's all too easy to make a mistake.

That's how this section is going to help you — summarising the effectiveness of new PC products in a direct and straightforward way, free of jargon. This will point you in the direction of that essential gadget, and warn you off the badly made, the unsuitable and the ill-conceived.

Many PC products are just not designed for you and me to use, they're still aimed at companies and offices. In a company, you don't chose what sits on your desk, you don't have to pay for it, or fix it when it goes wrong. A specialist does it all for you.

That doesn't happen at home. So, until there's a wholesale change in the type of equipment we're sold, you need to be able to distinguish what is important about PC hardware and software, and what is just marketing guff. When you buy a car you don't need to know how a 16-valve engine works right down to the last rivet. You need to know how quick it is, how well it performs and whether it's likely to fall apart on you. The same is true with the PC, and that is what we aim to provide in these pages.

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The rating system explained

The products in the following section are marked out of five:

★ Dreadful. Don't touch with a barge pole.

★★ Usefulness is probably limited, but could be suitable for specific need.

★★★ Generally good; some limitations

★★★★ Good. Should go on anyone's shortlist to buy

★★★★★ Superb, either outperforming or offering features that other products can't do.

Ease of use, ease of installation, value for money and sheer performance are the most important factors we take into consideration.

Product directory

PRODUCTS

Processors, tucked away inside the PC case, now come in greater varieties than the bizarre suffixes on your average motor car. But do DX, SX, DX/4 and Pentium mean any more than GTi, XR3i and cabriolet ever did? The answer is undoubtedly 'yes'. So we start this month's Product Directory with a close look at the latest power PCs, and the engine inside them.



AST Advantage! Adventure

486SX/33 desktop PC

AST is one of the biggest PC manufacturers in the business. And the company is finally turning its attention to the home market, with the Advantage! Adventure PC range, which encompasses everything from entry-level 486 systems, to full bells and whistles Pentium PCs.

The multimedia system comes with a built-in Sony CD-ROM drive and Creative Labs Sound Blaster sound card at £1,499.99. It's not cheap, but the components are all top quality and the performance, especially from the super-fast hard disk, is impressive.

The styling is pretty bland — indeed the monitor and system box are a slightly different colour and even feature different AST logos. It's easy to set up though — for example, from power-up it loads straight into Windows. A message appears reminding you to back-up your software disks — and re-appears every time thereafter until you do so. This handholding extends as far as the DOS prompt where the message "Type WIN and press ENTER to return to Windows" appears.

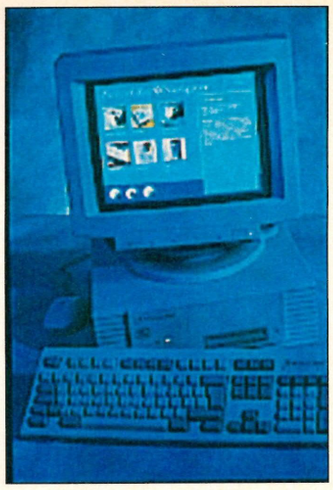
This system should suit the needs of most home users, although you may find it occasionally on a go-slow with large software applications. But compared to other machines in its class, the Advantage! Adventure is a sprightly performer and there are no main weaknesses apart from perhaps the styling. The bundled software is also good, and there's an option to bundle the Microsoft Works suite and Quicken financial software available as well.

David Bradwell

★★★★

- **Supplier:** AST
- **Contact** (081) 232 5000
- **Price** £1,499.99

■ 486SX-33, 170Mb hard disk, 4Mb RAM, double speed CD-ROM, Sound Blaster, DOS 6.2, Windows 3.1, AST Multimedia Experience, Encarta.



Packard Bell 135D

486 desktop PC

This is no frills computing for those who don't want any hassles. Just open the boxes, take out the bits, and plug them in using the step by step instructions supplied (if necessary). And when you power the system up, you'll find the bundled software already installed with a beginner's guide front end called 'Navigator' to help you get to the package you want.

Not a single DOS prompt in sight.

This makes the 135D an ideal PC for first-timers.

As its name implies, the Executive is designed more as an office machine than a home PC. You won't find any games installed, of course. But you will find Lotus Organiser and a word processor waiting for you. As far as looks go, this is a PC from the breeze-block school of styling — concentrating on functionality over flashiness.

Even so, it makes a fair first system. The processor chip may not be the fastest in the world, but it's probably fast enough for the market it's aimed at. And when you want to up-grade, inside it's a neat, orderly machine. Adding a multimedia kit, a new drive, or even changing processors is a simple process.

There are certainly better value PC offers around, giving you more frills for less money, but if you want reliability and ease of use with no sleepless nights setting it all up, then it's worth checking this machine out.

Martin Klimes

★★★

- **Supplier:** Packard Bell
- **Contact** (0753) 831914
- **Price** £1,408

■ 486/SX25 PC, 340MB hard disk (150MB left after installed software), 14" Four free drive bays. There are four free 16-bit expansion slots.

GenSys Blue Lightning

High powered 486 PC

One of the best-kept secrets in the computer world is IBM's status as a major chip manufacturer — it has been making processor chips for years, thanks to a cross-licencing deal with Intel along similar lines to that enjoyed by AMD. Like AMD, it has taken Intel chips as a base and tweaked them, but unlike Intel, it has kept them for its own machines.

Until now, that is. Although it won't sell its chips on their own, IBM has started selling them as parts of packages. The first company to take advantage of this is tiny Scottish manufacturer GenSys. Its Blue Lightning machine is a typical example of the clone genre, assembled from a kit around a motherboard made by IBM. It uses IBM's Blue Lightning processor, which is a clock-tripled chip, running at 75MHz which, in conjunction with a Cyrix co-processor, runs about as quickly as a 75MHz Intel DX4.

The Blue Lightning is a neat and unremarkable mini-tower with plenty of room for add-in cards. But it's remarkably good value for money — for £1,149, you get 8Mb of memory, a 250Mb hard disk and a machine which runs about as quickly as a DX4. Just add a cheap CD-ROM drive and a sound card and you get a machine that can cope with the most ridiculously demanding games around. At the moment, it's difficult to get your hands on a DX4, but even if that wasn't the case, you'd be hard pressed to find one which offers anything like the Blue Lightning's value for money. So, if you're lucky enough to have just over £1,000 to spend, it's highly recommended.

Steve Boxer

★★★★

Supplier: GenSys
Contact (031) 553 3305
Price £1,149

8Mb RAM, 250Mb hard disk, 75MHz clock-tripled 486 processor.

Mint 486SX/33

Low cost 486

When someone sticks a 486 PC with a sub £500 price tag under my nose I (not unsuprisingly) expect it to fall apart before it even emerges from the box. What happens instead? It works, that's what. Despite the fact that it costs a piffling £499 (exVAT), the Mint 486SX/33 works perfectly well. Honest, it does.

Of course, it's not the best designed PC you're ever likely to see, it's not brimming with state of the art components and flashy features, and it doesn't exactly whistle through heavy duty software — being more than a little underendowed in the RAM and hard disk departments. But for the money, it's well enough made, performs creditably for the spec and hasn't thrown up any unpleasant habits (as yet), to be worth more than a casual look.

The assumption nowadays is that everything PC-related is obsolete even before it leaves the factory, and you're expected to upgrade as you go. If that's the case, the Mint 486 provides the bare bones you need to start with, to which you add newer and better quality components as and when you need or can afford them. Seems fair enough.

The only real areas for concern, the RAM and the hard disk size, can be brought up to decent levels for £59 and £49.

Given the devastating averageness of many high street PCs costing twice the price, the £500, local bus Mint 486SX is starting to look more attractive by the minute.

John Bennett

★★★

Supplier: R&D Technologies
Contact (081) 965 5151
Price £585

Local Bus 486SX/33. 80Mb hard disk, 2Mb RAM, mouse, keyboard, DOS 5.0 and Windows, SVGA and 14" colour monitor.

Carrera DX4

Top of the range 486

Whilst the price of the Pentium is slowly dropping, it's still going to be sometime before everyone will boast about their home machine being a 64-bit system. But who needs a Pentium when a DX4 can give similar performance for less cash damage?

This particular DX4 PC hails from Carrera Technology. Based around the VESA Local Bus architecture, they will kit you out with what ever spec you're after.

In the build quality department, it doesn't offer anything spectacular; it's an average mini desktop case with an average keyboard, good value 15" monitor, yet nothing really outstanding. But under the hood, you have one of the best performing machines I've come across. The clock tripled DX4 processor is accompanied by a 2Mb V-LB cache controller card that really makes the hard drive fly and a Diamond Stealth 32 graphics card that offers performance close to its bigger brother the Viper.

The review PC worked out at about £1,900 (ex VAT), which isn't cheap. But as processors go, the DX4 certainly delivers the goods, and if greater than average performance is a high priority, you can't fault the Carrera DX4.

Whilst it might not look much, don't judge a book by its cover, or a PC by its case — this one is certainly a diamond in the rough.

Alan Clark

★★★★

Supplier: Carrera Technology
Contact (071) 830 0486
Price £2,169.08

486 DX4 PC, 8Mb RAM, 2MB cache controller and Diamond Stealth graphics accelerator card.

CHIP WARS



If you're trying to do some research into machines powered by different makes of processor chips, there's a fair chance that you'll be tearing your hair out by now — there are more chips on the market than ever before, all accompanied by claims that they're faster than their rivals. This isn't as much of a problem as you might think — since Intel's monopoly started to erode, the rash of processor chips from other manufacturers has meant that it's now possible to get some seriously good deals on PCs. Take a look at some of the bargain 33, 50 and even 66MHz SX-powered PCs coming through right now.

You have to be careful, though. The first thing to bear in mind is that according to international law, companies aren't allowed to patent numbers, so a number of chips that claim to be 486s aren't anything like Intel's 486s. The worst perpetrator here is Cyrix; its 486 chips are more like steroid-enhanced 386s, and they include some nice technology which enables them to go almost as fast as 486s, but some of them are 32-bit chips with 16-bit pin-outs, and these should be avoided like the plague, particularly if there's a chance that you'll use them with Microsoft's Chicago, which will finally get the most out of 32-bit chips.

AMD's chips are roughly on a par with Intel's equivalents, and tend to be cheaper, but they have become a bit difficult to find these days. The same applies to IBM's chips, which are well worth seeking out, and will soon start becoming easier to get hold of.

So what's Intel up to? Its latest chip family is the DX4, a clock-tripled version of the DX/DX2. The 75MHz and 100MHz DX4s are super chips — the 100MHz one can give a 60MHz Pentium a run for its money. The one problem is that at the moment, Intel is much keener for people to buy Pentium chips, so DX4s are suffering from "supply problems". Ho hum ... This is a shame, as the DX4 is a really good games chip.

The 60MHz and 66MHz Pentiums are both dogs — they're disappointingly slow. But they're easy for Intel to make (much easier than DX4s), so there are some good Pentium bargains to be found. This will be the case until Intel sorts out its chip manufacturing problems, so take advantage while you can. Sub-£1,500 Pentium machines should appear soon.

Finally, the 90MHz and 100MHz Pentiums are the real thing; they're proper Pentiums. However, they're also very expensive, and rarer than hens' molars. At the moment, they're undoubtedly the ultimate games processors, but it'll take about a year for them to become affordable.

Steve Boxer

ADVANCED GRAVIS ULTRASOUND MAX

Wavetable sound card

The Ultrasound Max has a good variety of emulations, a superb set of bundled music software, features like 32-voice polyphony coming out of its ears (pardon the pun), and, not to put too fine a point on it, sounds gorgeous in its native mode. Truly gorgeous.

This 'Max' incarnation also answers the two major criticisms of its predecessor, the Gravis Ultrasound: for musos, it's now got 16-bit sampling both ways, and for games players it has three CD-ROM interfaces built-in — so no more having to shell out for an extra card to make the Ultrasound work with your new CD-ROM drive.

Most importantly, the card is finally getting the games support it deserves for its native mode. But, that doesn't mean it's managed to shake off all of its annoying habits — notably that of not always working with the game you've just spent £50 on until you give it a swift — or sometimes lengthy — kick in the software setup department.

Quite simply, this is not the sort of sound card you can slap in your PC and forget about: if you're anything more than a casual games player you will have to give it plenty of care and attention to make sure it behaves as it should.

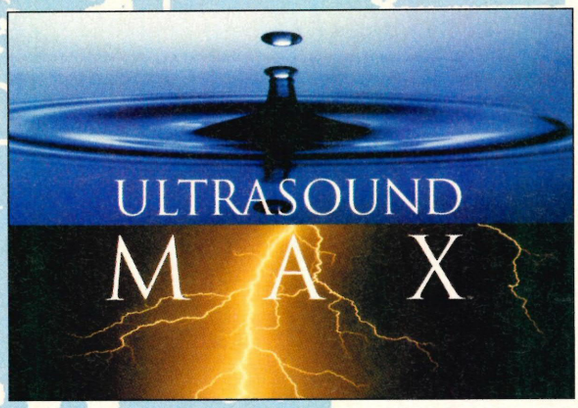
Whether it justifies the hefty price tag when there are similarly specified cards kicking around for £50 to £100 less is open to debate ... which is why we'll be running a huge, test them till they drop, feature on the four leading high-end cards — the Ultrasound Max included — in next month's issue of PC Review. Don't miss it.

John Bennett

★★★★

Supplier: Zye Technology
Contact (0293) 538666
Price £295

16-bit wavetable sound card. 32-voice polyphony, 16-bit stereo sampling to DAT quality, 3D sound, MIDI and Sound Blaster mutations.



Spea Video 7 Vega Plus (PCI)

Graphics Card

The graphics card that comes with your new PCI PC should be a pretty decent one. If the machine specification is anything better than average, chances are that it'll be a 2Mb graphics card. So what's the point in upgrading to a 1Mb PCI card? Because that's exactly what the V7-Vega Plus from Spea is; a basic 1Mb card for PCI machines.

It will cope with the highest resolutions — but only in 16 colours because of its limited 1Mb of memory. It can only handle true colour at the lowest resolutions; when cards nowadays should at least be able to handle 800x600 in true colour.

Performance is better than standard ISA cards and low end V-LB cards, but it just can't stand up to the likes of the Diamond Vipers, Matrox cards, or even S3 based video cards.

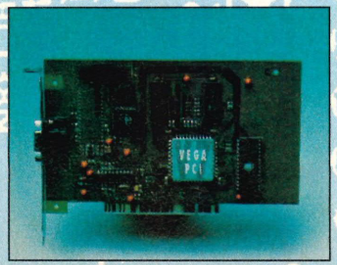
The only reason I can think of for someone to buy this, or any other 1Mb PCI card for that matter, is if the company you've bought the PC from has pulled a fast one on you, and supplied a standard ISA bus graphics card. Otherwise, the Vega Plus doesn't really offer any significant benefits.

Alan Clark

★★

Supplier: Spea Video 7
Contact (0844) 261886
Price £116.33

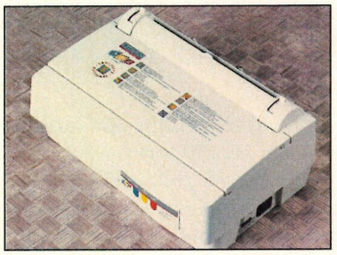
Highest resolutions only in 16 colour, 24-bit colour in lower resolutions. 1Mb RAM on board.



Citizen ABC

Colour dot-matrix printer

The Citizen ABC printer is unlike any other dot matrix printer. Like an average backbench MP, dot matrix printers tend to be noisy, ugly and not very good at producing anything of any real use.



With the ABC however, Citizen has changed several of these traditional problems. For starters, the ugly low-slung dot matrix design has gone — replaced by an elegant, sealed exterior design with just one revealing button. A colleague of mine looked at the ABC and thought it looked more like a bread-bin than a computer peripheral.

Being in a near sealed box also helps noise levels. There isn't much you can do about noise with dot matrix printers — it goes with the territory — but encasing it like this certainly helps.

But what about its output? Well for print quality the Citizen is okay, but not brilliant. Text can be a little faint, whilst pictures and large areas of colour suffer from banding (lines running through the print). These are problems of dot matrix technology in general and not specific to the ABC, but they did seem more pronounced in this model.

So can I recommend it? Well for the £129, the ABC delivers usable

PREVIEW

Phoenix: Flight and Weapons Control System

Advanced Gravis

If you want the total flight sim experience — and that means no fumbling around on the keyboard trying to find G to lower the landing gear — the nearest you can get is probably by using the Thrustmaster joystick and its bulbous WCS add-on. With these you can control every inch of your chosen plane; throttle, rudder, weapons selection and so on. The only disadvantage is the price. You have to fork out a cool £160.

But later this month, Advanced Gravis (producers of the acclaimed Ultrasound soundcard) plan to release the Phoenix, a joystick and WCS that not only provides throttle and rudder controls but also 24 programmable buttons. Better still, you can just plug the Phoenix into the back of your PC and start playing straight away. Unlike the Thrustmaster, Gravis promise that there is no complicated software to install or settings to tweak.

It's simplicity itself and because you can easily program each of the 24 buttons to execute any game command (including keyboard taps and mouse clicks), the Phoenix is instantly compatible with all the latest flight sims and space games on the market. Does it work with TIE Fighter? Yep. Can I use it with TFX? Absolutely.

Programming the 24 buttons may sound like a bit of a nightmare, but with the easy-to-use graphical interface, you can easily program in all those X-Wing commands in under five minutes. The only problem you have then is remembering what commands you've programmed and what buttons you've assigned them to.

As for the price of the Phoenix, well there's nothing confirmed as yet, but as soon as we know, you'll know.

Although it may look like a handful, the nice thing about this joystick is its simplicity. The Thrustmaster and WCS add-on can be notoriously difficult to configure at times but the Phoenix neatly sidesteps this problem. It's damned impressive, take it from me.

colour output and it's a reasonable buy as a basic printer. But if you want a printer for serious use, writing a letter to your MP for instance, you'll need to spend a little more money.

Andy Leaning

★★★

- **Supplier:** Citizen ABC
- **Contact** (0753) 584111
- **Price** £129

24-pin dot matrix colour printing. Works on any PC with a Parallel Centronics printer interface.

Classic Library

CD library

There are occasional packages which ram home the huge storage capacities and stunning potential of CD disks. And, for me, Classic Library is one.

Just consider this: 55 novels, 365 poems, 278 short stories, 74 documents, 22 speeches, 85 dramatic works, 77 biographies and autobiographies, 47 essays, 42 philosophical works, plus pamphlets, histories, letters, sacred texts, fables, myths and magazine articles. Add to that a resident word processing package, the ability to carry out text and word searches, cut and paste text and a stunningly simple indexing system.

From Dickens to Dumas, Shakespeare to Voltaire, Conan Doyle to Ovid, it's a stunning collection. All that for under £50! It would be impossible to build such a comprehensive book library without it being many, many times that cost. Truly a stunning work. Try getting this lot out on your library ticket!

But... What do you use it for? Nobody in their right mind is going to attempt to read Far From the Madding Crowd or The Brothers Karamazov on screen. You'd go blind. Printing out the text would consume a small forest.

So is it a research tool for students? Yes, providing the text you require is on disk and not subject to copyright, otherwise it's back to the real library. And there's the problem — that only one person at a time can use this library.

Essentially, this is a fascinating but limited product. What's the point of having books you don't or cannot read? And what's more, you can't read in bed with it.

Paul Boughton

★★

- **Supplier:** Andromeda Interactive
- **Contact** (0235) 529595
- **Price** £49.99

55 novels, 365 poems, 278 short stories, 74 documents, 22 speeches, 77 biographies and autobiographies ... Needs a 386PC with MPC CDF-ROM.

ON THE RED-EYE ...

RedEye IR2 Remote joystick set



This is what I call a nice little package — two jazzy remote control gamepad-style joysticks (with infra-red remote which connects to the joystick port on your PC) in one box for under £50 before the VAT claims his bit. Not bad.

