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PC review

THE COMPLETE GUIDE TO PC ENTERTAINMENT

TORNADO

PREVIEW OF DI's FLIGHT SIM, PLUS 8 PUZZLES FROM THE INCREDIBLE MACHINE



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BURNING RUBBER

The best PC driving games

REVIEWS

Microprose's Harrier takes off; Stunt Island, SimLife and much, much more

PROFILE

Cue Archer Maclean and PC Pool

COMPETITION

Win a Citizen colour printer! Full details inside

03
770964454010

PC review
Burning rubber

ISSUE 17 MARCH 1993

FLIGHT FOR PC

Only you can stop the Luftwaffe

The Summer of 1940. Hitler's war machine has humbled all of Europe - except Great Britain.

Now, the all-conquering Luftwaffe plans to soften up Southern England for an invasion known as Operation Sea Lion.





Only the RAF can halt their relentless progress. The odds are stacked against them.

Now, above the Home Counties; Spitfires and Hurricanes are locked in deadly combat with Messerschmitts and Heinkels. There can only be one winner.

This is The Battle of Britain.



Graphically stunning, historically accurate and thrillingly realistic (with instant-replay feature), Their Finest Hour resets the stage for the ultimate dogfight.

One thing's certain, this Lucasfilm spectacular will provide you with many fine hours of pure entertainment.

Available on: Atari ST, Amiga and PC and Compatibles (CGA, EGA, MCGA, VGA and Tandy ® 16 colour. Requires 512k Ram. Supports AdLib™ sound card). Mouse or joystick.

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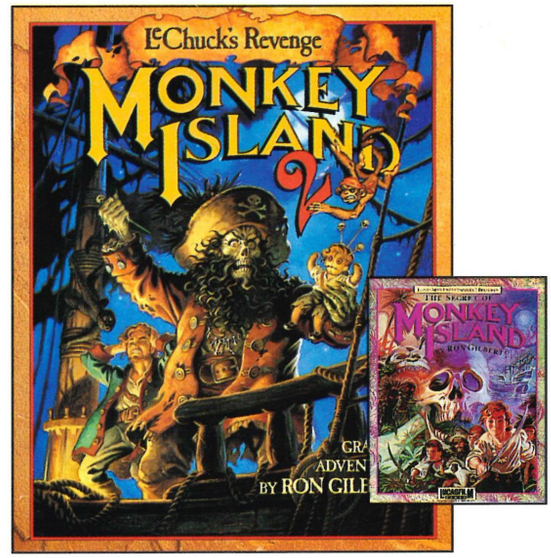
LucasArts™ Lucasfilm Games™

LAUGHS FOR PC

Side-splitting pirate adventure

Just when you thought it was le end for LeChuck, he's back.

The legend states that "when LeChuck wants you dead, you're dead"- grim news for his old adversary, young Guybrush Threepwood.





But fear not. Big Whoop holds the key to great power. All is not lost.

In this stunning graphic sequel, young Guybrush's adventures will have you rolling in hysterics. Beware, you'll laugh so hard, milk will flow from your nose.

Behind every pirate is a really gnarly chair and in front of Guybrush is a saga so savage it'll put hairs on your chest.

With 256 colours (PC version), variable difficulty modes, interactive reggae music and "point 'n' click" interface, you'll be transported to Monkey Island in a flash.



So, brace yourself, the fun starts here. Who knows when it will stop?

Available on: Amiga (32 colours) and PC (VGA/ MCGA. Requires 640k Ram AT or compatible. Supports AdLib™, Roland™, Soundblaster™ and SoundMaster™II sound cards. Hard drive required.

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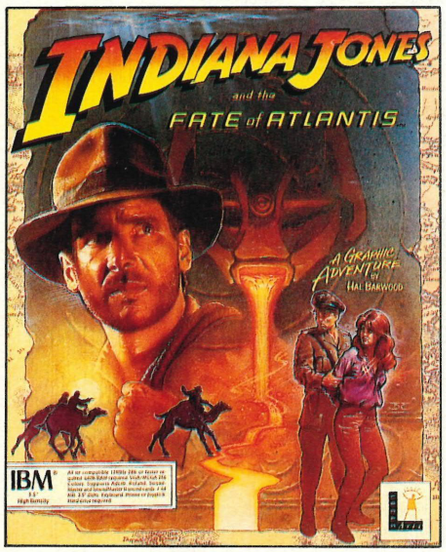
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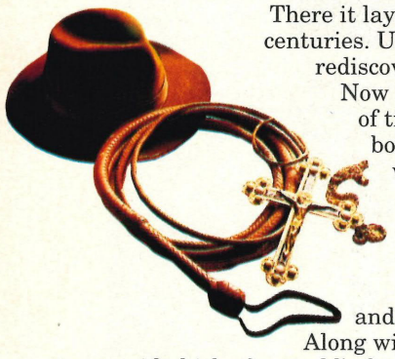
ADVENTURE FOR PC

Who can save Civilisation from destruction?

Who else? It has to be Indy.

It all began a few thousand years ago, when Atlantis sank to the ocean bed. With it, the secret of the most destructive force on earth also sank without trace. Or did it?





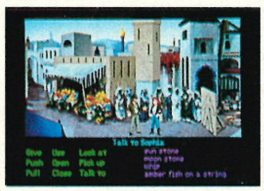
There it lay undisturbed for centuries. Until the Nazis rediscovered the Kingdom. Now it will only be a matter of time until they have a bomb so powerful it will draw World War II to a conclusion. Schnell!

Enter the man with the funny hat and the bull whip. Along with Sophia, his trusty side-kick, the world's future rests on their shoulders.

Is this too much to ask? No way!

Join the intrepid duo in dazzling 3D with full music and sound effects as The Fate of Atlantis and the world is decided.

So, here goes!



Available on: Amstrad and C64 Cassette & Disk, Spectrum Cassette, Atari ST, Amiga; PC and Compatibles.

LucasArts™ Lucasfilm Games™

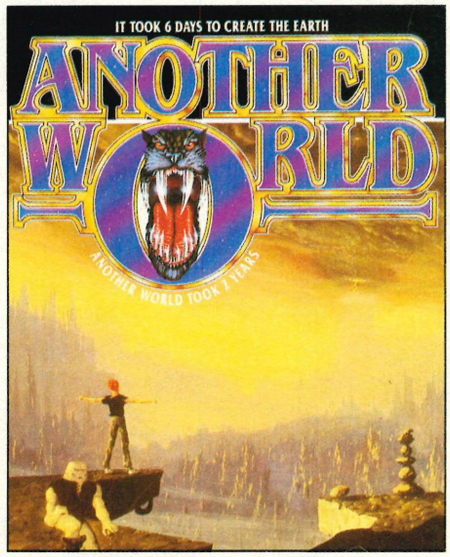
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ADVENTURE FOR PC

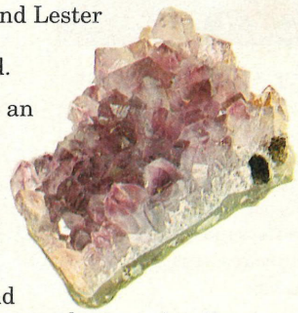
You're about to enter "Another World"

It was a one-in-a-million chance. But it was about to happen.

Young scientist Lester Chaykin was busy experimenting in his laboratory. He'd just reached a crucial point in a test on sub-atomic particles, when zap,



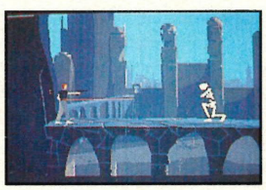
a bolt of lightning struck and Lester was teleported into a different dimension. Into Another World.



He was on his own, against an unknown quantity.

From the designers of Future Wars - Another World took two years to create. And it's easy to see why.

There's zoom, panorama and close-up shots, as well as a unique polygon animation technique for fluidity.



Delphine's in-house recording studios provide the finishing touch.

Quite simply, you ain't seen nothin' yet.

Available on: Atari ST, Amiga (32 colours) & PC (CGA, EGA, VGA, Tandy ®, AdLib™ & Roland™).

DELPHINE SOFTWARE

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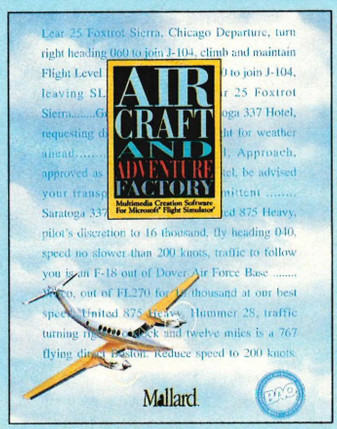
A serious PC experience

SCREENSHOTS ARE ONLY INTENDED TO BE ILLUSTRATIVE OF THE GAMEPLAY AND NOT THE SCREEN GRAPHICS WHICH MAY VARY CONSIDERABLY BETWEEN DIFFERENT FORMATS IN QUALITY AND APPEARANCE AND ARE SUBJECT TO THE COMPUTER'S SPECIFICATIONS

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Until now, there's been something important missing from your Flight Simulator experience. **Speech**. Vital instructions. Weather. Navigational directions. Mallard's audio controlled flight adventure series adds high-quality digital audio, speech and sound effects to Flight Simulator. Custom scenery includes day and night scenes with spectacular night-time lighting. Choose an aircraft and get ready for a sight and sound adventure.

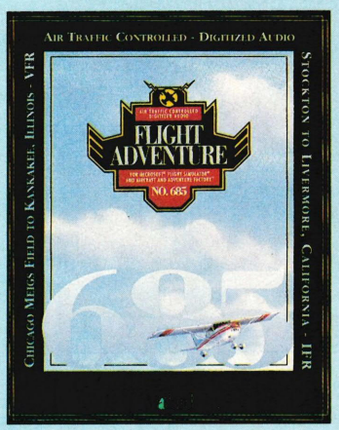
"Cessna 36 Bravo, Roger. Cleared to St. Pete/Clearwater via radar vectors. After departure fly heading 030. Climb and maintain 1600. Departure frequency will be 134.25. squawk 2636."



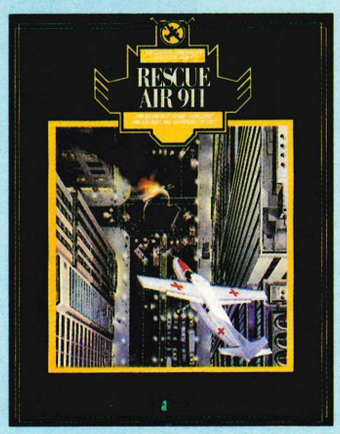
"Roger, Cessna 51367, Livermore. Ceiling is 500 feet. Broken to overcast. Visibility 2 miles, fog. Winds 240 at 6. Report outer marker. In the event of missed approach re-contact Stockton Approach on 123.85."



AIRCRAFT AND ADVENTURE FACTORY
Create multimedia Flight Simulator adventures and design, build and fly your own aircraft with specific flight characteristics and performance levels. Supplied with three new aircraft and demo 747 adventure.
PC 3.5/5.25 - £39.99



FLIGHT ADVENTURE 701
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PC 3.5 - £29.99



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Similar to No. 701 but with four different airports, new scenery and adventures. Once you have filed your flight plan you are in the hands of Air Traffic Control. The closest thing yet to being in the cockpit!
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RESCUE AIR 911
Flying an Air ambulance is tough. Select your assignment and receive directions to one of eight accident scenes. On route anything can happen, so keep in contact with Air Traffic Control. Each destination will have its hazards and you won't know what to expect until you get there. Good luck!
PC 3.5 - £29.99

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PCreview

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Printed in the UK



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Enjoy a sneak preview of Digital Integration's forthcoming flight sim Tornado, in this guided tour. Plus, 3.5" disk owners can try out eight fiendish puzzles from Sierra's fascinating Incredible Machine, as well as making use ofthe latest version of Marketeer, the shareware program which will sort out all your contacts and mailshots.

Turn straight to page 10 for full details on using the disks.

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Your chance to win one of the brand new Swift 240c printers, quiet dot matrix printers with colour printing capabilities from Citizen Europe.

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The very best driving, racing, and death-defying games are lined up at the grid by Paul Presley. If you'd like to test-drive some fast cars, courtesy of your PC, look no further than this assessment of the best in the field.

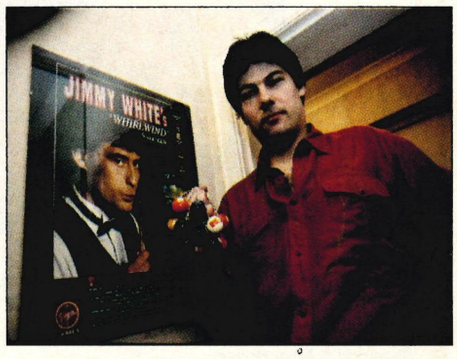


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'Useful' software designed to complement a hobby, or simply to make your life easier, could be big news in 1993, with companies such as Mindscape and Microsoft All releasing product ranges in this area.

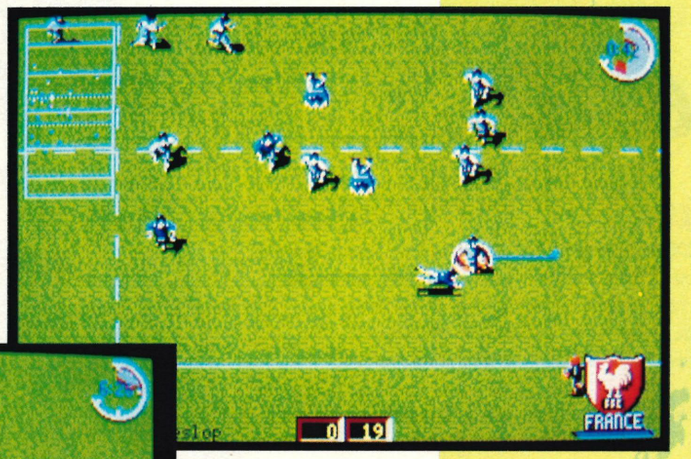


Archer Maclean explains some of the pitfalls of programming ball movement.

INTERNATIONAL RUGBY™ CHALLENGE



THE DEFINITIVE RUGBY SIMULATION







IBM PC Screenshots

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DOMARK

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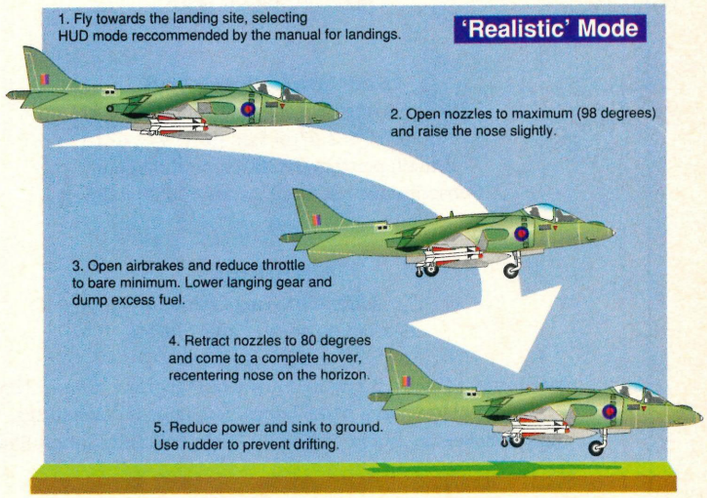


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Perfect landings in any flight sim with the help of Simulation School.

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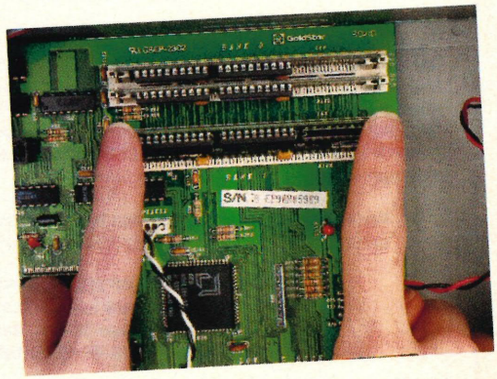
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Adding RAM chips to your PC needn't be a complex process — see page 112.

PC review

Issue 17 March 1993

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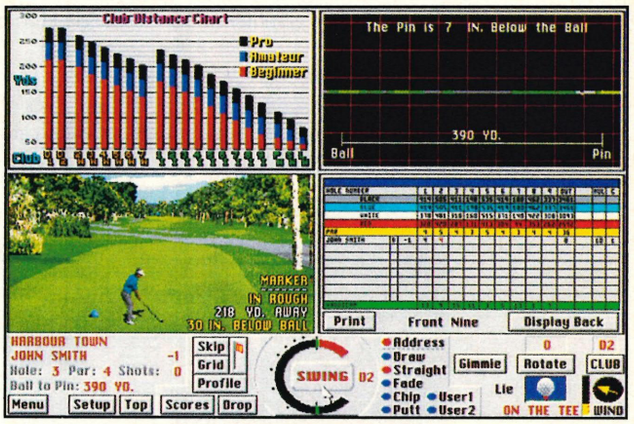
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SPORT FOR PC

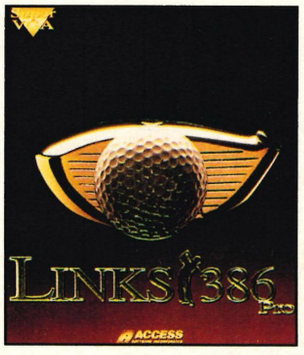
Links 386 Pro. The rest are strictly amateur.











There are other golf simulation games. And there's Links 386 Pro.

It's like trying to compare a crazy golf tournament with the Ryder Cup.

The 386 Super VGA graphics are so realistic, you'll imagine you're driving up the fairway of the featured championship course, Harbour Town, or any of the 7 separate championship courses currently available.

All of the features on Links 386 Pro leave other games flailing in a bunker of mediocrity. With over 345 different options of viewing windows you are able to set up the screen the way you like it, perhaps showing profile from ball to pin, the leaderboard and the club distance chart. You can even choose the colour of your golfing attire!

But the real beauty of Links 386 Pro is that it's simply great fun to play around on. Again and Again.

Whether you're a pro or not.

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DOGFIGHT

80 YEARS OF AERIAL WARFARE


Sopwith Camel

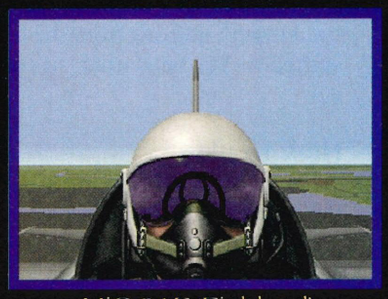

Fokker Dr. 1 Triplane


Messerschmitt Bf109E

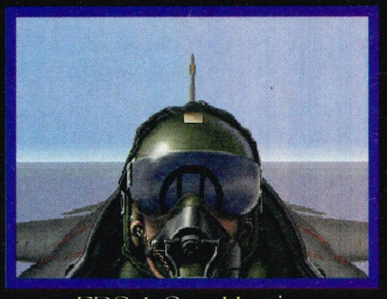

Mk.II Supermarine Spitfire

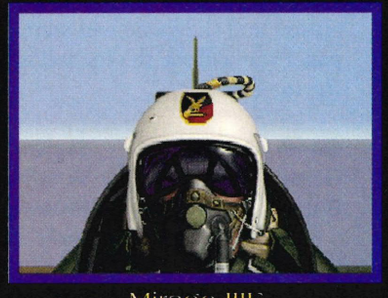

F-86E Sabre

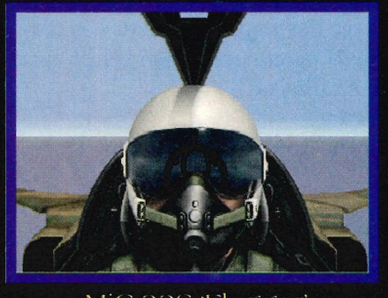

MiG-15

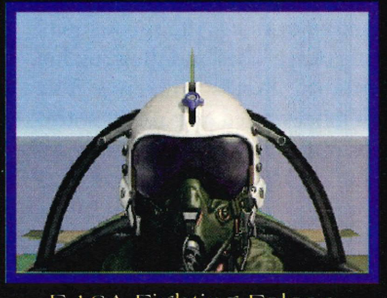

MiG-21F 'Fishbed'


F-4J Phantom II


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MiG-23S 'Flogger'


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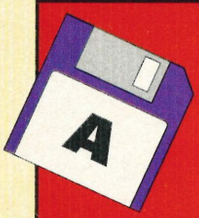
Cover disks

You get to play the wacky inventor in the fiendish Incredible Machine, reviewed on page 82, and with eight puzzles here for 3.5" disk owners to try out. For everyone, though, we're proud to present a preview tour of Tornado, Digital Integration's eagerly-awaited flight sim. Plus, we have the latest version of Marketeer, and a useful utility for CD-ROM users in The CD Music Player.





INCREDIBLE MACHINE





3.5" disk only

With the squeaking of mice, the meowing of cats, the creaking of see-saws and the sound of peddling monkeys, Sierra presents The Incredible Machine, reviewed on page 82 of this very issue. Here, you can try out the game for yourself, with no less than eight levels of puzzles from the game.

You are given just the right amount of equipment to complete each puzzle in this demo, which can involve making a ball go through a hoop, bursting balloons, or even freeing a cat from a bird cage.

How to start

Log on to the directory on which you have installed The Incredible Machine demo, and type either

Install (Enter)

to change the graphics (option 1) and/or sound (option 2) parameters, then select option 3 to play the game, or

Tim (Enter)

to play the game straightaway.

How to quit

While playing the game, press the right mouse button to get to the menu screen. Click the left mouse button on the icon which looks like a red button on the control panel. When you click on to the red button you should see the word 'quit' on the cursor.

Hardware required

Any PC with CGA, EGA, MCGA or VGA, although VGA and a 286 or better is recommended.

Controls

The Incredible Machine is controlled by mouse. Although it is possible to use keys you will have trouble with quitting from the level once you've started it. You've started, so you've got to finish.

How to play

When you start the game, a menu appears on the bottom right of the screen, you will see an inscription of what you are to do in this puzzle. Above that, there is a picture of the screen set-up. If you move the cursor on there you will see on the cursor the word 'play'. Click left mouse button and the game will start. On the control panel you will see the the following icons, from the top left:

Green Arrow	**Starts the game**
Horn	**Volume adjuster**
Bomb	**Restarts the current level**
Red button	**Quits game**
Spanner	**Not available in this demo**
Puzzle	**Takes you to the puz zle selection menu**
Gravity	**Not available in this demo**
Air pressure	**Not available in this demo**

When you have started playing the game, you will see the puzzle in the middle and the icons on the right:

● **Ramp**
Roll balls up or down ramps increasing or decreasing speed. They also can be used to change the direction of balloons.

● **See-saw**
Can act as a lever, eg, a ball could land on a see-saw at one end and at the other end is a mouse motor. The ball would push down the lever and turn on the mouse motor.

● **Conveyor**
Needs to be attached to a mouse motor or a Kelly monkey (see below) for it to turn clockwise or anti-clockwise.

● **Belt**
Connectsmotors, cogs and conveyors together.

● **Rope**
Links pulley, see-saws, balloons (and more) together.

● **Cog**
Generally its purpose is to change direction of machinery or to burst balloons.

● **Balls**
Do what balls do best bounce and roll.

● **Mouse motor**
This mechanical genius has to be knocked about in its box. The mouse gets frightened and tries to run away but it's running on a mouse wheel, so instead of going places it turns the wheel round.

● **Kelly monkey**
This greedy animal loves bananas. He sits on the bike and a banana is tied to a fishing rod behind the blinds. Pull open the blinds and he will peddle rampantly after the banana, turning the wheel.

● **Balloons**
Float up (what else do balloons do?). They can be tied down by a rope and can also be used to lift up an end of a see-saw.

You can't move equipment that is already on the screen. To obtain any of this kit, place the cursor on the desired piece and click the left mouse button: then you can move the piece where you want it. You will not get all of these items to be used at the same time in any one puzzle.

The icon at the top right is to start your contraptions. In any part of the game, clicking the left mouse button on this enables you to test to see how you're going in solving the puzzle. To stop and resume play, click the left mouse button again.

Once you've moved an icon, if you place the cursor on it, a box will appear around the piece of equipment. Around the box you should see symbols. They mean:

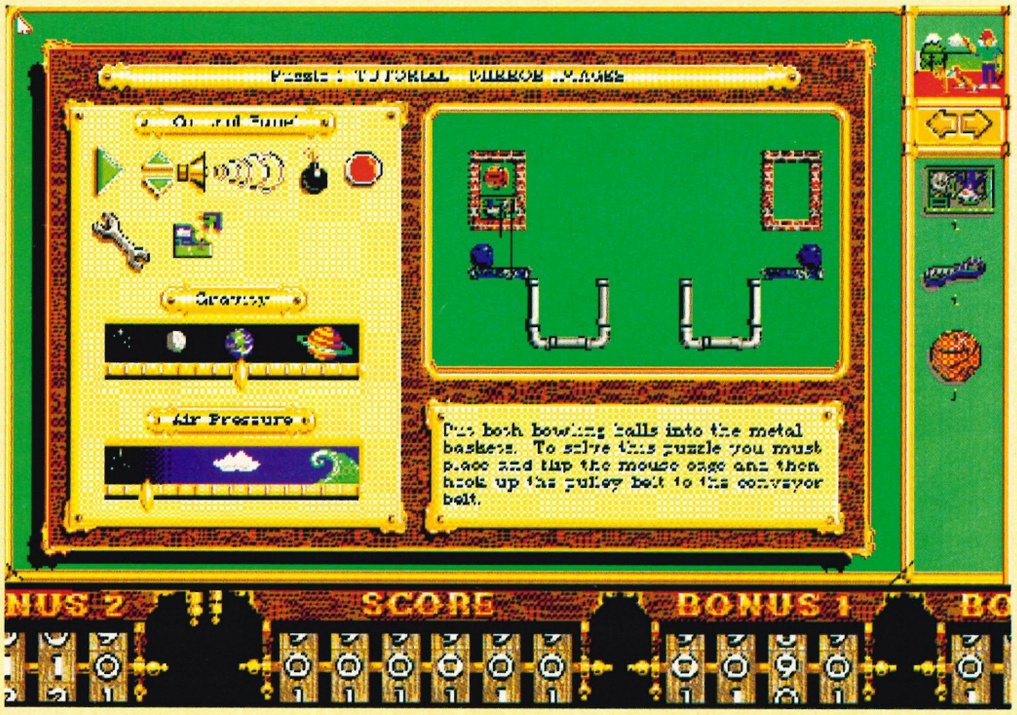
● **Trash can**
The grey icon which looks like a bin. This will return the piece to the column of equipment on the right of the screen.