True, it's not going to be suitable for all games, or necessarily to everybody's taste. You don't, for example, buy this for flight sims. But arcade and sports games, platformers, beat 'em ups and so on would be ideal.

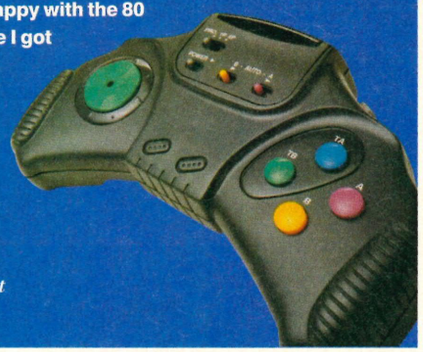
The pads come with enough semi-programmable options to cater for second fire buttons, autofire and special weapons to do more than just the basics — but surprisingly need no software whatsoever to do the job. Just dig up some AA batteries and away you go — up to 40 feet away, if you really feel the need.

What's more, they seem to work with most games without kicking up a fuss, which is all the more surprising given that the PC still doesn't sit that comfortably with two-player games despite the assortment of adaptors, splitters and other solutions to the problem. I've never found anything that works with everything yet, so I was more than happy with the 80 per cent success rate I got from these.

One thing I haven't had the chance to check yet is whether everytime you hit the fire button, it changes the TV channel ...

John Bennett

★★★★



- **Supplier:** Bluepoint
- **Contact** (0908) 277007
- **Price** £57

Twin remote analogue gamepads, 40feet range, infrared controller. Requires four AA batteries.

The Chambers Dictionary

Complete text of Chambers Dictionary on CD-ROM

Putting the Chambers Dictionary on disc has a several distinct advantages. First, it's not nearly so heavy. Second, as well as the text, it also has search, print, hypertext and backtrack facilities, all of which are designed to make it easier to move around the entries to find the word(s) you want. Third, it can be directly linked in to Microsoft Word, to act as a spell checker.

Since Chambers is also PC Review's 'official' dictionary (though I suppose I can't blame it for all our misprints), this CD version has been well-used since it landed on my desk.

You can run Chambers directly from the CD-ROM, or install the whole lot on to your hard disk. If you choose to run it from the CD, you'll find you lose a lot of the ease of access of having it on hard disk, along with the attendant decrease in speed. Install it on the hard disk, however, and you'll need 20Mb of free space. You can look up specific words for spelling or meaning from the Entry Window, or you can get into some quite complicated search patterns anywhere in Chambers' text, using Boolean And, Not and Or to make your search requirements really precise.

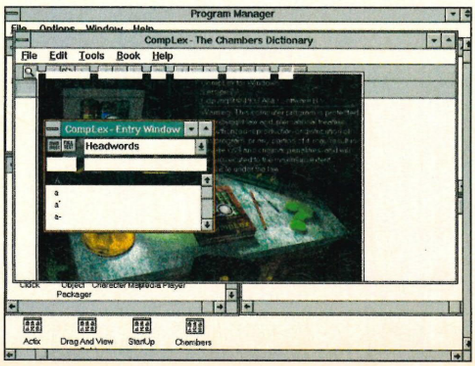
You could, if you were feeling really masochistic, simply scroll through the index until you find the word you require (not advised). As well as a head words index and a complete text index, there are also indexes for capitalised words, foreign words and phrases and idioms. Some words in the text are marked so that you can look them up as well simply by clicking on them, in fact, it's a pretty well-structured, easy to use package all round.

It only really scores over having the book version by your side if you have it open in Windows all the time for easy access. And, ahem, isn't £90 only around four times as expensive as the printed version?

Still, if anyone thinks PC Review's spelling has improved this month, you can always put it down to us having Chambers installed on our hard disks ...

Christina Erskine

★★★★

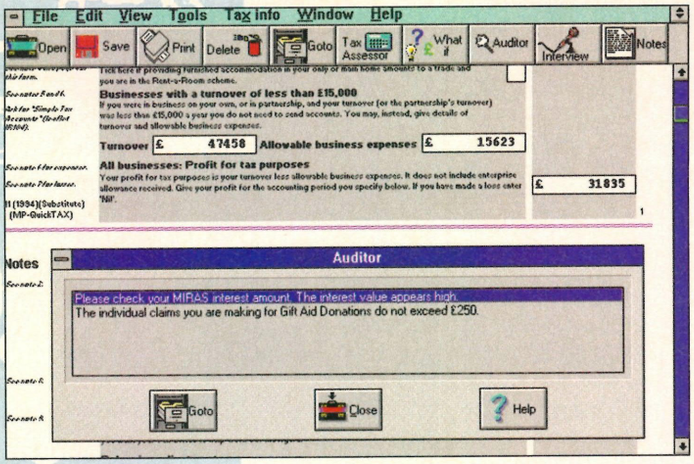


- **Supplier:** Chambers Harrap
- **Contact** (031) 557 4571
- **Price** £90.00

386/486-based PC running Windows 3.x, 2Mb RAM, CD-ROM drive, VGA graphics, plus 20Mb free if installing on hard disk.

QUICKTAX

Tax software



If you've ever been self-employed you'll know all about the horrors of filling in an income tax return. And even if you haven't, changes in the law mean that every working person will be faced with one sooner than they think.

QuickTAX (from the makers of best-selling finance software Quicken) is designed to make filling in a 1993/94 tax return as painless as possible — and possibly save you money in the process.

The program has been designed and engineered by UK tax consultants. It covers the three major tax return forms, and if you've got access to a printer, the finished document it produces is acceptable as a completed form by the Inland Revenue.

If you already know about tax, you can simply enter all your details on screen. Alternatively, you can elect to be guided through the QuickTAX interview, with on screen commentary prompting you for information in a logical sequence.

Extensive help is available at every step, both from the Inland Revenue itself and in the form of QuickTAX Expert Guidance.

The most powerful planning tool is the Tax Assessor, which calculates the size of the tax bill you are likely to receive, based on the information given. Alternatively, if you haven't already received a tax return form, the Assessor will reveal any potential opportunity to claim a tax rebate through making a return.

Once the interview is completed, the QuickTAX Auditor checks it over and points out any inconsistencies which could raise eyebrows at the tax office.

And that's about it: simple and relatively painless (until the tax bill arrives). QuickTAX could put accountants out of business.

David Bradwell

★★★★★

Supplier: Intuit
Contact (081) 990 5500
Price £49.95

286 PC minimum, with VGA monitor, Windows 3.1, 2Mb RAM, 4Mb of hard disk space ... and a printer helps.

Fitness Partner

Keep fit CD

Hup, two, three, four... There's something appallingly embarrassing about the prospect of prancing around in front of your PC doing exercises. But, then again, probably no more toe-curling than putting yourself through torture going for the burn with Jane Fonda on video or stomping around with Mr Motivator.

Here you get the chance to feed in personal data — age, sex, beginner, advanced etc, — and the aim of the exercises, whether that's to tone muscles or loose weight.

Each daily session starts with a gentle warming up before the main program starts, all demonstrated by a leotard-clad woman with the sort of fixed grin which soon begins to irritate. As the days go by and your fitness — hopefully — improves, you get the chance to alter your regime, increase or decrease particular styles of exercises.

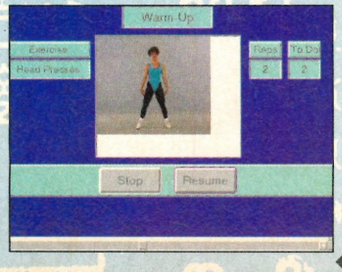
A choice of background music to work-out can be made — country and western (no, really), jazz and rock/pop. Personally, they all sounded the same to me, bland and undistinguished.

Now, the staff at PC Review, being fit, sleek, toned and tanned, really have no need of such a program, which makes it odd that everyone wants to take Fitness Partner home. It's my turn next week — not that I need it, of course.

Altogether now, knees bend, arms bend, ra, ra, ra...

Paul Boughton

★★★



Supplier: Guildsoft
Contact (0752) 895100
Price £49.95

Minimum hardware requirements are a 386 PC, VGA, DOS 5.0 and Windows 3.1, with an MPC CD-ROM drive.

Infoware

History In Motion

History in Motion is billed as an enthralling guide to the history of transport. Well, it depends how you define enthralling...

The good news is that it's pretty comprehensive. Over 380 inventions and personalities are covered, and some even come complete with animated graphics. All subjects are linked by cross-references to provide an overall picture of developments in air, sea, space and land travel.

However, opportunities have been missed, and there are too many flaws to make the software a serious point of reference.

The colour pictures are not the photographs you might reasonably expect — instead they're rather dubious illustrations. The depth of information is no greater than you would expect from an average encyclopaedia, and the animations are not as exciting as you are led to believe.

It's quite easy to move around the software, though. An information line at the bottom the screen gives constant help and explains the function of each screen icon. Key words in each description are highlighted and clicking on these moves you to another related subject. At any stage you can return to your previous screen by clicking on the Back Step icon.

Playing with the software is a useful way to spend a couple of lazy summer days, and you might even learn something. But the frustrating thing is that you're left asking 'is that it?' It's the sort of program that could benefit from multimedia: imagine the difference a video clip of a space shuttle launch would have made — compared to a rather limp animation of the workings of a jet engine.

Perhaps you shouldn't expect too much for £29.99, but for that sort of money you could buy a damn good book on the subject. The software is well-intentioned, but ultimately fails to hit the mark.

David Bradwell

★★

Supplier: Software Partners
Contact (0480) 497622
Price £29.99

286PC, VGA monitor, MS DOS 3.3, 9.5Mb of hard disk space and a mouse

Architecture — Design your own home series:

Home planning software

Imagine your ideal home. Picture the number of bedrooms and bathrooms, the size of the garden, the conservatory and even the position of the swimming pool and gym ...

Now imagine what would happen if you won the pools. Would you be able to convey your ideas effectively to an architect? Or would you prefer to design it yourself, if only you had the skills?

With Architecture from the Design Your Own Home software series, anybody can turn fantasy into reality, eight jackpot draws permitting. But it's not just designed for creative millionaires. The program can also help with more down-to-earth schemes, from simple alterations to major home improvements and extensions.

All the tools needed to draw to-scale professional-looking plans are provided, and to start you off, there are dozens of preset floor plans which you can customise, or your can draw your own from scratch.

From there, nine separate overlays are possible. You use these to view complicated matters like the plumbing or electrical wiring from your main drawing seperately, but

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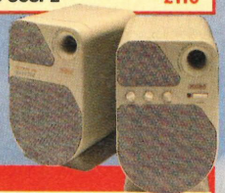
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INFOCENTRAL

Personal Information Manager

Windows personal information managers are the '90s equivalent of that essential yuppie tool — the Filofax. And while they're not as portable as their leather-bound '80s counterpart, they can handle a lot more information in many more ingenious ways.

One of the best is InfoCentral — part of WordPerfect's Main Street range which is designed to bring professional quality software to home PC users. Main Street applications are generally low cost, and at £79, InfoCentral is one of the most tempting.

The program keeps track of people, places and events — and then sorts the information dynamically, in the same way as a human brain. Information can be connected in an almost unlimited number of ways, yet it is very easy to retrieve. To find a person, company, or venue simply click on the Find button and enter the name — or even just the initials. Then click on the Telephone button and all of the related telephone numbers appear, and if you have the right hardware, InfoCentral will even dial the number for you.

Everything you enter is stored in a database. Four of which are already prepared — packed full of information on worldwide travel, consumer products, wines of the world, and computer industry contacts. Other templates exist to give you a headstart in creating your own.

You can create custom databases of your own friends and relatives, house contents (for insurance purposes) or even your CD collection. All of them work in exactly the same way: connections are made between each entry to describe how they relate to each other. When you call up any entry, all of the available connections are shown.

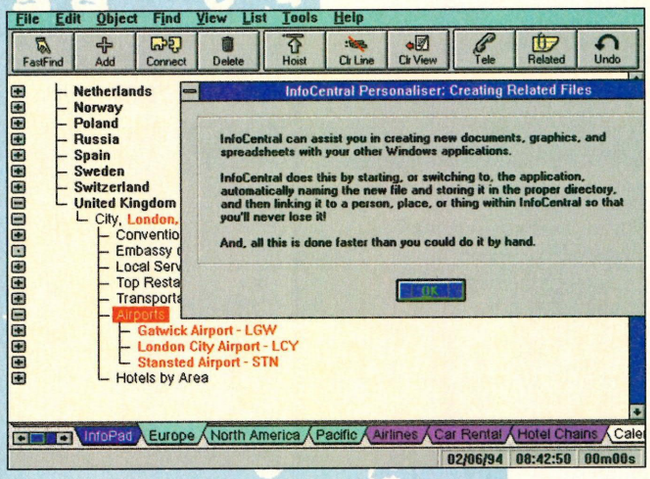
It's easier than it sounds. In the case of relatives, for example, you could connect each person to their address, telephone number, parents, children, etc, to build up a computerised family tree. Searching for Uncle Bill will reveal he is connected to cousins John and Mary, as well as his wife, Ethel. There will also be links to his address, brothers, sisters, and even perhaps an employer. You can move freely around this circle of information, and go off in any direction you choose at the click of a mouse.

In addition, each time you want to write a letter to Uncle Bill, InfoCentral will launch a word processing package and then keep a record of that letter against Uncle Bill's name.

Once you get the hang of it, Info Central is extremely powerful, flexible and easy to use, and there's loads of on-line help. My only major criticism is that the supplied databases assume you are American, and in the case of Business Travel, deny the existence of Heathrow Airport. Apart from that there is much to recommend it — and it offers far more by way of information processing than any Filofax ever could.

David Bradwell

★★★★



Supplier:	WordPerfect Software
Contact	(0932) 850505
Price	£79

Requires a 386 PC, with VGA monitor, Windows 3.1, 4Mb RAM, and 5-9Mb of free hard disk space.

still keep them accurately positioned as part of the overall design.

Standard objects like windows and doors can be pulled and dragged into place from the object library. Alternatively, if you want something special you can draw it and then save it for later use.

Unfortunately, when you've finally designed your dream home, or re-vamped granny-flat, you need to run a companion program from the same publishers, Design Estimator, to get an accurate idea of the cost (lets face it, there's always a catch, isn't there?).

Design Estimator will set you back an extra £39.99, which is a bit steep and it would have been more useful to have a costing section directly within Architecture.

Ultimately though, Design Your Own Home: Architecture is fun to play around with, and while not perfect (it doesn't tell you which numbers to pick on your Littlewoods pools coupon, for a start) it also has enogh serious uses to make it worth the £40 outlay.

David Bradwell

★★★

Supplier:	The October Company
Contact	(0440) 730121
Price	£39.99

386 PC, VGA monitor, Windows 3.1, 3.5Mb of hard disk space and a mouse.

Summer Sun

Infoware

Have you ever sat down to plan a holiday and had no idea where you want to go? Or do you sit around a table with your family and all the holiday brochures and argue over the best location?

If so, you may be glad of Summer Sun, a holiday planning package from Software Partners.

The idea of Summer Sun is that you tell the computer what sort of holiday you want, and it decides which hotel and location are the most suitable.

You can choose travel dates, climate, hotel grade (from one to five stars), sporting and social facilities, and distance from the beach and town centre.

You can also dictate whether the hotel must be suitable for children, what sort of room you require (single, twin or double) and even the price bracket you require, from cheap to very expensive.

As you select the criteria, the choice of destination narrows down until ultimately a list appears of all the hotels which meet your needs.

The program isn't perfect, but it can be a good starting point. It only covers countries bordering the Mediterranean, and for reasons of size only a few of all the possible hotels are included at each location.

Real photographs of each hotel would also be useful, rather than the misleading illustrations which bear no resemblance to reality. And it would have been useful to have had more detailed pricing information.

Ultimately though, compared to the price of a holiday, Summer Sun is an inexpensive package. And if it points you in the direction of a holiday of a lifetime — even if you still need to visit a travel agent for more information — it will be money well spent. Bon Voyage!

David Bradwell

★★★

Supplier:	Software Partners
Contact	(0480) 497622
Price	£29.99

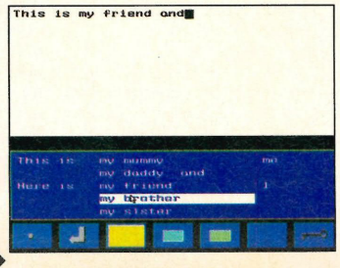
Needs a 386 PC, VGA monitor, MS DOS 3.3, a minimum of 2.5Mb of hard disk space and a mouse to run.

Primary Works

Education

The boxes for the four programs in the Primary Works suite all bear the Mindscape logo and the Edutainment Series badge. Since our young testers have now had the benefit of playing with a wide range of this type of software they thought they knew what to expect. In fact this is very different software as we were to discover.

Our testers' initial reaction to the activities in First Steps was one of blank amazement. In the Collage section of the game you can click on characters in a scene to move and animate them — but the most



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Supplier:	Softkey
Contact	(081) 789 2000
Price	£29.95

386PC, VGA monitor, Windows 3.1, 2-5Mb of hard disk space and a mouse

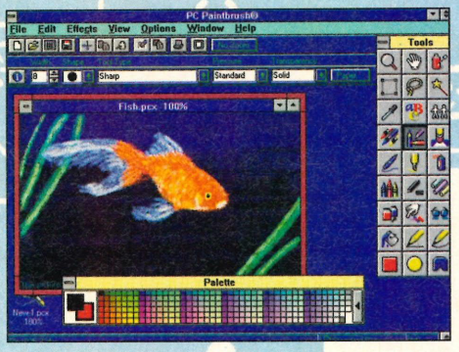
If there was an award for the coolest ever packaging, PC Paintbrush Plus would surely win it. It comes in a metal paint box, complete with four coloured pencils, four paints, and a brush.

Thankfully the imagination shown by the marketing team has been matched by the programmers.

PC Paintbrush Plus is essentially a grown up, fully featured version of the Paintbrush applet that comes with Windows. You can choose from 87 painting tools: 14 paintbrushes, five airbrushes, four spray cans, six pens, three types of charcoal strokes, four markers, four types of crayons, and many more.

Each tool has been designed to look authentic, so you get a dribble down effect with the spray cans and a smudgey look with charcoal, for example.

Once you've drawn your picture there are time-saving features that let you alter the brightness or contrast with the click of a button. Special effect tools let you rotate the picture or change its colours — and even add textures and motion blur.



Any picture created in PC Paintbrush Plus can be saved and then imported into other Windows programs. You could, for example, design a full colour logo for a company, band or event, and then transfer it to a word processing package to create letters or posters.

The software is remarkable value at £29.99 and is highly recommended to anybody who wants to try painting on their PC. And if you get frustrated with the mouse you can always go back to paints and pencils.

David Bradwell

★★★★

exciting response is a wave of Father Pig's hand which is hardly rewarding. The collages are provided for a story telling activity — but it is the children together with their teacher who tell the story. Sound in the program is confined to beeps and congratulatory tunes through the PC's internal speaker.

The other activities in this first level program are the all-too-familiar memory game; Move It where you rearrange blocks in a jumbled picture; two maze games, an odd one out game and a matching game. The kids felt more at home here — it was clear when you had completed the task and for some activities there were league tables.

Moving on to Second Steps however, they were baffled once more as in two of the activities there were no right answers. Click is an activity in which you use the mouse to reveal parts of a picture while in Point you can move shapes around the screen. This is intended as an "open ended" activity to be used in the classroom to stimulate language development, spatial awareness, sequencing and to develop motor skills. From our home-based point of view Second Steps seemed to have little to offer.

Unfortunately our expectations of Little Author and Little Artist were also well in excess of the contents of the software. Little Author lets the user put together sentences by selecting words from supplied lists. The teacher can edit or create such lists and so it could be helpful in the classroom situation, but it seems very limited and pedestrian in comparison with other writing software aimed at the same age group.

Little Artist offers three options. Paintpot De Luxe is a facility for creating patterns, symmetrical designs and pictures and can be used at four levels called Play, Doodle, Sketch and Design. Again, it has a limited set of tools compared to most programs of this type.

As for Animate, a four frame animator is fun to use, but again left us with the feeling "is this all?".

Snippet is an alternative drawing facility for creating small pictures specifically for use with the Collage routine in First Steps. Indeed, First Steps and Little Artist are so interdependent that they really should be sold as a single pack.

This software has been developed in conjunction with Birmingham City Educational Department and is used in schools throughout the country. Although aimed at 5-11 year olds its real audience is adults. The menus in all four programs combine game playing commands with set up and editing options for controlling the environment and are confusing for non-readers — but unlike most edutainment software these programs have not be designed for use by kids on their own. They are intended for use in a situation in which the child's response to the teacher or parent is what matters and the computer is just one tool being used. By 'edutainment' standards they are under-endowed and over-priced.

Sue James

★★



Supplier:	Mindscape
Contact	(04444) 246333
Price	£39.99 each

The series requires a minimum of a 286 PC with a mouse and 2Mb of RAM. VGA graphics recommended.

Supplier:	EA Kids
Contact	(0753) 549442
Price	£44.99 (inc VAT)

25MHz 386 (Not for use with SCSI drives), 1 Mb RAM, 256 colour VGA

Cuckoo Zoo

Edutainment software

Software for young children needs to be bright and busy and Cuckoo Zoo scores well in these respects. The theme (wild animals) has wide appeal and the skills it teaches — recognition and matching both of the animals and letters of the alphabet — are entirely appropriate to the age group of three to six year olds.

Young children will respond to the two characters who act as playmates and guides — Ping Panda and Kooky Cuckoo — but perhaps of even greater appeal is the train that takes them to the different areas and adds an extra element of interest. Indeed some of our testers wanted just to ride the train and click on its bells and whistles and it was only the promise that they could resume this activity that persuaded them to venture into the rest of the games.

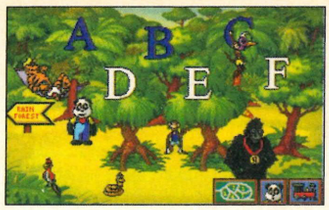
The two main activities are Who's Who and Animal Mix-Ups where the child playing the game has to resolve a muddle by selecting a correct tail, head or colour.

Other games are specific to the program's five different play areas and include painting, alphabet sequencing, counting and simple addition. Games can be set to Easy, Medium and Hard levels of difficulty which allows them to cater for a child's developing skills.

Cuckoo Zoo has some of the best sound effects I have come across and also the very worst. The atmosphere of the rain forest is beautifully created by the background noises but CuckooFest, where a chorus sings a number of songs and children can compose their own, presents a cacophony that offends even my, unmusical, ear.

Sue James

★★★



Busytown
Edutainment software

If you know and love Richard Scarry's books for young children with their many characters such as Huckle Cat and Lowly Worm you will be pleased by the availability of this software which is based around the same Busytown Gang. Although, like the books, the program is obviously American with venues like a gas station and Bruno's Deli, the concepts and skills it aims to develop are entirely universal.

There are plenty of different activities included, all of them within the capabilities of very young children. The child chooses a location to visit in the playground which serves as a main menu. Moving the mouse to specified objects, matching shapes, following paths and avoiding obstacles are some of the elements common to many of the games. Our testers' favourites were the Fire Station where they helped put out a fire and rescued Huckle Cat's family and a maze game in which they assisted Bananas Gorilla to reach his bananas without being photographed. The program is also at pains to reassure parents and teachers of its educational value and gives a reminder about the specific skills targeted by each activity each time you Exit.

Much of the charm of this program lies in its wealth of detail in the characters and the locations it depicts. This is enhanced by the sound track — voices and tuneful music. The downside of there being so much going on is that the program's response can feel sluggish, even downright slow, and while this need not necessarily detract from the child's enjoyment of the activities, it might lead to occasional loss of interest. There are both disk and CD-ROM versions of the software and the latter includes a jukebox activity giving the opportunity to listen to 13 tunes or to sing along.

Sue James
★★★

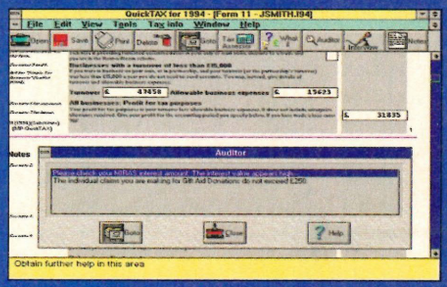
- **Supplier:** Activision
- **Contact** (081) 742 9400
- **Price** £29.99

■ 386 PC recommended, 640k minimum memory (CD version) plus VGA, Sound Blaster, Ad Lib or Pro Audio Spectrum sound support.

PC REVIEW TRIED & TESTED

Some software gets deleted from the hard disk the minute a review is written — some hardware we wish we'd never laid eyes on. But there are products we see every month which we wish we could keep.

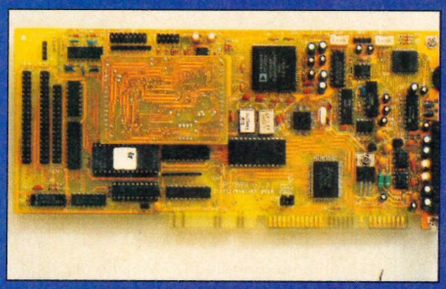
It is these programs, devices and systems — those which we've worked with and found enjoyable, reliable and, above all, genuinely useful above and beyond the call of duty, that rate an appearance on this page. Any of the products which feature here we recommend as worthy of inclusion on anyone's shortlist.



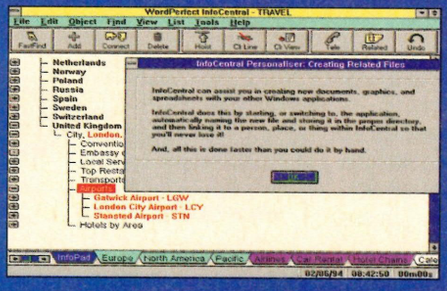
QuickTAX
Intuit, £49.95
Save-you-money-software in the truest sense — cheaper than an accountant.



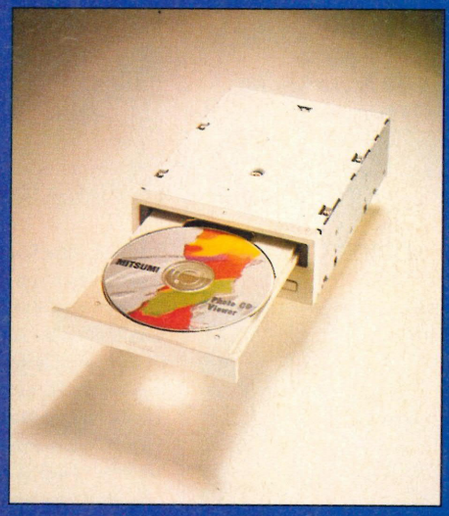
GenSys Blue Lightning Performance PC
GenSyS, £1,149
A powerful combination of clock-tripled performance and 486SX pricing.



Sound FX Classic 3000
Bluepoint, £149
Great all-round card for music and games: now even cheaper than before!



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WordPerfect, £79
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Mitsumi FX001D
Mitsumi, £169
A double speed CD-ROM drive: a competitive performer with a ridiculously low street price.

Recommended so far: Gateway 2000 486/33SX, Fauve Matisse, Microsoft Art Gallery, Microsoft Fine Artist, Media Vision Double Fusion LX, Orchid GameWave, Bluepoint Sound FX Classic 3000, Micrograph Tabby, Dan Vantage Multimedia PC, KidDesk, NEC 3Xi

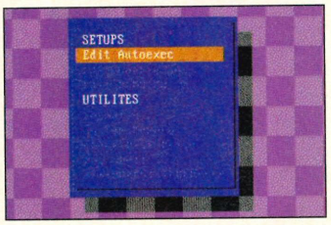
PRODUCTS

Shareware reviews

There's no need to spend a fortune on software, when shareware and public domain programs exist for just about every application you can think of. Alan Clark looks at some of the latest and best applications.

PRODUCTS

Club Membership



Keeping track of all the members in your local club can become a chore can't it? Whether it's your local sailing, golfing, amateur dramatics or even computer appreciation club, accessing membership details with a view to using them for data purposes can sometimes be hard work.

With the aid of a computer database, everything is a lot easier though. But to be honest, you don't want to spend hours grappling with a database language that's as incomprehensible as Mongolian.

Thankfully, with Club Membership, all the database stuff is already there for you; all you need to do is fill in the relevant details.

Really simple to use, Club Membership sorts and lists all the members, and you can view or edit anyone at any time. What could be easier?

Available from Advantage PD (0242) 224340

Price £24.95 PC REVIEW RATING 6

Hocus Pocus



The latest in a long line of releases from Apogee is another platform romp in a similar vein to its earlier release Halloween Harry. Hocus Pocus finds you in control of an apprentice wizard who must complete various quests in order to satisfy the Grand High Council of Wizards and thereby earn his robes.

It's the usual affair of shooting baddies, jumping from platform to platform, collecting keys and finding all the gems to complete the level. Whilst the gameplay is about as original as Babylon 5, the characters and backgrounds are beautifully drawn, whilst the music and sound effects create a pleasing atmosphere.

There's a good variety of baddies to battle your way through and scattered throughout each level you'll come across the High Wizard himself who may give you tips concerning the current level or just insult you.

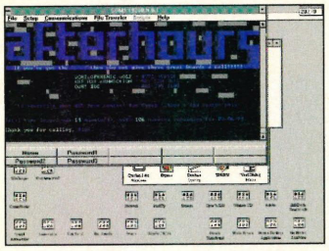
Nothing new or revolutionary on the gameplay side unfortunately, but it's still great fun nonetheless.

Hocus Pocus is another quality releaser from one of the premier shareware companies.

Available from: After Hours BBS 0785 228214

Price £24.95 (including 4 new levels) PC REVIEW RATING 7

Digiterm



Ideal for the beginner in the wide world of comms, Digiterm won't thrust a vast amount of options and configurations into your face.

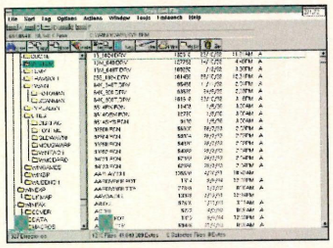
A range of buttons are available at the bottom of the interface which can be configured to automatically input names, passwords, addresses and so on when logging onto boards which will save time with the phone bills.

And whilst the plain, easy interface will appeal to the new user, more experienced comms freaks will still be able to take advantage of the options available, including external protocols and scripts.

Available from After Hours BBS 0785 228214

Price $50.00 PC REVIEW RATING 7

Drag and File



Drag and File is another application in the replacement Windows File Manager genre. But this particular program is a bit different to most of the others.

As well as being a full file and disk manager that takes advantage of Windows' simple drag and drop features, Drag and File can be tied in with a range of other utilities including Drag and View, Drag and Zip, PKZip, LHA and also your favourite text file editor.

A wide range of options are available for this program, all of which are useful for maintaining both drives and files.

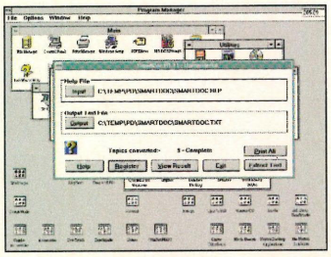
There is also an option which gives you the ability to tag multiple files spread over the disk, a variety of sort options are available and directory and file lists can be sent to your printer too.

Drag and File is a very comprehensive yet easy to use file manager with a wide range of options that should be able to cope with even the most demanding hard drives.

Available from After Hours BBS 0785 228214

Price $69.95 PC REVIEW RATING 8

SmartDoc



One of the little annoyances about Windows concerns the help facility; yes, you can print out the help files, but only if you print topic by topic, and then only if you want all the accompanying graphics too, and with a large help file this can really become tedious.

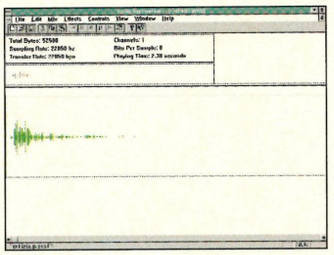
But now here's a simple little utility that will extract all the text from within a help file, place it into a single text file and allow you to print out the whole thing in one go. There's also an option to automatically convert it to Write format as well.

For all of you who have spent hours printing help files topic by topic, SmartDoc is your salvation.

Available from After Hours BBS 0785 228214

Price £14.69 PC REVIEW RATING 8

Sonic Screwdriver



For all you Windows WAV file freaks, here comes Sonic Screwdriver.

This handy application allows you to record and edit your own WAV files.

A whole host of options are available in Sonic Screwdriver, including mono to stereo conversion, 8-bit to 16-bit transformation, increase and decrease of sampling rates as well as a wide range of effects including echo, vibrato and scale to name but a few.

The interface is simple and uncluttered with the tool bar containing basic file and clipboard operations as well as playback control.

Sonic Screwdriver is limited to Windows WAV files only, but it offers some of the most comprehensive features available.

Available from Aural Ecstasy BBS 0344 762056

Price £21.45 PC REVIEW RATING 7

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Graphics Workshop

Graphics packages can let you do all sorts of things. From creating accurate scale plans of new super skyscrapers or company logos, to editing photographs or bringing 3D animations for music videos alive. Graphics packages are amazingly versatile. But why would you want to edit photographs? Alan Clark tells you why, shows you how and takes a look at two affordable packages.

So what exactly is photo editing? It's more than just cropping and sizing photographic images — it also involves touching up, enhancing and otherwise manipulating photographs that you've scanned into your computer using photo-editing software. Photo-editing also involves using software to enable you to adjust colours, brightness and contrast, add a variety of effects, overlap two or more images to create a photo-montage and even add your own drawings and text.

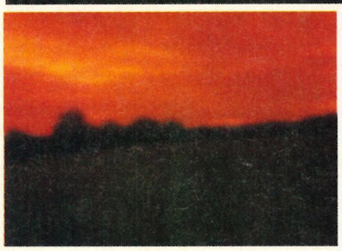
But what's the difference between this software and an ordinary art package? Largely that with an ordinary art package you create the image yourself, but with photo-editing software, as the name suggests, you use the package to change what's already there.

So why would you want to edit photographs? The most common use for photo-editing software is within the publishing industry for enhancing and touching up photographs before a magazine, brochure or book is printed.

So, for example, a blemished photograph can be enhanced simply by using photo-editing software.

Photo-editing software is also used within the advertising field for creating flyers, posters, etc and even professional photographers are turning to computers for creating their own masterpieces. But what photo editing software is presently available and what can you actually do with it?







Top: the original scanned image.

Above left: a few specs have been touched up and all the colours blended together to create a soft image with PhotoFinish.

Above right: the same image, again it's been touched up and blended, and this time the colour of the sky has been changed using the Hue control within PhotoMagic. The Magicwand tool was used to select the sky based on a colour range percentage, and then the Hue changed using the EffectsBrowser. By just selecting the sky, everything else stays the same.

PhotoFinish vs PhotoMagic

The most well known photo editing software packages are PhotoFinish v2 from Zsoft and PhotoMagic v1 from Micrografx.

Both retail for £99 and both of these packages are aimed at the small business or home user.

As with any piece of software, the user interface is one of the most important parts of the application; there's absolutely no point in having a wonderful piece of software if it's too cluttered with tool boxes or obscure menus to be easily used.

With PhotoFinish, the screen is left pretty much clear except for a tool box to the right. Some of the tools have further options available by clicking a small triangle within the icon itself, thereby extending the range of tools without cluttering up the screen. There's a colour palette at the bottom of the screen that can



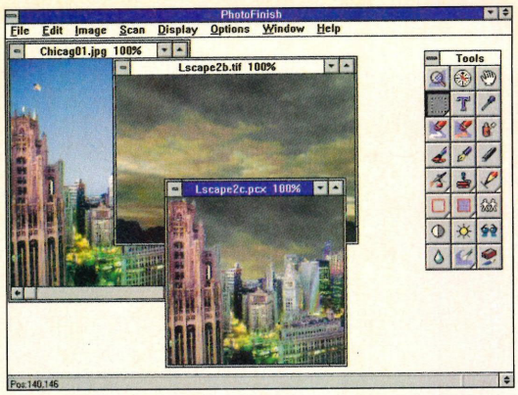


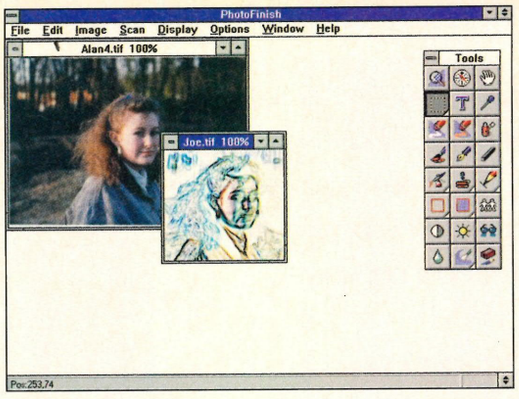


Far left: original scanned image.

Above left: The Magicwand option has been used from within PhotoFinish, to adjust the colours of the various cloud patterns. This was achieved again by adjusting the Hue control"

Below left: Using PhotoMagic, a bolt of lightning has been added by using the neon line style and a pale yellow free-hand tool.





Far left: using PhotoFinish, two images have been combined to create something rather different. This was achieved by carefully outlining the buildings, copying the selection to the clipboard and then pasting it onto the sky background.

Left: Edge detection can be applied to images giving interesting results.

be rolled up, and a brush size selector. Everything else is contained within the menus.

This user interface works well and is fine for most cases. But things can become a little tedious if you have to keep going to a menu option to make fine adjustments.

PhotoMagic, on the other hand, uses a different approach. Around the edge of the working area, are a series of tool boxes and list boxes. The tool box to the left of the screen houses the main tools. Select one of these and the options at the top change accordingly, so you're only presented with the options you need for the particular tool chosen.

This interface makes things a good deal easier to use and follow; you aren't bombarded with a range of tools and options straightaway. You only get what you need. Whilst there are still a lot of options available from the various menus, the most important ones are grouped with their respective tools.

Special FX

Both packages offer a range of 'photographic' effects including brightness, contrast, hue and saturation, along with other effects including motion blur, edge detection, smooth and sharpen.

PhotoFinish presents these and other effects via a range of extending menu options. When an item is selected, you're presented with a dialogue box that allows you to control various attributes of the effects. A preview function is available giving you the ability to fine tune your options before committing yourself. But if the chosen effect isn't the one you want, you have to then go back up and navigate the various menus and dialogue boxes until you find the right effect.

PhotoMagic's approach is slightly different. All the effects options are grouped together in various categories, under one dialogue box, the EffectsBrowser. As you scroll through the various effects, the control options to the right update accordingly. The EffectsBrowser has the preview function, similar to PhotoFinish, but if the effect isn't quite what you want, you're still within the Browser so just go and choose a different one.

Quick on the draw

As well as the variety of editing functions and effects, both packages offer you a range of drawing tools for retouching and creating your own images. PhotoMagic splits the various tools between two groupings; paint tools and drawing tools. paint, clone, smear and eraser make up the tools for the paint option, and while this may seem limited, just check out the line styles option. Within this pull down list you have a range of styles including neon, marker pens, chalk, charcoal and crayons as well as the familiar solid and airbrush tools.

This range of line styles is also available under the Drawing tools that include the usual range of filled/unfilled circles, squares, ellipses, etc, giving PhotoMagic a good range of drawing tools and options for creating your own artwork and interesting effects.

PhotoFinish on the other hand, just provides you with the basic range of drawing tools to create circles, squares, etc, spray can, lines and curves, without the variety of line styles provided with Photo Magic.

Rule of thumb

When you've got a whole list of pictures, unless you've got a very good memory, looking for the right file can become tiresome — loading each picture one after the other until you find the one you're looking for. Both PhotoFinish and PhotoMagic incorporate a small addition to the File/Open dialogue box that allows you to preview the various files in the chosen directory.