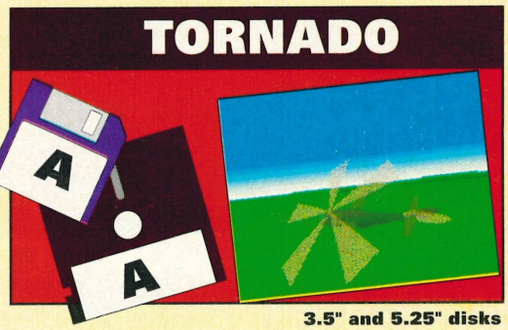
● **Red arrows**
Three arrows which once selected, flip the direction of the equipment.
Size tool Two blue arrow which changes the size of machine parts.
The normal cursor handles in the games mean:

● **Watch**
'Please Wait'.

● **Hand**
Moves objects from place to place.

At the bottom of the screen starting from the left is your score, then two bonuses. Bonus one is a timer, received if you complete the puzzle quickly. Bonus two is a normal bonus — finish the level to earn it.





3.5" and 5.25" disks

Digital Integration's Tornado flight sim is now on its way, and you can get a sneak preview of the game with this demo, comprising a tour of the game's landscape, rolling demonstration and a controllable exploration mode.

How to start

Log on to the directory in which you have installed the Tornado demo and type Tornado. The following options may be selected by entering one or more of the following switches:

/d1 Drone cycling demo
/d2 Flying demo
/e Explore mode

Explore is the interactive mode, so Tornado /e (Enter) will probably be your first choice. The following are also settings:

/f1	**Light fog**
/f2	**Heavy fog**
/n1	**Night 1 (dusk)**
/n2	**Night 2**
/n3	**Night 3**
/n4	**Night 4 (midnight)**
/o	**Overcast**
/tm	**Preset joystick sensitivity for the Thrustmaster joy stick.**

Example: to run Tornado Explore mode with light fog, type:
tornado /e /f1 (Enter)

How to quit

To quit in any part of the demo, press **Ctrl Q**

Hardware required

Any PC with VGA, although a 286 or better is recommended. Microsoft mouse compatible.

Control

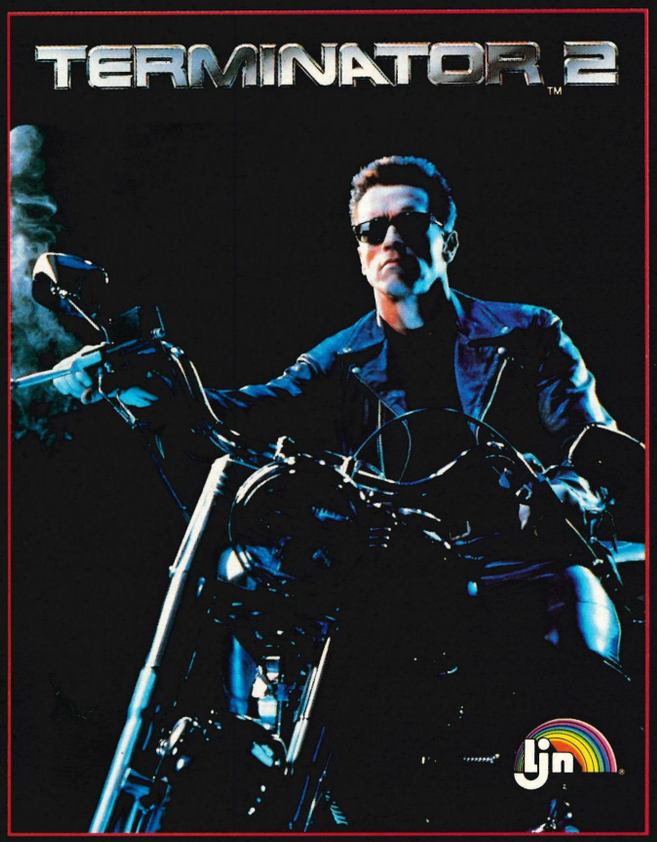
Needed only in the interactive exploration mode in which the mouse is needed to view through the map the controls are:

● **Scroll map left**
Mouse pointer to the left edge of the screen

Problems with the cover disk? See page 15 ➪

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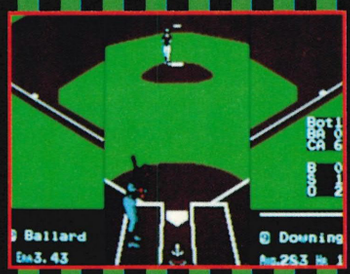
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● **Scroll map right**
Mouse pointer to the right edge of the screen
● **Scroll map up**
Mouse pointer to the top edge of the screen
● **Scroll map down**
Mouse pointer to the bottom edge of the screen
● **Zoom in**
Left mouse button
● **Zoom out**
Right mouse button
● **Switch to 3-D view**
Space bar or Enter

However, during the 3D view mode you are able to use the mouse, joystick or keyboard by pressing M, J or K. The following controls are for moving about in the 3D mode:

Pitch up and climb
Mouse: back; joystick: back; keyboard: cursor down.
Pitch down and descend
Mouse: forward; joystick: forward; keyboard: cursor up.
Yaw left
Mouse: left; joystick: left; keyboard: cursor left.
Yaw right
Mouse: right; joystick: right; keyboard: cursor right.
Re-centre mouse
Right mouse button.
Accelerate forwards
Hold left mouse button and move mouse forward; fire and joystick forward; keyboard + (plus key).
Accelerate backwards
Hold left mouse button and move mouse backwards; fire and joystick back; keyboard — (minus key).
Stop dead
Left right mouse buttons; fire joystick button two; keyboard: numeric pad 5
Switch to map view
Spacebar or Enter.
Select visual range
1 (cycle 6, 9, 12, 16, 19, 22, 25 miles)

Ground texture toggle	2
Hill texture toggle	3
Individual clouds toggle	4
Graduated horizon toggle	5
Minimise/restore visual toggle	0

There is also a Readme file on the Tornado disk, which lists the controls and handling.

How to play

Tornado has three demos for you to see. The first shows a rear angle view of a tornado flying through the landscape. The second is a viewing gallery of all the planes and helicopters taking off and flying (some really impressive angles used here). The third one is a chance for you to have a look at the 3D landscape and see close-ups of tanks, bunkers, runways, towns and much, much more.



3.5" and 5.25" disks

For Windows 3.1 users with a CD-ROM drive, this shareware program offers an alternative to the Windows Media Player with some extra options. You can catalogue your audio CDs, and play them through your CD-ROM drive (music while you work, perhaps), having first programmed the play order, if you wish, or, as with CD audio players, you can set the program to 'random play'.

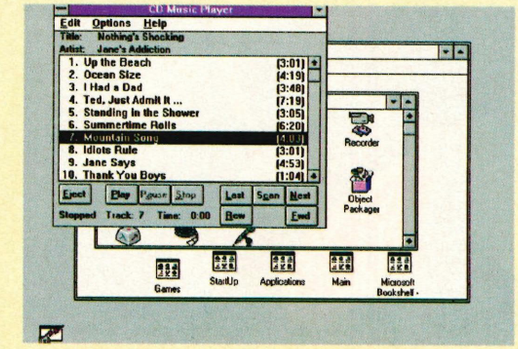
How to start

From Windows 3.1 File Manager, select Run (from the File menu). In the prompted box, type either
c:\cdmp\setup.exe (Enter)
or
c:\cdmp\cdmp.exe (Enter)

The first command will reinstall The CD Music Player in a different directory (you can delete the files in C:\CDMP later) and add a launching icon to your Windows set-up.

The second command enables you to enter The CD Music Player directly.

From here on in, things should be self-explanatory. To try it out, put a CD audio disc in your CD-ROM drive, and simply click once on the 'play' icon.



The Edit and Option menus enable you to take things further:

Edit/Current disc
Fill in the title, artist and track listing details. These will be stored on hard disk, so they're not lost when you remove the CD audio disc from the CD-ROM drive.
Edit/Other disc
Call up a track listing you've already compiled in order to use the programming options when the corresponding CD is to be played.
Options
Use the items here to play tracks in your own preferred order, reverse order, etc.
Help
How to use The CD Music Player, with details of how to register this shareware product.



3.5" disks only

This copy of Marketeer is the very latest version of the fully-featured shareware program for anyone with an address list to manage, contacts to keep track of, or direct mail requirements, and is reviewed in this month's Shareware Reviews section. It also comes with a set of desk accessories — a calculator, appointments reminder, calendar and to-do list maker.

How to start

Log on to the directory in which you installed Marketeer and type
Install (Enter)

The Marketeer files are still compressed when transferred from the cover disk to your hard disk and need further decompression. Once you have installed them, you'll be told to type **Market** to start the program. This is from the root directory (C:>), not the subdirectory you used to install Marketeer in!
NB we recommend that you accept the suggested Mktr subdirectory when you transfer the files from the cover disk, otherwise the Market command from the root directory won't work. The file Market.bat in the root directory looks specifically for the program in the Mktr subdirectory. If you have installed Marketeer to a different subdirectory (for example, Market), then

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log on to C:>\MARKET, and type
Marketer (Enter)
to start the program.

How to quit

Press Esc from the modules to get back to the main menu. Then either use the cursor to highlight the Quit option, or press Q.

Hardware required

Any PC with a hard disk.

Control

Marketeer's menus are driven by the keyboard, either using the cursor keys, or by pressing the highlighted letter of each option (usually the initial letter) to select an item.

How to use

Marketeer is centred around a simple database, containing fields for names, addresses, telephone numbers, date of last contact, and when to contact again, and a category listing (so that you can keep your work contacts separate from your Christmas card list, for instance. You could also keep this lists separate in different databases). From the main menu, you can select from the following items:

Edit prospects

Make additions, deletions or alterations to your list of contacts and their contents.

Make a selection

Mark some of your records, to be contacted.

Do a mail shot

Choose whether to write a pro-forma letter, or use one of the sample scripts for the letter format, to print address labels, or print the list in form suitable for use in Wordperfect, Wordstar or Microsoft Word.

Telemarket/Browse

Check through your records

Search

Look up specific details in your records, or specific types of category, etc.

Supporting files

Includes a list of towns and counties, checklist of the databases you've created, job titles you've used, categories defined, etc. Use these files to make sure your records are standardised.

Configuration

Here you change program parameters, the printer to be used, etc. If Marketeer seems to be operating oddly, check the configuration suits your PC before assuming a fault.

Program information

How to register this shareware product.

Hardware details

Again, check this screen before assuming a fault, if the program isn't working properly.

Accessories

Gives access to the calculator, appointment book, calendar and to-do list. Accessories can also be used from the mail-shot menu.



5.25" disks only (on 3.5" disk, Issue 15)

You are Captain Comic, intergalactic hero. Your mission is to recover three treasures, which have been stolen and hiddenon the planet of Tambi. Your task will not be easy, since you need to gather tools to increase your fighting and defensive capability, navigate dangerous terrain, and avoid or destroy a horde of deadly creatures.

How to start

Log on to the directory in which you installed Captain Comic and type Comic (Enter).

How to quit

From within the game press Esc and then Q.

Hardware required
PC with 640K RAM; EGA graphics or better.

Controls

Cursor left	Move left
Cursor right	Move right
Spacebar	Jump
Insert	Fire (after collecting Coke can)
Alt	Open door (mus be in posses sion of door key)
Caps lock	Teleport (in possession of wand)
Esc	Pause or Quit
F1	Turn sound on
F2	Turn sound off

How to use the cover disk

1. Put the cover disk in any disk drive and log on to that drive. For instance, if you have put it into drive A: type:
   A: [Enter]
2. Now type **PCR [Enter]** to load the installation program.
3. A list of programs on the disk will now be displayed. Use mouse or cursor keys to select one to install and then press Enter.
4. The program will select a drive or directory to install the program to. If you are happy with the suggested location, press the enter key and installation will begin, otherwise backspace over the suggested path and enter another one. The program will now be installed to the desired location.
5. Once you have installed all the programs that you wish to, press Esc from the main menu to return to DOS.

Helpline

If you have difficulty in getting your disk to operate, please telephone our helpline number below before returning the disk.

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LANDMARK v2.00 SPEED COMPARISON CHART

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Power meter aggregate MIPS performance increases by up to 2 times using the hardware multiplier, which also provides an overall performance of 102MHz using Landmark's latest version Speedcom 2.00 performance benchmark. This is over 3 times as fast as a 386SX - 25 CPU (see Landmark Speed Chart above). Beware of competitors quoting the older version Landmark 1.14 which can sometimes give misleading benchmarks at the high end.

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NEWS

Maxis talks to the animals

Sim development specialist Maxis chose the daunting platform of January's giant Consumer Electronics Show in Las Vegas to preview its forthcoming line-up of unusual 'life creation' programs (or, as it has now dubbed them, software toys), all of which should make it into Europe during the first quarter of 1993.

First to appear, through Maxis' latest collaborator Mindscape, will be El-Fish (pictured right), an electronic aquarium, which allows its owner to breed and mutate a whole host of exotic fish. Once developed, these new species can be kept in a custom-built aquarium featuring plants, coral, the inevitable miniature castle — and even an electronic predator in the shape of a random cat's paw.

Developed by the Russian programming team AnimaTek (which includes the legendary Alexey Pajitnov, creator of Tetris), El-Fish uses a new 3D graphics system and randomly generated music to create an effect which the publisher describes as 'hypnotic'.

For those who prefer (almost) dry land, Maxis' next home-produced life simulator swaps rippling water and fish food for fertilisers, livestock and pesticides. For all the world like a rural incarnation of Sim City, SimFarm abandons the high pressures of civic management for the more down to earth occupation of farm management.

Alongside the rustic attractions of animal breeding, crop harvesting and even the rodeo, SimFarm features some slightly less idyllic rural occurrences including pests, floods, drought and tornadoes.

Finally, a previous Maxis release, A-Train, is due for a new lease of life with the announcement of its first add-on package. The A-Train Construction Set (see page 94 for the review) allows the user access to more trains, more cities and more money.

No prices have been decided for any of these new software toys, although it is known that El-Fish is to make its first appearance next month. Further details are available from Mindscape on (0444) 246333.



IN BRIEF...

OUR PREVIOUS announcement that Sony was to team up with Nintendo for a combined attack on the CD games market (News, Issue 15) seems to have been a little premature, as reports in the Japanese financial paper The Nikkei Weekly suggest that Sony has now put its plans on 'indefinite hold'. Although no announcement has been made as yet, it would now seem certain that Sony is to go it alone by producing a CD games machine of its own.

CHANNEL FOUR'S computer games show, Gamesmaster, attracted the station's highest viewing figures for Christmas Eve, with an impressive roster of 3.1 million gaming enthusiasts reported to have tuned in. This figure equals the show's highest ever rating.

LITERARY PUBLISHER Chadwyck Healey has completed work on the first version of The English Poetry Full-Text Database CD-ROM. Featuring the works of over 200 poets (including Browning and Tennyson), this first release is only the beginning of a series, which will eventually grow to include 1,350 bards.

SPEECH INTERNATIONAL'S WAVE-Play RS sound system incorporates a parallel port sound card, DOS software, headphones and four new Windows components, all for a price of £29.99. The system is designed to offer Windows users the opportunity to customise their applications with a range of 26 samples.

YORKSHIRE TELEVISION has teamed up with Interactive Learning Productions (ILP) to produce a series of 'interactive learning' packages on CD-ROM. YTV's director of enterprises, Sarah Doole, says "Footage from a television series such as How We Used To Live can now be transferred on to CD-ROM and be used as an interactive learning device. CD-ROM learning will develop quickly and we want to be involved from the start."

STUDENTS SEARCHING for help with the new compulsory GCSE subject integrated science can now reach for LCL's revision aid program, Micro Science. Designed to take students right from the beginning (at the tender age of eight) right up to the examination itself, it can be used to brush up on either the entire subject or on the separate disciplines of physics, chemistry or biology. Priced at £24, Micro Science is available now from educational software stockists, general software shops or direct from LCL on (0491) 579345.

KOREAN PC manufacturer TriGem has launched its first easily upgradable machine. Originally supplied as a 25MHz 486SX computer, the TriGem 486mm can be quickly upgraded to either a 486DX running at 33MHz or a 486DX2 which runs at either 50MHz or 60MHz. Upgrades are carried out by simply plugging in a new Intel chip and altering an internal DIP switch (the machine's current DIP settings are displayed on screen. The standard PC comes in at £1,080, while the upgrades start at £227 (exclusive of VAT). Contact TriGem on (0753) 810808 for details.

IT EVENTS, organiser of the Windows Show 93 (to be held at London's Olympia between February 16th and 18th), in conjunction with the Computer Art Foundation, has organised a Windows-based computer art competition to be judged at the show. For further details and an entry form, contact (0483) 898989.

READERS IN THE SHROPSHIRE, Staffordshire, Warwickshire, Hereford areas (and surrounding parts of the West Midlands) no longer have to travel to London to take a look at the latest in PC equipment, as the Telford Exhibition Centre is to host the Computer Shopping Spectacular between March 6th and 7th. For more details, call (0474) 536535.

Expert opinions

A Florida-based producer of a range of lifestyle productivity programs which claims to sell one copy every 24 seconds in its native market has this month set up a division in the UK.

Expert Software of Coral Gables has chosen the UK's closest equivalent to the 'sunshine state', Ilford in Essex, as the centre of its UK operation, from where it is to distribute a range of special interest products which range in price from £14.99 to £44.99 (for further details, call (081) 551 2797).

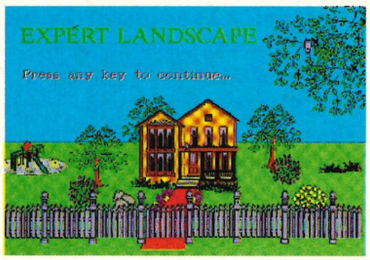
Alongside such standards as a genealogy program and typing tutor, the Expert range also includes a number of uniquely specialised programs.

Expert Home Design, Expert Office Design and Expert Landscape are three Computer Aided Design (CAD) inspired products which allow the user to input the dimensions of their own home, workplace or garden and proceed to conjure up any layout of his or her choice. Each features a library of standard design elements and supports most common printer types, while Home Design comes in both DOS and Windows configurations.

Expert Maps and Expert Travel Planner are detailed reference works featuring full-colour images (although the latter has a decidedly US bias, and may not therefore be of much use to the average UK traveller), while Personality Expert, Expert Astronomer and Expert Fortune Teller are designed for those with more mystic tastes.

The breadth of the Expert range is demonstrated by some of the remainder of the line-up which includes a DTP package, Expert Publisher, a financial aid program, Expert Finance, a word processor for CV construction, Expert Resume Writer, form and label printers, screen savers, a DOS tutor, a paint package and an animation program.

Two products from the original US range which were deemed unsuitable for UK release in their original form are Expert Will (a will-creation program which doesn't comply with European laws) and Lottery Expert (which is designed for use with the US State lottery). Both titles, however, may eventually make an appearance in revised form.



Microsoft heads for the sky with Works offer

Following last month's multiple product announcements (see News, Issue 16), Microsoft continues its campaign to fill the hard disks of the nation's home PCs with the announcement of a high-flying sales promotion for its integrated software suite, Microsoft Works.

Any customer purchasing a copy of either Microsoft Works 3.0 for MS-DOS or Microsoft Works 2.0 for Windows before the end of February will receive a double bonus: not only will they receive two flights to the USA for the price of one (with Continental Airlines), but they'll also get a free copy of Microsoft's Flight Simulator 4.0.

All versions of Microsoft's award-winning Works package feature a word processor, spreadsheet (with business graphics) and database, while Flight Simulator 4.0 featured strongly in PC Review's round-up of PC flight simulators and is widely regarded as the definitive civilian flight simulation package.

Restrictions applying to the offer are that it must be claimed from Microsoft by March 31st and also that tickets must be used on or before June 15th.

For further information on the Works promotion, call Microsoft's Customer Response Centre on (0734) 270000.

Shows start up again

Now that the dust has settled in the wake of the major computer shows which took place prior to Christmas, it's time once again for the smaller events to rear their heads in an attempt to soak up the die-hard exhibition visitor.

First off the blocks will be the 7th International Computer Show, which is scheduled to take place at London's Wembley Conference and Exhibition Centre between February 19th and 21st. The show, which has already attracted more than 150 exhibitors from Europe and the USA, will be divided into four parts, featuring games, the 'home office', education and music.

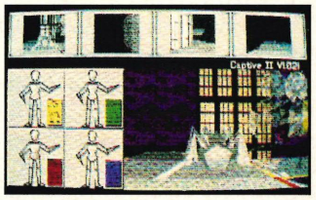
Next on the agenda is the Ideal Electronic Games Show, which will run between March 18th and April 12th as part of the giant Ideal Home Exhibition at its customary Earls Court venue.

For more information on the above, contact Westminster Exhibitions (International Computer Show) on (081) 549 3444 and the Daily Mail Ideal Home Exhibition on (0895) 677677.

COMING SOON



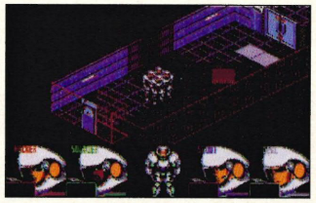
Ultrabots from Electronic Arts simulates life inside huge robotic war machines (a la Battletech). Cause untold damage to other like-minded mechanoids next month.



Captive 2, the sequel to Mindscape's award-winning RPG, is to make its escape next month. Once again designed and developed by Tony Crowther, the sequel is set in the 29th century and takes in a grand total of 4,096 randomly-generated and interlinked cities.



Featuring 'Real Time Visual' (RTV) technology and a 'lightning fast interface', SSI's horror fantasy adventure Veil of Darkness is due to set spines tingling from next month onwards. Set in 1930's Transylvania, VOD pits its hero into a battle with an evil vampire and his unspeakable hordes.



Following on from the successful Shadow Lands, Krisalis bring us the sci-fi sequel Shadow Worlds. Again programmed by Teque, you get to control four space-suited commandos as they rid an inter-galactic laboratory of fearsome alien intruders.

New noise from Roland

Professional music hardware specialist Roland is to complement its industry-standard MT-32 sound module with a new arrival, the SC-7.

Like the MT-32 (and its LAPC-1 sound card counterpart) the SC-7 has been designed with the serious musician in mind — a factor which is reflected in its £335 price (inclusive of VAT).

Fully compatible with the General MIDI (GM) standard (the recommended standard for MIDI within a Multimedia PC, as put forward by Microsoft), the SC-7 is compatible with any PC system from a 286 upwards and connects directly via the serial port.

In all, the module features 128 GM sounds, six drum kits, 16-part multi-timbral capability and 28-voice polyphony. Featured effects include digital reverb, delay and chorus.

In its basic 'starter kit' form, the SC-7 comes bundled with Band in a Box, Turbo Trax, MIDI sequencing and compositional software, along with a disk of MIDI song files. Separate packs are available for users of both DOS and Windows.

Although it is designed primarily for use in music creation, the SC-7 also has uses in leisure, business and multimedia applications. Further details on the complete range of Roland PC add-ons can be obtained by calling the company on (0252) 816181.

LucasArts introduces the 'talkie'

Leading adventure and simulation producer LucasArts Games has made a strong commitment to the emerging CD-ROM games field, with the announcement of three new compact disc-based programs.

Scheduled for a simultaneous release with its floppy disk-based counterpart, the CD-ROM version of Day of the Tentacle: Maniac Mansion 2 will differ from the conventional release in that it will incorporate full speech throughout.

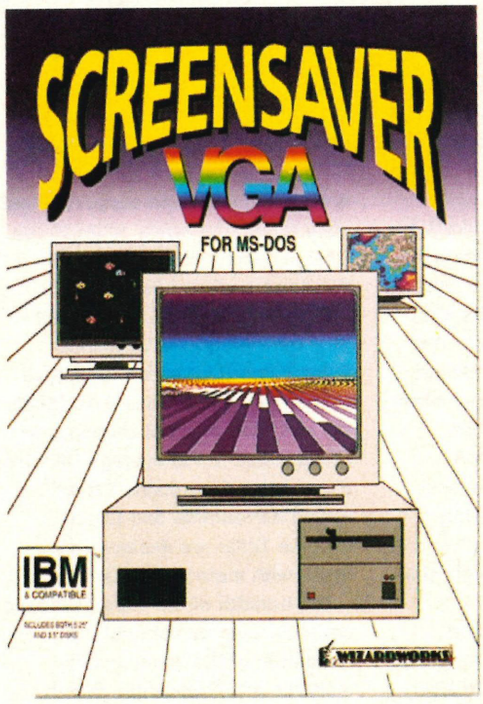
A full 'talkie' soundtrack is also offered in the CD incarnation of LucasArts' recent hit, Indiana Jones and the Fate of Atlantis. Although the voice is not provided by Harrison Ford, the developers do promise that this digital Indy will preserve the feel of the films, right down to uttering his ubiquitous catchphrase, "Trust me".

Finally for CD-ROM, 15 levels of arcade-style action is promised in Star Wars 3D. Although no finished title has been decided for this release as yet, it is known that this 'game of the film' will once again include constant speech, along with many video scenes digitised from the original film.

The first of these three releases will be available later in 1993. For more details, contact LucasArts' UK publisher US Gold on (021) 625 3366.



Wizard sounds



SoundWav 1 will add a little audio colour to any sound card-carrying and Windows-equipped IBM-compatible.

Something which Macintosh and Windows users already have in common are the colourful screen savers which grace their screens whenever they lie idle for a couple of minutes or more. Now, once again from Wizardworks, comes Screen Saver VGA, a similar utility, designed for use with DOS.

Using a system called 'memory swapping', this utility switches from your current program to a separate graphics program, sparing your monitor from the iniquities of phosphor etching.

Users have the impressive visual facilities to create their own pictures for use with the saver, or can choose from 13 ready-to-use images which include a spinning colour wheel, fireworks and the intriguingly-named Lava Lamp #1.

Screen Saver VGA requires a 386-equipped machine or higher, with 2Mb or more of RAM and 1.2Mb of hard drive space to spare. Needless to say, a VGA card and monitor are essential, as is DOS 3.0 or greater.

Both Wizardworks utilities are available now, with SoundWav priced at £49.95 and Screen Saver VGA £29.95. Further details from UK distributor GST, on (0480) 495495.

Wizardworks, a software development crew from the decidedly non-Silicon Valley location of St Paul's twin city Minneapolis (home of notorious purple popster Prince), looks set to take on California's best with the release of two user-friendly utilities for PC users.