These preview images are called thumbnails and are created when you save each file.

PhotoMagic uses these thumbnails as standard, completely doing away with long lists of filenames. This makes choosing the right file a good deal quicker as you can see exactly what the file is.

With PhotoFinish, the thumbnails are available as an option from the File/Open dialogue box and not a standard function.

So you are still presented with a long list of filenames, but you are given the option to view the thumbnails if you want to.

Unfortunately Zsoft's implementation isn't as quick or effective as that found within PhotoMagic.

On individual merit, both packages offer a good range of editing functions and in their own way are both easy to use.

In comparison, PhotoMagic offers a wider range of drawing tools which in turn results in giving you greater flexibility. And because of the way the various functions are laid out, PhotoMagic is a much more convenient package to use.

Performance may go slightly to PhotoFinish, but if it's an easy to use, comprehensive package you're after, my bet goes with PhotoMagic from Micrografx.

Photos on CD

At present, the most usual way to get a picture onto your computer is to use some form of scanner; this can be a laborious and costly process and depending on the type of scanner, the quality might not be as good as it could be. But now, thanks to new technology developed by Kodak, you can have films developed and prints and slides transferred onto CD-ROM.

These CD-ROMS, that can contain up to 100 prints, can be read by any standard Photo-CD compatible CD-ROM drive and the Photo-CD Access software.

The images can then be loaded directly into your photo-editing software, edited and then saved to your harddrive.

Cost is quite reasonable; the CD-ROM will cost about £13–£15, whilst 24 exposures will cost around £5 – £7 to get transferred to the CD.

Then all you need is the software itself, which shouldn't cost anymore than about £25.

This set up works out cheaper than buying a scanner and is definately a lot less hassle. The quality you get is also very good.

Below: This image was created by photographer Richard Dunn, winning him the Electronic Imaging category in Ilford's professional awards, and illustrating the sort of images that can be created with the right software and creative abilities.



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PC REVIEW JJLY 1994

Help!

Don't Panic –

check the PC Review technical reference guide (then panic)

If you are new to PCs, or just plain bewildered by talk of boot disks, device drivers and upper memory blocks, then these pages have been designed with you in mind.
In this month's Technical Help section, we cover some of the parameters you can use with the DIR command for easy file viewing, and some useful advice on buying a PC and what to look for.
There's also a glossary of PC jargon, which should help to explain terms not only in these pages, but those which you may come across in hardware and program manuals.

Rather than laboriously typing out 'change directory' commands every time you want to move around your hard disk, there are a number of short cuts you can use which will cut down the amount of keying in needed, and therefore minimise typing errors.

The backslash key, \ (which should be at the bottom left of your keyboard, next to Z), on its own is shorthand for the root directory. Thus,

- **CD** [Enter] takes you to the root directory, no matter where you are currently.
- **DIR** [Enter] gives a file listing of the root directory, no matter where you are currently.
- Two dots (full stops) indicates the next directory 'up the tree'. Let's say your prompt currently reads c:\wordpro\files\letters:
- **CD ..** will take you to the path c:\wordpro\files.
- **DIR ..** will give you a file listing of c:\wordpro\files.

Now, suppose you have another directory under c:\wordpro\files, called 'reports'. Still in c:\wordpro\files\letters, type

- **CD ..\REPORTS** to move directly to the reports subdirectory
- **DIR ..\REPORTS** for a file listing of the reports subdirectory, without moving out of the letters subdirectory. Incidentally, that space between CD/DIR and the two dots is optional — we've included it here for clarity, but you could omit it.

Moving between directories in the root directory is even easier. From c:\wordpro, typing

- **CD \GAMES** takes you to the GAMES directory.
- **DIR \GAMES** gives you a file listing of the games directory.



EASY FILE VIEWING

Typing DIR to see a list of files in a directory is all very well, but if there are more files than there is space on-screen, they will whizz past you too fast to read. There is an unusually vast number of 'switches' (letters coupled with the forward slash key) you can use with the Dir command to get a more sensible file listing, (see the Easy File Listings panel opposite for a complete list).

And you can combine these. For example

```
DIR /W/S/P/A:r/O:n
```

will display, in wide format, all the read-only files, in alphabetical order, in the current directory and all subdirectories, and it will pause at the end of each screenful.

Of course you can use wildcards:

```
DIR /W/S/P/O:s *.bat
```

will display all the files with the extension .BAT (batch files), in wide format, pausing after each screenful, with the smallest batch file appearing first and the largest file last, then going through subdirectories as well.

If you find one of these types of display invariably useful, you can set this as your default way to view file lists after the standard DIR command. You can add the following command to your Autoexec.bat file, in which case it will determine the way Dir behaves every time you use the PC, or you can type it in at the C:\ prompt for use in a single session with the PC:

```
SET DIRCMD=/W
```

This means you'll get a wide format list every time you type DIR. Correspondingly, SET DIRCMD=/S means you see subdirectory listings as well every time you type DIR. You can also do this with wildcards (such as SET DIRCMD=*.bat), but I'm not sure why you might want to.

What order does MS-DOS normally list files in?

MS-DOS looks as though it saves your files by date, but it doesn't — quite. If you create a directory, then create some new files and save them, when you type DIR you'll find the file list arranged in the order in which you created them. However, DOS order starts to look confusing when you delete one or more of those files and create and save new ones. Now, DOS, or more precisely your file allocation table, which is a sort of index that DOS makes to keep track of your files on disk, puts each new file into a slot made vacant when you deleted files earlier. If it runs out of 'slots', then the next files it saves will go at the end, as you would expect normally. That is why you can save five new files and then find three of them in the middle of a file listing and two at the end.

PANE-FREE WINDOWS

Eight things you might not know about Windows.

- **Switching between open applications.**

In Windows, you can keep more than one application open, even if it's not visible on-screen. There are hotkeys available which will take you quickly from one to another. Press Ctrl-Esc to see a list of all open programs, and select with the mouse or cursor keys, which one to move to next. You can either double-click on the name of the application you want, or click once on the application name and once on the Switch To option in the panel below the list. A second way is to press Alt-Tab, which takes you to the next open

EASY FILE LISTINGS

DIR /W	Displays files in 'wide' format, in five columns across the screen.
DIR /P	Pauses at the end of each screenful. You press a key when you're ready to see the next screen.
DIR /S	Displays all files in subdirectories as well as the current directory.
DIR /O	Displays first the subdirectories in alphabetical order, then the files in alphabetical order.
DIR /O:N	Displays files and subdirectories together in alphabetical order.
DIR /O:E	Displays files and subdirectories together alphabetically by extension (the three letters after the full stop in a filename).
DIR /O:D	Displays files and subdirectories together by date and time, earliest first.
DIR /O:S	Displays files and subdirectories together by size, smallest first.
DIR /O:G	Displays directories first in MS-DOS order (see below), followed by files in MS-DOS order.
DIR /O:-N	Displays files and subdirectories together in reverse alphabetical order.
DIR /O:-E	Displays files and subdirectories together in reverse alphabetical order by extension.
DIR /O:-D	Displays files and subdirectories together by date and time, most recent first.
DIR /O:-S	Displays files and subdirectories together by size, largest first.
DIR /O:-G	Displays files first in MS-DOS order, followed by directories in MS-DOS order.
DIR /A:H	Displays only 'hidden' files, not normally visible in a directory listing.
DIR /A:S	Displays only 'system' files, not normally visible in a directory listing.
DIR /A:D	Displays only 'directories, rather than files. DIR *. is less long-winded, but this will also display files which do not have a three letter extension.
DIR /A:A	Displays only files which have changed since lasted backed up using MS-DOS's Backup command, ie, if you don't use the Backup command, this will be all your files.
DIR /A:R	Displays only 'read-only' files.
DIR /A:-H	Displays all files except 'hidden' files. Although these wouldn't normally be displayed anyway, the point here is that *all* other files are displayed.
DIR /A:-S	Displays all files except 'system' files, not normally visible in a directory listing. As above, this means that hidden files that aren't system files will show up on this listing, where they wouldn't with plain old DIR.
DIR /A:-D	Displays only files, not directories — and will display *all* files, including hidden and system files.
DIR /A:-A	Displays only those files that have not changed since they were last backed up using MS-DOS's Backup command.
DIR /A:-R	Displays all files except read-only files.
DIR /B	Displays simply the name of the file or directory — no date, no size, no info.
DIR /L	Displays files and directories unsorted and in lower case.

application instantly. Press it again to move on to the next.

● **Alt-Enter**

Alt-Enter is a dual-purpose hotkey. If you highlight a file with a single mouse click and then press Alt-Enter, you'll see a dialogue box with lots of details about that file — and also an option for you to change its associated icon, but see over for more details on this.

More interestingly, if you run a DOS application from within Windows, or you're simply running the DOS prompt from Windows, hit Alt-Enter and you'll see your program running in an on-screen window



GLOSSARY

8-bit: a bus (see below) or processor which can transfer and process data eight bits at a time. See bits, below.

16-bit: a bus (see below) or processor which can transfer data 16 bits at a time. A 16/32-bit processor, such as the 386SX takes data in and spurts it out 16 bits at a time, but internally processes it 32 bits at a time.

32-bit: a bus (see below) or processor which can transfer and process data 32 bits at a time.

3DO: a digital CD-based console system developed by The 3DO Company, intended to set a standard for interactive entertainment on CD (as per CD-i). The name is derived from a rather excruciating extension of audio, video.

Analogue: a device capable of representation by electrical voltages rather than electrical signals.

Ansi.sys: this DOS file can be loaded as a device in Config.sys and then used to present very basic coloured block displays on-screen.

ASCII: (*pron Ass-key*) stands for American Standard Code for Information Interchange. An ASCII file is a plain text file which contains no codes specific to the software the file was created with.

Autoexec.bat: a file you create on your PC which is acted upon every time you switch on the machine and which tailors the PC's configuration.

BASIC: stands for Beginners' All-purpose Symbolic Instruction Code. A programming language.

Batch file: a file with the extension .BAT consists of a series of other DOS commands, so that you can implement a series of commands in one go. A very simple batch file might consist of the following:

```
CD\
MOUSE\MOUSE
CD THARG
THARG
```

which would move you into the root directory, load up the mouse driver, move to the Tharg directory and start up the program Tharg. If you named this file GO.BAT, you would only need type GO to load up Tharg.

Baud rate: speed of transfer by a modem as measured in bits per second. See modem.

BBS: stands for Bulletin Board System. A database of programs, demos, and mail-box areas which you can phone using a modem. Facilities vary, but normally include access to the programs, the option to upload your own data and to 'chat' on-line to other users.

Bit: the smallest unit of computer data, equal to either of the digits 0 or 1 (bit actually stands for 'binary digit').

Bitmap: a way of defining a graphics image so that one bit equals one pixel.

Booting: booting up the PC is the same as switching it on and loading up the start-up programs.

Buffer: an area of memory used for temporary storage. The buffers command in the Config.sys files specifies how much RAM MS-DOS reserves for storing bits of data that can be called upon more quickly than accessing the hard disk. Printers normally contain a memory buffer into which the file to be printed is transferred, leaving the PC free for work on other applications.

Bus: the software, hardware and wiring that enables the different parts of your PC to communicate with each other. The expansion bus connects the PC to external devices.

Byte: a unit of data equal to eight bits; more understandably, one character in ASCII (plain text) takes up one byte of space.

Cache: a form of buffer memory, a disk cache or cache memory is an area where data is stored and can be transferred rapidly rather than being called up from the hard disk, floppy, or CD-ROM.

within Windows. This makes for easier cutting and pasting between applications and also means that you won't 'forget' you're in Windows when you come to the end of your PC session.

● **Creating icons for anything**

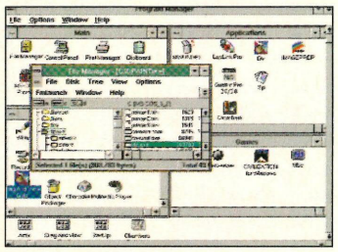
Normally, Windows will create an icon for programs which run specifically under Windows. When you initially install Windows, it will also look for applications that it can detect and offer to create icons for these, too. But you can create an icon for any program — here's how.

Open up the program group that you want the icon to be placed in — probably Applications, or Accessories. Now open File Manager, and position the File Manager window so that your 'destination' window is also visible. Locate the file that starts the program you want 'iconised' — it will be the command you normally type in at the DOS prompt plus the extension .EXE (most likely), .COM or .BAT (possible). Thus, if you usually type DP to start Deluxe Paint, look for a file called DP.EXE. Highlight this file with a single mouse click, keep the mouse button pressed down, and 'drag' the file over to the destination window.

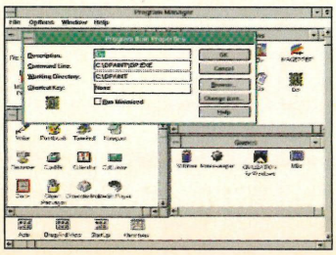
It will appear in the destination window with an icon labelled MS-DOS and the name of the file written underneath. If you want a different icon, highlight it with a single mouse click and press Alt-Enter. You will now see a dialogue box with an option, Change Icon ... Select it.

Windows will probably now tell you that it has no icon set up specifically for that application, so you will have to choose one from its general selection. Click on OK, and you'll be presented with a veritable raft of icons, any one of which you can choose for your application. Now you don't have to exit to DOS to use this program — just click on the newly created icon as if it were any Windows application.

NB Some programs simply won't run from Windows whatever you do, and creating an icon for them won't help.



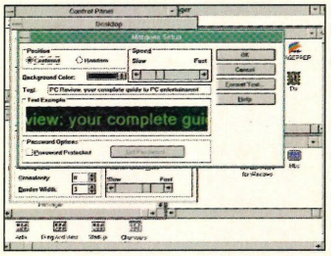
To create an icon for a program in Windows, locate the launch file in File Manager (above), and 'drag' the file over to the desired window (below).



● **Create your own screen saver**

The Marquee screen saver supplied with Windows puts moving text on the screen which can be edited, so you can leave messages for colleagues and family while you go out to lunch — even if it's only "Don't touch this machine!".

To do this, double-click on Control Panel, then on Desktop. In the Desktop box, there is a screen saver selection option. Click on the right arrow to bring up the list and select Marquee. Now click on the Set-up box and type in the text you require. To choose your own colour and typeface, click on Format Text.



Typing in the new text for the Marquee screen saver.

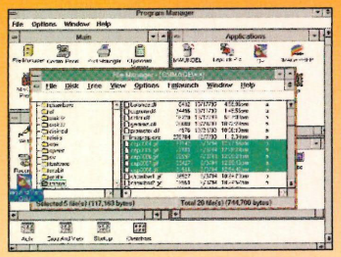
Once everything is to your liking, click on OK, then OK again in the Desktop box and you're all set.

● **Copying files by dragging**

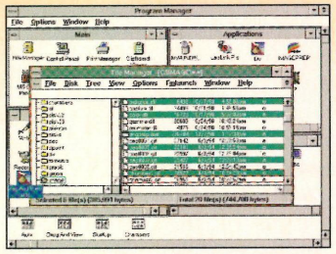
It's often easier to do long batch copying and deletion jobs in Windows' File Manager than at the DOS prompt, but this can still mean typing. To copy a file from a subdirectory in drive C: to a floppy disk in A:, you can simply click on the file required, and keeping the mouse button pressed down, drag the file to the A: drive icon on the bar above the file listings.

● **Multiple file selection**

To select a file in File Manager, you just click on it with the mouse. And most people know that if you click on one file, then hold down the Shift key and click on another file, then all the files between the first and second file selected will be highlighted. But did you also know, that



Selecting files with the Shift key.



Selecting files with the Ctrl key.

if you hold down the Ctrl key instead of the Shift key you can select as many files as you like with just a single click?

● **Setting confirmations in File Manager**

Once you've got your Windows start-up screen looking exactly the way you want it — all your applications in a window opened at the top right, with the control panel, File Manager and other Main icons on the left, and all the games you play neatly stretched along the bottom, maybe — go to Options, and click on Save Settings on Exit, so that it is ticked. Then when you next load up Windows, your screen layout will be preserved, and you won't have to rearrange everything again.

● **Getting help**

Windows has an on-screen help facility which also includes a glossary. So if you come across something you don't understand, then rather than scrolling through reams of preamble in the main help and tutorial screens, just look up the word in the alphabeticised glossary — often quicker. To find it, select Help in Program Manager, then Glossary from the menu bar in the Help screen.

BUYING A PC

Let's face it, buying a PC is no simple matter, whether you're a first time buyer or upgrading from your current model. With a vast number of manufacturers, selling a wide variety of configurations, wildly differing prices, and everybody telling you that theirs is the best buy of the

USEFUL PRODUCTS

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Central Point Software
(081) 848 1414
Disk housekeeping utilities, file and disk repair

QEMM 386
£80
Quarterdeck
(0245) 496699
Memory manager for increasing conventional memory



GLOSSARY

CAD: stands for Computer-Aided Design. Technical drawing on the computer.

CD-i: stands for Compact Disc Interactive. A digital CD-based machine developed and sold by Philips with limited compatibility with other CD-ROM formats.

CD-ROM: stands for Compact Disc Read Only Memory. Physically the same as the compact discs you play music on, CD-ROMs hold up to 600Mb of computer data, stored digitally.

Centronics: the standard interface for computer printers, named after the manufacturer.

Chkdsk: Useful, but not foolproof, DOS command which when used regularly, will check your hard disk for file errors.

CIX: stands for Compulink Information eXchange, a bulletin board and e-mail service.

CLI: stands for Command Line Interface. A system, such as DOS, in which you must type in the correct commands to get the computer to perform.

Clip art: usually found in art packages or desktop publishing programs, these are files of images saved in the program's preferred format.

Co-processor: an additional processor used for auxiliary functions, especially mathematical operations.

Command.com: This is MS-DOS's command interpreter, a file which contains the bulk of the commands for MS-DOS, and without which your PC will not function.

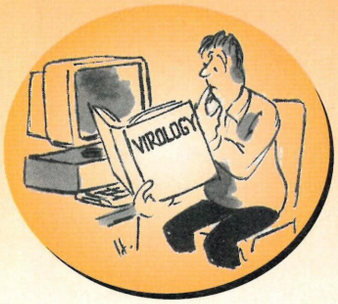
Config.sys: a file which you create on your PC to load up device drivers for items such as a sound card, CD-ROM drive, etc, every time your machine is switched on.

Conventional memory: The first 640K of RAM, into which MS-DOS is loaded, and the place where all your programs must run from.

Cpi: stands for characters per inch. Used to describe the width of character output by a printer.

Cps: stands for characters per second. Used to describe the speed of printer output.

CPU: stands for central processing unit. Generally means the processor inside your PC, but it's often used loosely to refer to that and the motherboard as well.



Digital: making use of binary digits, eg, a device, such as a computer in which data is stored as binary numbers, as opposed to analogue devices (see above).

Digitisation: the act of turning non-digital data into a form understood by computers (ie, in binary digit form). Most often used at present to describe graphics (taken from film, paper, slides, etc) or sound (taken from tape) which is scanned (see below) into a computer-compatible form.

Directory: Your PC files can be grouped together in directories on a hard or floppy disk to make easier to sort them or find them.

A common analogy is to compare the files with documents, stored in folders (directories) in a filing cabinet (the hard disk).

DOS: stands for Disk Operating System. This is a generic term which can refer either to MS-DOS or DR-DOS (see below).

DOS shell: a pseudo-graphical user interface (see below) included with MS-DOS v4 and later.

This presents your filing system in tree-structure form and can make it easier to find, sort, copy and move files than typing commands at the C:\ prompt.

Dot matrix printer: printer which produces output by firing pins through an inked ribbon.

Download: to transfer data from a bulletin board system or central database on to your own computer.

Dpi: stands for dots per inch. A way of describing the density of output from the computer.

DR-DOS: stands for Digital Research Disk Operating System. An alternative and rival to MS-DOS, with some different functions, but compatible with it.

DTP: stands for desktop publishing. Software which enables the user to mix text, and graphics in a document to produce newsletters, newspapers and magazines.

DX: The DX sub-set of processors are the full-blown versions in their grade. A 386DX is a 32-bit processor as opposed to the 16/32-bit 386SX. A 486DX is a fully enabled version of the Intel 486 family.

DX2: A version of the 486 processor which does its internal calculations at twice the speed of the equivalent 486DX.

Edutainment: a term for educational games, which mix traditional gaming elements with educational content.

EGA: Enhanced Graphics Adapter. PC graphics mode which succeeded CGA. Now, like CGA, virtually obsolete.

EISA: stands for Electronics Industry Standards Association. This interface is for use in 386 and 486 PCs and remains compatible with the older AT bus.

Electronic mail, e-mail: files sent from one computer user to another, often via a bulletin board, or over a network.

EMS: stands for Expanded Memory System. This was the first standard enabling MS-DOS to use system memory above 640K in the PC.

Emulator: a piece of hardware or software, used to enable one computer to behave like another.

Expanded memory: a form of adding system memory above 640K to the PC so that it can be used by MS-DOS, and also programs written to support it.

Expansion ports, expansion slots: the connectors in the PC into which are inserted add-ons such as sound cards, joystick cards, internal modems, etc.

Extended memory: a form of system memory above 1Mb which can be used by programs written to support it.

Format: to prepare a disk, either a floppy disk or the hard drive, so that it will accept the relevant data (ie, format a disk on the PC and it will accept PC data, format it on an Amiga and will take Amiga files etc).

Game card: or joystick card. A board which fits into an expansion slot (see above), which a joystick can be plugged into.

Gigabyte: 1,024 megabytes.

Gouraud shading: a graphic technique in which colours are blended at the edges and rounded at the corners to give the impression of smoothness and speed when animated.

Graphical user interface: a system, such as Windows, in which you move an on-screen cursor and 'click' (usually with a mouse) on pictorial representations (icons) in order to make the PC perform commands.

Graphics card: the circuitry which drives the type of graphics and resolution (density) at which they appear on-screen.

GUI: stands for graphical user interface. See above.

Hidden file: a DOS file which has been marked as 'hidden' will not be displayed on the directory listing, and cannot normally be opened, read or deleted.

HMA, high memory area: a 64K block of memory above 640K which MS-DOS can load into with the command Dos= high after the Device= Himem.sys line in Config.sys.

Icon: a pictorial representation of a file or command on screen.

Inkjet printer: printer which works by ejecting tiny droplets of ink on the paper.

Io.sys: one of MS-DOS's two hidden system files. Needs to be present at start-up.

Joystick card: see game card.

Kermit: an old, not very advanced, protocol (method) for transferring files by modem.

GLOSSARY

Key disk: some programs require you to insert a master disk in your floppy disk drive while using the program on hard disk as a form of copy protection. This master disk is referred to as the key disk.

Kilobyte: 1,024 bytes.

Laser printer: printer which outputs in not too dissimilar fashion to a photocopier.

Low level format: Formatting a hard disk is a two-stage process: the initial low-level format prepares the disk for a high level format, after which data can be recorded. Occasionally, a low level format may be the only way to repair a damaged hard disk, although you will lose all existing data in the process.

Main board: general term for the motherboard of the PC.

Maths co-processor: a second processor in the machine, which is used to carry out mathematical functions by programs which support them.

MCA: stands for Micro Channel Architecture. An expansion bus developed by IBM, originally designed to bring the bus in line with faster 386 processors.

MCGA: stands for Multi-Colour Graphics Array, a graphics mode on some IBM PS/2 machines.

Megabyte: 1,024 kilobytes.

Memory-resident: a program which remains in memory even while other programs are running. Programs such as desktop organisers are often designed to be memory resident so that the user can switch to them at a single keypress; virus scanners usually remain in memory so that they can scan any floppy disks as they are inserted in the drive.

MHz, megahertz: the unit of frequency at which electric current cycles through the processor. Used to describe the speed of the processor.

MIDI: stands for Musical Instrument Digital Interface. A system by which electronic musical instruments can be connected to each other and to a computer, which then controls all of them.

Mini-Tower: a squat – roughly half-height – version of the Tower, where the PC itself is housed in upright casing. See Tower, below.

Modem: stands for *Mod*ulator/*Dem*odulator. A device which enables you to connect your PC to the telephone line and send and receive data through it.

Motherboard: the main board for a computer circuit.

MPC: stands for Multimedia PC. A standard minimum specification for developing and running CD-ROM software.

MPEG: stands for Motions Pictures Experts Group, a compression standard for video images.

MS-DOS: stands for MicroSoft Disk Operating System. The standard operating system for the PC. The operating system is the base program which enables you to run applications on the PC, use disks and add-on devices and organise your files.

Msdos.sys: one of MS-DOS's two hidden system files. Needs to be present on start-up.

Multimedia: the use of data from different media in the same program, eg, mixing video, computer graphics, sampled speech, music, text, etc. Often sloppily used to refer to any CD-ROM program.

OCR: stands for optical character recognition. Software which 'reads' text scanned into the computer with a scanner (see below) and converts it into the original characters (when scanned, the document will be saved as a graphics file rather than a text file).

century, it's all too easy to end up with something that won't quite match your needs. What follows is not intended to be the definitive 'this is what you do to ensure results', but hopefully, it will help you to come to the right decision about exactly what you need and the best outlet for you to buy the machine. Forewarned is, after all, forearmed.

THE GOLDEN RULES

Before you do anything, you should ask yourself two key questions:

- What will I use a PC for? Business, games or a combination of both?
- How much can I afford to spend? Set an upper limit as an optimum price (say, £1,000, but of course it depends on your budget) and a top limit, above which you will not (cannot) go, no matter what's on offer (say, £1,200). This gives you a bit of flexibility, but also ensures you don't feel pressured to go over your absolute budget limit.

Next, you need to work out some details of the type of PC you want. If you do want to use the PC for anything processor-heavy, such as games, or graphics packages, you'll need to make sure that the PC you buy is up to the job and won't slide into obsolescence within six months. The following list of specifications comprises PC Review's minimum recommendations for an all-round PC which will cope with entertainment software, and other leisure utilities such as graphics, or music. Remember — we said *minimum*.



ESSENTIALS

Processor: 486 SX, running at 25MHz. Go for 33MHz if you can, and 66MHz if the budget will stand it. Pentium technology — essentially the 586 chip — is now available, but it is still expensive. Warning: "Pentium Ready" or "Pentium technology" are nice pat phrases to be seen on an increasing number of PC adverts. It means the manufacturer claims the machine is capable of being upgraded with a Pentium chip. If you see "Intel Verified" it means that Intel — the manufacturer of the Pentium chip — has tested it with this PC.

- Memory: 4Mb minimum. This is the standard amount which most PCs sold in the high street are fitted with. It is fast becoming inadequate. Eight megabytes really should be the minimum you acquire — if you can afford to pay the extra.
- Operating system: MS-DOS v6 (should be v6.2). DOS gets upgraded with great regularity, and sometimes you will find machines aren't being supplied with the latest version.
- Graphics and display. Go for SVGA (Super Video Graphics Array). VGA is still common and most programs still use it, but SVGA-only is becoming increasingly common.
- Hard drive: minimum of 120Mb.
- Sound card: should be Sound Blaster Pro-compatible. Make sure you get speakers.
- Floppy drive. A single 3.5", 1.44Mb (high density) will do just fine.
- Mouse. A two-button, Microsoft compatible mouse should be included in the package.
- Expansion slots. The clever question to ask here is how many *free* expansion slots there are in the machine you're considering, and 'free' means with unrestricted access. We've seen far too many machines with, say, six expansion slots, two of which are in use, and with another two blocked by cabling — or even by the power supply unit — so that in fact only two are free. Your sound card and graphics card will probably take up two slots, so it really is worth checking.
- Serial and parallel ports. One parallel and two serial ports is a good standard to look for. The parallel port is where you'll want to plug a printer; one serial port can take a mouse (the mouse might plug into a dedicated socket next to the keyboard socket), the other you can add a modem to later.
- Software. It is quite common to get a bundle of software with your

REBOOTING

Press Ctrl-Alt-Del to restart the machine so that it runs through its start-up files again. If the PC has frozen up completely, press the reset button which should be at the front of the PC and labelled clearly.

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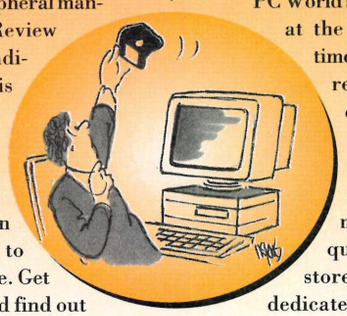
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PC in addition to MS-DOS. Windows 3.1 (at least) should be included and there is often a business utility and a piece of entertainment software.

If not, why not ask? You may get a dealer who is feeling particularly generous. Nothing ventured, nothing gained.

● Warranty details. It is important that you know what cover your PC has. If it goes wrong or you have a technical problem, what do you do? Who is responsible — the dealer or manufacturer? Or both. Find out if there is a telephone hotline you can call. Our survey of the principal hardware and peripheral manufacturers (PC Review 33) gives a good indication of what is available.



● Delivery date. Do not let your supplier be vague about when you can expect your PC to arrive at your home. Get a specific date. And find out in advance who pays for the delivery charges.

DESIRABLES

● Joystick. Two-button analogue model. Check that the PC you're going to buy has a game port, or buy a game card as well (takes up a free expansion slot).

● Double speed CD-ROM drive. Some software houses have already stated they will have switched to CD-only product by next year. Others will almost certainly follow. If you buy a PC with one we would recommend a minimum running speed of 33MHz and 8Mb RAM. It seems 25MHz, 4Mb machines are already beginning to struggle with the latest multimedia products. We'd suggest that unless you *know* you want a CD-ROM drive now, this is something you could leave until you find you need one, but prices for double-speed are pretty good at the moment. One reason for holding off might be to wait for prices of triple speed drives to fall.

And how much will this 'minimum' PC cost? We reckon you could get this set-up for around £1,200, including VAT, after comparing prices from the shops. And if you were to scour all the adverts and mail order pages searching for bargains, you could probably get it cheaper.

WHERE TO BUY

1) The High Street multiple outlet

For most people this will mean Dixons, Currys, or a 'superstore' such as PC World. Dixons has 200 outlets which incorporate in-store Business Centres and plans to expand this to 350 within three years. In addition to its high street stores, Currys has about 150 Curry Super Stores. There are eight PC World outlets, in Croydon, West Thurrock, Brentford, Staples Corner, Cardiff, Bristol Parkway, Leeds, and Northampton, with another four planned this year.

Now it may come as a surprise to you to know that Dixons, Currys and PC World are all owned by Dixons itself.

PC World stores are targeted at the second or third time-buyer. The staff receive training direct from the PC manufacturers so they should be able to answer the most technical of questions. The stores have an area dedicated to installation and problem-solving. And, perhaps more importantly, you have more flexibility in buying a PC which matches your desired specifications. You can have your machines configured to your own standards. But maybe the first-time buyer may find it a little daunting.

2) Independent dealers

Virgin Megastores has 24 outlets throughout the UK with another six planned this year. It is eventually planned that all these stores will sell a "Virgin" branded 486 PC packages. But at the time of writing they are not on sale yet and customer choice does not seem to be the main priority. You buy the Virgin brand or nothing.

Makro, the cash and carry warehouse chain, also sell PC hardware in its 23-strong chain of stores. But you cannot just turn up at these outlets and buy. You have to register with the store and the qualification for that is you run a business or buy on behalf of a business.

Silica has been a well-known name in computer retail and mail order since 1978. Now it is set to raise its profile further by setting up 20 outlets throughout the country specialising in PCs, peripherals and software with the promise of "understanding advice and assistance and unconditional after-sales support," There will also be on-site service teams to "evaluate and fix any technical problems."

Many of these Silica outlets will be found in Debenhams stores. There are also many independent high street dealers and chains operating throughout the land, who at their best, should have a detailed knowledge of product and be willing to discuss your individual needs and construct a system to suit you.

Armed with your set of PC requirements, you can ask the retailer some simple questions about the machines you are being shown. Do not be

MAKING A BOOT DISK

If you're having difficulties freeing up enough memory to run a program and you're fed up to the back teeth with editing Config.sys and Autoexec.bat to no avail, an easy way out is to make a boot disk.

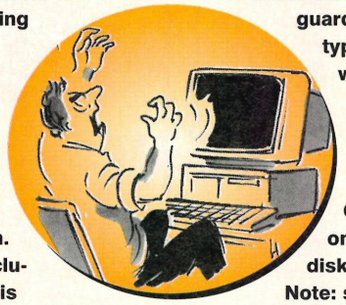
This is a floppy disk with just enough files on it to load MS-DOS, but not so many that it eats into your conventional memory.

There are two ways to create a boot disk, one for formatted floppy disks, and one for unformatted. All you need is the floppy disk, a sticky label and a pen.

If your floppy disk is already formatted, make sure it's blank, put it in your disk drive and then, at the C:\ prompt, type

SYS A:

This will transfer three files (four in DOS 6) from the hard drive to the floppy drive. The two system files, which are probably called Io.sys and Msdos.sys, are 'hidden' and not normally visible to a directory listing (so just take our word for it that they're copied across). The third is the all-important Command.com. The fourth, exclusive to DOS 6, is Dblspace.bin, which is also a hidden file. Once the files have copied over, your floppy disk is now a boot disk. It contains the bare minimum to run MS-DOS, while leaving plenty of memory free for running hefty games.



If your floppy disk is unformatted, you can format it and make it a system disk in one fell swoop. Put the disk in your floppy disk drive and type:

FORMAT A:/S

The format command will format the disk. The /s is called a switch, and tells DOS to transfer the three main system files to the floppy disk, making it a boot disk.

Now take the sticky label and pen and label the floppy as a boot disk.

Because the Sys and Format/s only transfer the fewest files necessary to boot the system, your mouse will not be loaded, nor will a sound card or CD-ROM drive be loaded with a device driver.

You can load these separately from the C:> prompt, after using the boot disk to start up, but it's probably easier to make Autoexec.bat and Config.sys files on the boot disk itself. And the easiest way to do this is to copy over your standard Config.sys and Autoexec.bat files from your hard disk and then remove all the lines except the ones you need for the program to run, such as the mouse driver, sound card settings, or expanded memory manager lines. This at least guards against typing errors when you try to create the new Autoexec.bat and Config.sys on the floppy disk.

Note: several program manuals explain how to make a boot disk and suggest specific commands to go into the Config and Autoexec files on the boot disk — usually with regard to extended and/or expanded memory requirements specific to the program in question. Let the program manuals recommendations override your existing configuration if you want the program to work properly.

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rushed into buying. Take your time and think about it. Today's bargain offer will more than likely still be available tomorrow.

MAIL ORDER

A flip through the pages of any of the business-orientated computer magazines will reveal a bewildering number of mail order companies, appearing to sell a myriad of PC s — both with known brand names and some with names that you have probably never heard of — plus every conceivable peripheral, gimmick or gizmo. Then there are the manufacturers selling directly.

Mail order remains popular, despite the fact that a number of mail order outfits have gone out of business in the last few years. So is there any way of making sure that you pick one of the good ones?

There is the Personal Computer Direct Marketing Association, an embryonic organisation, which aims to ensure its members operate to the highest standards. It has a code of conduct, strict membership rules, a seal of approval which appears on the advertisements of members. You can contact the Personal Computer Direct Marketing Association at PO Box 48 Royston, Herts SG8 6JS, tel (0763) 262987.

If the worst comes to the worst and things do go wrong and you don't get satisfaction, then you could be in for a long battle to get things put right. You should contact the Mail Order Protection Scheme, at 16 Tooks Court, London EC4A 1LB, as soon as possible.

Buying direct from manufacturers with worldwide reputations may inspire more confidence. Many of the manufacturers operate pre-sales telephone advice services helping to put together the system you desire. They are also very good at supplying information about new developments and upgrades.

The main drawback of this approach is that you somewhat lose the mix 'n' match ability to put together hardware from various sources.

The advice which appears above is an extract from the article "Help! Finding the perfect PC partner", in PC Review, Issue 33. The original article not only contains more details about types of PC and where to buy, but also includes a comprehensive survey of the after-sales support offered by various companies, and how you can fix things if it all goes horribly wrong.

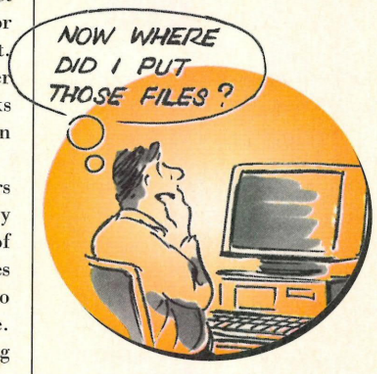
DISK COMPRESSION

Disk compression seems like magic: you run the set-up program and, voilà, your hard disk is twice as big as it was before! Of course, there is no such thing as a free lunch and you pay for the increased capacity in a number of ways. Your disk will be slower, it will be more sensitive to errors and some software may not work with it.

Disk compression works by recoding your data so that it takes less space. The recoding simply replaces repeating sets of recurring data by shorter symbols. For example, this printed explanation would be a bit shorter if we agree to code "disk compression" as "DC". The recoding is done by your machine's processor as the data is read from or written to the disk.

If your machine is a comparative slouch — a 386SX or DX — then you will probably notice the time it takes to compress and decompress the data. This seems unfair, as it is the lower powered machine that is usually coupled with a smaller hard disk and so needs compression most.

Most users can decide if the prospect of the loss of speed makes it worth trying disk compression as a way of avoiding buying a new hard disk drive. What is more difficult is



the threat that the drive may be in some way less stable and the data less secure.

The most obvious reason why a compressed disk may be less secure is that more data is packed into the same space.

If a disk error occurs that wipes out a section of the disk, then you will lose roughly twice the amount of data that you would have lost on the uncompressed drive.

This obviously sounds serious, but in practice it isn't really much worse. Most files are so organised that if you lose even the tiniest fragment of the file's data it will refuse to load.



SOFTWARE ERRORS

A compressed drive isn't any more likely to suffer a hardware failure than non-compressed drive. However the way that the files are stored on the disk do seem to make it more sensitive to software errors. For example, if you have files open when your machine crashes, for whatever reason, then sometimes those files will be lost.

Similarly, software failures that result in irritating but not serious, disk problems such as cross-linked files, lost clusters and so on, can become very serious when they occur on a compressed drive and you carry on without correcting them. For this reason it is essential to run Chkdsk or, better, Scandisk (which comes with MS-DOS 6.2) before you settle down to use your machine and correct any problems that are found. If you start the day with a problem-free disk it is unlikely to develop any serious fault by the end of the day.

A compressed disk also makes your machine look slightly more complicated. The reason is that as well as the compressed disk there is an uncompressed 'host' drive added to your set-up. Having two drives when you started out with one is a complication, as is the matter of the compression drivers which have to be loaded when your machine starts up to do the compression/decompression.

The problems start if you try to reconfigure your machine manually — you have to leave the drivers where they are. If you delete them on purpose or by accident, then the whole of the compressed drive apparently vanishes to be replaced by an oddly named file. Whatever you do, don't delete the odd file — it's the compressed disk's data. Simply reinstall the compression software using an option that tells it that there is already a compressed disk in existence. As long as you don't try playing about with your machine's configuration this sort of problem is unlikely to happen — but the fact that it can is another reason why compression is less secure.

OUT OF SPACE?

The final disadvantage is that some programs simply refuse to work or work unreliably from a compressed drive. Sometimes the problem is to do with running out of disk space. The amount of disk space shown on a compressed disk is just an estimate of how much you can store given that the compression manages to achieve a given compression ratio. If it doesn't achieve this estimated compression ratio then you can appear to have run out of space even though the file should have fitted into the available space.