Those of you who've looked on in envy as your Macintosh-owning friends' machines have exclaimed, "It's life, Jim, but not as we know it!", or some other digitised soundbite, will be happy to hear of the release of Wizardworks' SoundWav Pro 1 for Windows.

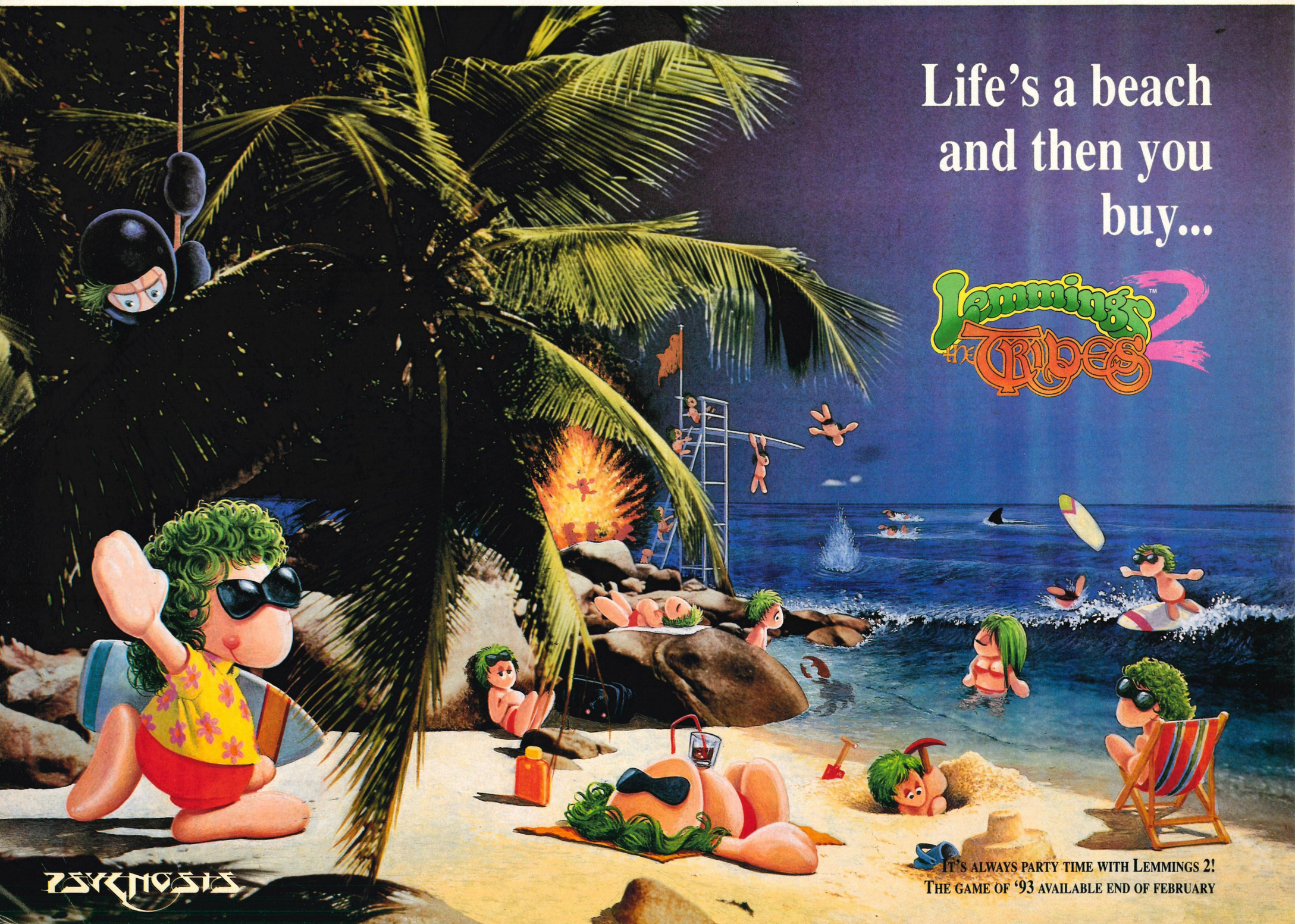
Including such famous quotes as "Go ahead, make my day" and Th', th', th', th' that's all folks!",

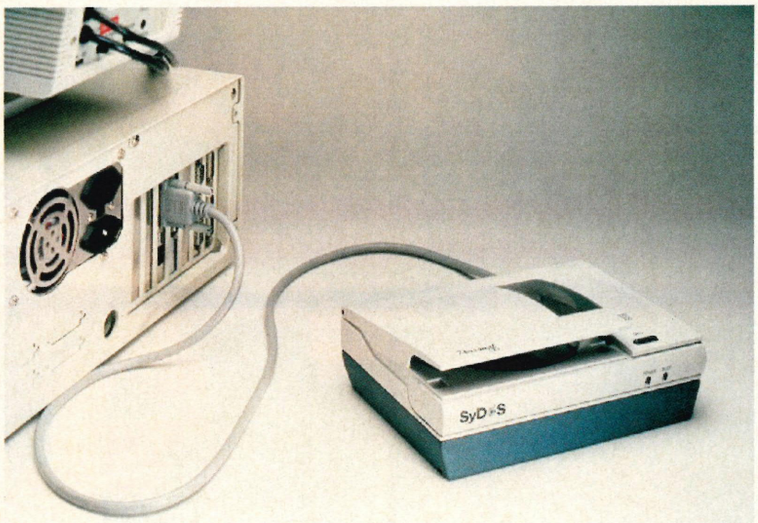
Glasgow pirates scuppered

The concerted campaign against the sale of illegally copied software carried out by the UK's software publishing community scored a notable success last month, as a major raid on Glasgow's Barrowlands market produced a haul worth in excess of £400,000.

The raids, which were a joint effort between the Federation Against Software Theft (FAST) and the European Leisure Software Publishers' Association (ELSPA), resulted in the closure of five market stalls and at least one prosecution. Further raids on other known centres of illegal software sales throughout the year.

It's estimated that software theft costs UK publishers up to £50 million every year.


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PSYGNOSIS
IT'S ALWAYS PARTY TIME WITH LEMMINGS 2!
THE GAME OF '93 AVAILABLE END OF FEBRUARY



CD-ROM drives: this time it's personal

Florida-based SyDOS, a division of removable hard drive specialist SyQuest, has developed and produced a new portable CD-ROM player which does away with the need for difficult and time-consuming drive installation.

The SyDOS Personal CD drive is designed to plug directly into the parallel port of any IBM-compatible, and requires no special interface card, hardware peripheral or external power supply (making it deal for use with portables as well as desktop PCs).

Priced at £249 (or £425 when bundled with the graphics package CorelDRAW), the drive incorporates a through-port to allow both it and a printer to work from a single parallel interface.

Weighing in at only 1.33 Kg and measuring 6.5cm x 15cm x 21.4cm, the Personal CD claims an average access time of 850 milliseconds, and can transfer data at up to 176.4K per second. One drawback is that the drive is not compatible with the MPC multimedia standard, but an upgrade is promised and will be available within 60 to 90 days.

Further information on the Personal CD and all other SyDOS products (including its range of removable cartridge disk drives) is available from the firm's Scottish office on (0800) 526559.

Do it yourself PC

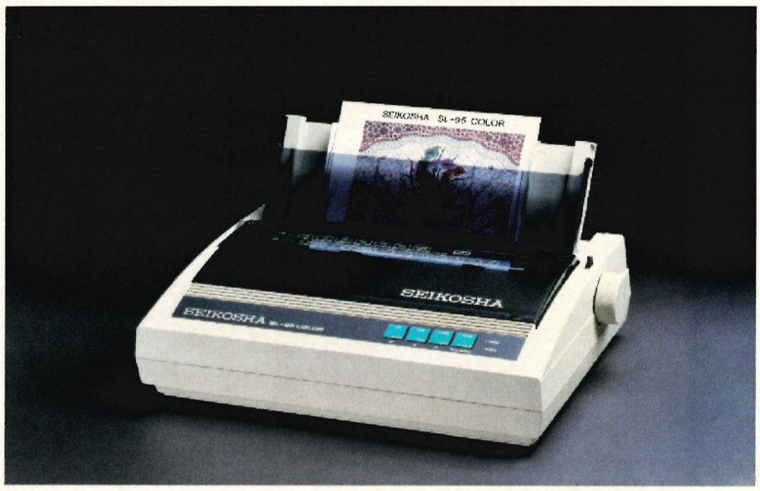
A new range of DIY kits supplied by Maplin Electronics will allow any PC enthusiast equipped with a screwdriver to assemble his or her own fully-functioning 286 or 386 IBM-compatible machine. Each kit features a full range of components, cables and instructions, and as all of the boards come pre-assembled, there's no need for any soldering or tricky chip installation.

There are four kits in all, the basic specifications for which include two serial, one parallel and one games port, a 1.44Mb 3.5-inch floppy drive, a 43Mb hard drive, 1Mb of memory (expandable to 16Mb), six expansion slots, a 200W power supply, desk-top case, extended keyboard and DOS 5.0.

On the graphics front, each kit includes a VGA graphics card with 512K of RAM built-in (which supports 256-colour graphics at a resolution of 800 x 600). The user has a choice of either a VGA monochrome or Super VGA colour monitor.

Prices for the finished computers range from £505 for a mono 286 to £675 for a 386 with colour monitor (prices are inclusive of VAT).

The kits are available either from any Maplin shop, or direct from the manufacturer via mail order. For further information, contact (0702) 554155.



Seikosha cuts colour

Seikosha has raised the stakes in the low-cost printer field, by introducing what it claims to be the first 24-pin colour dot-matrix model with a sub-£250 price tag.

The new printer, the SL-95, can operate at speeds of up to 240 characters per second (cps) in 'super-draft' mode, 192 cps in draft mode and 64 cps at letter quality.

Other attractions offered include a 43K buffer, a range of nine separate fonts, a number of paper-handling options and a 12-month warranty (which can be upgraded to an on-site service for an extra £10). For further details, contact Seikosha on (0753) 685873.

Kuma shows its basic instincts

Specialist book publisher Kuma continues to service the needs of the PC enthusiast, with the release of two new volumes this month.

For users of the program-creation application Clipper, there's Will Chapman's Databases Using Clipper 5.01, a 350-page step-by-step guide through the creation of Databox, a versatile database program. The book is designed not only to teach the reader how to use Clipper, but also so that he or she can create a working utility program by following its lessons.

Staying with this slightly 'techie' theme, Kuma's second offering this month is The Utter Novice Guide to GW Basic. Written by Bill Aitken, this 246-pager assumes no previous knowledge of programming.

Both books are available now, priced at £16.95 and £14.94 respectively. Further details are available from Kuma on (0734) 844335.

Kores has its fill

Users of ink-jet printers may be interested to check out a new cartridge replacement option which, it's claimed, will not only save them money, but is also friendly to the environment.

Essex-based Kores Nordic has introduced a series of ink-jet cartridge refills for the most popular printer models, including those from Hewlett Packard and Canon. Packaged in pairs, the refills will cost roughly half the price of a conventional replacement cartridge.

While there are no firm figures available as to how many times a cartridge can be refilled, Kores estimates that any cartridge is capable of sustaining up to eight refills without suffering any loss of print quality.

For details of price and availability, call Kores on (0279) 454455.

A320

A·I·R·B·U·S



On final approach to the United States

Developed in corporation with

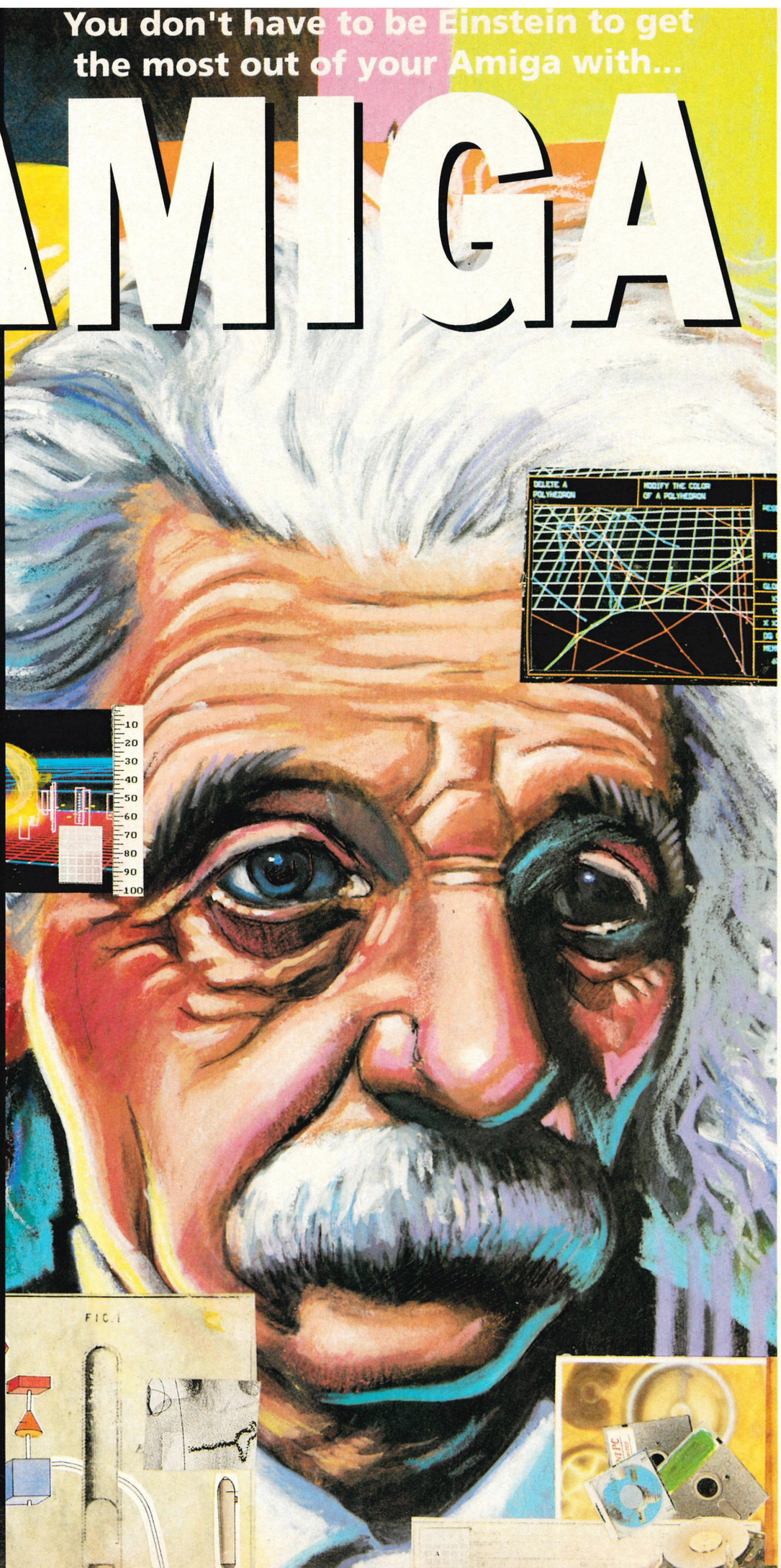
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WIN A new Swift Colour Printer

No, not a speedy printer – although it'd be hard to find one that is faster or quieter. The Swift 240C colour dot matrix printer from Citizen (pictured above) has been designed with a printing speed of 240 characters per second and a maximum noise output level of just 43.0dB, one of the quietest dot matrix on the market. Gone are the days of speaking to your partners through megaphones while printing out your latest letter to the bank manager.

Apart from the low noise level, the Swift 240C contains an easy to use Command Vue control panel with an LCD display, the ability to 'Quarter print' – ie, print four A4 pages of data on to a single sheet – and an automatic set-up routine that cuts out the tiring process of configuring your computer. All 240Cs print in full colour, allow a maximum of nine different fonts to be used (two of which are resident in the machine) and in any size from 8 to 40 point.

And one of these ultra-cool babies could be sitting by your desk courtesy of PC Review and Swift. All you have to do is enter this competition and wait for that letter of congratulation to pop through your letter-box. And even if you don't win the first prize you may still end up with our spankingly great runners-up prize of a Swift 200C printer (pictured right), an entry level version of the 240C.

Write your answers on the form and send it to us at:

Swift Printer Competition
PC Review
EMAP Images
Priory Court
30-32 Farringdon Lane
London
EC1R 3AU

How to enter

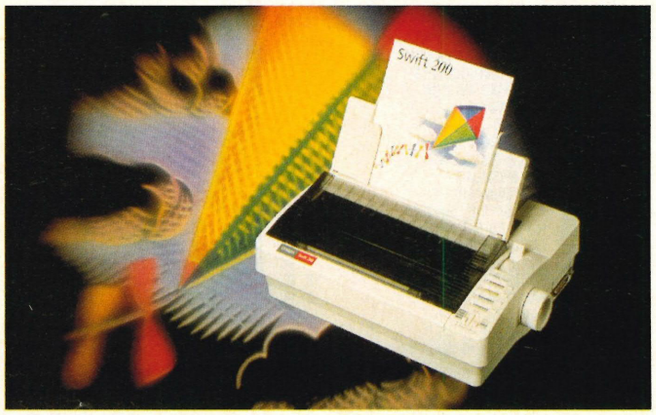
Couldn't be simpler. Since the Swift 240C is one of the quietest dot matrix printers available, we want you to answer these noise-related questions:

1. What noise is also the name of a famous children's game?
a Kerrang!
b Ker-plunk!
c Ka-blam!

2. What is the name given to the art of adding sound effects to a film's soundtrack?
a Splicing
b Interlacing
c Dubbing

3. Which humour magazine was renowned for its use of bizarre written sound effects?
a Cracked
b Mad
c. The Beano

Entries in no later than March 25, 1993, or they won't be considered. The results will be announce in the July issue of PC Review.



Rules

The winners of the Swift 240C and the Swift 200C will be selected after the closing date.
No entries received after the closing date will be considered.
Only ONE entry per person.
No employees of EMAP Images or Citizen Europe are eligible for entry.
The editor's decision in all these matters is unswervingly final.

Win a Swift printer

The answers are as follows:
1.....
2.....
3.....

Name.....
Address.....
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.....
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☐ **Tick this box if you do NOT wish to receive any further information from companies associated with this competition.**

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Official RRP (excl. VAT)	£945	£1,179	£1,099	£1,099	£1,195
Maximum resolution in dots per inch	300 x 300	300 x 300	300 x 300	300 x 300	400 x 400
Windows 3.1 Driver @ 400 dpi	-	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	5ppm	6ppm
Straight Paper Path	YES	-	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	-	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES	YES
Standard RAM	0.5Mb	1Mb	1Mb	1Mb	2Mb
Full A4/300 dpi graphics with standard RAM	-	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	33 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	20 secs	<15 secs
Document Description Language included	-	-	-	-	YES
Flash ROM	-	-	-	-	YES
Upgradable Firmware	-	-	-	-	YES
IC Card Slot	YES	-	-	YES	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	0	8
Resident Bit-Mapped Fonts	11	14	14	16	14
AGFA Intellifont Scalable Font Technology	-	YES	-	-	YES
HP LaserJet III Emulation Included	-	YES	YES	-	YES
EPSON FX Emulation Included	YES	-	YES	-	YES
IBM ProPrinter Emulation Included	-	-	YES	-	YES
Standard Tray Capacity	100	70	100	200	100
Protective cover on standard tray	YES	-	YES	YES	YES
Cost per copy**	1.65p	2.00p	1.71p	1.64p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-131	60-157
Able to print on OHP Film	YES	YES	YES	YES	YES
Able to print on card (157gsm - Manual Feed)	YES	-	-	-	YES
Standby -Noise Level	<40dB	31.7dB	<35dB	38 dB	<38dB
Printing -Noise Level	<50dB	43.3dB	<46dB	50 dB	<48dB

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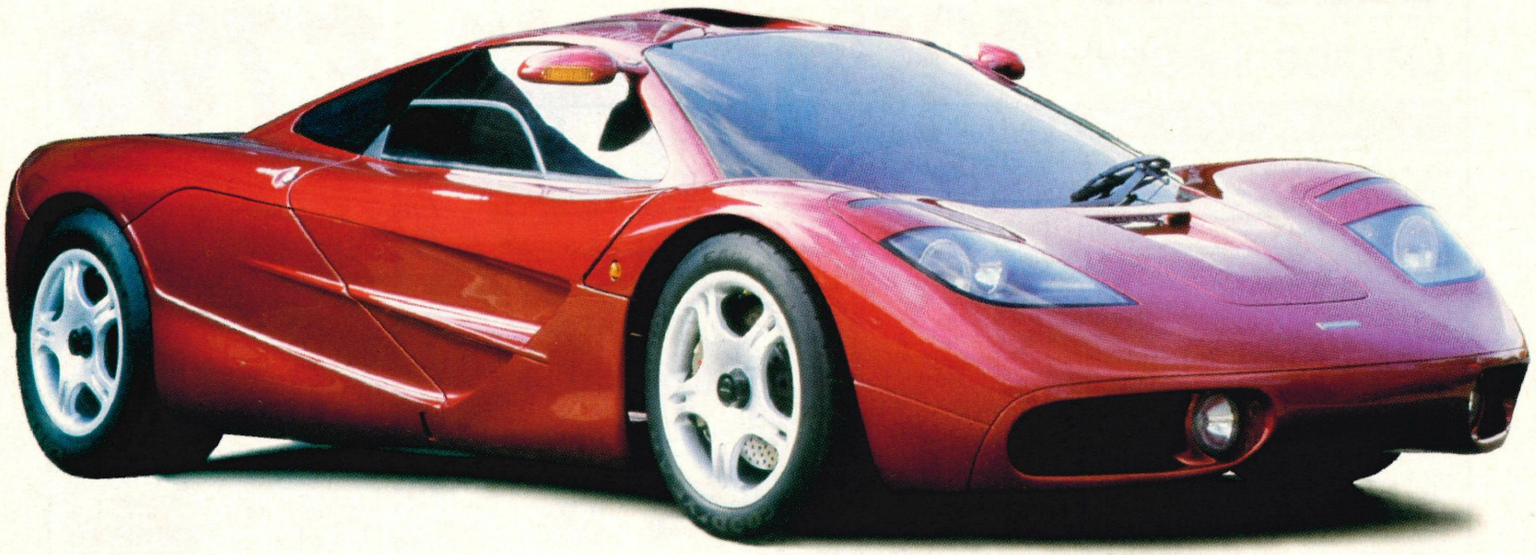
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PUT THE PEDAL

Paul Presley's driven everything from Formula One racing cars to the latest prototypes from the makers of Lamborghini. Strange, considering he doesn't have a driving licence...

I've always wondered why The Cannonball Run was never made into a computer game. It's perfect conversion material; a wide choice of cars with plenty of different features, a long winding course from one side of America to the other, plenty of big name stars to help sell the product (plus it's about time Burt Reynolds appeared in a computer game).

Still, while the celluloid Chevys continue to elude us, the home PC owner certainly isn't short of plain old car simulators. With over a dozen racers currently available, letting you drive everything from Ferrari F40s to Ford Cosworth rally cars, you can now add a glimmer of truth to the age old chat-up line, "Hey babe, my other car's a Porsche".

Looking inside a driving simulator is in many ways similar to road testing a car. You're checking for performance, reliability, sturdiness, optional extras, good pricing and compatibility with your specifications. There are plenty out there, the problem is deciding which make is right for you.

Are you after a long-lasting drive that will see you through a good few years? Or do you want something that makes a lot of noise and leaves skid marks on the ozone layer? Or do you want both? Greedy, aren't you?

So how do you know just which game is the one for you? Which is the mint condition '64 E-Type and which is the '79 Mini Clubman with 50,000 on the clock and furry dice on the mirror? PC Review has taken a wide selection of driving games, featuring rally cars, sports and performance cars, and Formula One cars for this guide to the best. We've identified three categories of game and awarded the winners and runners-up in each plus a recounting of how the results were ascertained. What could be fairer?

MOTOR RACING SIMULATORS



Formula One Grand Prix



Grand Prix Unlim

Motor racing simulators

The contenders:

Formula One Grand Prix, MicroProse, £44.99
Grand Prix Unlimited, Accolade, £39.99
Indianapolis 500, Electronic Arts, £24.99
Lombard RAC Rally, The Hit Squad, £9.99
Mario Andretti's Racing Challenge, Electronic Arts, £29.99

You'd be forgiven for thinking that this race was over before it had even started, once MicroProse's challenger drove on to the grid. Formula One Grand Prix has caught the eye of critics everywhere with its sheer playability and thrilling atmosphere. But you shouldn't write off everyone else straight away. In some ways it's the Nigel Mansell of the simulation world. It may be the fastest of them all but it's also the most expensive and the most demanding. Removing various levels of detail from the graphical side of the game lets you retain the necessary speed to simulate life in the pit lane, but it does mean you lose some of the atmosphere generated. On a fast PC, F1GP is simply the best. On a slower machine there's a much better game slip-streaming past.

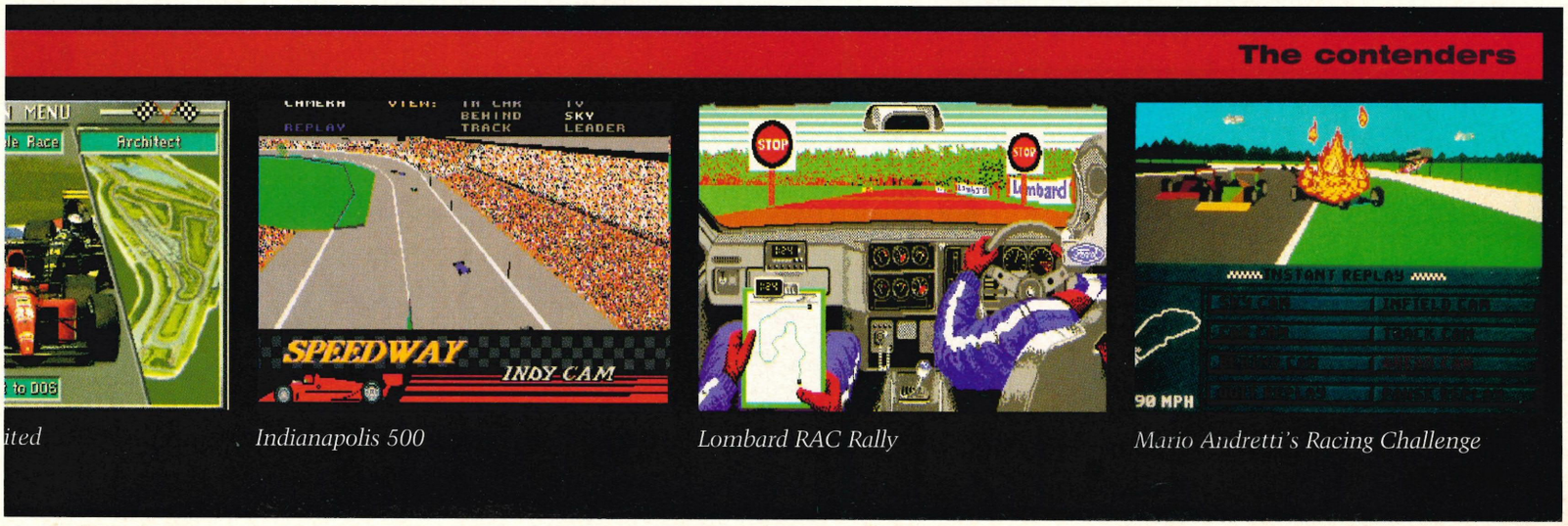
Indianapolis 500 (or simply Indy 500 to close friends) is over four years old and is still one of the all-time greats. Yes, you only get one course. OK, so the course is nothing more than a simple oval and all right, there's little or no presentation to speak of, but this is really the best all-rounder. Excellent value for money in its present form (it's been rereleased so many times you'd think it was a Status Quo farewell tour), just load it up, crank up the speakers connected to the Roland and listen to those engines roar and the tyres squeal. Atmosphere is created at such a pace that Electronic Arts might have invented the word. What's more, the actual racing is just as good. An oval course may not sound challenging but try driving around it with 32 other cars all perfectly willing to smash right into your rear end to get you out of their way.