Some software simply cannot cope with this aspect of compression and instead of telling you that the drive is full, it crashes. Other software does strange things to the disk, usually by passing the compression, and also crashes. There really is no reason why this is necessary. It's all a matter of bad program design, but then we all know a few games and other programs that would qualify for that title!

If you need to run a program that doesn't work from a compressed drive, then the solution is to make sure that the uncompressed (host) drive has enough space on it to install and run it. This often means running a utility to alter the amount of compressed and uncompressed space available — and this is yet another complication of using compression at all.

So finally, is it worth it? Not if you can afford a new multi-megabyte drive, but in the real world compression makes it possible to carry on having fun with a system that is past its use-by date.



NEXT MONTH

Next month, we'll be including a starter guide to adding peripherals, whether CD-ROM drives, sound cards or joysticks to your PC. Plus, some useful DOS and PC books.

GLOSSARY

Parallel port, interface: interface for parallel signals usually used to connect printers.

Partition: division of a hard disk drive into more than one 'logical' drive, ie, although physically the same hard disk, different areas are assigned their own drive letter.

Originally, users were forced to partition larger drives, because early versions of MS-DOS could only address up to 32Mb on one disk.

Patch: an add-on disk to a program which can be bought by existing users and which usually fixes a bug, or provides an update to the original program.

Path, pathname: the 'tree' of directories and sub-directories that defines the location of a file or group of files. For example, c:\wordpro\john\sample.let is the path for the file Sample.let in the sub-directory John, in the directory Wordpro, which is in the root directory.

Pentium: The name for what is logically the 80586 processor. Intel, the manufacturer, gave the chip a name rather than a number to make life more difficult for rival manufacturers. Numbers — such as 586 — cannot be trademarked in the US but, of course, names can be. Thus, while other companies can develop what is, in effect, also a 586 chip, they cannot call it a Pentium and reap the reflected rewards from Intel's high brand name visibility.

Pixel: stands for Picture Element. The smallest size of on-screen dot that can be directly controlled by the computer.

Port: a chip which controls the connection of external devices to the computer. Often used loosely to mean the socket, the interface, the back of the PC, etc.

Processor: the chip that drives your PC, and deals with mathematical and logical operations.

Program Manager: the main screen, or 'front end' to Windows, from where all Windows operations can be accessed.

Public domain: software designed to be distributed free of charge, with no copyright attached.

RAM: stands for Random Access Memory. This is the dynamic system memory which holds programs and data while they are being worked on.

Read-only: a file or disk whose contents can be read or copied, but cannot be changed.

Resolution: the density of dots on-screen, or in printed hard copy (or in graphic files) which determines how detailed the picture (or print) looks to the eye.

Standard VGA screens display at 640x480 pixels, SVGA at up to 1024x768. Resolution of print is measured in dots per inch — a standard laser printer prints at 300dpi.

ROM: stands for Read Only Memory. This is permanent memory, and in PCs is generally used for start-up operations — routines stored in Rom carry out the self-tests and activate DOS when you switch the machine on.

Root directory: the directory immediately under C:. See path.

Scanner: a device which 'reads' printed matter and converts it into digital information which can be stored as a computer file.

Screen saver: Spurious, but mildly diverting software which puts pictures and animations on your screen if you don't press a key for a certain length of time.

SCSI: (*pron Scuzzy*) stands for Small Computer Systems Interface.

A multi-purpose interface between the computer and peripherals, mainly disk drives and CD-ROM drives. Provides very fast data transfer.

Serial port, interface: an interface which uses serial connections. Mainly used for modems, networks, and some mice. Standard serial interfaces on PCs come in two versions: 9-pin and 24-pin and adapters are readily available.

Shareware: Shareware is actually software designed to be used and distributed freely on a trial basis, but for which users are expected to register and pay if they wish to use it regularly. Shareware is subject to copyright.

SIMM: stands for Single Inline Memory Module. Board with a set of memory chips for comparatively easy RAM upgrades.

Sound card, soundboard: a soundcard or soundboard is an item which plugs into a spare expansion slot and enables programs to play music and sound effects through it, coupled with a set of speakers.

SVGA: stands for Super VGA (Video Graphics Array, see below). A general standard describing graphics modes of 800x600 and up to 1024x768 pixels with at least 256 colours on-screen.

SX: the 'cut-down' versions of processors. The 386SX processor is a cut-down version of the 386DX, because although it processes data internally 32 bits at a time, it only accepts and transfers data 16 bits at a time. The 386DX is a true 32 bit processor. The 486SX, however, is a 486DX without a built-in maths co-processor.

System disk: a floppy disk with DOS system files on it which will boot up the machine.

System files: the files which make up the operating system of the computer.

TLA: stands for Three Letter Acronym, much beloved of computer programmers, journalists and data processing managers.

Tower, mini-Tower: an upright casing for the PC, designed to save desk space, since it will stand on the floor.

TSR: stands for Terminate and Stay Resident, a memory resident program which you can exit from but call up, typically with a single keypress, since it is still stored in system memory. See Memory Resident, above.

UMB, upper memory block: smallish areas of unused memory between the first 640K and 1Mb.

You can put drivers in here by using the command DEVICEHIGH instead of DEVICE in the Config.sys file. Upper memory blocks are explained in more detail elsewhere on these pages.

Upload: to transfer files from your computer to another, typically to a bulletin board or central database.

Vector graphics: a graphics technique characterised by the drawing of geometric lines for precise scaling and movement.

VESA: stands for Video Electronics Standards Association. A group of graphics card manufacturers who have determined standards for high resolution monitors and graphics adapters.

VGA: stands for Video Graphics Array. An IBM graphics mode which has become the base standard for PC colour displays.

Virus: a program which has been specifically designed to alter the contents of other programs, with differing effects but usually rendering the programs unusable.

Virus checker, virus scanner: a program that will check files for the presence of a virus, usually by looking for unexpected patterns in the file contents.

Virus killer: a program which will remove the virus elements from an infected file and — optimally — repair the file.

Wallpaper: the background to — usually — a graphical user interface screen, such as the screen background in Windows.

Windows: a graphical user interface developed by Microsoft for use with DOS on the PC.

Write-protect: to render a disk read-only, so that its contents cannot be altered, usually by moving a notch at the top of the disk's casing.

XA, CD-ROM XA: stands for eXtended Architecture. CD-ROM with additional video capabilities.

XGA: eXtended Graphics Array. IBM graphics mode.

XModem, YModem, ZModem: three different protocols — sets of rules — for transferring data via modem. ZModem has become the preferred standard.

XMS: stands for eXtended Memory System. See Extended memory, above.

Q+A

Is your hardware making your head ache? Is DOS driving you dotty? If you've problems with your PC, share them with Mike James and he'll try to help.

Some extra help with compression

Q I would like to add my three ha'porths to the compression debate and offer some advice. I have been using compression software for three years, firstly with DR DOS's Superstor, then Stacker 2, and finally MS-DOS 6 Doublespace. I have installed it on many machines at work and for friends and relatives. My experience is as follows:

1) Stacker is probably the most solid, Superstor the least, but Doublespace is free!

2) I've never had problems running any piece of software (and I've used scores and scores) from a compressed drive.

3) Problems will be caused by 'overfilling the drive'. This can happen because these programs tend to over-estimate the compression ratio. You think you've got 40Mb free and try to load Strike Commander, whilst in reality only 25Mb is free. The result is that the disk fills up and you're still trying to load files to it. This often seems to corrupt the FAT and cause cross-linked files. The answer is to keep a close eye on your compressed drive ratios, defrag often and keep a bit in reserve (I leave 10Mb). And of course, make sure you back up!

4) I always compress only part of the drive and leave C: drive uncompressed with DOS, Windows, PC Tools and room for my permanent swapfile and some free space for temporary files.

On a different subject, I must disagree with what John Bennett says about Local Bus. Firstly, the price differential between VLB and non-VLB machines is very small; secondly ISA cards will work in VLB slots so there are no additional upgrade problems; and finally there is a definite speed gain on video performance.

Finally, I have some advice for choosing among cheap clones: avoid anyone who uses Trident. They are really slow, even if cheap, and the chances are that other components will cut corners too. Tseng is the next stage up followed by Cirrus. Other cards will tend to be just Windows Accelerators which are both more expensive and often slower in DOS than even the Trident!

Peter L Coleman
Herts

A *I agree with your comments about disk compression, but I have to point out that Microsoft is having to revamp Doublespace because of the minor difficulty it has been having with Stac (the company which produces Stacker) and copyright (see PC Review News, Issue 31). We will have to wait and see what the new Microsoft disk compression software is like in MS-DOS 6.3. As well as making sure there really is enough space on the disk you should also run Scandisk every time you start your machine — add it to Autoexec.bat. This cleans up the file systems and makes it much less likely that the compression will cause a problem.*

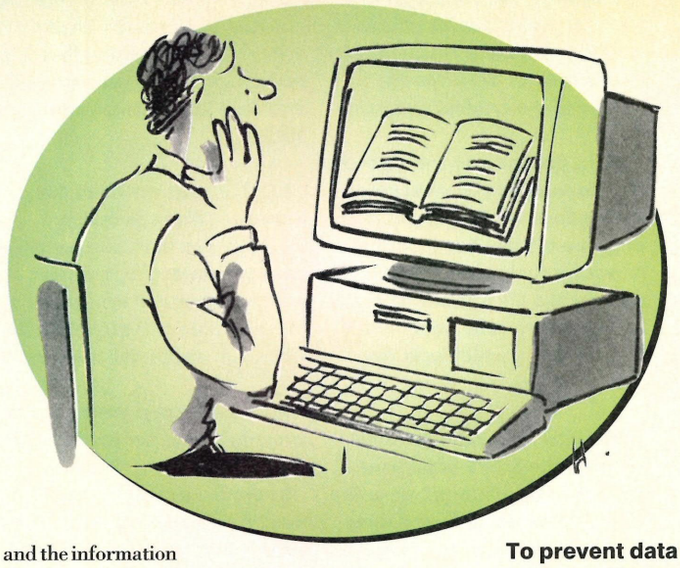
Sound Galaxy solution?

A In reference to the letter in PC Review, Issue 31, by Peter Doggart, concerning the problems that he has encountered using the Sound Galaxy Pro sound card, I have a solution to his problem of noise being generated by the card when he is printing. The reason this occurs is due to the sound card emulating the Covox speech and Disney sound source. Both of these connect directly to the PC's parallel port, and the information they send bound for the printer, is sent also to the sound card, which tries to "play" it. This is the problem cause, as I have experienced it myself (with an HP500C printer). The solution is to disable this part of the sound card's emulation, and I have achieved this by having the following line in Autoexec.bat:

C:\SGNXPRO\UTILITY\SGCOX/OFF

The only compatibility problem I have encountered is a refusal to accept the Sound Blaster option on Laser Squad, only the Ad Lib option.

Ian Collins
Kent



Taking exception ...

Q I have been trying to play the shareware game Connex (also called Empire) on my 486SX 4Mb PC but on two occasions it simply locked up and on my final attempt to run it, my PC gave me the following message and then reset itself.

EMM386 has detected error #06 in an application at memory address (numbers).

To prevent data loss your system will now be reset.
PRESS ENTER TO RESTART.

I had a look at the 'Help EMM386' section in my DOS 6.2 manual and it gives details of some typical errors but not #06. So what is it? I do not understand this, since all my other games run perfectly. Can you help?

David Hodder
Gwent

A *Errors thrown up by EMM386 are usually called exception errors because they relate to the inner working of the 386/486 processor. The general point is that many of these errors have nothing to do with EMM386: it just happens to be the error handler, ie, it is just the bearer of bad news.*

Exception #6 is an interesting one because it signals the fact that the processor has just encountered an 'invalid op code'. Put into English this means that the instruction that the processor was trying to obey is nonsense. So the question is, how can nonsense get into your machine? There are two possibilities: a program error or a machine error.

If you only get exception error #6 when you are running a particular program, then the chances are that

the program might have a bug or the copy of the program you are running has been altered. The program could have been altered, for example, by a disk error that has gone undetected. To discover if this is the case, reinstall the program and see if the exception #6 error then goes away.

The second possibility — a hardware error — is more worrying. If you start getting exception #6 on a range of programs then the chances are there is a faulty memory chip in your system. To find out which chip is the culprit, you can either get hold of a memory testing program or you can simply replace each memory module in turn with a new component. When the problem goes away you have replaced the faulty device. Given that in your particular case you mention the fault in connection with a particular program my best guess is that it is the program that is at fault. It is also worth knowing that some old versions of the screen saver After Dark and applications programs such as Quicken occasionally generate exception #6.

Printer from the vaults

Q I have acquired a printer a Seikosha GP-100A Mark II but I can't find it in the list of Windows printer drivers. Even though my printer isn't on the list I was advised to try them on my printer anyway. I had hardly any success just a line of garbled print with the Epson LQ850 driver, so I wondered if you could advise me on what to do next, or possibly supply me with Seikosha's address so I could get some help. Also I have Alone In The Dark II from your January issue but have had no luck getting my computer to accept it, I get the message

NOT ENOUGH EXPANDED MEMORY

. I hope you can help.

W E Searston
Mansfield

A *The Seikosha GP-100 is a very old printer — at least 10 years old which is ancient in computer terms. And because of that I can't say that I am too surprised that there is no mention of it in the printer installation list — in fact there is no mention of Seikosha at all! Given its vintage then the only printer driver that you are likely to have any success with is the Epson FX-80 driver. Seikosha can be contacted on (0753) 685873 — good luck!*

As for the expanded memory problem, this is a little easier to solve! First of all make sure that your Config.sys file has the line

DEVICE=C:\DOS\EMM386.EXE

after the line

DEVICE=C:\DOS\HIMEM.SYS

This assumes that the file Emm386.Exe is stored in C:\DOS — if this isn't the case, change the line so that it indicates where it is stored. If this line is already in your Config.sys file, add the amount of expanded memory you want to create. The default is 256 so try 512 or even more.

Is my PC upgradeable?

Q I bought my son a Watford Electronics Aries Perfecta 486SX, 25MHz computer. It is said to have an upgradeable motherboard. What is involved in upgrading in the following ways?

1) Can I fit a maths co-processor to upgrade to 486DX-25?

2) If I fit a DX33 or DX50 chip in place of the SX25, what do I have to do to reconfigure the machine?

3) Can I fit a VL bus card? If so, how, and is there any advantage?

4) Can I fit a 1Mb video card? If so, is there any advantage?

5) Is there any advantage in fitting a windows accelerator card?

A G Harrison
Nr Rugby

A *You could fit a maths co-processor, but unless you are running technical programs — CAD drawing packages, etc — you probably wouldn't notice the improvement. As the motherboard is upgradeable you most certainly could fit a faster processor and this will make a difference. This would involve pulling out the old processor chip and plugging in the new one. You would also need to change some jumpers — small plugs — on the motherboard to run the processor at the higher speed. The details should be in the manual supplied, but I am sure Watford would be happy to supply you both with a quote for the replacement and details of how to do the upgrade. One point that is worth keeping in mind is that the price of 486DX chips is currently on the way down so waiting a little while longer might be a good idea.*

You can't use a VL bus card because your machine doesn't have a VL bus! The alternative is to use a Windows accelerator video card but this, as its name suggests, only speeds up Windows applications. Finally, yes you could upgrade the video card to 1Mb. This would provide extra video modes — usually more colours at the same resolution — but why not put the money towards a Windows accelerator with 1Mb already fitted?

A big problem ...

Q I am a college student doing computer programming and I have a serious problem.

My hard drive crashed a few days ago and I have lost all my college work, which is C, C++ and C++( ) source code. I have a copy of the .EXE files on floppy disk but not the source code, and I have to hand the source code in very soon. The question is, do you know of a decompiler (hopefully shareware or PD as I have not got much money) for C, C++ and C++(32-bit) as I have not got enough time to rewrite all the source code again.

Peter Hughes
Bristol

A *I would be sitting down before reading the rest of this ... there are C decompilers of sorts but none of them work well enough to recover your program in a form that you would recognise. They are generally used to 'investigate' other people's software to find out how it works — they do not produce nice, or even easy to read, output. Also as far as I know there are no C++ decompilers at all. It gives me no pleasure to say that the only solution to your problem was to back up your valuable files — but perhaps this might act as a warning to other users of what can happen if you don't.*

On becoming a games programmer

Q I am writing to you because after reading the article in the News section of PC Review, Issue 31, titled "Game play by degree", I decided I would like to do something about a dream I have had for some time, namely to be able to design games.

I have been told that there is a program for the Amiga called Amos, or something, that teaches you how to program/design Amiga games as well as letting you create your own. All I want to know is:

1) Is there any program like this for the PC?

2) Do you know of any books on the subject?

3) Are there any courses that teach the basics?

4) What sort of skills do you need to be a games programmer/designer?

5) How would one even start to go about becoming a professional in the subject? I mean, how would someone get a big software house to sponsor them, to go on such a course as the one launched by Middlesex University?

6) How would someone get a job as a games programmer/designer?

Basically, Mike, I need help, because I know nothing about games programming/designing, but am willing to try anything to change this, can you help?

Nick Mac
Surrey

A *If you want to try out your hand at programming PC games in particular, then you could use something like Amos which should be available for the PC soon — see last month's Q&A for details of Click and Play from Europress.*

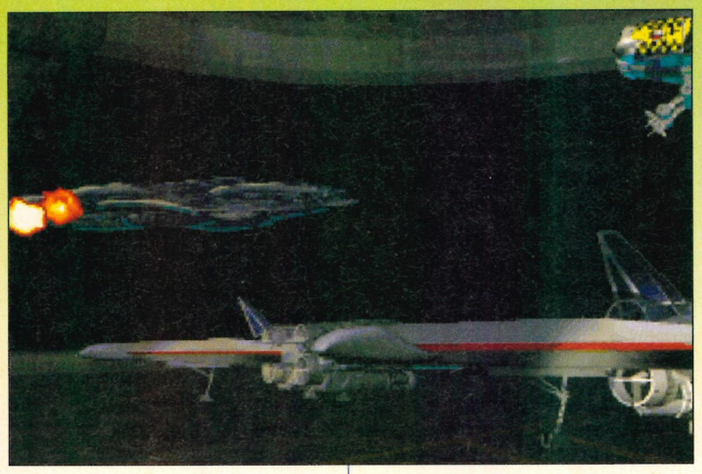
Remember however, that whilst a system like this may be fine for trying out ideas, a fully produced game would need to programmed using a language like C or C++. If you want to get into the games world you really do need to know how to program in C and C++ and you need to know a lot about the hardware of the PC. Although I have nothing against the idea of a special 'games degree', I think it would be better to try a general course on computer science. That way if you change your mind about what you want to do with your programming talent there are no problems.

As to how to get on such a course you simply apply to a university and they will tell you what qualifications you need. If you get them then the chances are you will also get a grant.

Q&A EXTRA

Galaxy sound cards

If you have written in about Galaxy sound cards and wonder why there are no questions or answers about this subject, the reason is that we have had lots and lots of letters about them. Some of the letters add to the list of woe that users seem to be having with this particular type of sound card — but the good news is that just as many readers have supplied solutions to problem. It seems that most of the problems with this card are to do with configuration. Next month I will attempt to put together the definitive problem solver on how to get your Galaxy sound card doing what it should — with many thanks to readers for their help.



Getting a job with a games company is a more difficult question to answer.

What matters here is proven programming ability and in this case having a computer science degree probably doesn't carry as much weight as having actually written a good program. You can think of this as a sort of 'apprentice piece' that you can show around.

If you are serious, then get hold of a C compiler — there is at least one good one available as shareware — and a book on programming in C. Don't worry about the games aspect — just learn to program and the rest will follow.

Is it fast enough?

Q I have a few questions to ask and would be grateful if you could answer them. I own a 386SX-16 with VGA graphics and a Sound Galaxy BX sound card.

1) Could I replace my old VGA card with a true colour card with only a VGA monitor, and if so, would it display in 320 x 200 or 640 x 480, and if the latter, could it display SVGA programs?

2) My sound card has started to do odd things. In some games the speech and sound effects have little 'beats' in them.

For example, in Day of the Tentacle, when they talk it sounds as if they all have stutters. Do you have any idea what could be causing this?

3) Would F1 Grand Prix and X-Wing (see above)run at a decent speed on my machine?

Peter Johnson
Lancashire

A *You can certainly plug in any SVGA card on the market and expect it to work with your machine. The question is, will it work with your monitor. If the monitor is strictly a VGA monitor, ie, not an SVGA monitor currently working at VGA resolutions, then you will only be able to use 640 x 480 at best.*

However, you will not be limited in the number of colours that you can display — so you can use 640 x 480 with 16 million colours. Personally I don't think that the upgrade is worth it because for most applications there is little difference between 256 colours and 16 million! Working at such a high colour resolution will also slow your machine down quite a bit.

The sound card problem could be another example of your machine not running fast enough.

The little beats are the pauses as the machine fails to get the sound data to the card fast enough.

The only solution is to increase the size of the sound buffer — but unfortunately, not many programs allow you to specify this.

It seems only five minutes ago that the 386SX-16 was a perfectly suitable machine for games. Now it is only barely acceptable.

Would F1 and X Wing run fast enough? Personally I would say not and I would save up for an upgrade to at least a 486SX-25 — a motherboard swap (around £100) or a processor replacement (£161) is called for.

If you have a problem with your PC, you can write to Mike James at Q&A, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU, or you can e-mail him at Infomax@cix.compulink.co.uk.

We're sorry, but Mike can only answer your questions on these pages, so please don't include SAEs or ask for personal replies.

Q&A UPDATE

The configuration blues

I would probably be out of a job if it wasn't for the difficulties that everyone has configuring the average PC! To a beginner, the very idea that you have to configure a PC isn't obvious. After all, you don't think of configuring other electronic equipment to make it work. The only parallel I can think of is having to tune a new TV or satellite receiver to all the right channels. Configuring a PC is in a different league to this and users have a right to know why it is so difficult and, more to the point, why it has to be so difficult.

When it was first introduced the PC didn't need to be configured at all. It came fully set up and often with only 64K or 128K of memory. All the different types of memory that we know today — conventional, expanded, extended and upper — either weren't invented or didn't matter. Adding new expansion cards wasn't a problem either because there weren't any!

IBM must have been truly shocked at the size of the expansion card industry that grew up around the PC — but it wasn't planned. IBM did allocate a whole range of I/O port addresses to just about every sort of expansion card it could think of at the time and this list is still in use. Allocating standard I/O port addresses was easy because there were lots and lots of them. A more difficult job was allocating the few IRQ and DMA channels to specific purposes. In short it couldn't be done. There just weren't, and still aren't, enough to go round and so you just have to allocate them as you add expansion cards. The shortage of IRQ and DMA channels is the single reason why configuring a machine to use a range of expansion cards is so difficult.

There have been some attempts to make it easier. IBM introduced the MCA bus to replace the ISA bus expansion bus that most of us use to this day. The MCA bus had, as one of its minor advantages, a software configuration system. You used a disk to store the machine's configuration. When you added new hardware the disk was consulted to see how the IRQ, DMA and I/O ports should be allocated. This worked reasonably well but the software was very difficult to use and almost as technical as doing the job manually! A bigger problem was that users tended to lose their machine's reference disk! The MCA bus is now more or less dead but the same sort of software configuration lives on in the EISA bus.

Plug and play

There is hope for the future though — but only if you buy a new machine. Microsoft, Intel, AMI and others have finally decided to make configuration easier. The catchword is 'Plug and Play'. What is supposed to happen is that you plug in a new expansion card and the software scans all of the cards and configures them correctly without you worrying. No need to think about configuration at all and there is no reference disk to loose! The only problem is that to make Plug and Play work your machine needs a new BIOS ROM and a new operating system — Windows 4 will support Plug and Play. What this means is that you have to buy the next generation of machines to loose those configuration blues.

Of course Plug and Play does little to help memory configuration problems. However in this case things should get better for all of us. Expanded memory is slowly being phased out in favour of XMS extended memory. Windows 4 will provide more conventional memory than raw MS-DOS and it claims to run all existing games software — this I've got to see! The writers of games software are in general slower than most programmers to catch on to what is happening in the rest of the PC world — but give them time. They may discover quite soon that they don't need 600K plus of conventional memory to work. After all there's megabytes of the stuff just above their heads in extended memory.

So the future looks bleak for me. No configuration problems and no difficult questions to answer — don't you believe it ...!

■ Mike James

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Letters

PC Review welcomes your opinions on just about any PC-related subject. We reserve the right to edit your letters, and we'll also assume correspondence is for publication unless you state otherwise.

Going to the dogs

It's all your fault! I'm blaming you, you know! Agh! Help me, I'm dying.

OK, let me explain. Remember your article "Who Needs a Pentium, Anyway?" (Issue 31, May 1994). In it you mention that by the end of the year 486s were going to drop below the £1,000 mark. If you hadn't said that and my mum hadn't read it, I would have had a ninja 486DX along with SimCity 2000, Gabriel Knight, Doom, Police Quest 4 and others. Instead I'm left with a measly 386SX with a monitor that shows all white and blue and Spiritual Warfare.

I'm deeply, deeply depressed. And I can't get any of your brilliant demos to work either. Therefore I went to see Reservoir Dogs instead.

And I'm not forgiving you!

(A very displeased)
Sarah Quilliam
Santon, Isle of Man

Sorry, Sarah (still at least you got to see Reservoir Dogs). Would it help to point out to your mum that by the time that 486s are under £1,000, Pentiums will be around £1,600, and that when Pentiums are around £1,000, the next great thing will be looming over the horizon? The point is that the best time to buy a new PC is always either right now, or never. If you start waiting, the next price cut, or new chip, or whatever, will always be about to happen. So, once your budget can stand it, get out there and get the best deal you can!

Boxer beat?

In "Who Needs a Pentium, Anyway?" (Issue 31, May 1994) Steve Boxer dismisses anyone who has purchased a Mac for use as a games machine as a "loony". I suspect we are meant to assume of course, that Mr Boxer does have a Mac and a knowledge of current power/facility/pricing of the range? But somehow I don't think so. Perhaps the PC in PC Review is a censoring factor?

This house has PCs, Macs and five resident children (quite a few visiting ones too!) I'm writing this letter on a 486, but for game-playing (and a few other things too) the Mac is first choice.

Let's have properly informed opinion, not bigotry, please.

Geoff Greaves
Kington, Herefordshire

"I'm deeply depressed. I couldn't get your demos to work and had to see Reservoir Dogs instead."

Prepare to meet thy Doom

For all you poor people out there who can't get Doom to run, here is a possible solution to your misfortune.

Try putting the external turbo setting to disable in your CMOS. This could be done from your CMOS set-up option during boot-up, but not all versions of the set-up utility are able to do this (like mine). So you may need a special piece of software to do it for you.

I know the idea may seem, well, stupid actually, but I have seen it work on two computers so far.

Graham Fieldhouse
Stockport

Robot reprise?

Could you please review Rise of the Robots? I eagerly read your three part feature on this game and I do not understand why you have not followed up with a normal review.

I appreciate that you cannot review every game released, but I would be grateful if you could at least mention how well the game plays, and whether it is worth buying, in next month's magazine. Could you also review Theme Park?

Alan Murray
Greenford, Middlesex

Alan, we'd love to review Rise of the Robots, but the simple fact is that the game isn't ready yet. First, it spent much longer in play-testing than was initially predicted and then Mirage (the publisher) went and did a deal with Time-Warner that means that instead of bringing out the PC version, then the Amiga version, and so on, they are going to release 13 versions, all at once — but not until October!

Now, there's no point in us reviewing a game which you can't go out and buy for another four months, and for us to review an unfinished game is worse than useless (how can we be sure that all the good bits that the programmers promise to add really will be added and that all the bugs we find really will be ironed out?).

So, no Robots yet — and we did update you about the progress on this game in the News section in Issue 32. Theme Park was also delayed slightly, but it is now finished. Our review is on page 54

State of confusion

Everyone in the PC world seems to ignore the fact that Amigas with Video Toasters added on were used for computer graphics in SeaQuest DSV and Babylon 5.

My own faith is beginning to waver. Apparently it would cost twice as much to design graphics of a similar standard on a PC — something to do with Amigas working at the right rate, whilst PCs don't.

What with the PowerMac and Acorn's new RISC PC, I'm becoming increasingly reluctant to upgrade my trusty PC. Price-for-hardware, I'm sure that Atari's Jaguar would be a much better deal if it didn't just do games, or if it had any games to start with.

As you can tell, I'm becoming increasingly confused with the whole kaboodle. Anyone with any non-biased guidance?

Ross Elliott
Horsham, West Sussex

I take it you're implying that the advice you would get from PC Review's authors (which generally runs along the lines of "Stick to the PC!") would be biased — a charge we'd probably have to plead guilty to anyway. But we'll print readers' opinions on this, on the strict understanding that the minute it all looks like degenerating into a "my machine's better than yours" shouting match, the correspondence is closed.

Television toying with computers

Software prize WINNER

I am a regular subscriber to your magazine and find its coverage mature and interesting. However the same cannot always be said of the coverage of computers and computer related issues that you see on TV. So far computers have largely been treated as toys — Gamesmaster managed to dump PC reviews by the third series. Ironically, one of the best balanced programmes was the kids-orientated Bad Influence which manages to look at all formats. The less said about Sky's Games World — apologies to Cal Jones — or the sickeningly puerile Digitiser on C4 Teletext, the better.

Thank heaven then that The Net has landed on BBC 2. At last computers are being presented as an essential part of life, rather than just games machines. Enough e-mail has flown around the Internet over its games reviews. Let's just say they are out of place, but camp enough to pass muster. I think it has done an excellent job of presenting the real potential of computers in a layman-friendly way which avoids the hype of the Virtual Reality bandwagon as much as it does the toys-for-kids syndrome.

Regarding your new layout, I think there are many positive points about it. The whole magazine is much brighter and the news has been neatly split-up. The smaller typeface allows more text to be squeezed in per page. However I have noticed in the overhauled reviews section you have stopped devoting at least a full page to games. I think this is disappointing as it means the coverage a game receives is dictated by what you think of it, regardless of how major a release it is or, more importantly, how much other people may be interested in it.

A case in point is F14 Fleet Defender, one of MicroProse's major releases of 1994. An avid flight sim fan, I was eager to find out about it, having seen some stunning screenshots. Ditto Dragonsphere. A full page would allow more screenshots and, as they say, a picture conveys a thousand words.

Jonathan Tseng
Ickenham, Middlesex

Sounding off

Comprehensive though your reviews are, I still feel the Techspec boxes are not detailed enough.

With Creative Labs now selling four or five different sound cards, saying "Sound Blaster" at the end of a review is no longer good enough. Is the reason that you do this the reason that you do this because very few games are compatible with anything but the Sound Blaster 2.0 card — ie cards such as SB Pro, SB 16, SB 16 Asp, SB AWE32?

There are, of course, other makes of sound card, such as Gravis, but are games manufacturers supporting its "surround sound" technology or Wave-table effects, or are these little more than gimmicks?

In short, is there any point in owning anything better than the Sound Blaster 2.0 at the moment?

Martin Vickers
Sheffield

We did a straw poll around the PC Review office on this question, and came up with some differences of opinion. Dean would go for the Orchid Soundware 32,. while John is something of a Gravis fan, although he has been mighty impressed by the Bluepoint Sound FX Classic 3000, both in terms of sound quality and ease of use. The somewhat Luddite editor swears by her trusty Sound Blaster Pro, which works with absolutely everything, never causes a problem, no compatibility difficulties since it already is a Sound Blaster, etc, etc. But we are all agreed on one thing: if you want an original Sound Blaster, go for at least the Pro if not the SB 16, not the basic Sound Blaster 2.0.

"Thank heaven that The Net has landed on BBC2 – computers are seen as more than games machines."

Out of control

I use a Sanyo 18NB Notebook 386 20MHz with 60Mb hard disk compressed with Super Stor and a Sanyo trackball mouse (Logitec Labelled). Most of my games run very well although this is not by any means a games machine.

Being a keen adventurer, I was quite looking forward to the Lords of Midnight demo, but I found it almost impossible to control the movement with the mouse. I have exactly the same problem with Midwinter II. I gave up after one mission because vehicles were extremely difficult to manoeuvre and buildings impossible to enter.

I don't know know whether this applies to my trackball, any trackball or mice in general, but I thought perhaps the development team might like to take a look at the problem if you would care to pass on the observation for me.

And another thing. Of the vast array of possible characters to play, most had beards and those without didn't look or sound remotely female. This will not do. I have rather got used to Ultima and being told by an adoring peasantry that I am still the most beautiful woman in Britannia, even *after* a hard day's dungeoneering and demon-bashing with the old two-handed sword.

Congratulations on the new-look magazine and on the reviews in general, which seem to be way ahead of the competition in balance and standard of English.

Elizabeth Gledhill
Grantham, Lincs

"I've rather got used to being told I am still the most beautiful woman in Britannia."

Making the upgrade

I am having a problem with choosing the right sound card for my new PC. I am using a 386SX 20MHz laptop at the moment and I am having it upgraded to a 486DX2 66MHz, 8Mb, 250Mb plus hard disk, CD-ROM, VESA Local Bus etc. It will mainly be used for games and music.

I have shortlisted the following sound cards: Gravis Ultrasound, Orchid Soundwave 32, Sound FX Classic 3000 and the new Sound Blaster AWE32. They each have their merits and disadvantages. Let me tell you what I know already.

Gravis Ultrasound: This card has a lot of potential because it has 3D sound. The Virtual Reality market is forever growing — perhaps in the future it may become another add-on, just like the mouse. Gravis has also signed a deal with AMD (or Cyrix) so whenever there is a AMD (or Cyrix), there is GUS. The software emulation is still weak despite the number of patches available. The number of games supporting it is also growing but, unfortunately, it is like the situation four years ago with AD Lib and Sound Blaster. It could become the new sound card standard. But who knows?

Orchid Soundwave 32: This is another Wave-table card. This one doesn't offer anything special or new, but it has a good variety and rock solid emulation of other sound cards. There is nothing new about it so I don't see why anyone would want to buy it,

Sound FX Classic 3000: This has the latest Wave-table technology — the PCM synthesis. You gave it a four star rating because of its superior sound quality and no 3D sound. With a good amount of hardware emulation and amazing sound quality, it is a good buy.

Sound Blaster AWE32: It is made by Sound Blaster so it is guaranteed that compatibility is not going to be a problem— if GUS does not take over the market. They have also signed a deal with IBM. And remember: where IBM goes, everyone follows. The sound quality is not going to be as good as the Sound FX Classic 3000 however.

A MATTER OF NOTE

I am in the process of setting up a non-profit making newsletter which will give composers of all standards a chance to have their work assessed by other writers, and which will in turn give them the opportunity to review their fellow musicians' work. Members will be able to submit their music on tape, disk or manuscript.

The initial aim is to have a membership of approximately 100, each paying a monthly subscription fee of £3-£5. There will be a £100 prize for best piece submitted each month and an annual prize of £1,000 for the composition of the year. The monthly award will be decided by the members and the annual winner by a panel of professionals from the music world. As the membership grows so will the prizes.

Copies of each month's winning composition will be distributed to all music publishers who have expressed an interest in the project.

If any reader is interested in becoming a member, contributing articles, offering their opinion on the viability of this project, or if they would like further details, they write to me.

Mr R. Dixon
1 Pembroke Place
Penrith
Cumbria CA11 9HB

As we can see here, the main battle is between GUS and SB AWE32. SFX is also good, but will it be the card supported by every game and program or does it have to emulate other standards all its life? GUS will either be the new sound standard or will drop out like the Ad Lib because it has a weak emulation.

Have you got any news about the Gravis Ultramax, which is supposed to now have its problems solved?

Adrian Kwa
Bath, Avon

We can do better than "news": there's a review of the new Ultrasound Max on page 106 of this issue.

Do I not like that?

I have just picked up PC Review Issue 31. No American magazines could ever match the quality of the UK Atari ST magazines I used to buy, and now that I have moved to a PC, I am happy to see such a great magazine (yours) available for that platform as well.

Now, to my point. I need a good soccer game for the PC. I have seen several in your magazine, but I'm not sure which to choose.

1. Sensible Soccer sounds good, but it looks horrible!

2. I have seen ads for Dino Dini's Goal — how does this game stack up to Sensible Soccer?

3. I saw that Player Manager was coming out as well. Do you know if this is a translation of Dino Dini's game of the same name for Atari ST.

There are *no* playable soccer games available in the USA, so the UK is my last hope. Please help me decide which to purchase.

Steve Fulton
Via CIX

Sensible Soccer is an incredible game on the Amiga, but the PC version isn't quite as wonderful. Up until now, however, it has been far and away the best PC football game available. Thanks to the World Cup, many more football games have been piled on to the market in the last few weeks — check out our Football Special this issue, which starts on page 74.

From distant shores

Firstly, I would like to add my name to the growing list of gratulants (*"Gratulants"? Ed*) of your great magazine.

This is a long shot really, but I thought I'd try to answer the Sound FX competition via e-mail, so if you could please take a print-out of this letter, and put it in the draw with the rest, I'd be very pleased.

Paul Roberts
Dronning Aasas vei 30
N-7040 Trondheim
Norway

No worries, Paul. Your entry has been processed along with the rest.

"With development costs rising, will we see the demise of smaller software houses?"

A brave new world?

Having only seen a couple of copies of PC Review, I'm most impressed — I especially liked the coverage of the VFX1.

I consider myself to be a bit of an old grizzled, probably, cynical games player (now 28, ugh), going right the way back to the old ZX81! (Anyone out there remember RAM pack wobble?) It was games playing that got me interested into computers and hence, my career.

I've seen game fads come and go: seen that platform game, done that adventure, doing the latest shoot 'em up tomorrow if my reflexes haven't decayed too much.

But I must admit to being completely gobsmacked as to the speed of development that has hit the games market in less than a year. Mitsumi single speed drives, the cutting edge of technology for home PC's a year ago, are now to all intents and purposes obsolete. We're even talking about games on *two* CD-ROMS!

Now all this is bloody marvellous and I'll drink to its health any time (mine's a pint of Boddingtons, please), but I have a few niggly worries. With the cost of producing a big CD-ROM game being vastly more expensive than producing a floppy-based game, we're going to see the demise of the smaller software houses. They cannot afford development time. The big boys on the market will move in, crushing what opponents are left. With no real opposition they could produce what they wanted, almost guaranteed of a decent number of sales. With only a few big software houses/distributors around they could form a sort of cartel, setting their own prices.

Yes, yes I know the big distributors are supplied by the smaller software houses, doing their bits, but think how much harder it is now for a couple of friends to get together and start up a business coding games compared to even as recently, as two years ago. They have to release a popular game to be recognised by the market, getting on to the payroll of a large distributor as an 'unknown' would be, I would think, very, very difficult.

Now I've painted a deliberately worst case scenario here, I really don't think things will get that bad, but still, food for thought.

Oh, and another suggestion, how about printing the nationality of the originating software house in the rating box? It'll be interesting to see just how healthy the UK games industry actually is when up against the behemoth of the US monster software houses. Just an idea.

Simon Hughes
Via CIX

COMPETITION WINNERS

Virtual Reality competition (Issue 31)

I think we can safely say that this proved to be PC Review's most popular competition ever. The entries have been spilling out of boxes all over the office right from the start. So, if your name appears here, you've done very well indeed!