The crashes are the other key factor to the captivating gameplay. With so many cars on so small a track, one car colliding with another is sure to set off a chain reaction, ending with a multiple-car pile up. Replayed on the handy-dandy eye-in-the-sky cameras, the result is simply spectacular. Yes, I know it's sick and/or twisted, but I'm willing to bet you can't resist giving it a go. As I write I've just had a quick 10 lap race and of 33 cars, 13 remained and while the first few laps were like Deathrace 2000, the last few were like the closing scenes of Rollerball. Cars lay in ruins everywhere and it was more challenging trying to weave in and out of them than to worry about the other, still racing, drivers. And, believe it or not, this really is fun *and* it's happening on a 16MHz 386SX!

Mario Andretti's Racing Challenge is also an old game with a fairly good pedigree, although it's not going to score many points against the McLaren team of Indy and F1GP. As it also came from Electronic Arts and had much the same look as Indy 500, it was wrongly hailed by some as the sequel. This is an insult and a pity as it is nowhere near as good as Indy and doesn't have the same kind of lasting appeal guaranteed to keep it in contention with today's racers, despite having a plethora of new tracks, cars and racing styles to play with.

It's not a bad game compared to some and plays quite well on most machines. With the variety of racing styles (dirt track, Formula One, stock car racing, etc) you are constantly challenged and I can't remember one race that was similar to another. Unfortunately that's the only challenge. The rest of the drivers don't put up much of a struggle and the graphic presentation leaves a lot to be desired. Its main trouble is atmosphere.

TO THE MICRO



ited *Indianapolis 500* *Lombard RAC Rally* *Mario Andretti's Racing Challenge*

PUT THE PEDAL TO THE MICRO

Graphics can be surpassed and sound quality can always be improved, but a game that generates a good atmosphere can never be dulled. Whereas Indy 500 is still absorbing enough to rank up there with today's big names, Mario just doesn't have the same appeal and for a few quid more you can purchase an infinitely superior game (ie, Formula One Grand Prix).

Sticking with the big name racers, Road & Track Presents: Grand Prix Unlimited is next past the chequered flag. This recent title was released just in time to steal F1GP's thunder and certainly had the potential to do so. Unlike MicroProse's effort, GPU uses the real names of the Formula One drivers, contains all of the courses and doesn't bog itself down with too much technical detail. Plus it has the backing of the well respected racing enthusiasts' journal Road & Track (what? Must be American). How could it fail?

Well, it does – simply because it looks and feels more like an arcade racer than a serious simulation of the sport. People may mock the size of MicroProse manuals, but at least when you flick through one you certainly feel as though the game is going to be a competent simulation with plenty of detail. This is all too familiar if you've ever pumped fifty pence pieces into one of those hulking great machines at the local amusement emporium, the ones with the big seats and the ear-blowing rock music accompanying you around the track. A good thing, I suppose, if what you're after is just a simple fun race game and not a complex look at the life of a Formula One driver. If it's simplicity you want, here's where you'll get it.

Finally in this first heat is the ageing classic Lombard RAC Rally. This is different to the rest in that you're not required to drive flat out around man-made circuits in a car that looks like it should still be half way along the production line. This puts you in a gruelling rally across muddy terrain in the kind of car that most people simply use to get to work and back each day.

Lombard is actually older than Indy 500 and clearly wasn't designed with the PC in mind. This is a throw-back to the days when PCs didn't play games and there were just one or two companies bothering to convert their all-action Amiga and ST smashes into very poor PC products. Lombard shows all of these signs and while different to the others in style, it isn't a case of being original enough to merit any worth. It's old, it's dated, and frankly it's had its day.

Results:

1st Formula One Grand Prix
2nd Indianapolis 500
3rd Road & Track presents Grand Prix Unlimited
4th Mario Andretti's Racing Challenge
5th Lombard RAC Rally



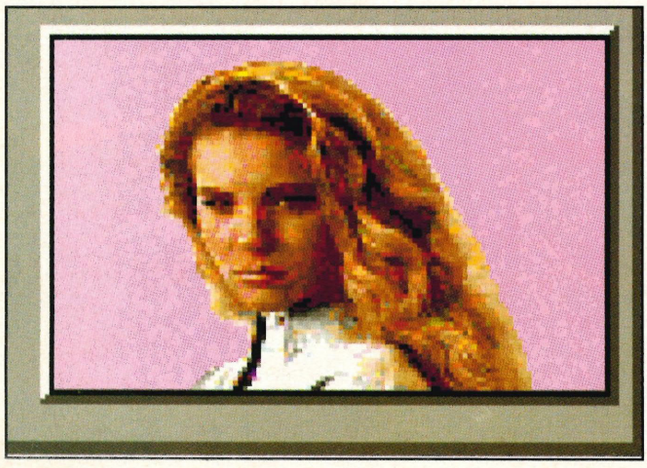
Stunt cars

The contenders:

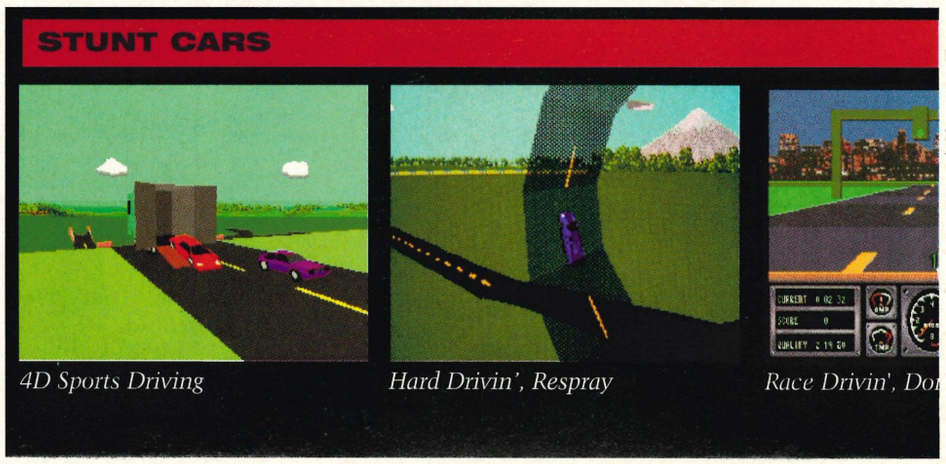
4D Sports Driving, Mindscape, £19.99
Hard Drivin', Respray, £7.99
Race Drivin', Domark, £29.99
Stunt Car Racer, Kixx, £7.99
Stunt Driver, Spectrum Holobyte, £14.99

So racing around the streets of Monaco at excessive speeds isn't for you then? Perhaps you'd prefer to try your hand at giant loops, jumping bridges and generally behaving like the Dukes of Hazzard on heat? Ever since there have been driving games there's been the opportunity to take perfectly good cars and crash them in any number of silly ways. Hard Drivin', the coin-op smash, revolutionised the arcade driving game by introducing some of the silliest ways of crashing ever.

Since it's the original stunt car game it's now pretty limited compared to some of the others, only having two tracks and a limited choice of cars to drive. Hard Drivin' spawned a sequel



Get a car and you get the girls? Perhaps surprisingly, most of the women found in computer driving games are the ones driving the opposing cars and they're none too pleased if you beat them.(4D Sports Driving, below).



4D Sports Driving *Hard Drivin', Respray* *Race Drivin', Do*



but the most notable addition of late has been Race Drivin', also an arcade conversion and also pretty limiting. Three more courses to choose from with even more hair-raising twists, turns and terrors. Unfortunately Race Drivin' also contains the one element that marred all the others in the series. The steering is completely wrong and you tend to spend more time sliding off the course than driving round it.

A much better control method is found in Stunt Driver, but then it does come from the people who brought you Falcon 3.0, so you'd expect something pretty decent. In fact, of all the stunt driving games I've tested, this is easily the most enjoyable and is a must for anyone that wants to perform some fantastic controlled skids. Even in CGA, Stunt Driver is a joy to play with uncluttered screens and super-smooth 3D scrolling. You can even create your own tracks once you've mastered the ones provided and linking two PCs together and playing head to head with a friend is superb fun.

The only negative part about it is that you are limited to just one car — a '66 Shelby Mustang, which is great for an American audience but leaves anyone with more exotic tastes a little bit stuck. We don't play these games just to smash up one type of car. We buy these things expecting to be able to demolish Ferraris, Lamborghinis and Porsches. To wreck beyond repair Rolls Royces, Lotuses and Bentleys. To pound, prang, crumple, crush, flatten, pulverise and annihilate Jaguars, Mercedes, Bugattis and my personal favourite, Corvettes.

Most of this is possible in 4D Sports Driving. If you want to wreck a good-looking sports car, this is the place for you. Plenty of varied and interesting courses to drive on, a comprehensive course editor to build your own death traps with and all the fun of trying to beat the computer's ridiculously low lap times. The control isn't as good as Stunt Driver and neither does it feel quite as realistic, but it's a lot more fun.

There is the odd dodgy moment when it comes to the graphics, and occasionally you get cars that slide into each other (giving a new meaning to the word convertible) or you'll see walls disappear from buildings if you get too close, but otherwise there's little to be said against it. The track editor is a particularly nice tool and it's possible to build some of the biggest, most complex stunt courses known to mankind. I actually made one so large it took over 45 minutes just to complete one lap. Even in a Lamborghini.

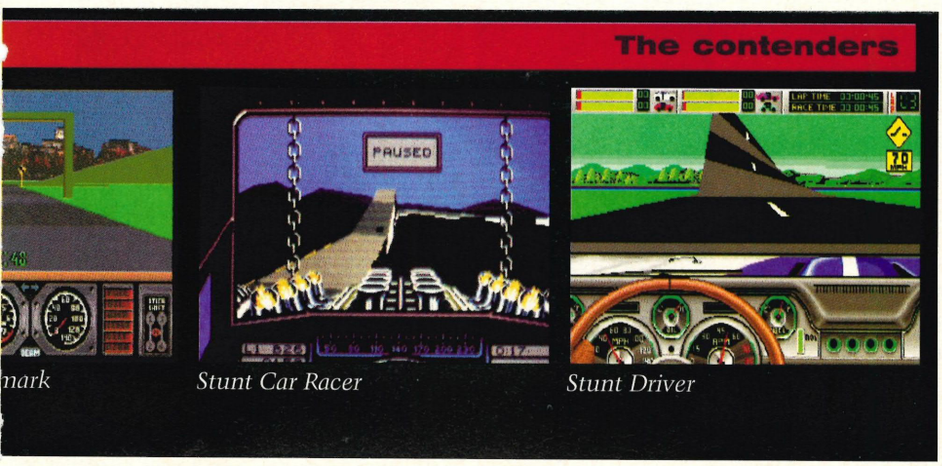
Less complex but infinitely stranger is Stunt Car Racer, an early title from Formula One hero Geoff Crammond. No simple tracks or standard obstacles here; instead you drive what can best be described as a customised dragster around an elevated course, jumping gaps, banking around corners and doing your damnedest not to fall over the edge. Stunt Car Racer has grown to be something of a cult in the world of computer games. A lot of people really love it, a lot of people really hate it, but most just treat it with a certain sense of indifference. I tend towards the latter of the three but I can appreciate its finer points. It's certainly original and I don't think I've ever seen anything else come along since that has really tried to emulate the thing, plus it's very well programmed, the graphics are very smooth and you get a good feeling of speed (when you aren't plummeting to a painful demise after missing that last corner). Sadly I can't muster a sense of longing about the game and in my mind its time has passed. There are more entertaining things to do with cars and this just doesn't have the power to draw me away from those pursuits.

PUT THE PEDAL TO THE MICRO

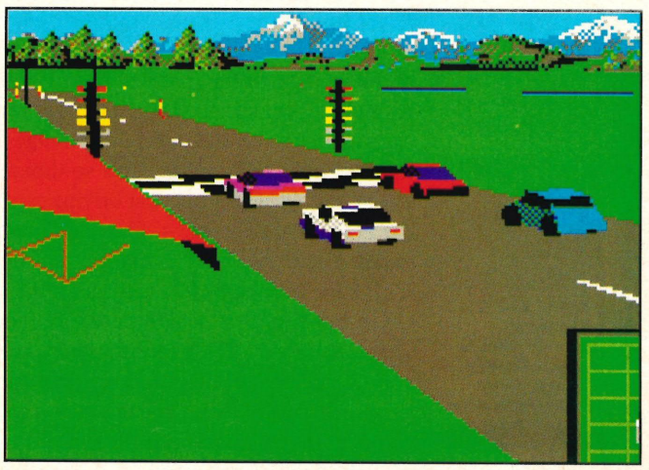
Results:

1st 4D Sports Driving
2nd Stunt Driver
3rd Stunt Car Racer
4th Race Drivin'
5th Hard Drivin'

Such a nice sight. Four brand new cars, tuned to perfection, raring to go. Pity by the end of the race they'll look like they've had a close encounter with a bulldozer.



nark *Stunt Car Racer* *Stunt Driver*





Car and Driver *Test Drive II* *Test Drive III*

Test driving

The contenders:

Car and Driver, Electronic Arts, £34.99
Test Drive II — The Duel, The Hit Squad, £9.99
Test Drive III — The Passion, Accolade, £29.99

At last. The closest I'm going to get to realising my initial wish for The Cannonball Run computer game is with Test Drive III — The Passion. Take one of the top sports cars of today straight off the production line and drive it from one side of America to the other, racing against similar prototypes. You've got to be the quickest past each checkpoint to win the game, but at the same time watch out for police patrols and speed traps, all of whom slow you down, pull you over and give you a spot fine or a ticket. Contend with weather conditions (including rain with actual raindrops – use those windshield wipers!), narrow mountain roads, regular traffic, night time driving. Everything you can think of is here, right down to choosing your own route.

This is also the case for its predecessor Test Drive II — The Duel. Take a top sports car straight off the line and push it to its limits on long, winding, American roads. Having been out for some time now, TD2 doesn't have quite the same sparkle, the same spit 'n' shine to it that number three does, but since you can now buy it on budget it's not such bad value. Imagine owning the most prestigious performance cars in the world for a tenner. Sigh, it's a dream but it's a nice one.

You can certainly see how TD3 has evolved from TD2. The same tricky control system is used and it manages to stagger over the line between realism and arcade driving with about as much certainty as a drunk driver blowing into a breathalyser. I'm quite amazed, not just at the Test Drive series but at any driving game that doesn't have a good control system. I mean, how can you mess it up? You push left on your control device and you turn left. Push right and you turn right. Leave it alone and it returns to the middle. What it boils down to is sensitivity and the way the program decides how much the angle of your car's wheels affect direction. It's strange that this causes a problem and that each game plays so differently to all the others.

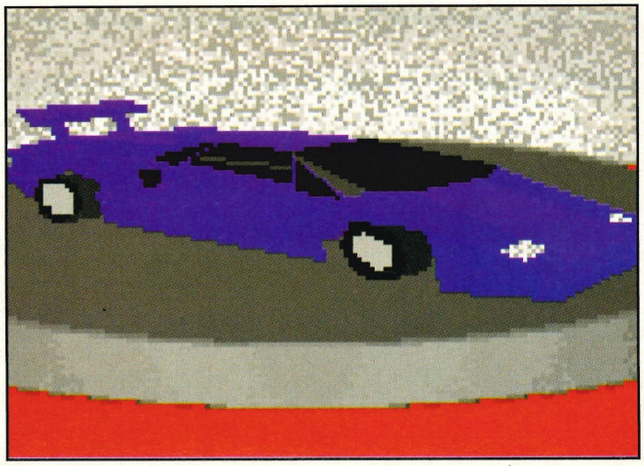
The real winner in the test driving category is without a doubt the Electronic Arts title — Car and Driver. Right from the start, when it simulates a car magazine on your screen (complete with page numbers) you can't help but see that this has been taken down to the local Superwash, then coated and polished with Turtle wax. It's a recent release so you get to drive in the very, very latest of high performance cars, all of which handle very realistically. Even the courses have a spark of originality about them, taking you to Russia, across the main highways of the States and even into a Californian shopping mall parking lot. I never knew it could be so much fun crashing into so many stationary cars in one place, especially when you start nudging them into position for one almighty multiple pile-up.

Leaving the carnage behind for a moment, Car and Driver is a very good driving simulator. There are some very impressive graphical effects and the general feeling while playing the game is one of immense satisfaction. If it does have a problem it's with the external view choices. Come to that, Indy 500 aside, I haven't really been happy with any of the external views in any of the games mentioned so far. If you can do it with aircraft sims, why not with cars. Everyone seems to go for these strange 45 degrees to one side of the rear view or above and behind but so far above that you can't see enough of the road ahead to drive properly. Anyway, with the lack of opposition, Car and Driver is the best of the real driving games, a definite treat for armchair hot-rods everywhere.

Results:

1st Car and Driver
2nd Test Drive III — The Passion
3rd Test Drive II — The Duel

So I've taken them all for a spin and discovered which are worth storing in the garage and which are worth taking to 'Onest John's Used Car Lot. There's a lot to be said for computerised driving games, especially for us young 'uns that have yet to pass our driving test. Many's the time I've longed to climb into the driving seat and just take off. Thanks to my PC, I've been able to do just that. Plus there's one important advantage to PC driving games that puts them way above owning a real car ... there's no road tax. Think, then dream, about it.



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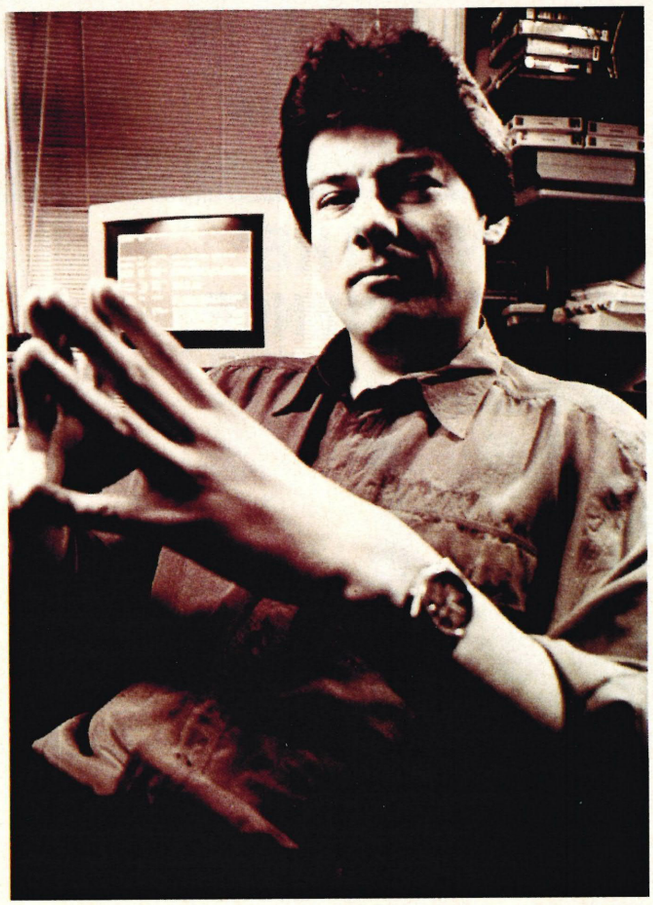
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Maximum break

Is Archer Maclean snooker loopy? After Jimmy White's Whirlwind Snooker, he's turning the tables and working on a computer version of Pool. Ciarán Brennan reports on the progress so far

Archer MacLean was born 32 years ago in a nursing home on the edge of a cliff in Barton-on-Sea on England's south coast. There will probably never be a blue plaque on the building to commemorate the event, however, as rumour has it that this gaming landmark has since fallen foul of cliff erosion and disappeared into the sea.

The renowned games designer and developer inherited his unusual name from his maternal grandfather, and admits that there aren't many namesakes around. "If I ever do meet another Archer, it'll be a case of me buying him a pint and the two of us crying into it," he laughs. Compared to the young Archer's early life, the foundations of his nursing home were positively stable, as his family emigrated to New Zealand in 1969 and then spent the best part of the next year making their way back to Blighty via the scenic route.

When the MacLean family eventually returned to Britain, Archer finally went back to school to begin a five-year stint at a Devon boarding school. However, this period of relative stability was obviously too good to last. Sure enough, in the mid 1970s the family moved once again, and Archer found himself at the opposite end of the educational spectrum, taking up a position at a comprehensive school in Brentwood, Essex.

During this time, Archer had begun to develop an interest in electronics. At first this amounted to little more than ripping up old TVs and putting them back together again, but by the time the family had moved to Essex, it had expanded to the fledgeling computer buff designing gadgets of his own.

A happy coincidence at this point led to an unusual hobby becoming the first part of an unusual career. Archer takes up the story: "In 1977 I worked part-time for a small electronics company where I met a guy called Roland Perry (who went on to work for Amstrad and design their CPC machines and early PCs). He always used to turn up for work in a Maserati and unload all sorts of early microchip gear from small cubby holes in the car. This fascinated me, and I became keen to learn more about machine code and high level languages."

This initial systems work branched out, and by the time Archer decided that it was time to head for pastures new in 1980, taking on a place at Lanchester Polytechnic to study Computer and Control Systems Engineering Instrumentation and Electronics (or cybernetics for short), he had begun to apply his basic programming skills to the company's core business of building communications hardware.

At about this time, a childhood interest in games was brought back to life at an electronics show in Alexandra Palace, when Archer first saw the Atari 800 computer running Star Raiders. "Not long before, Pong was considered to be state of the art, so when I saw the hyperspace effect in that game it really blew me away. I thought to myself that the machine was doing something that was either down to very brilliant programming, or there were some very clever bits inside it."

With the profits gleaned from building and selling many Nascom computers from kits, Archer bought his first Atari ("on the second day that they were available in the country"), for the then astonishing price of £825 – plus an extra £310 for the disk drive.

Archer's interest in electronics had led him at an early stage

into his local arcade, where he soon became a big fan of the games designed by Eugene Jarvis – the pioneering arcade guru responsible for Defender, Star Gate and other such early classics.

A combination of the Atari's potential and a Jarvis-inspired idea soon resulted in Archer's first commercial game, the fondly-remembered space action game Dropzone (which has recently received a new lease of life on Nintendo). And although he's never been a particularly prolific developer, Archer's catalogue bursts with big-name games from the beat 'em up action of International Karate (and its sequel IK+) to the more recent green baize simulator, Jimmy White's Whirlwind Snooker.

Archer currently lives with his predatory black and white cat (named, like President Clinton's, Socks) in a rural idyll in deepest Warwickshire, where he's putting the finishing touches to a quasi-sequel to Snooker, Archer MacLean's Pool.

You've spent the best part of the last two years for the last two years working on stick and ball games. Is this due to a great love of snooker and pool?

No, not really. There are a number of reasons, going right back to 1981 when I had a lucid dream of flying over a snooker table as if I was a camera sweeping above the baize. I thought very deep and hard at the time about how I could do something like that on my Atari 800, but never got around to actually doing a game.

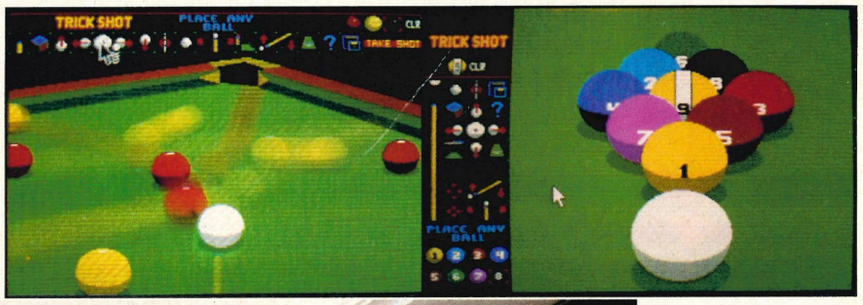
Then, in around 1987, I bought a screen digitiser. And, as there just happened to be a snooker tournament on the television that night, the first thing I grabbed was a really nice shot of a corner pocket. At that stage I remembered the dream and once again thought, 'I'd love to do a snooker game', but because I was in the middle of writing IK+ I had to put everything else to one side.

About six months later, Nick Pelling brought out 3D Pool, which at the time was great, but I was still determined that my snooker game was going to be a lot better than that. So, with IK+ out of the way, I got to work ...

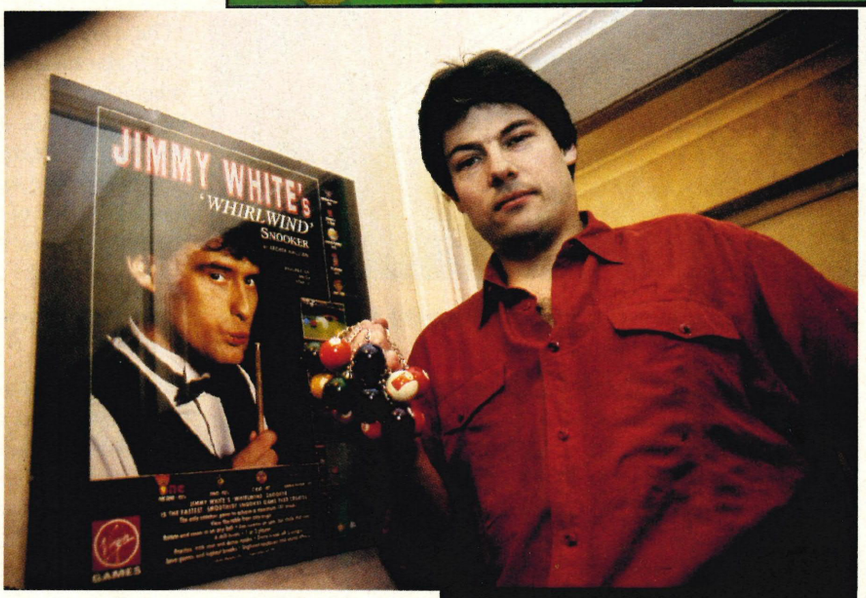
How come it took until the beginning of this decade for the finished product to appear?

Well, I started to figure out the maths for Snooker in 1988, and actually got a lot of the heavy duty maths bits working in Basic. But then a lot of other things came up over the next year or so, so it wasn't until late 1989 that I really got into producing the machine code. However, while the first lump of code I came up with was, I thought, as good as I could make it, I eventually ended up re-writing the whole thing from top to bottom three times before I was finished.

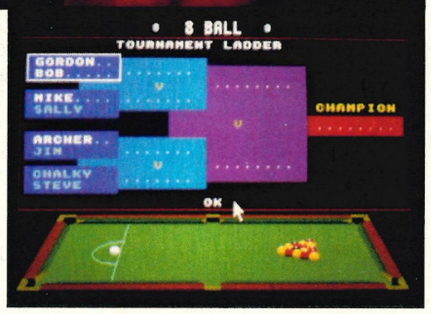
The real problems only started to arise when I moved on to coding the balls. I discussed much of it with a mathematically-minded mate of mine and originally wrote everything in 32-bit maths, but I had serious problems making the collision equations work accurately enough – the balls moved OK, but the collisions never looked or felt right.



Above: you can set up and play your own trick shots in pool, and save them to disk to impress your friends.



Left: Archer demonstrates his ball-handling skills.



Left: you can play pool in tournament or practice mode, against any of the 20 computer-generated played, who each have their own characteristics. Steve Safe, for example, plays an unusually high proportion of safety shots.

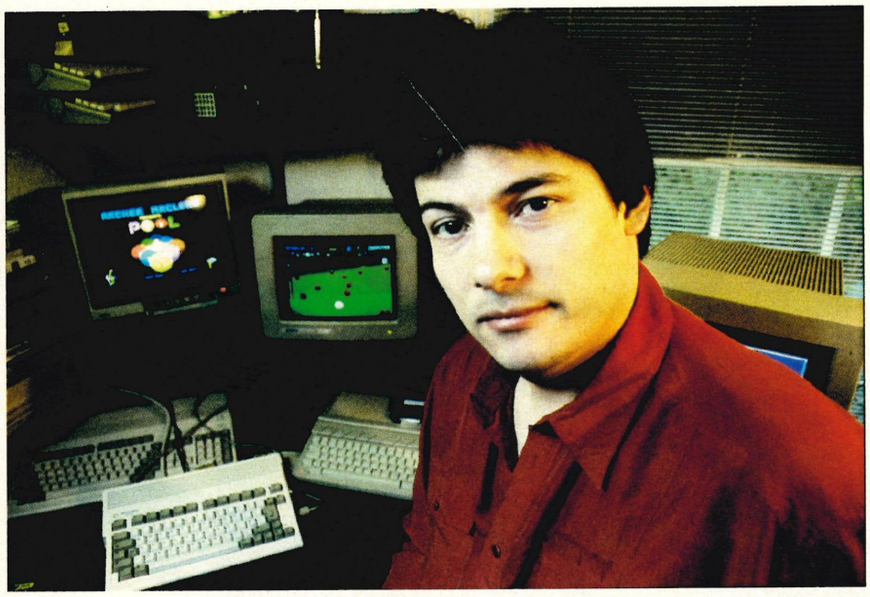
"I'd done all this 3D maths and all the front end, and suddenly I couldn't do the main part of the game. I was nearly suicidal"

Why was it such a problem?

You've then got to work out where all the balls will go when a shot is played: will they hit each other, or the side cushions, or a pocket? It's a complex process where you work out the time of the first collision, then 'stop' the game and calculate each of the incremental positions of the other balls. You then calculate the momentum interchange of the first ball (allowing for spin and all of the rest of it), or the reflection off the cushion, and re-do the table all over again. You then have to do this over and over again until all of the balls have stopped. It literally took me months to get this as kinetically perfect as possible.

But then, even after I'd figured this out, I reached a point where I honestly believed that I was stuck. I'd done all of this 3D maths and all of the front end, and suddenly I couldn't do the main part of the game. I was nearly suicidal.

I therefore had to trek right the way back to the beginning and re-do the whole thing in 64-bit resolution. The result is that the game is now accurate to under one micron in positional space and under one millionth of a second in time – that's very accurate indeed.



Archer's 'office', and an assortment of the machines he works on and for.

Is there any one element in Snooker and/or Pool that you're particularly proud of?

When you see the cue going in and out before a shot is played, what the computer is actually doing is filling up a whopping great big table showing where all of the ball positions are for the next 15 seconds or so. This cut out a problem which I had seen in other table and ball games where a ball would go into the pack and then the screen would freeze while the computer worked out where everything was going. In fact, there are about 20 different actions which the cue performs, depending on what shot is about to be played, and funnily enough, only Jimmy White spotted that. He was impressed that I'd gone to great lengths to simulate the cue action accurately.

Didn't you have real problems with simulating touching balls?

That was a real tester. Just imagine you have five balls touching in the middle of the table which are hit simultaneously by the cue ball from the front and another ball rebounding off the cushion from the back – how on earth do you work that out?

I eventually got around this by being incredibly sneaky. I made sure that all of the balls were randomly shuffled at the start so that they were never actually touching each other – they're always separated by a couple of millionths of a metre, which is probably the case on a real table anyway. In the end, I sorted it out so that in the worst case, such as hitting the pack with full power, the program was performing approximately 30,000 64-bit quadratic equations,which isn't as bad as it sounds: a 486 can handle that in less than a second.

There are those who say that this Pool game that's coming next is just a simple way to cash in on all of the work that's already been carried out on Snooker. Is this the case?

No, not at all. I was originally scheduled to do both under a single contract – Pool for the European market and Snooker for the UK – but in the end it seemed like a better idea to do them separately. Believe it or not, Pool is actually 15,000 lines bigger than Snooker, and there's a hell of a lot more in it.

How come? Surely Snooker is the more complex game of the two.

Well, for a start there are three sets of rules in Pool – and because most people seem to have their own set of rules for the game, I've also included a rule editor. Then, instead of having four computerised opponents as in Snooker, there are now 20 different players built-in, each with a different personality. The computer player also has to take different approaches, depending on which particular game is being played: for example, in nine-ball you can win the game by hitting the lowest-numbered ball on the table and also potting the nine ball with the same shot, so the computer player has to be intelligent enough to attempt this shot. Snooker never had anything like that.

You've now finished the game on the Amiga. Are there any problems attached to recreating it on PC?

"There are one or two, mostly technical. For example, although the high-end models are extremely fast, the PC has the most ridiculously limiting structures built into it: the way the bus only works at 8MHz while the processor is working at 33MHz or 66MHz is certainly a bit of a nuisance. And there's a completely separate set of problems connected with the 286, which has a number of awkward data-structure problems with its memory, so you've got write everything in nice 64K blocks – that's a real pain in the ass.

Are these problems going to change the way you work in the future?

Definitely. From now on, I'll only write code for 386 machines and above. Most of the earlier models' limitations have been removed, so if the minimum specification is for a 386 machine with a decent VGA graphics card, you can really begin to design much better games. Two years ago I would have had to produce CGA, MCGA, Hercules, Tandy 16-colour and so on and at the same time produce a workable game – can you imagine Snooker or Pool in three colours?

You're working with another programmer, Tim Watson, on the PC version of Pool. Does this mean and end to your operating as a one-man band?

Well, I can't really go on for much longer the way things are. Things are already beginning to stagnate, and my workload is causing severe problems even in my social life. With the way that my games are now being developed for a number of different computers and [video games] consoles, I'm already working with three or four people anyway. I don't think that I'm suited to running a company in the way that, say, Peter Molyneux [Bullfrog's game design supremo] does. But if I'm going to take advantage of all of the opportunities which will present themselves over the next couple of years – CD-ROM, virtual reality and so on – then I'm going to have to draw a larger team of people together to do it.

With Pool nearing completion now, do you have any clear plans for the future?

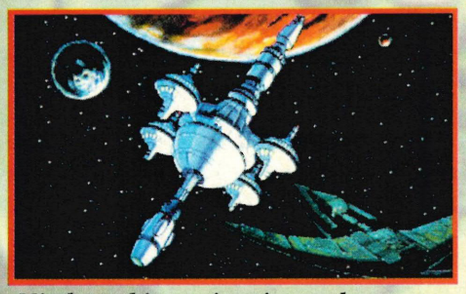
Well, Virgin wants me, among other things, to do Snooker and Pool 2, which will bring both games together in one package, using high-res graphics and rolling numbers like we've already discussed. I want to make real use of contemporary processing power by building in a whole host of new features like definable players – where you use a graphic equaliser-style series of sliding bars to affect their characteristics – digitised speech, balls jumping off tables, balls disappearing into pockets properly, pockets with nets and so on.

But that's just more ball games. Apart from those, I have so many other ideas that I'd like to get stuck into and so little time to do it. Maybe it is time that I set up that company ... ■

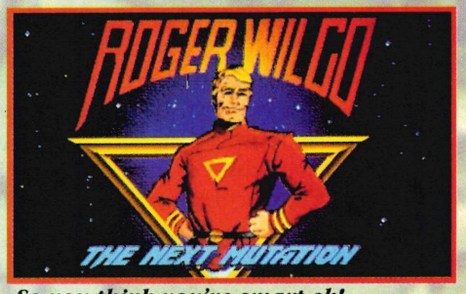
The first versions of Archer MacLean's Pool will be released on the Virgin label on April 30th 1993.

May the farce be with you in the 5th episode involving the most highly decorated caretaker in the Universe

SPACE QUEST V
"THE NEXT MUTATION"



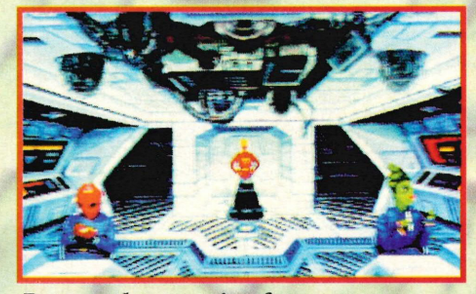
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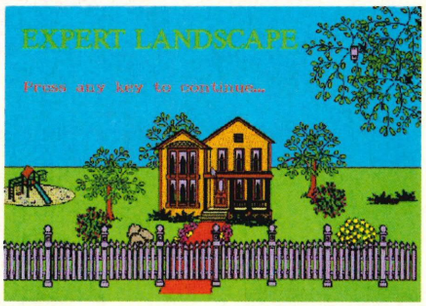
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Neither game, nor utility, nor for business, hobbyist software is becoming ever more visible. Ciarán Brennan looks at the latest batch of life-enhancers from Mindscape's Expert Software and Microsoft

In Issue 14, December 1992, Huw Collingbourne cast a critical eye over a number of what we termed 'PC oddballs', programs which defied categorisation as either business, games or even, strictly speaking, leisure software (how can writing a CV be described as leisure?), but which did, in some way, claim to enhance the user's life.



From the Expert range: right, Expert Landscape, below, Expert Home Design and below right, Expert Astronomer.

Huw's eventual conclusion was that this motley crew of diet analyst, horse race predictor, gardening aid and so on didn't exactly live up to their promise of providing a better life – but is this any reason to give up completely on the whole idea of 'life enhancing' software?

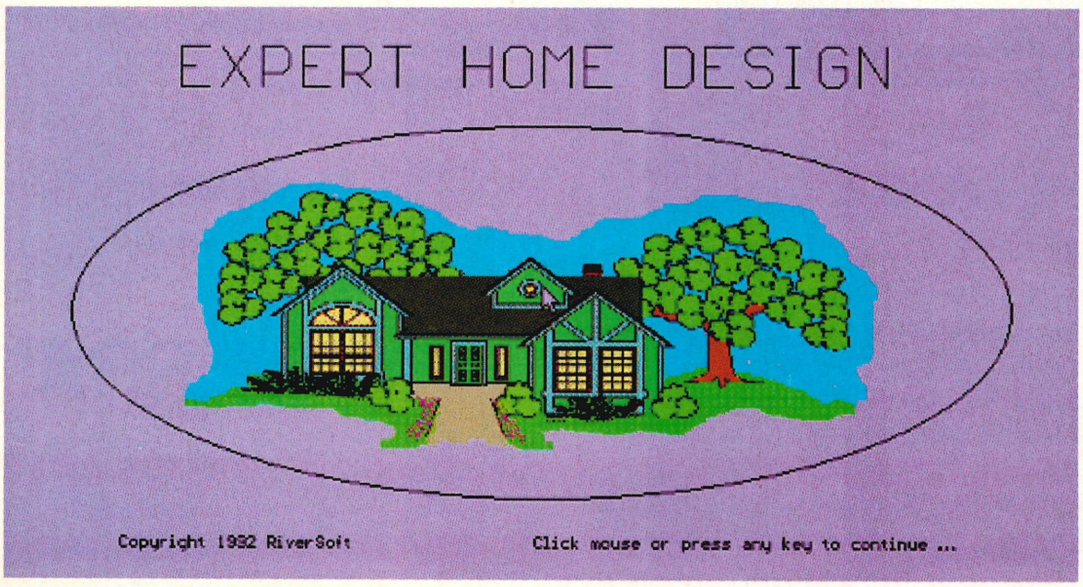
Certainly not. Surely the reason we all bought our PCs was just so that we could trace our family trees, put our record collections into alphabetical order (complete with entries on when we last listened to each, with whom and for how long) and keep up-to-date databases of our Christmas card lists?

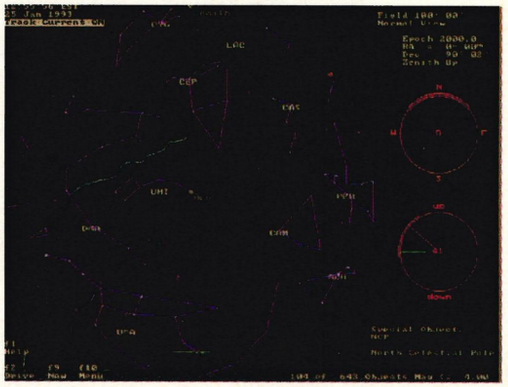
Up until now though, the greatest problem with finding software to handle most of these peculiar tasks has been that the major software publishers have steered well clear of producing them, preferring to devote their resources to producing conventional business or games software. This has inevitably left the user with only two options, either to search through the shareware catalogues or to sit down and actually write a bespoke program.

In recent months, however, all that has changed. Mindscape has begun to import a substantial range of packages from California's appropriately named Lifestyle Software Group, Expert Software has only this month announced a similar product line-up, and even the mighty Microsoft is getting in on the act of producing software designed to help you get that little bit more out of your PC.

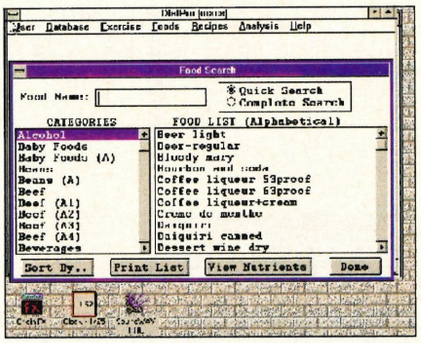
Of course, the few examples that we have space to cover in these pages don't exactly do justice to the range of hobbies and other interests which are now covered by programs of this type – where, for example, is the pet care package, the diet planner, the electronic book of crosswords or the travel guide? The list, as ever, is almost endless.

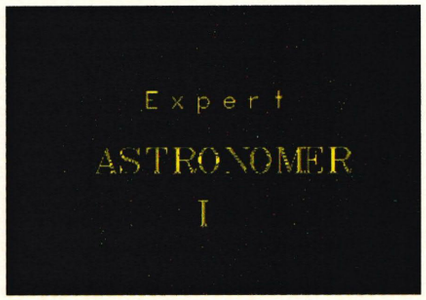
In fact, all that's left for you to do is to develop an interest. Best of luck ...





life!





Expert Landscape

Expert Astronomer
Price: £14.99
Publisher: Expert Software
Windows-compatible: no

Not to be confused with fortune telling or horoscopes or any of that malarkey, this is a professional guide to the stars as Patrick Moore sees them: in conjunctions, constellations, eclipses and retrograde motions.

It may all seem pretty complex to the beginner (and, despite its name, this program is probably best suited to a newcomer to the discipline), but it's also completely fascinating to watch your computer recreate the sky above your head in glorious Technicolor (well, Technicolor-ish, anyway).

There are more than 9,000 celestial objects available for view through the program, all of which can be accurately mapped as they move about the heavens. Individual celestial bodies can be pinpointed by use of the mouse, or can be tracked by name (depending on your purpose), and once selected, their immediate environment can be zoomed in on for greater detail, or printed out.

The slim but informative manual contains an introduction to the science of astronomy along with what few technical details are required (the program is controlled via a series or fairly straightforward pull-down menus), making this an ideal purchase for anyone who's just picked up their first telescope.

Experienced astronomers, on the other hand, will find little here that they've not seen before.

Expert Home Design
Price: £14.99
Publisher: Expert Software
Windows-compatible: yes (separate version)

OK, so redesigning your living space or rearranging furniture could never be accurately described as a hobby, but it is nevertheless a time-consuming (not to mention occasionally back-breaking) affair which could do with a little digital help to take the error out of its trials.

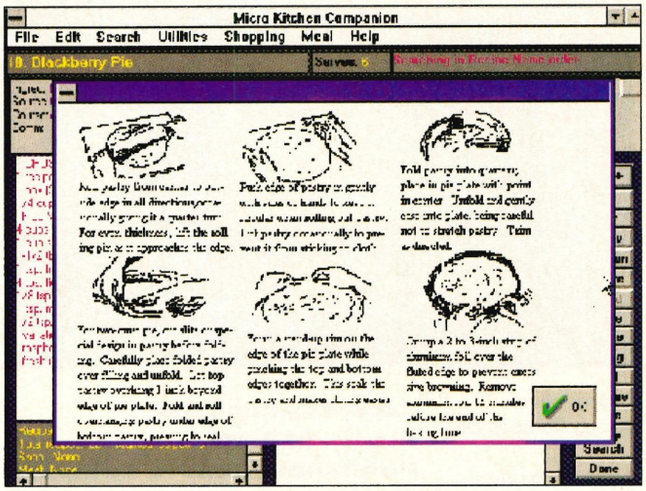
And that's exactly where Expert Home Design comes in. A fairly basic Computer Aided Design (CAD) package, EHD allows the user to recreate an accurate floorplan of his or her living space – complete with doors, windows and stairs – and place any combination of furniture (real or imagined) therein.

Simplicity is the name of the game, from the moment you position your first wall, right up until you face the agonising decision of whether to have a round or oblong table in your dining room – what a complete nightmare!

Two separate libraries of furniture are supplied, and while the package's claim that they can support more than 200 pieces between them is more than a little extravagant (many of the elements are in fact duplicated and resized to increase the roster), they do contain just about everything that the budding house designer could want – everything including the kitchen sink, in fact!

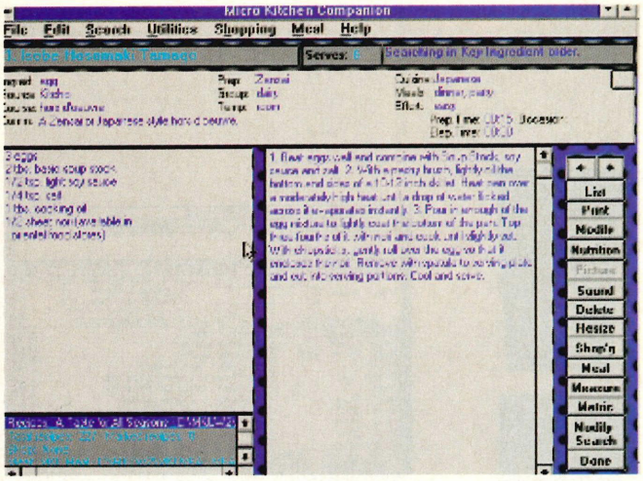
Files are saved in .PCX format and can be saved, reloaded, adjusted and retouched to the user's fancy (within the program's pretty strict limits, of course) before the completed design is eventually sent to your printer. After that, of course, you have to get down to business and actually move the stuff.

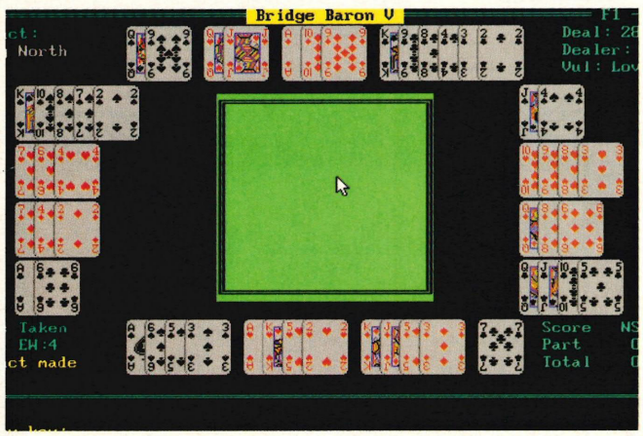
It is possible that it may never be much use to the professional, but at this price EHD can only be a bonus for the enthusiastic amateur.

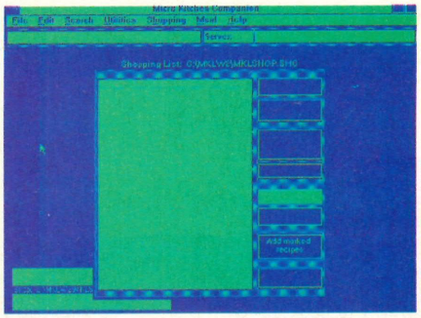


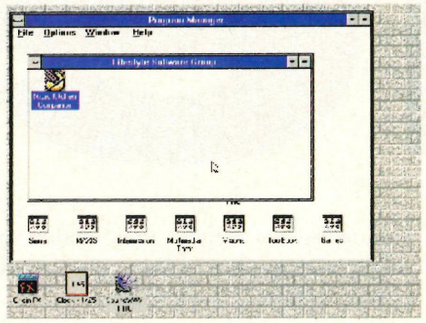


Top pictures: the Micro Kitchen Companion enables you to search for specific ingredients and includes illustrations to accompany the recipes.









Above: Micro Bridge Companion

Top and Far right: Micro Kitchen Companion

Right:Lifestyle's Golf Companion

Expert Landscape
Price: £14.99
Publisher: Expert Software
Windows-compatible: no

Rather similar in nature to Expert Home Design, this garden construction package once again makes use of basic CAD techniques to help those with green fingers to allow their fertile imaginations to run riot in black and white.

One major advantage which this DOS-based program has over its indoor counterpart, however, is that it looks and feels a good deal more contemporary (it even has the benefit of an Install feature, which its predecessor lacked).

Where Home Design had chairs and tables, Landscape has trees, shrubs, swimming pools, washing lines and other suitable garden furniture for the user to place and move until the garden looks just right – which once again beats the age-old trial and error method.

While it's highly unlikely that most people will get around to redesigning their garden as often as they'll move their furniture, Landscape offers exactly the same value as Expert Home Design; and, like its predecessor, is a perfect example of a general computing principle (CAD), put to a very specific use. While neither program is ever going to win awards for pushing back the boundaries of contemporary programming and design, each one is a step above shareware and represents excellent value for money.

Lifestyle's Golf Companion
Price: £39.99
Publisher:
Lifestyle/Mindscape
Windows-compatible: yes

There's no enthusiast like a golf enthusiast, and although the educational section of this three-part program isn't quite the 'interactive tool' which the blurb promises, the rest is probably enough to make it a worthwhile addition to any swinger's library.

Golf Companion is a combination of three separate programs – a tutor, score compiler and course database – tied together by a standard bank of graphic icons. And while the three vary widely in their usefulness, they combine to make a pretty substantial package.

Because it provides little more than the standard advice and diagrams found in any coffee table golf book, The Golf Analyst doesn't really have a great deal to offer – especially as you can't take it to the course or driving range.

The Golf Travel Guide, on the other hand, is more useful, providing a stream of updatable information on hundreds of golf courses around the world (and even its heavy concentration on US courses isn't too great a handicap – whoops! – as the database can be added to ad infinitum by the user).

However, it's the final section, The Handicapper, which makes the entire program worthwhile. Essentially another database, this provides the golfer with the opportunity to keep track of not only his or her own scores from week to week, but also those of numerous fellow players – surely an irresistible attraction.

Micro Bridge Companion
Price: £34.99
Publisher:
Lifestyle/Mindscape
Windows-compatible: No

Perhaps the oldest of all the programs featured here, MBC sports tacky text and graphics, a user-interface which never quite earns the title friendly (although it remains cordial throughout) and – worst of all – it's not Windows compatible unfortunately (so there's no chance of a quick peek at your hand while word processing, or whatever).

Designed by Tom Throop, described on the packaging as the 'foremost expert on computer bridge in the world', with help from syndicated Bridge columnist Alfred Sheinwold, MBC is based on an engine which triumphed in the Computer Bridge Olympiads of 1990 and 1991 – and compared to other bridge programs on the market, it's certainly rich in options.

One major asset is that it's the only bridge program on the PC I know of which will play duplicate, rather than rubber bridge: the computer plays the boards 'in the other room' and works out your International Match Point Score.

Other than that, it offers a wide range of practice modes (with slam hands, in defence, or with random deals) and a choice – albeit limited – of bidding conventions to use. The scope of the program goes way beyond what the rather old-fashioned front end implies.

However, this strength of game can become completely bewildering to the more inexperienced player, as the program sometimes runs through tricks so quickly that you're not sure whether you played well or badly – or even whether you were involved at all.

However, a considerable amount of careful thought has evidently gone into making the program easy to use. The mouse control is intuitive, and the programmers have even tried to get round the problem of playing with more than one human player and having to look at, or look away from the screen in order to see your hand but not anyone else's. You can print out each hand, so that your co-players can at least bid looking at the print-out rather than the screen.