Winners: the big one, the Forte VFX1 Virtual reality head-mounted system, Cyberbat controller and Ultrasound card goes to ... Martin Proffitt, of Corby, Northants; second prizes of the Gravis Ultra sound card go to L P Westleigh, of Hereford; John Turnbull of Guildford, Surrey; Mrs P Wyatt, of Wolverhampton, West Midlands; David Anderson, of Bushey, Herts, and Jonathan Ash, of London N17; third prizes of Gravis Analogue Pro joysticks go to Mr D A Pottersby, of Sheffield; Mike McGuire of Edinburgh; Mr C L Lee, of Hove, East Sussex; Andrew Turner, of London E9, and John Donnelly of County Down, Northern Ireland.

Answers: 1) The three major types of VR are immersive, 3D modelling, and stereoscopic 3D; 2) Myron Krueger coined the term Virtual Reality; 3) Forte Technologies is based in Rochester, New York.

Battle Isle 2 (Issue 31)

Winners of Battle Isle 2 print plus copy of the game: Peter Sanderson, of Thirsk, North Yorks; Jon Large, of Kingston-upon-Thames, Surrey; Andrew Herbert, of Ipswich, Suffolk; Michael Barker, of Hull, East Yorks; Nicholas Colledge, of Nuneaton, Warwicks, and C D Williams, of Porthcawl, Mid-Glamorgan.

Answers: 1) "We will fight them on the beaches" (Winston Chruchill); 2) "I love the smell of napalm in the morning" (Captain Kilgare Robert Duvall in Apocalypse Now); 3) "I counted them all in, and I counted them all back" (Brian Hanrahan during the Falklands War).

PC Review Gallery (Issue 31)

It's nice to know that we have such cultured readers, particularly those who can spot a Seurat from 100 paces. Georges Seurat, of course, dropped off the list of possible artists we gave you on the same page, which caused no end of confusion. However, by the simple measure of discounting picture B for judging purposes, we have managed to come up with our five winners.

Winners of the Micrograph Tabby graphics tablet and Fauve Matisse art package: Neil Simpson, of Durham; Joe Elias, of Honiton, Devon; Kevan McGregor, of Northwood, Middlesex; James H Brady, of London SE15, and Alan Turnbull, of Brighton, East Sussex.

Answers: picture A) Edgar Degas; picture B) Georges Seurat, but didn't count in the grand draw; picture C) Vincent Van Gogh; picture D) J M W Turner; picture E) Claude Monet.

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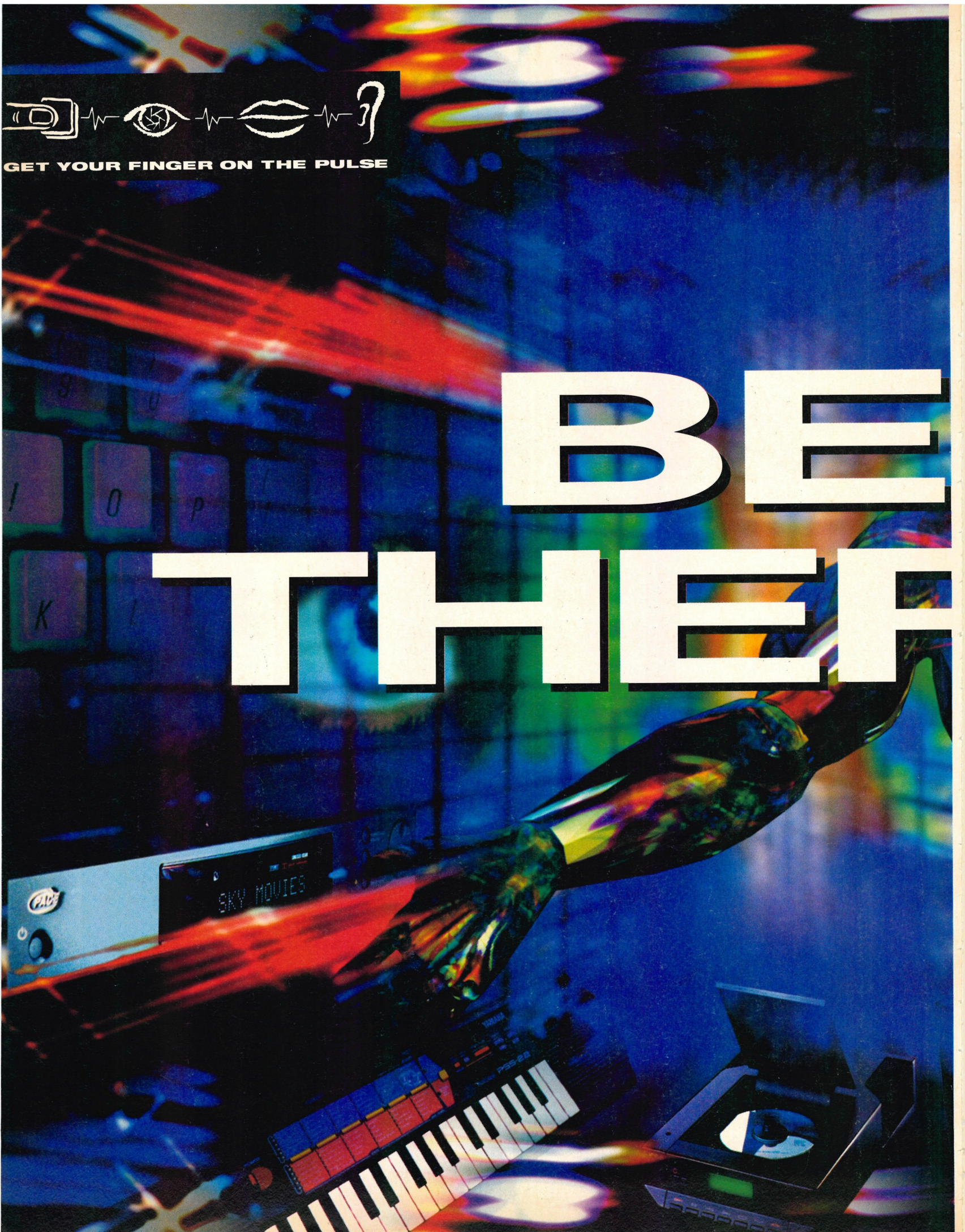
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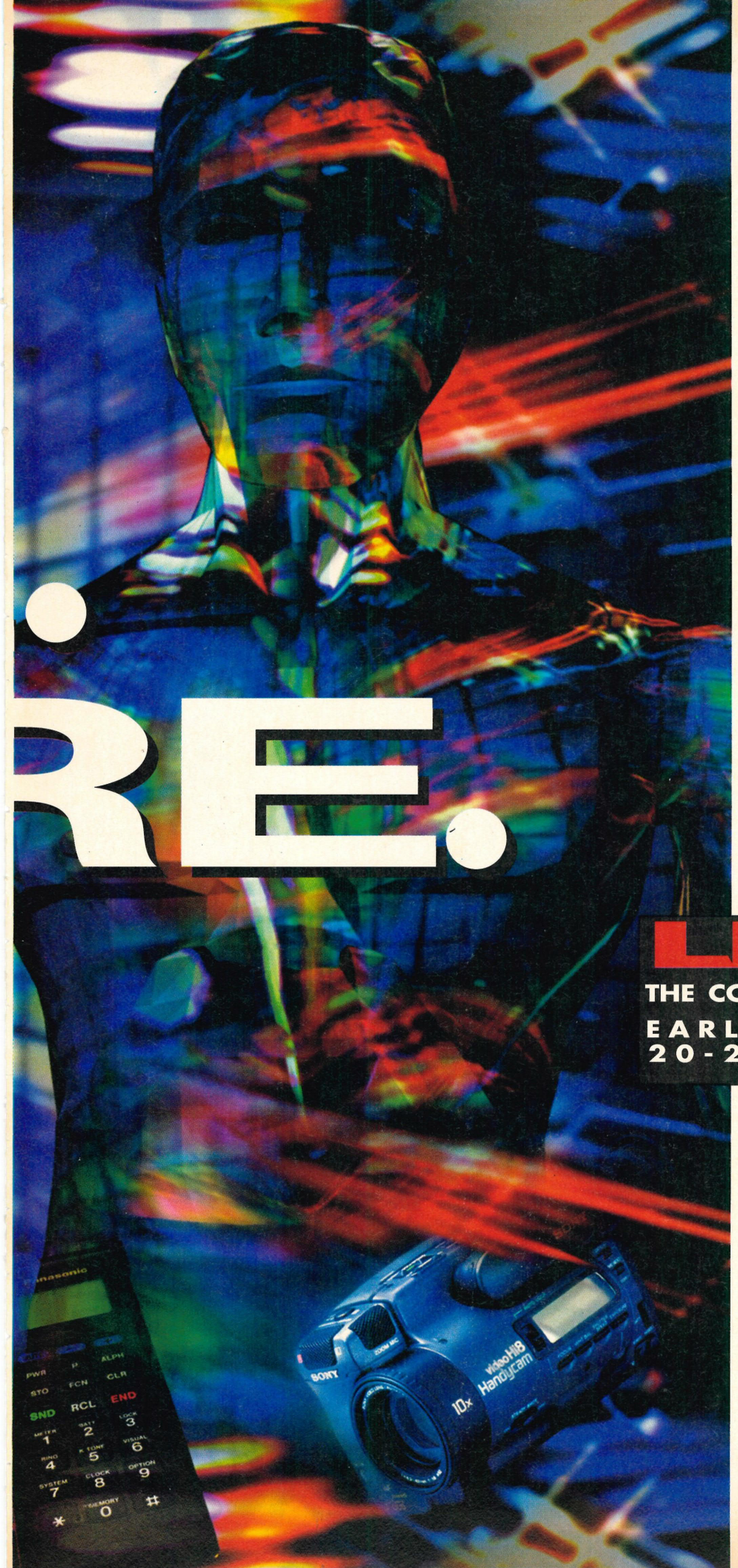
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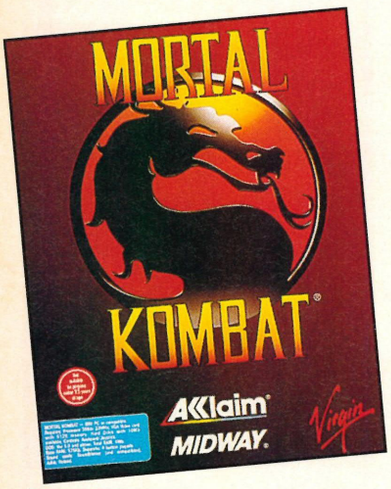
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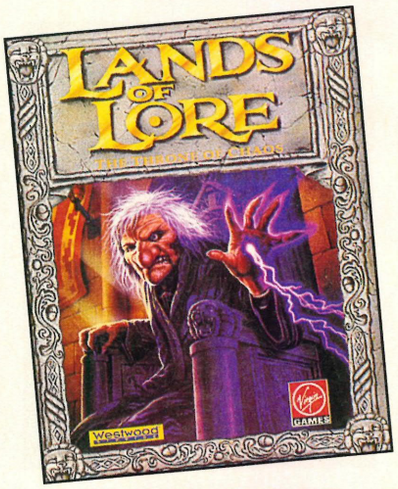
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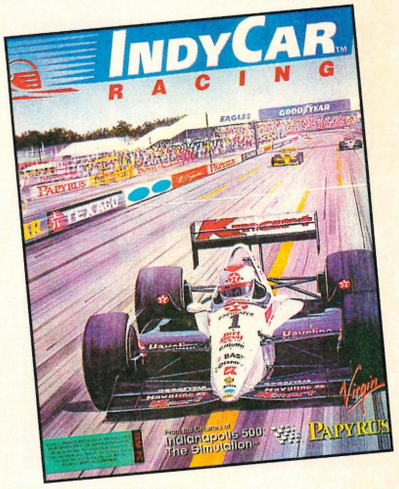
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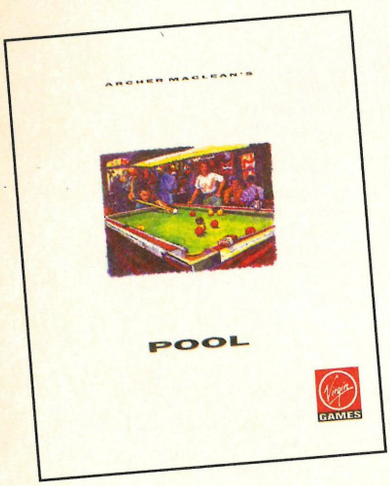
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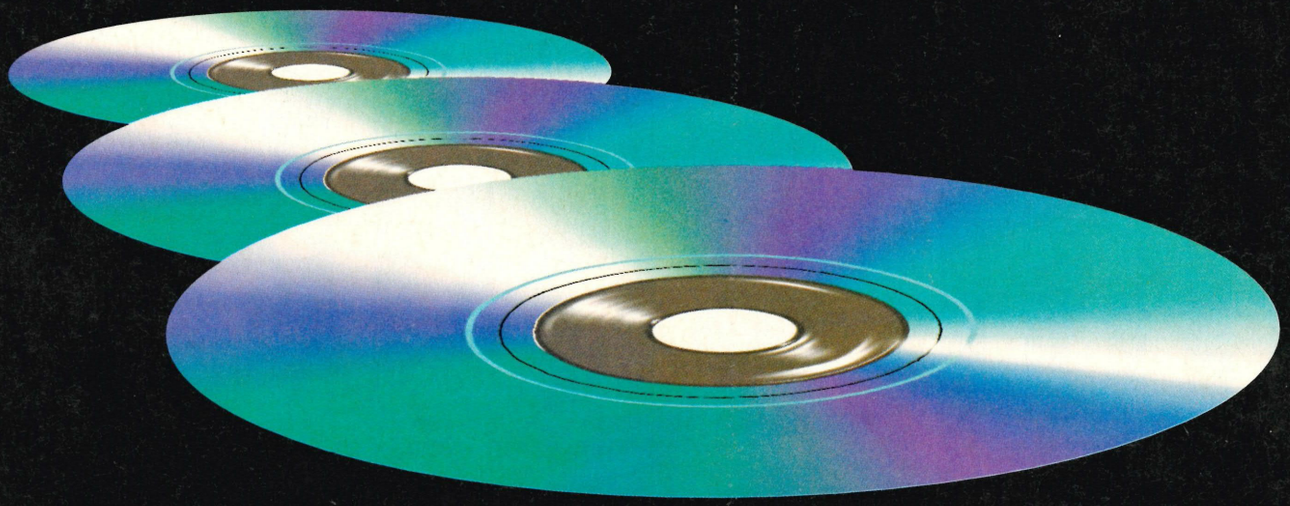
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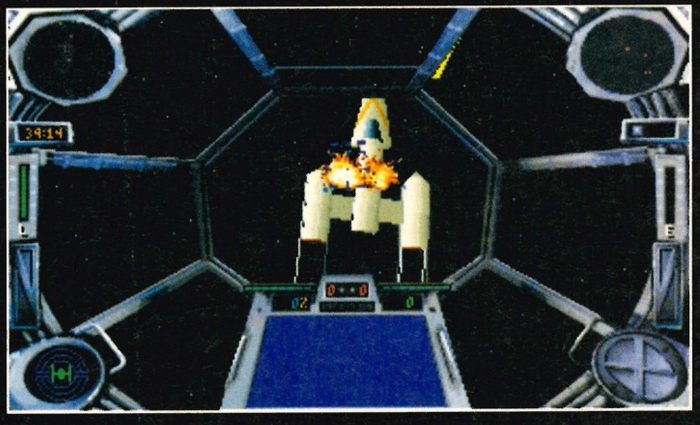
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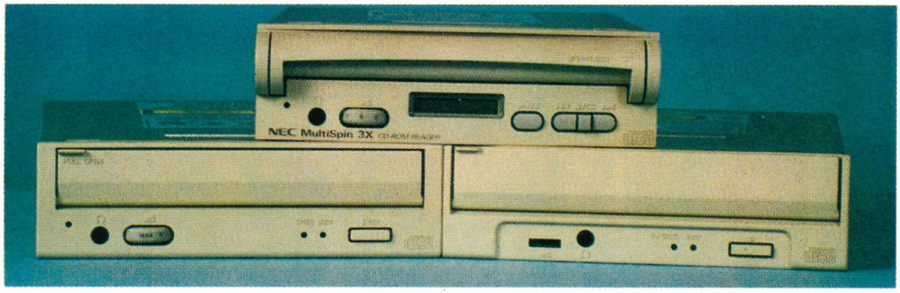


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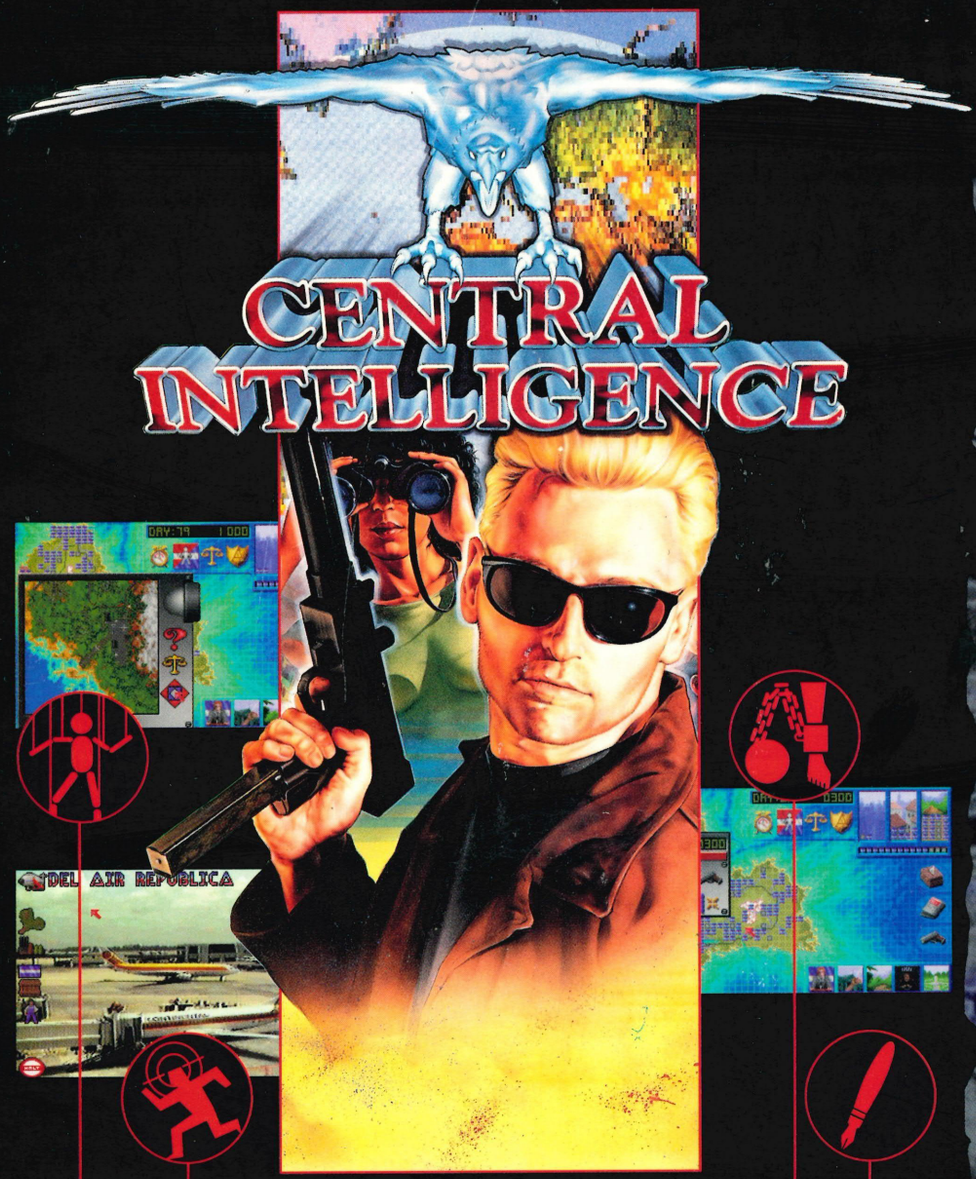
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