But if we do have to accept that a 'life enhancement' program is only worth-

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AVAILABLE ON:

Atari ST, Amiga and PC & Compatibles (EGA, VGA, minimum memory required 640k).

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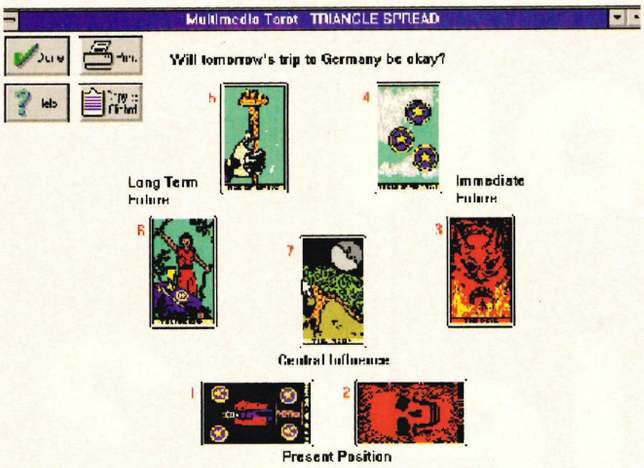
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Above: Multimedia Tarot

while if it offers something special that can't be found elsewhere, Micro Bridge Companion wins hands down (pardon the pun), as there's no book in the world which is able to provide so much really valuable match practice in such a short space of time.

Micro Kitchen Companion
Price: £39.99
Publisher: Lifestyle/Mindscape
Windows-compatible: Yes

Despite its most elaborate attempts to hide behind a somewhat euphemistic title (recipe management program, anyone?), the Micro Kitchen Companion is, to all intents and purposes, an electronic cookbook. The only question that really requires an answer, therefore, is whether or not it has anything to offer that you can't already get from your straining kitchen bookshelf.

And the answer is yes ... a hell of a lot actually.

Apart entirely from being far easier to manage than numerous paper cookbooks, this program is infinitely expansible (either through update recipe disks or the user's own input) and offers the puzzled cook a whole lot more choices than its paper-based rivals.

For example, should you have a guest coming around for dinner who has a particularly difficult palate to please, you can call up a list of menus either using or omitting specific ingredients in order to cater for his or her taste.

Not only that, but entire menus can be planned, printed out (in shopping list form if you so choose) and analysed for nutritional value.

Best of all, though, is the feature which, at the mere press of a button, adjusts the recipe for a cosy dinner for two into one which caters for a feast for 200. Now what standard cookbook can do that?

Microsoft Money for Windows v2.0
Price: £59.95
Publisher: Microsoft
Windows-compatible: Yes

If the majority of these 'lifestyle' programs cover subjects that are either hobbies or special interests of one sort or another, only one deals with a matter of prime importance – that subject is money management and the package in question is this one, Microsoft Money.

Although it's easy enough to get to grips with (and, as you'd expect from the creator of Windows, it makes great use of that graphic interface's conventions to provide a speedy and clear impression of its user's current financial state), this is a great deal more complex than most of the other programs featured here, and as a result the best part of the 282-page manual will have to be ploughed through before it begins to deliver its best.

Once this has been achieved though, Money not only provides an up-to-the-minute balance of all accounts for either a single user or small business, it can also be used to deliver all kinds of financial information in chart form (a pie chart depicting the relative amounts spent on, say, the user's car and the grocery bills is usually quite an eye opener).

It's certainly true that you have to put a lot into Money to get a lot out of it, but if used properly, it should be enough to unravel the mysteries of most people's monetary health.

Multimedia Tarot
Price: £39.99
Publisher: Lifestyle/Mindscape
Windows-compatible: Yes

The human race's insatiable desire to gaze into its future doesn't take much proving – a summary glance at the huge number of newspaper horoscopes published every day is evidence enough of that all too common character trait. However, whether fortunes can be told through the ancient medium of the Tarot card – and a 'multimedia' digital rendition of the deck at that – is another matter altogether.

If there's a single program featured in this piece which has nothing to offer that's not available elsewhere (in cheaper and more accurate form) then this is the one, I'm afraid.

OK, so you could possibly argue that pressing a mouse button to unleash the PC's ability to generate random numbers is just as likely to reveal a person's true character as shuffling and dealing a deck of cards, but that's not the heart of the problem in this instance – it's the rather vague nature of the interpretations and the silly way in which they're delivered that's at fault here.

While all fortune telling is obviously carried out with some degree of inexactitude, a human interpreter can vary his or her language enough to make the findings seem more specifically targeted at the recipient – fixed-text responses will never be able to do that.

Furthermore, the overwhelming 'showbiz' element of the illustrated readers dispels any slight shred of credibility which the program may have salvaged (deceased 60s medium Solitaire, for example, wears a decidedly modern hairstyle). All very offputting, on the whole.

It shouldn't take too much exceptional visionary talent to see where this package is destined.

Contacts

Expert Software: (081) 551 2797

Mindscape: (0444) 246333

Microsoft: (0734) 270000

Programs reviewed

Expert Astronomer, £14.99 Publisher: Expert Software

Expert Home Design, £14.99 Publisher: Expert Software

Expert Landscape, £14.99 Publisher: Expert Software

Lifestyle's Golf Companion, £39.99 Publisher:Lifestyle/Mindscape

Micro Bridge Companion, £34.99 Publisher: Lifestyle/Mindscape

Micro Kitchen Companion, £39.99 Publisher: Lifestyle/Mindscape

Microsoft Money for Windows v2.0, £59.95 Publisher: Microsoft

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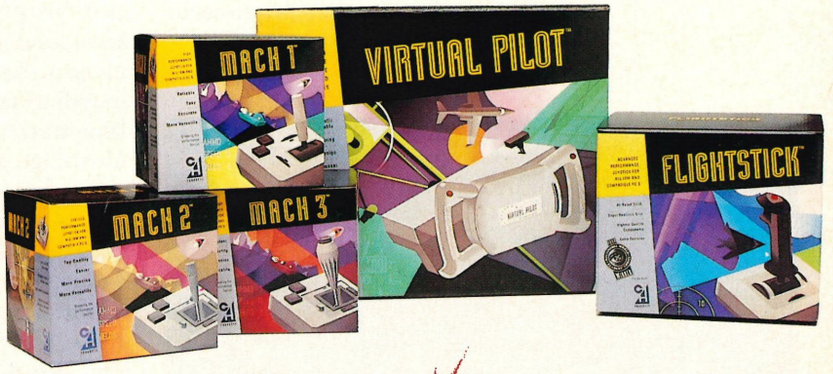
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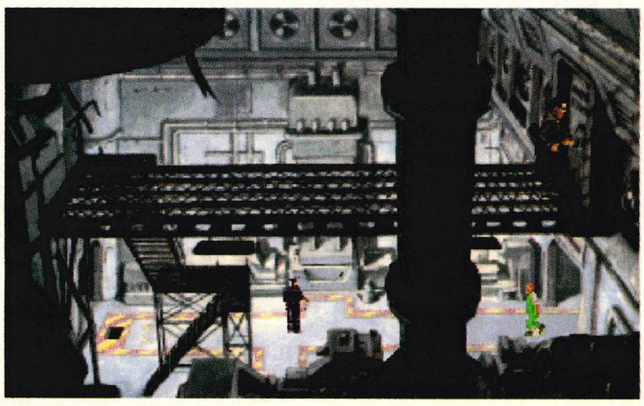
Set in a Cyberpunk world of the future, Beneath a Steel Sky contains some stunning scenery.

Title	**Beneath a Steel Sky**
Publisher	**Virgin Games**
Contact	**(081) 960 2255**
Release date	**TBA**
Genre	**Graphic adventure**
Price	**£TBA**

Beneath a Steel Sky

A year after the Temptress lured us, Virtual Theatre returns for a darker, more serious outing.

Imagine you had an idea for a game. Imagine that game involved combining real-time action with a graphic adventure interface. Imagine it used characters that continued to exist even when they weren't on the screen. Imagine it had a world that didn't centre around the principal character but continued to go about its business no matter what you decided to do. Imagine that it had a control system that was simple enough to be instantly usable, yet comprehensive enough to allow you to do whatever you so desired. Imagine the gaming equivalent of Milton Keynes.



One man who did imagine this was Charles Cecil of Revolution Software. Last year witnessed the birth of Revolution and Virtual Theatre, a new adventure system that incorporated everything mentioned above. Lure of the Temptress was the game that first took advantage of VT and it was received extremely well by both the public and the press. As Cecil said at the time, "Virtual Theatre has created a lot of interest because of its brand new concepts. The graphic adventure is a tried and tested theme, we've just done things in a new way. Virtual Theatre aims to build up an alternative 'reality', a new real world."

A year down the line and Cecil is the first to highlight Lure's faults, levelling complaints towards its size and the timid way it approached VT's new concepts. When playing the game you can see just how much potential VT has and, consequently, how Lure barely touches that potential's surface. Containing a comparatively small number of locations (compared to something like Monkey Island 2, that is) and only a few puzzles that made use of VT's real-world feel, players were left feeling comfortably satisfied once the game was at an end, but with the impression that there was so much more that could have been done.

Enter Beneath a Steel Sky – Virtual Theatre 2. Penned by master comics writer/artist Dave Gibbons, it's been designed to make full use of VT's abilities while telling an absorbing, well plotted story. Taking the player into the not so distant future, Beneath a Steel Sky has a Cyberpunk/Judge Dredd style setting, with large industrial cities, today's technology taken a step further, a totalitarian government and huge corporations running everything. You play the part of an escaped fugitive, being tracked through the dark streets and buildings by the local police. To prevent a life imprisoned behind laser bars, you have to discover why you were arrested, what has happened to the once prosperous city and how to put things straight.

Gibbons' influence over the game is evident even in the design stages. VT2 has been developed in much the same way as a typical comic book, with the author first outlining the general plot, characters, settings and objects, then fleshing out the actual scenes, puzzles and script. The initial draft is then sent to Revolution along with Gibbons' sketches for the numerous locations, copies of which are provided to the graphic artists and programmers.

Overseeing the whole project, Cecil takes a semi-directorial role, consulting with his own programmers/designers and suggesting changes to Gibbons' artwork. Eventually they arrive at finished pieces which are turned into full-colour paintings and supplied to the graphic artists. Finally the finished screen is produced and added to the game.

Meanwhile Cecil is also keeping tabs



A futuristic Indiana Jones swings to safety. Good job he's not scared of heights.

on the script and the puzzle content of the game. Elaborate 'puzzle trees' are produced showing all possible routes that the player could take throughout the game and what the consequences of his actions are. By charting out the player's potential routes, it is also possible to see how the game can include multiple storylines and even, possibly, multiple endings – although Cecil is somewhat loath to have more than one ending in the game, preferring a multiple amount of ways to reach a fixed conclusion instead. Along with the puzzles themselves, the actual script (ie, all the lines of text that the player will actually see on screen) is entered into a custom-built text generator, designed and programmed by Revolution's own programmers.

Beneath a Steel Sky attempts to use the various 'real-world' elements of VT to a much greater extent than in Lure. Once again the main hero has a sidekick, a computer called Joey who exists in the form of a personality 'board' and can be plugged into a variety of different robotic bodies to achieve different tasks.

Many of the game's puzzles can only be solved by having Joey perform a set of actions while you are occupied elsewhere. The 'looking through the window' puzzle crops up again and again as does the reliance on influencing other people by interacting with them in different ways.

Throughout the game's development stages, Revolution has been debating with Virgin Games (the distributor) as to whether it can create a 386 only version of the game. The reasoning behind their argument is that by designing the game using the 386's codes the end result will be infinitely better than if they were to create the game for lower-spec machines and just leave it at that (despite Charles Cecil's comments in 1993 and All That, PC Review, Issue 15.

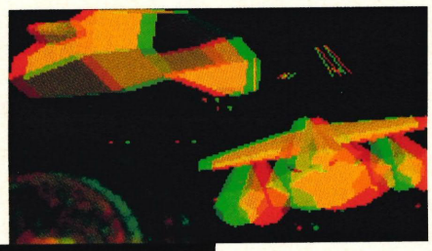
At the time of writing Virgin has just agreed to this proposal and Revolution has set about modifying and improving its designs. Virgin has also stipulated that apart from supporting all the usual graphic modes, it also wants a Super VGA version that makes full use of the high resolution graphic capabilities of the cards. Add to that the use of simultaneous soundboard support (using two sound boards at the same time, eg, the Roland for music and the Sound Blaster for sound effects) and it adds up to a game that is potentially stunning from a presentation point of view.

"All I really want," says Cecil, "is for someone to look at Beneath a Steel Sky and simply say 'Wow. That's better than Monkey Island 2'". And while we'll really have to wait for the game's release before we can pass such a judgment, initial impression seem to imply that this phrase will be probably be heard by PC users everywhere.





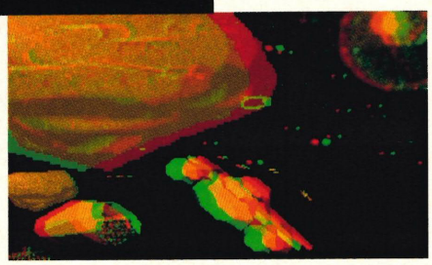
The Revolution crew in all their glory. From left to right: David Sykes, Stephen Oades, Adam Tween, Tony Warriner, Dave Cummings and Charles Cecil.



Title	**3D Challenge : Starfighter Ace**
Developer	**Maelstrom**
Publisher	**Mirage**
Contact	**(0260) 299401**
Release date	**March 1993**
Genre	**Shoot 'em up**
Price	**£34.99**

3D Challenge

Starfighter Ace

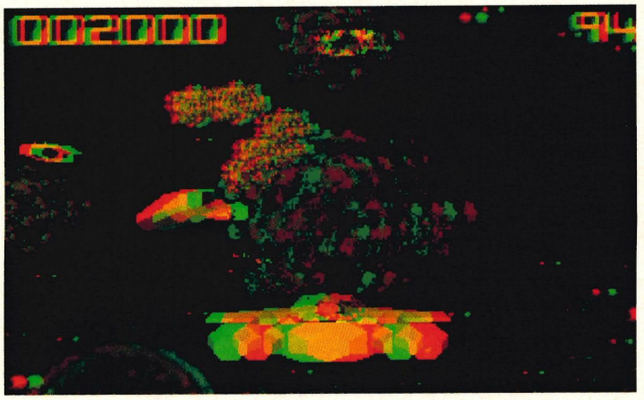


After the two Midwinter programs and Ashes of Empire, you might expect Maelstrom's next title to develop the psycho-strategy themes of these even further. However, Starfighter Ace has but a single strategy: blast, blast and blast again. And it also has a unique point of view: the first game to be seen entirely from a 3D perspective.

By 3D we mean the type of screens that require the red and green cellophane glasses rather than an attempt to create an impression of depth with 'flat' graphics, and the appropriate glasses will be included in the box when released. Maelstrom has been experimenting with the offset double graphics needed to create the 3D illusion for some time, and felt that a traditional intergalactic shoot 'em up was the ideal setting for an whole game of this type.

"OK, so there's a bit of the 'gimmick' aspect to it to start with, but the effect is really quite dramatic," says Maelstrom's Mike Singleton. "We're planning to do a number of products this way, especially as while we've been play-testing the game, we've noticed something quite interesting: with the glasses on, and when you're used to the effect, it becomes much easier to judge distances when you're shooting at targets."

The game is also set to be reasonably fast. "That's one reason why it's PC only and likely to remain so for some time. We needed the speed and we needed 256 colours — in order to achieve the 16 grey shades you get in 3D."



The 3D screen is created by offsetting the green-based graphics slightly from the red-based graphics. The degree of offset determines the perceived depth of field.

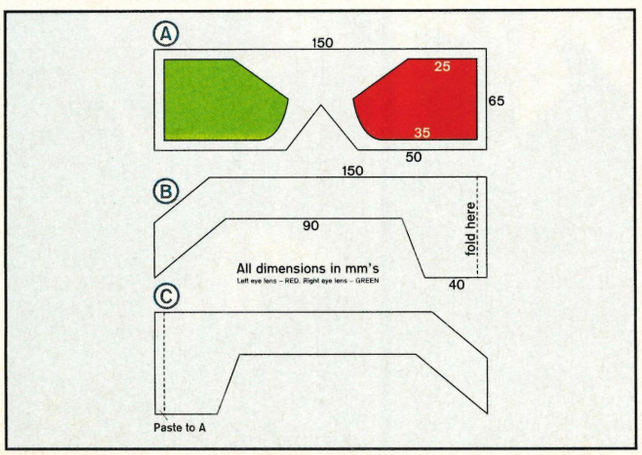
There's little need for plot. The game comprises 12 levels of missions centres around a different planet, each mission requiring various styles of play: one may make demands on your ship's agility, or evading capture, or simply clearing the screen of enemy craft. It's simple, but so far effective, and as Mike concedes, the big question has been how to make the game good enough to stand up without the 3D aspect.

This is especially needed since, in addition to the 3D game, you can transfer to a 'flat screen' 256-colour version with a single keypress. Maelstrom considers this option desirable, if not essential, since there's no doubt that with 3D glasses perched on your nose and objects appearing to ping out of the screen directly at you, the potential for eyestrain is that much greater.

"You do get eyestrain, because in 3D, with your eyes focusing on one plane and converging on another, it's not quite a natural process," explains Mike. "However, you will also be able to turn up, or tone down, the 3D effect gradually, until you find the level which is most comfortable for you."

In light of some of the recent newspaper headlines about photosensitive epilepsy being triggered off by some console games, this seems wise, although Mike also adds that he reckons the sheer speed of the game makes it more difficult to play without the 3D option.

OK, so the 3D pictures on this page look weird, and we've been too stingy to provide a special set of 3D glasses with the magazine, but if you don't have any such specs lying around, you can always construct your own — see the template left.



Draw the shapes below out to the measurements below (this is for an average adult head, but it shouldn't make too much difference) on a piece of card. Attach a piece of clear red cellophane to fill the left 'lens', and a piece of clear green cellophane to fill the right lens. Bingo! 3D glasses.


Doctor Schnellfurter's CASEBOOK.
GUTEN TAG! MY NAME IS DOCTOR SCHNELLFURTER. I AM A PSYCHIATRIST.
FOR OVER 25 YEARS I HAVE BEEN RESEARCHING AND OBSERVING ZE BEHAVIOUR OF MENTALLY UNSTABLE HUMAN BEINGS..
OR "NUTCASES", AS ZEY ARE COMMONLY KNOWN.
ZIS MAN, FOR EXAMPLE, SUFFERS FROM ZE BIZARRE DELUSION ZAT HIS ENTIRE BODY IS MADE OF DISPRIN. CONSEQUENTLY, HE HAS NOT TAKEN A BATH IN SIXTEEN YEARS..
B-BUT IF I GET IN THERE... ..I'LL DISSOLVE!!
HERE WE SEE A DISTURBED FELLOW WHO BELIEVES HIMSELF TO BE A CHARACTER IN A FRENCH FILM. TO PERPETUATE ZE ILLUSION, HE FINDS IT NECESSARY TO HOLD UP SUBTITLES WHENEVER HE SPEAKS.
MUMBLE SNORT MUTTER
FOR GOD'S SAKE WILL YOU JUST STUB OUT THAT GITANES AND EAT YOUR BLOODY FOOD?
COME CHANTAL, LET US MAKE LOVE.
MOST OF ZESE PATIENTS CAN BE CURED OF THEIR NEUROSES THROUGH A COURSE OF INTENSIVE THERAPY AND SYMPATHETIC COUNSELLING...
..OR IF ZAT FAILS..
...A SHARP BLOW TO ZE BACK OF ZE HEAD WITH AN ORDINARY WORKMAN'S HAMMER USUALLY ELIMINATES ZE PROBLEM...
ONLY VUNCE HAVE I COME ACROSS A MAN WHO COULD NOT BE CURED. HIS NAME? BOB.
ZIS IS BOB, FROM ZE TOTTENHAM COURT ROAD COMPUTER EXCHANGE
ADMITTEDLY, HE APPEARS TO BE NORMAL.
..BUT ZE SECOND HE OPENS HIS MOUTH, ZE ILLUSION OF NORMALITY IZ SHATTERED..
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..I KNOW VOT I'M TALKING ABOUT.
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reviews index

Our comprehensive reviews service starts here. Over the next 48 pages, you'll find the latest PC games fully evaluated, with clear comparisons made to similar games on the market. We also try to make it easy for you to see whether a game is suitable for your machine and your tastes, so read on to see how to get the most out of them

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Specifications

PCs come in so many different flavours and configurations that finding out whether a PC-compatible game really is going to work with your set-up can be a minefield. Each review carries a detailed TechSpec column, explaining what features are supported by the game in an easy to read, at-a-glance panel.

The graphics, soundboards and control sections tell you which popular devices are supported by the game in question.

Under Disk requirements, you'll find out whether a game needs to be installed on to hard disk in order to play it, how much space it takes up if installed to hard disk, and we also note if the game comes on high density disks.

The performance section isn't quite so clear cut. Publishers often state a set of minimum hardware requirements on the box, but these can be very minimal indeed. Our optimum performance level is a subjective rating, and gives you not the publisher's base specification required, but rather the minimum we think the game needs in order to run comfortably. Game X may run on a 286, but at a snail's pace, or it may run OK on a 16MHz 286 but be unacceptably slow at 8MHz. This is where we let you know.

After the optimum speed rating, we note the minmum RAM required to run the game, and finally, how much of your base 640K RAM must be available for the game to load properly.

Alternatively

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

Two Minutes

This is the closest you'll get to seeing the game in action. We take a series of manoeuvres from the game and explain clearly the gameplay required to get through the screens. You may find some helpful game hints in this section!

Rating system

We give a single mark out of 10 to indicate what we think of the quality of the game. As a rough guideline, the ratings break down thus:



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

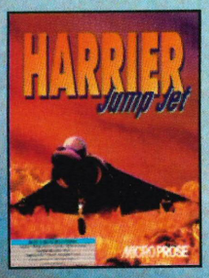
Ratings are not the sole preserve of the author of the review, but are discussed and thrashed out by everyone at PC Review who knows the game in question.

We also practise 'contemporaneous marking'. That means that games are rated relative to other current games.

The reason for this is that, while PC programming expertise is improving all the time, and Monkey Island VI will doubtless be miles better than Monkey Island II, that doesn't mean it will have to get 16 out of 10 when reviewed. If it looks excellent compared to everything else around at the time, it'll still be worthy of its eight or nine.

Shareware

The shareware reviews section is an independently written column on the best and most interesting of the latest shareware and public domain releases. Here you'll also find the Shareware Finder Service. If you have a particular software need for your PC, but don't know if such a program exists, try us. We may well be able to pin down a cost-effective shareware program to do the job for you.



Title	**Harrier Jump Jet**
Publisher	**MicroProse**
Contact	**(0666) 504326**
Price	**£44.99**

The Falklands is a unique battle area for a flight simulation, so let's try a quick mission there. My target is an enemy warship. My Harrier's fully loaded. Up, up and away ...

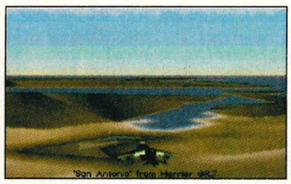


On the deck of the good ship Lollilop (well, HMS Invincible, actually), I open my nozzles, thrust to maximum, and slowly rise straight up. Coming to a hover at around 500ft I close the nozzles again and get going on my mission.

HARRIER *Jump Jet*



Autopilot on and it's maximum speed towards my first waypoint. Each mission involves a mission ingress waypoint, an initial point, a primary target, another IP, a secondary target, a mission egress and the landing site.



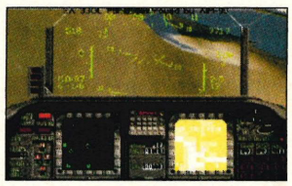
Approaching the first target, an enemy warship. Entering a hover I take the time to look around the area, find the target and select the correct weapon to use. All this while staying just out of radar detection range.



Off I pop and launch my attack. The target is nothing more than a sinking wreck. This has alerted the enemy to my presence, though, so I'd best move on pretty quick. Selecting the next waypoint I enter full forward flight.



Intercepted by an enemy helicopter, alerted by a patrol boat near the primary target. A couple of evasive manoeuvres later and I have him in my sights. A quick sidewinder up the rotor blades should do the trick. Fire!



Bullseye. The helicopter is no more and I'm off to find the secondary target. By flying low enough to the ground I hope to hide from enemy radar and avoid any more hairy aerial incidents. Best watch my altitude, though.

Time to take to the Harrier cockpit again, in the second game in as many months to feature this much underrated aircraft

It's odd really. Recent MicroProse flight simulations have managed to get one element absolutely right, but then another part of the program misses the mark. ATAC had excellent atmosphere but mediocre presentation. B-17 Flying Fortress had excellent presentation but not much of a flight sim. F-15 Strike Eagle III had wonderful new graphics but not much innovation in the gameplay.

One day I sincerely hope that somebody at the office will turn around, gather all of the existing MicroProse sims into a big pile on the floor, then proceed to take the best bits from each product and roll them into one.

Imagine it. Gourad shaded terrains with bitmap-overlaid graphics for detailed ground areas and realistic cloud effects, combined with light-sourced multi-faced advanced polygon object data and multiple player link-up facilities, all processing away under an impressive cinema quality intro sequence and superbly detailed, fully involving multi-role campaign missions.



Each of the menu screens is portrayed as a single picture relevant to the situation and various 'action areas' which offer selections when highlighted with a mouse.

But until this miraculous day dawns we've got Harrier Jump Jet, a game that's going to have to work unbelievably hard indeed to prove its worth in the wake of last month's superb AV-8B Harrier Assault from Domark.

Two questions that were asked of MicroProse's bird during the review of AV-8B were how well the flight model would compare and how much detail the campaign aspects would contain. The answers (in order) are: as good as if not better, and not as much.

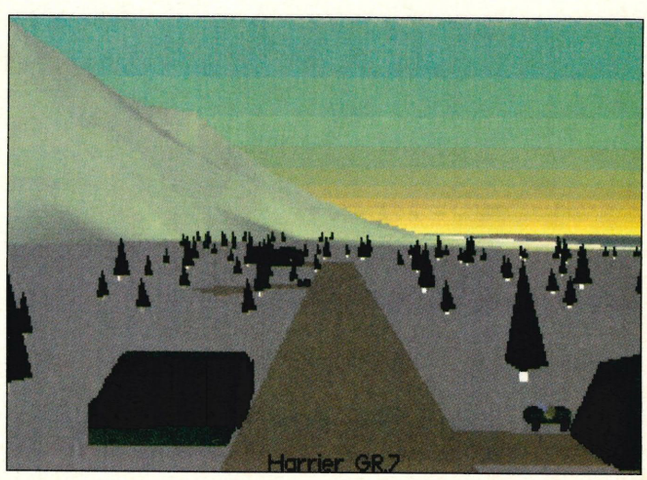
Which brings me back to my initial point. It's all very well MicroProse trying to dazzle us with fancy new graphic technology, but what we flight sim addicts are really after is a game to get our teeth into. Not just more of the same with a hover mode. We all know that as time goes on graphic presentation of games will better, there's no point in selling that to us. Where you see us players enthusing most is over the more innovative moments in gameplay, the things that set a game apart from the rest.

ATAC had it with its fantastic campaign play. Playing that tale of combat against the drug barons I really felt as though I was in charge. I could plan missions, analyse maps and see what should be attacked next and whether it should be by plane or helicopter. I could gather information on sensitive areas and act upon the information accordingly.

The snowy wastes of the Nordkapp scenario. Hidden amongst a flurry of trees is a small landing strip – a home away from home for the Harrier.

Falcon 3.0 is a similar case but for a different reason — the Electronic Battlefield System compatibility. Buying Falcon 3.0 we know that at some stage other games will arrive from the same stable, featuring different vehicles that will be fully compatible and allow multiple players to link up their machines and fly against each other in different planes/tanks/whatever. It's innovative, it's clever (and it's bound to be copied by someone at some stage). Presentation is important — ATAC wouldn't have been half as exciting if it hadn't been for some extremely nice graphic effects — but they simply shouldn't be the only improvements made to a game genre.

MicroProse will no doubt argue that Harrier does contain campaigns, it does contain new flight techniques ('Vectoring In Forward Flight', more on this later, and hovering, etc) but you're going to get those as a matter of course in any Harrier simulation — AV-8B had them after all. The campaigns aren't as detailed nor as involving as some of the better examples of the style: you are still merely a pilot who is simply given his orders for the current mission and told briefly how the war is going. As for how the plane han-



dles, if it wasn't for the hover mode I could barely have noticed the difference between flying a Harrier or an Eagle.

Hollywood realism

Most MicroProse simulations have this knack of creating plenty of technical accuracy but then a total lack of atmosphere or realism in flight. Perhaps realism isn't an appropriate term. Hollywood realism is more what we gameplayers are after. Dynamix once produced a game called A10 Tank Killer which wasn't the most detailed of sims but had sufficient excitement and plot to carry it above most of the others and was a good example of a game providing this 'alternative' authenticity.

Harrier faithfully follows the traditional MicroProse way of things. All the missions have initial waypoints, a primary target, a secondary target and a return waypoint and while the specific instructions for each sortie will differ (sometimes you've got an air target, sometimes a ground one or sometimes just a patrol), the feel of each is exactly the same. Perhaps this is a realistic simulation of life in the Air Force, it's just that most of us are crying out for something with a bit more variety.

However, let's put aside these ramblings from a cynical old hack for a moment and focus on the better aspects of Harrier because despite my misgivings I did find it enjoyable to play.

A good read

Because it is so much like MicroProse's other big-name simulations, it doesn't have any real flaws to it. The product is professional and it doesn't have any of the sloppy design mistakes seen in, let's say, Birds of Prey. The manual, as always, is packed full of information from detailed specifications on the Harrier and its role in combat situations to a step by step guide through a sample mission. One thing it does lack, though, (just to get back to the negatives for a moment) that would have been extremely handy is a description of potential targets with sample pictures of what to expect on the screen. B-17 Flying Fortress had a small booklet of target 'photographs' and such a pamphlet would have been a nice extra.

What is preventing me from casting Harrier on to the pit of eternally damned flight simulators is the Gourad shading it uses for ground terrain.

OK, so I said that graphics aren't the most important part of a game, but as with ATAC, good use of graphic technology can help a game no end and that's exactly the case here. The clever use of Gourad shading means that the terrain does make for some interesting flying.

Comanche is perhaps the only other game to create this realistic sense of flying along narrow valleys and in and out of mountain ridges: at least Harrier has a little bit more of a game to it. It still doesn't mean that I've been totally enthralled with the game: flying along valleys may create a good sense of being there, the trouble is I've not been convinced as to where 'there' actually is.

As far as actually flying the thing goes, everything is business as normal. Everything you've come to know from a typical MicroProse flight sim is there. The odd keyboard and joystick sensitivity settings either have your plane rolling out of control with the slightest of nudges on the stick or have you pulling left or right so hard with the control stick for the smallest of returns.

A typical mission for me would be to fly to the target, enter a hover just within weapon range, face the target and let fire. Controlling the plane within this routine I would first be using a low sensitivity level in order to make subtle changes, then once at the target I would have to change to a high level simply to line myself up before I was detected and fired upon. To be honest, I shouldn't have to keep adjusting an 'external' feature of the game like this. I certainly didn't with AV-8B.

Apart from that, Harrier is a polished flight sim, well up to the standards you've come to expect. Apart from the sensitiv-

Alternatively...



AV-8B Harrier Assault
Domark, £39.99
Rated 9, Issue 15
A timely release for Domark as it stole MicroProse's thunder. Superb in almost every respect, from the smoothness of the graphics to the totally absorbing and involving game play. Plan your missions, plan missions for other Harriers then fly any of them in any order. It may not have Gourad, but it's certainly very good.



ATAC
MicroProse, £44.99
Rated 8, Issue 14
The lesson to be learned from both this and AV-8B is that flight simulators these days have to be more than just flight simulators. People want to start getting more involved with their game, to go beyond mere flying. ATAC does just that with its in-depth campaign against South American drug barons. Highly recommended for anyone keen on flight sims.

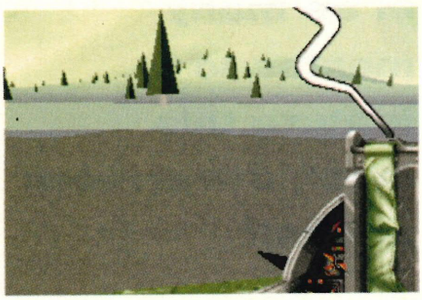


Gunship 2000
MicroProse, £39.99
A game that has managed to age reasonably well is Gunship 2000, especially with the recent mission disks that added more to the game play than just new scenarios, but better graphics and more challenging flight models. Modern helicopters are able to perform much the same roles as Harriers and this is one game that certainly proves that they can be as much fun to fly as planes.



Right: another of the decorative build-up screens, designed to add to the atmosphere.

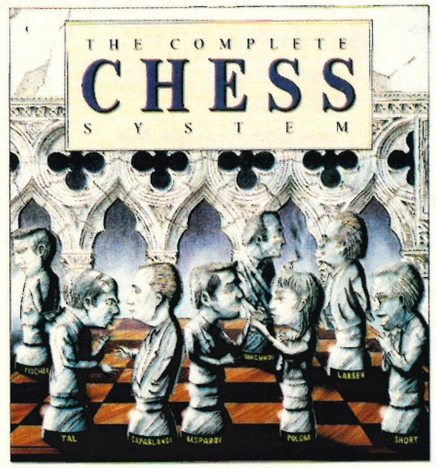
Far right: as well as many external views, you can also look outside your Harrier from one of six angles.





When a campaign is started your mission briefing screen changes to this representation of a mobile field unit.

exercise your mind



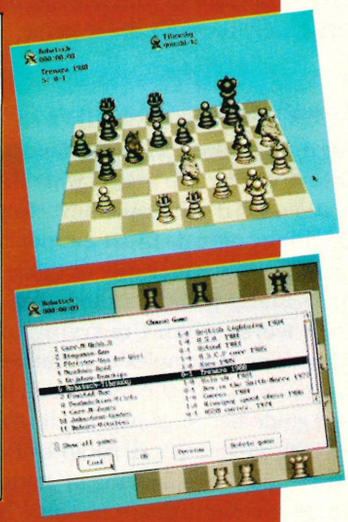
The Complete Chess System

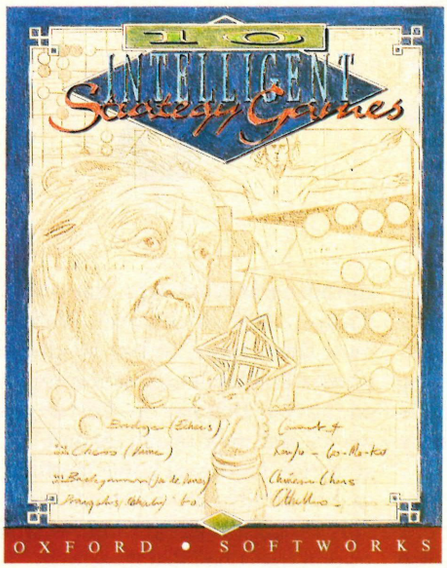
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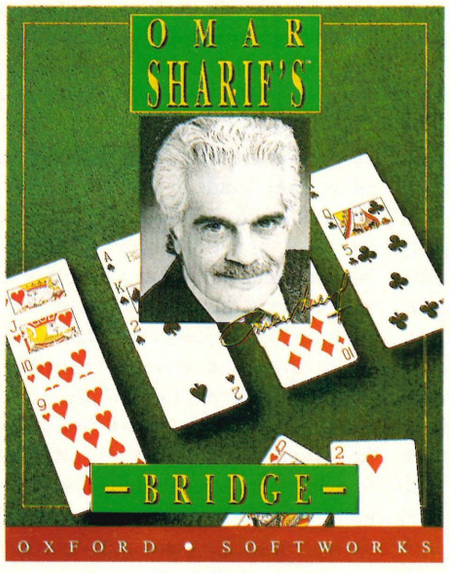
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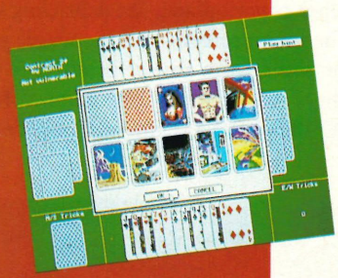
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Screenshots shown are from different machines, other machine versions may differ.

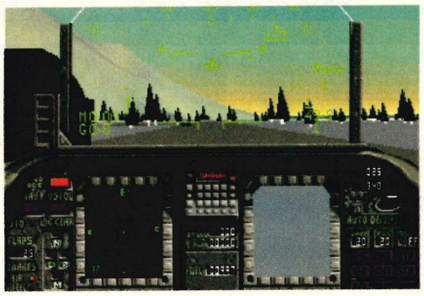
ity I was never in the situation where I was battling the game design instead of the on-screen enemy and I did enjoy myself while strapped into the harness. I did have a problem with landing, but that was hardly the fault of the game.

Touch down

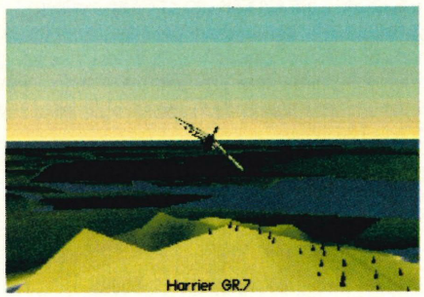
All right. I admit it. I can't land a plane to save my life. No matter what the simulation, what the plane, how simplified the flight model, I just cannot land a plane quickly, efficiently or safely. This particularly painful affliction is made even worse when I'm trying to land something as complex as a Harrier. You can't just do an ordinary 'turn on the ILS and guide her in gently' landing with a VSTOL aircraft. It's all because of weight ratios and fuel balancing or some such things. Harrier runways are short, hard to find and even harder to land on. You have to open nozzles and reduce speed and VIFF and all manner of other complicated manoeuvres.

It's like trying to land a cross between a humming bird, an eagle and an elephant on a matchbox – that is, difficult. I'm not going to condemn it for that, though. I've never been able to land a plane, even on autopilot. VIFFing, or Vectoring in Forward Flight, incidentally, is the use, by the pilot, of the Harrier's nozzles to perform manoeuvres such as sharp turns, or a sudden drop in height during a dogfight, one of the Harrier's most distinctive features.

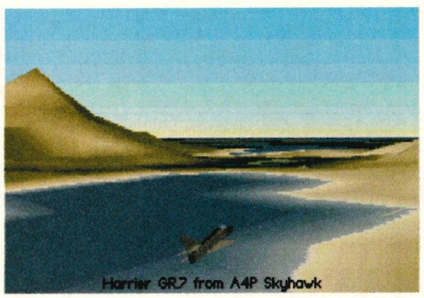
I feel that I should mention the presentation between flights at this stage. Presuming you have mastered the art of returning from a mission at the same time as your plane, the debriefing scenes, the menu screens and the whole process of going from initial briefing to actual flight, while not as deep and involving as AV-8B or ATAC, are well polished. The music particularly deserves applause — a hauntingly atmospheric piece sounding as though it's come straight out of a suspense-filled action film, the bit where the hero has found out who the bad guy is and is on his way to avenge his brother's death ... or something.



The Harrier's HUD modes have been designed to be as realistic as possible. Unfortunately half of the buttons, switches and dials you can see play no part inb the game and are just decoration.



Amongst the external views on offer are, chase plane, slot view, Harrier to target view, target to Harrier view and the good old side view. Unfortunately none of these are alterable.



The Gourad shading allows Harrier Jump Jet to provide some very realistic simulations of mountains and valleys. You also get beaches with surf that rolls in and out and a realistic feeling of ground terrain, such as trees.



Similar to ATAC, Harrier Jump Jet has some good spot effects, such as smoke trails from missiles.

The same praise cannot be heaped upon the intro sequence, though, for one reason. I am of the opinion that intro sequences can often do more harm to a game than good. Companies can spend so much time developing the fanciest, most technologically superior scenes ever seen that once you've finished watching it the reality of the game is somewhat disappointing. Such is the case here. Watching the animated Harrier rise slowly out of the clouds, then swoop down over a column of tanks in a narrow gully is breathtaking enough, it's a shame things aren't this exciting in the game.

It's also a shame that, even in the campaign mode, there's little feeling of continuity. At one stage during a war in the Nordic regions I decided to do a Flight of the Intruder and plan my own mission, one that would effectively paralyse the enemy air defences. Ignoring my assigned targets I instead flew to the two remaining airfields and proceeded to blow them apart, as well as anything in the surrounding area (power stations, fuel dumps, SAM stocks, etc). Well, I say blow them apart, in fact all that happened was a small explosion at the end of one runway that had no effect on enemy planes and their taking off and landing activities. I returned home, nothing was said about my maverick ways and I was duly assigned my next target — a power station that I had just destroyed.

To make matters worse, when I flew back to it it was back in working order with ne'er a trace of my previous hour's Mk.13 Paveway bomb! Either I'm fighting a race of highly skilled builders or a campaign in Harrier tends to be little more than a series of unconnected missions. You decide.

So what's to be made of Harrier Jump Jet? Well, as the lager ad said: it's good, but not that good. It has a couple of innovative ideas, but on the whole there's nothing that I haven't seen before. If I'm really after an entertaining simulation where I can hover, I'm tempted to go for ATAC and fly helicopters instead. I can see MicroProse's designers getting close to a flight sim to end all flight sims when looking at the better elements of each of their games. Like I said, it needs someone to pool them all together.

■ Paul Presley

Techspec *Nothing special is needed by way of machine specs, other than a powerful PC (386SX). The Harrier disks contain a file called Bootmake that creates a boot disk for your PC which is highly recommended.*

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	5Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		

Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✓	Keyboard	✓	Mouse	✓

Performance

Optimum speed	20MHz
Minimum memory	1Mb
Free RAM required	585K

PCreview 6

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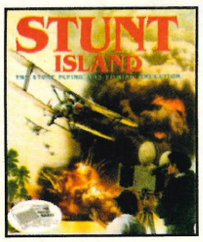


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Title	**Stunt Island**
Publisher	**Disney/Infogrames**
Contact	**(071) 738 8199**
Price	**£49.99**

Stunt

Is it a bird, is it a plane? Or is it a means to becoming rich and famous in the movie stunt business?

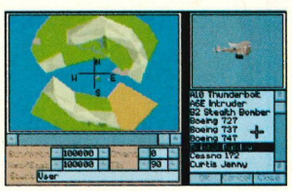
Fond as we are of pigeon-holing games into categories, we were defeated by Stunt Island. It's a huge program that at first sight seems to be a hybrid between a flight simulator, a 3D Construction Set and an animation program. While the packaging declares Stunt Island to include "a first-rate flight simulator", in practice, arranging flight-based stunts is far more central to the action than flight *per se*. Stunt Island's UK publisher, Infogrames, is particularly keen for the program *not* to be seen as a flight simulation, mindful of the high technical expectations of many armchair pilots. It's also interesting to note that although Stunt Island has been produced by Disney Software, it was developed by our very own UK-based Assembly Line.

So Stunt Island is a stunt movie simulation, with the emphasis on aerobatics. You can take on any of the 32 stunts created by the program, or you can build your set from the mammoth list of available objects and scenarios — Stunt Island, the place, is a location manager's dream — and distribute props and scenery to add colour, which is where the program looks like a 3D Construction Kit. Then you can start flying through, above, or around the landscape you've just crafted, the flight sim side of the program. But the meaty part of Stunt Island is that you can 'film' your flight (ie, save this slice of action to disk). Having created this footage, you can then add other bits of footage to it, edit out any untidy bits, or parts where your flying looks less than expert, add music or sound effects from the program's sound library, and even type in some credits to introduce your cinematic efforts so that you end up with your very own home movie.

Given that the stunts are geared towards flying, and that there is an impressive list of planes to pilot, how accessible is the program to non-flight sim buffs? I always feel nervous when confronted with a flight sim, since it means many hours, if not days, to get the hang of those hundreds of new flight instructions and in the end I am still stuck on the runway while the only things I can manage right away are to bomb the nearest friendly hangar or to raise the landing gear, which means 'mission over' before I've even taxied a couple of feet. But saying, "I can't, so I won't" isn't going to get me far in the movie business. I needn't have worried, though, the manual contains just a few concise instructions about joystick controls for flying the plane and then, believe it or not, it takes just a few keystrokes to get the machine airborne and to hold it there.

If you are a competent PC pilot, I would strongly advise you to rush to the airfield and to grab the first and best plane you can spot in the menu. If you

Not only do you get to act and direct your own movies, you're also the location manager, chief casting agent and properties buyer. This could be your big break ...

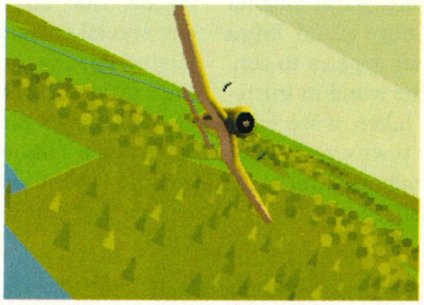


At the set creation screen, first choose your location from the overhead map of Stunt Island. Next you should choose your plane: this should always be the object in slot one of the 40 available slots for objects and props.

Island

are not so sure about your flying skills, here is a summary of the few keystrokes you need to get up and away. Hit 0 (zero) to gain maximum engine power. Once you are at your machine's take-off speed, either pull back your joystick, draw back your mouse continuously or keep tapping the cursor-down key to get your nose up and into the wind successfully. Having reached your desired height, reverse the joystick/mouse/cursor movement until you fly horizontally (check artificial horizon if available). The only aircraft that don't really make sense to get off the ground by themselves are the hang-glider, paraglider and the pterodactyl. These would have to be dropped from a certain height and only remind you of a cow on a bicycle when you leave them helplessly on the runway. And that is all that it takes to fly.

Infogrames is right. This is not an authentic, technical, 'being there' flying experience, and the program itself doesn't pretend to be, even if the blurb on the back of the box might lead you to think otherwise. What there is here is a cracking flying game, but the stunt creation is the really interesting bit ...

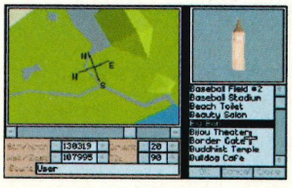


On with the plot

The very fact that you can play Stunt Island in so many ways is at the same time appealing and a tad confusing. You can fly pre-set stunts, or film pre-set stunts; you can fly pre-set stunts and film yourself doing so; you can design your own sets and stunts, and fly them, do all that and film it too; or, finally, you can add a more competitive edge to the entire proceedings by entering Stunt Island's Stunt Pilot of the Year contest.

This sets you 32 stunts, such as flying up to and landing on the Golden Gate Bridge (a 'prop', which like the Eiffel Tower and Big Ben, has found its way

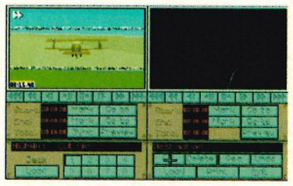
Two Minutes *on location*



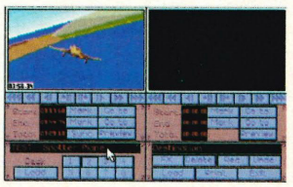
There are 800 objects and props in total to make a stunt more realistic or dangerous. Many have been used in the pre-set stunts, hence there are six different types of cloud! Here's Big Ben, but the Houses of Parliament is not on offer.



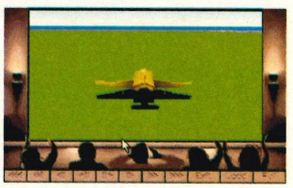
With your objects in place, you can try a test run of the stunt. This is the pilot's view of the start: I obviously chose a great place to put the aircraft. When placing objects, you can check on their position from set design screen.



Having wobbled through the course, I reckon there must be enough footage to create something half respectable. It's off to the post-production module and the editing suite. Here is the footage being viewed at twice the speed.



You can also switch camera angles, so that after a sequence from the pilot's viewpoint, you switch to the spotter plane camera. This camera is always in position; other camera angles must be defined at set design time.



Once you've edited and pasted your footage, you can add music, sound effects and credits, then show it in the Stunt Island theatre. However amateur the end results, you are always guaranteed a rapturous reception.

into Stunt Island's library of objects) flying down an aqueduct, or landing on a moving train. You will be awarded points for a successful stunt on the first 'take', and you lose points if you crash or exceed the maximum number of takes. Since you can practise these stunts to your heart's content without actually being in the contest, it's obviously advisable to get to know what's expected of you and do a fair few dry runs before you enter the contest proper. Stunt flying, whether competitively or not, is fun enough. Filming and editing your exploits requires a different set of skills altogether. Here, you can either set up your camera and fly around the existing landscape, looping the loop and generally looking brave, but for a true *auteur* feel, it's much more satisfying to build your own sets.

To start with, you can use the existing sets from the Stunt Contest and film yourself as you try them out. To build a set, or even load and change an existing one, you can either zoom into the 34 pre-set locations on the island, such as the mediaeval castle, or Los Angeles airport, and alter what you don't like or look for an open spot on this huge island. Stunt Island's natural habitat appears to contain the climates of the world in microcosm. It has rivers, lakes, waterfalls, mountains, deserts, towns and cities. Simply use the overhead map to spot the ideal location and zoom in.



Just one of the 45 aircraft on offer in Stunt Island; in addition to planes, you can also fly a duck, or hang-glide, or drift in a hot air balloon.

Then you can start furnishing and prettifying the scene with objects from a clip library of 800, which include vehicles, buildings, monuments, and some curious objets d'art which someone, somewhere will doubtless find a use for. You also need to choose a vehicle for yourself, and while the flight sim enthusiast will go for the planes on offer, there are some more exotic modes of transport: stunt flying by pterodactyl, anyone? Or hot air balloon perhaps?

Like 3D Construction Kit, there are technical aspects to determining how your props are going to 'behave'. If your film-set consists of inanimate, immobile objects, fine, but if you want to set up any special collision detection parameters, or animate, say, a vehicle other than the one you're controlling, you'll have to get your hands dirty with 'if' and 'and' statements. This is also true if you create a composite 'prop' from two separate objects and you want the two to move

Techspec

As you might expect for a game of this complexity, Stunt Island is demanding. You'll need at least a 16MHz 386SX, and frankly, a 33MHz 386DX is a more realistic minimum for smooth playing. If you have extended memory, the program will make use of it. You also need 256-colour VGA and a good 13Mb hard disk space free before you install it. In addition to the soundboards below, it also supports Disney Sound Source, Thunderboard and Tandy Sound.

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	13Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		

Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✓	Keyboard	✓	Mouse	✓

Performance

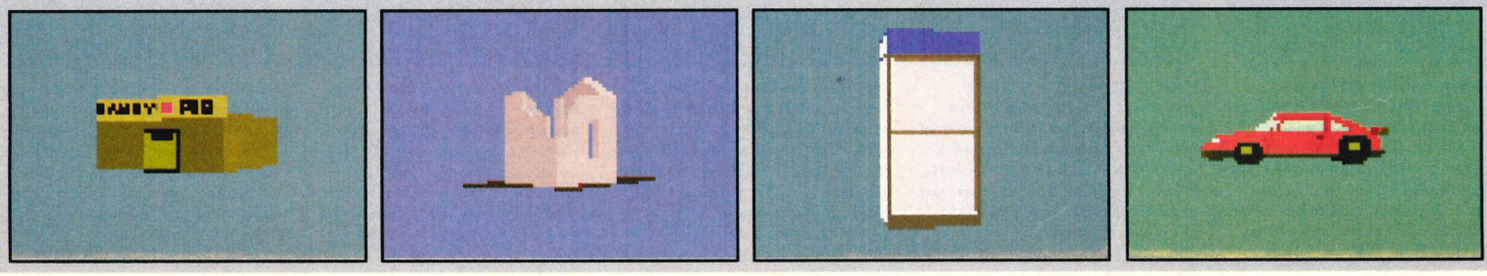
Optimum speed	33MHz
Minimum memory	640K
Free RAM required	570K

MENUS & OBJECTS

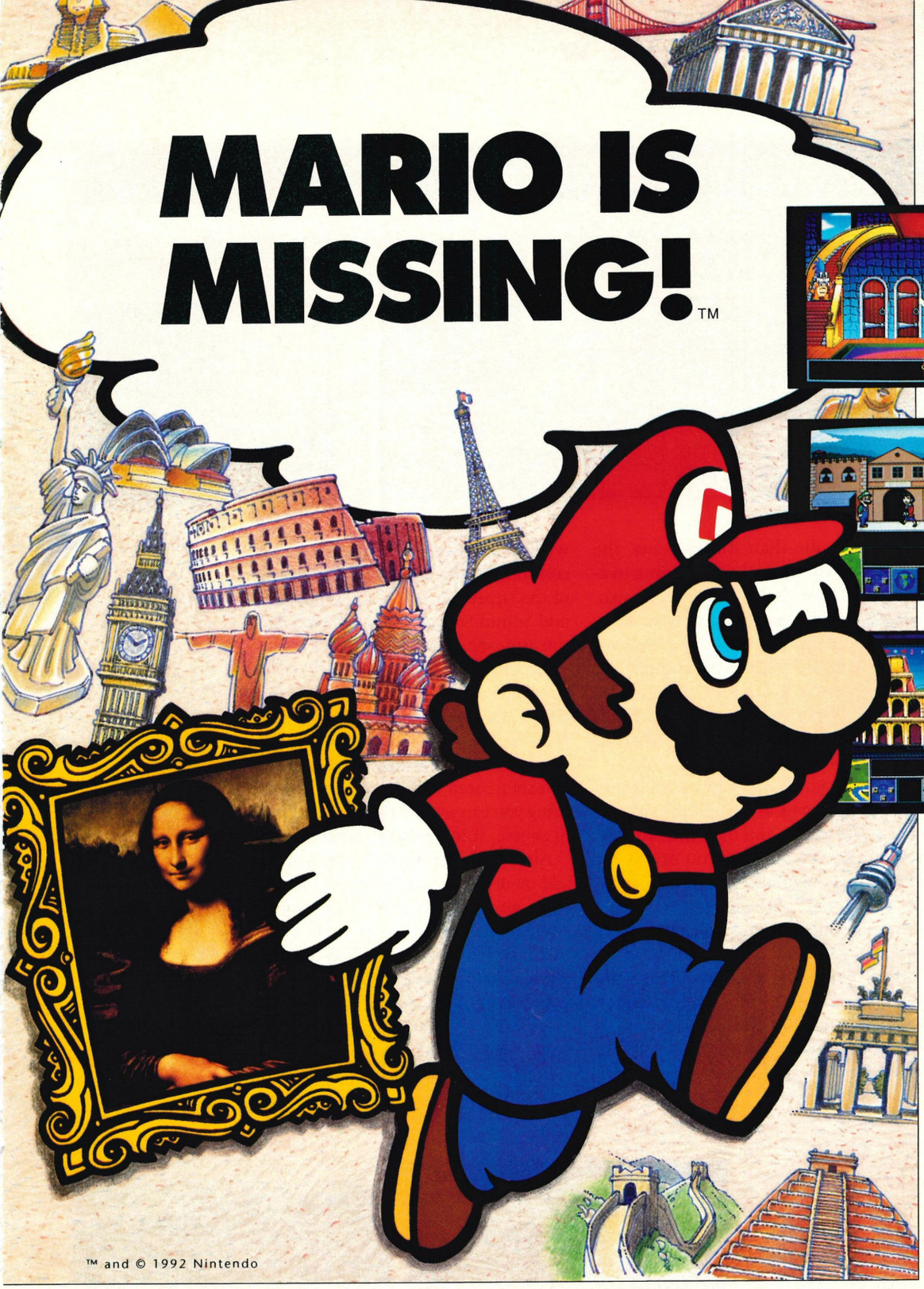
The introductory screens to the various modules. Left is the intro screen proper, with all the different options. The stunt coordinator offers you the pre-set stunts to take part, whether competitively or not. The surgeon will patch you up if you crash the plane; in post-production, you can either edit your own films, view successful completion of stunts, or edit the existing films on disk.



Some of the weird and wonderful objects and props you can use in your stunts, from left: English pub, ruins number four, phone box, and Porsche. Have the game designers ever set eyes on a real English pub? There are 800 of these altogether, including six different ruins in all, and three different types of beach towel!



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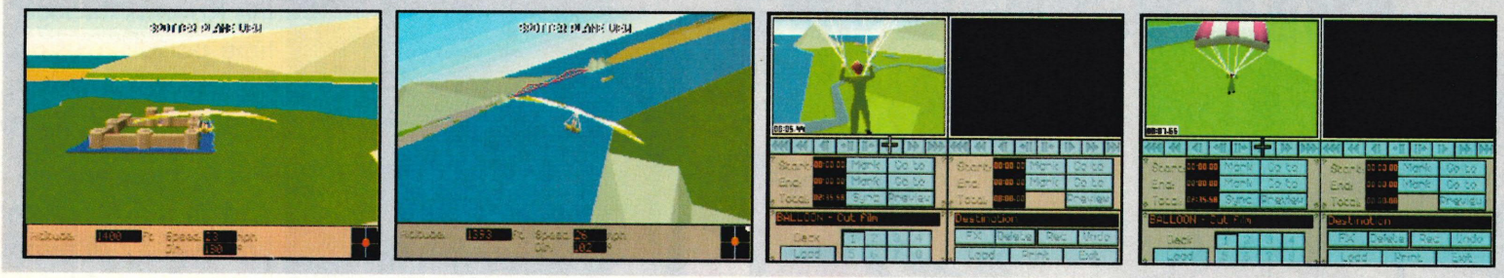
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STUNT FLYING

The pre-set stunts include Castlestorm, below left, in which you must hang-glide around the, er, mediaeval castle, and glide in through the front gates to land on the catapult. Apparently a stunt for a mediaeval farce. The two rightmost pictures are from Catch a Balloon; here you need to snag the red and white balloon which is carrying an explosive cargo and will blow the hot air balloon festival to smithereens if the guy's able to land. Political agitators, eh?



together or independently (for example, if you put a gun turret on top of a tank, you want the gun turret to spin round, but not to be left behind when the tank moves off). The program makes this aspect of things as clear as possible; it's not so much difficult as finicky and difficult to keep track of.

Filming, on the other hand, is comparatively easy. Choose 'fly stunt' from the 'set design' screen, and then select 'action-take'. Do your stuff as well as you can, and then save the take if you felt it was satisfactory (discard it if you crashed hideously, of course!). Now it's time to transformall this wonderful footage into your meaningful, action-packed, yet socially-aware movie.

Even if you start off with something fairly simple, it's surprising how pernickety you become in the post-production module, where you edit your footage and add sound and graphic effects. You wouldn't have thought that a simple 30 second video flying to the Golden Gate Bridge, describing a wide circle above it and then soaring off into the distance (my strikingly unambitious first attempt) would demand a lot in the way of editing, but, like the set design using the clip library objects, editing gets complicated.

In the editing suite you're presented with VCR-style controls for viewing your footage easily and options to mark the 'film' for editing or adding graphic and musical effects, and credits. Graphic effects include fading in or fading out images; sounds can include engine noise or explosions, or music — again from a library of tunes, most of which sound as though they had been first used on Miami Vice. Credits are simply typed in from the 'credits' option.

Finally, you can play your finished film in the Stunt Island cinema, where no matter if you prove to be more worthy of Jeremy Beadle than Ridley Scott, the audience will give you a standing ovation. And after all that flying, set design, filming and editing, you'll deserve it.

Stunt Island is really two programs wrapped in one. There's the stunt flying, which is terrific fun so long as you regard it as a flying game rather than a flight simulation, and then there's the film direction side of things.

Building your own stunt scenes and editing the footage is a complex business, which the game's interface does its best to simplify. The main menu makes the screen look as much like a studio backlot as possible, with signposts directing you to production and post-production houses, your cabin, the airfield or the ferry on which you can leave Stunt Island (ie, quit to DOS). The polygonal action graphics are clear and fast-moving, so that you really do get the impression of flying by the seat of your pants at times, while the editing suite functions are icon-controlled. Mention should also be made of the superb speech with SoundBlaster and Sound Source cards, which adds to the atmosphere of the game.

Stunt Island is limited only by the user's imagination and perseverance. While the idea of making films of your progress is fascinating there's a certain amount of learning and trial and error to be experienced before you create something you can really feel proud of (unless, of course, you *are* Ridley Scott).

Already, Infogrames is talking about add-on disks for later in the year with yet more aircraft, new stunts and probably some additional tools as well. This is assuming that you've milked the existing features dry of excitement by then, which is unlikely. Stunt Island is one of the freshest, most intriguing releases we've seen for a long time.

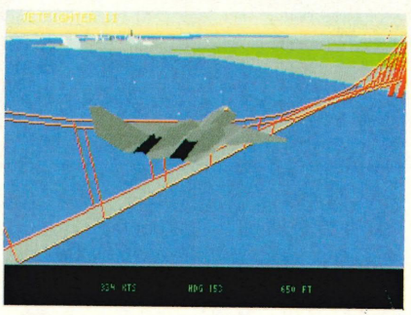
■ Tom Schmidt

PCreview 8

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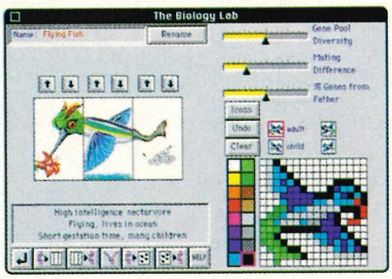
3D Construction Kit 2.0
Domark, £49.99
Rated 6, Issue 16
There's nothing on the market directly comparable to Stunt Island, but if you like the sound of creating your own environments and animating objects within them, 3DCK 2.0 takes this a few stages further. It can be either a tool for devising your own 'virtual worlds', or a game designer for creating simple polygon-based games. Very technical, though.



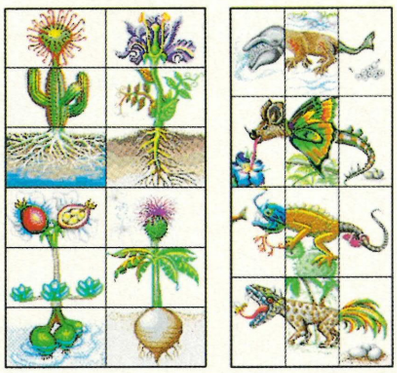
Jetfighter 2
Velocity/US Gold, £45.99
The other part of Stunt Island is the stunt flying aspect, and if an easy to play flying game is more your idea of fun, Jetfighter 2 could well fit the bill. There's nothing too technical or manically authentic here: you can fly without too much learning to begin with, and of course, shoot down everything that moves on a range of missions. It's graphically impressive as well, in a style similar to Stunt Island.

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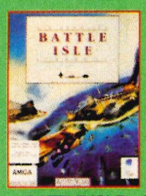
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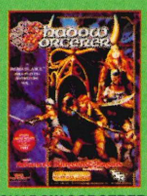
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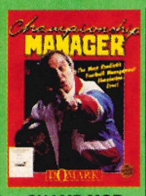
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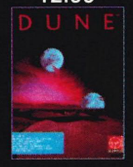
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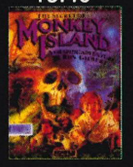
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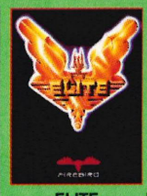
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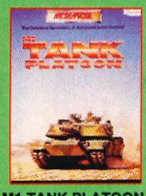
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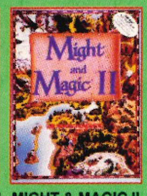
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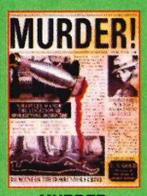
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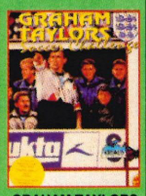
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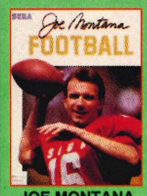
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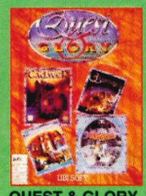
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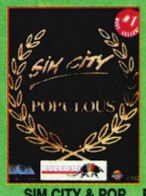
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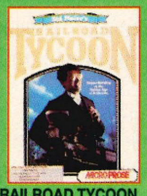
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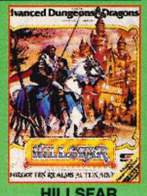
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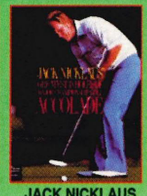
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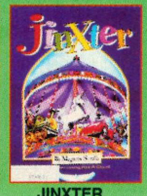
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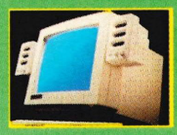
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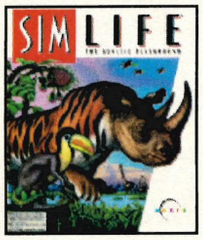
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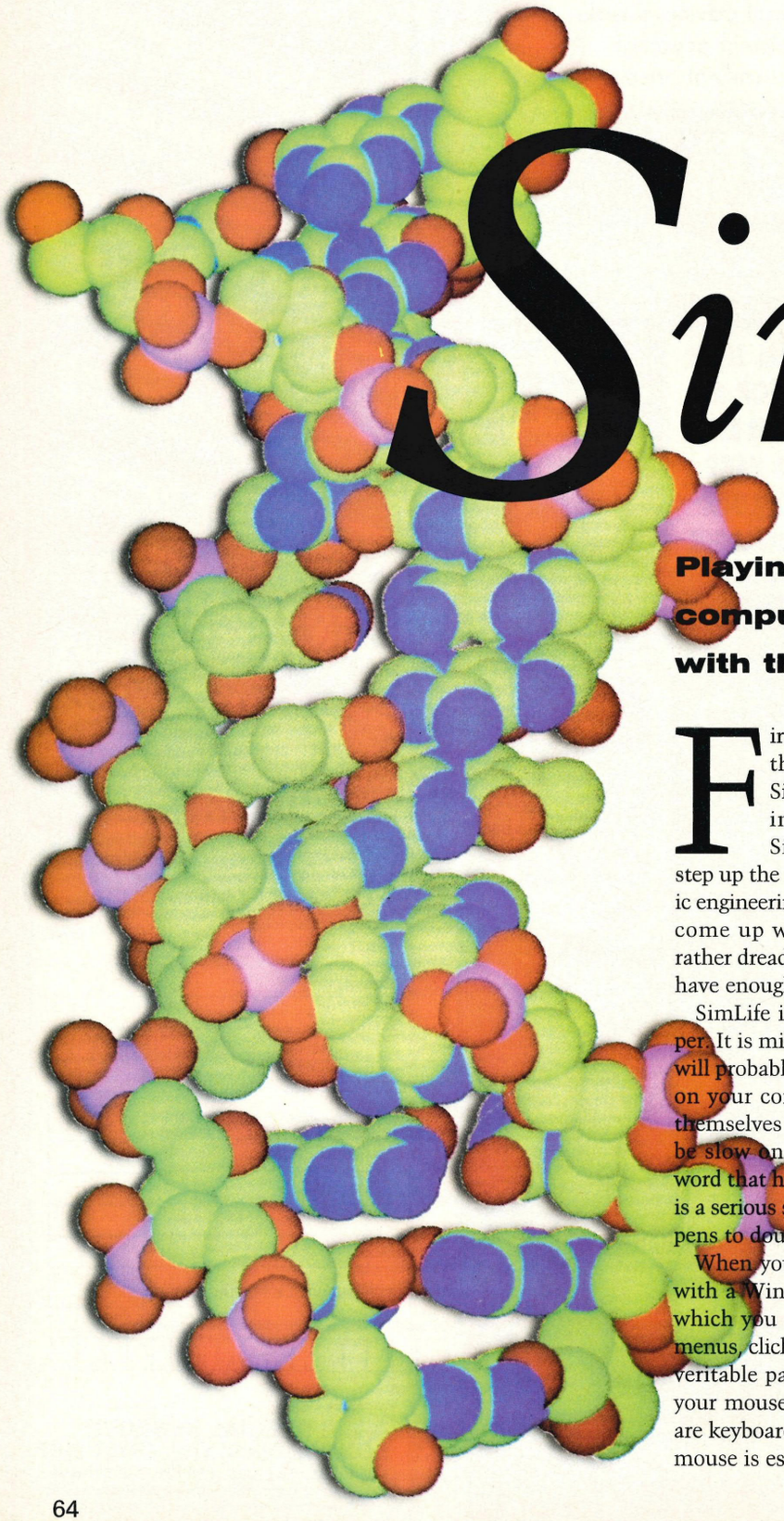


Title	**SimLife**
Publisher	**Maxis/Mindscape**
Contact	**(0444) 246333**
Price	**£39.99**

Scalpels at the ready, it's time for some lab work. Nothing like tinkering with the evolutionary chain to get the creative adrenalin going. Doctor Frankenstein, I presume?



Here we are in the biology lab, where we are going to create an experimental animal. By using the arrow keys we can select combinations from 18 types of head, 20 bodies and six tails. Here we've got a climbing, desert-dwelling herbivore with a short gestation period.



SimLife

Playing god is nothing new in the world of computer games, but now Maxis is toying with the very stuff of life itself

First town planning in SimCity, then global manipulation in SimEarth, and now, discounting the quirky cul-de-sac SimAnt, it's the next logical step up the megalomaniac ladder, genetic engineering in SimLife. What will they come up with next? To be honest, I rather dread finding out. I'm not sure I'll have enough brain cells to cope.

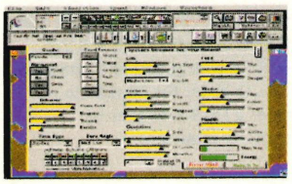
SimLife is, to put it simply, a whopper. It is mind-stretchingly complex and will probably have much the same effect on your computer – the programmers themselves admit that large games can be slow on a 486/33. And 'game' is a word that has to be used advisedly. This is a serious scientific tool which just happens to double up as a plaything.

When you load up you are presented with a Windows-style environment, in which you can access the various submenus, click-and-drag and choose from a veritable pantheon of relevant icons at your mouse's whim. Incidentally, there are keyboard commands available, but a mouse is essential in practice.

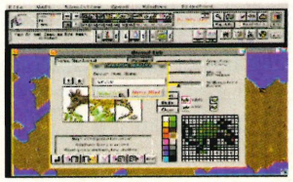
An initial menu offers a choice of scenarios, giving the opportunity to simulate either various evolutionary problems or to experiment from scratch in a randomly generated world. Every aspect is subject to your interference and control, allowing you to alter climatic conditions and decree as many or as few oceans, deserts, etc, as take your fancy, all before even scenting your first whiff of DNA.

If all this sounds daunting (and it should – it is) you will be relieved to hear that a clear and thorough on-screen tutorial is available. The manual contains further tutorials, and this certainly is an instance where a little study and familiarisation will reap the required dividends. Theoretically, I suppose, you could just jump in and see if you sink or swim, but it'll be a foregone conclusion – you'll sink. Which is a pity really, because given the premise of SimLife one ought at least to have the chance to mutate into an aquatic lifeform.

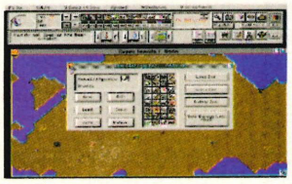
With the initial essential lessons digested, it's time to get down to evolutionary brass tacks. Click on 'experi-



And this is what makes it tick. This is the species' genome pool, where our animal's genetic data is stored. It's possible to fine tune behaviour patterns or environmental influences, for example, by giving our animal the ability to fly, or by changing its diet.



Meanwhile back at the lab ... The artistically inclined can create an icon from scratch using the palette provided, but I've chosen the lazy option and shopped off the shelf from the selection provided. 'New animal' isn't a very exciting title for the species. I've called it Moreau.



Once I've exited the lab, the first thing to do is save the new creation. Only 24 species are allowed in the game, so if you intend to experiment widely you'll have to delete existing categories to make way for your own. It's time to send my rough beast slouching into the world.



And here he/she/they are, dotted liberally about. There are plenty of plants around so with luck they'll find enough food to survive, but how will they adapt to the environment? Pretty well if the message in the top left of the screen is anything to go by: they've mutated already!



Now for the bad news. This is the Moreau's food web. The killer penguin on the left is its predator, and the plants on the right are its prey. I thought only the ones in the red wrappers were carnivorous ... And if you think that's a terrible joke wait till you read the manual ...



Left: one of the more attractive scenarios is 'terrible lizards'. Various groups of dinosaurs have just been placed fully-fledged on to the map (a strangely Creationist procedure in this most Darwinian of environments) but not all will survive: notice the skeletons. Sadly the graphics won't stretch to a Raquel Welch icon.

mental mode' to give yourself a free rein, select the size of world in which to operate (small, unless you have epic pretensions), and the first steps in the ineluctable Darwinian process are ready to be taken. The main screen is now given over to a 2D map of the world, generated in standard fashion. By clicking on various icons in the permanent main menu strip above it's possible to ascertain details of rainfall, temperature, soil, etc. These will become relevant later, but for now let's add a little life.

All living organisms are divided into either plant or animal categories. At the beginning there are 24 species of each available, all represented individually by icons in a panel which, because of their great number, must be scanned through using arrow keys, and which, because of their extremely small size, can lead to confusion and eye-strain. Fortunately it is not necessary at this stage to deal with them on an individual basis. Instead, just follow the tutorial's instructions closely and populate your world with representatives of 'all plants' and 'all animals'. It's at this point that any notions you might have had of god-like omnipotence will be quickly obliterated. It's one thing to create life, but controlling it, the essence of SimLife, is quite another. In short, chaos ensues.

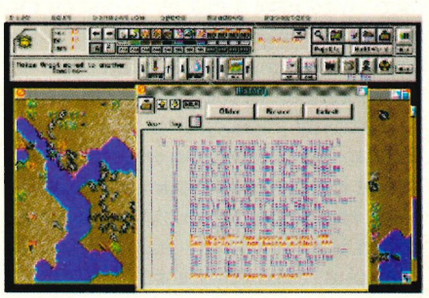
Plants may grow and sprout, or get eaten up or simply wither away. Animals suffer similar fates, and as the world becomes quickly populated with skeletons you begin to realise just how complex are the series of checks and balances which go to make an eco-system. A plant dies out and the herbivore which feeds on it is threatened. So the carnivore which feeds on the herbivore must either find new prey or face extinction itself. Why has the plant died out? Is it because the temperature is too hot/too cold? Or is the lack of richness in the soil a factor? You'd better find out fast or you'll have a lifeless barren world on your hands in a fraction of an aeon.

Even at the slowest speed setting in the smallest world all this amounts to a handful. The crucial question, having got this far, is will you have the perseverance to digest the massive amount of detail necessary to master the environment and let life flourish? You'll need to have a great deal of patience.

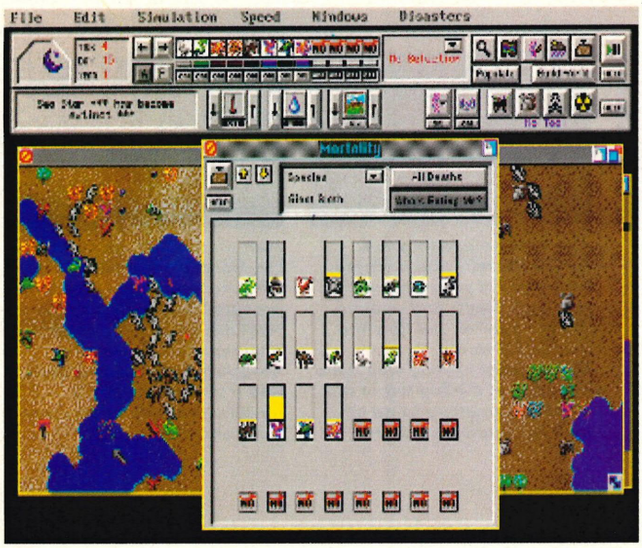
You'll also need to have the kind of mind that thrives on dealing with the abstract. SimLife is more like a giant chess game than the sort of software usually featured in the pages of this magazine. Of course this is no bad thing – after all, variety's the spice of SimLife – but this isn't 'Indiana Jones and the Fate of Darwinism'. If you went by the artwork on the box you might think that it was. The illustration shows a collection of plant and animal mutants, most strikingly a tiger's body with the head of a rhinoceros, and in the background some giraffe necks transplanted on to the bodies of ostriches. It's an arresting, quasi-Wellsian vision, but the reality is rather more mundane.

What this illustration is meant to evoke is the key part of the game known as the biology lab (see illustrations). Here, instead of just dealing with known plant and animal species, you have the chance to construct your own. Let's imagine we want to create a new animal.

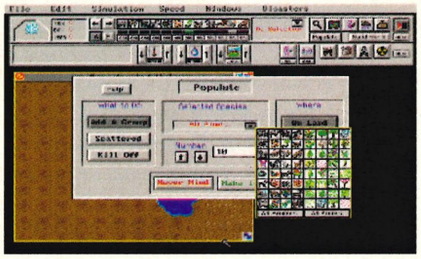
The animal will be composed of three segments, head, body and tail, which, broadly speaking, will determine its intel-



This history chart shows what has happened to the various species when. Here you can find out who's threatened with extinction, but if the line's highlighted in red you're too late: sea urchin, trilobyte and shark have bitten the evolutionary dust.



Here's a useful aid in heading off extinction, the mortality chart. Select an animal (here a giant sloth) and click on 'Who's eating me?' to identify predators. A little yellow in the bar chart indicates that sloth is a popular hors d'oeuvres with tyrannosaurus rex, pterodactyl and archaeopteryx, that well-known maximum score from Scrabble.



As there are 24 of both plant and animal species it would take a long time to populate the world with them individually. Luckily with this menu you can create whole batches at once. They can be scattered randomly (best for plants) or placed in groups on land or water.

charts, menus stuffed with data, these are the heart of the game, and it's perfectly understandable that the manufacturers should be keen to emphasise the jazzier aspects. Unfortunately they try a little too hard, and this is more than apparent in the manual.

The manual is necessarily dense, but I'm not certain that the correct way to sugar the bitter pill is to fill it with appalling puns and the odd faux-naif cartoon. And if we're going to get a pseudo-school-exercise book included in the package, couldn't they go the whole hog? Why not throw in a used anorak and a free tube of Clearasil?

If this judgement sounds harsh, wait till you hear the soundtrack.

At various points in the game we are regaled with snatches of background muzak, all quite unexceptional and unexceptionable. But when we arrive at the stage where the animals start reproducing, we get – and I kid you not – a breathy female voice coyly cooing in a cod French accent, "Ooh-la-la! Ooh-la-la!". It's like tuning in to Horizon and finding it's being presented from Rene's cafe on the set of 'Allo,'Allo.

All this gives the impression that somehow Maxis lacks confidence in the product, and that it's desperate for it to appear more exciting than it is, and more like, well, a 'game', than it could ever be. This is a pity because, negative comments aside, it's an impressive piece of work. It's complex, subtle, and absorbing. It's also highly educational, and that's the rub. The market is geared to entertainment, but however often the manual urges us just to 'have fun' (and it is often) you'd have to be pretty damned swotty to get much of an adrenalin surge out of this product.

This is a difficult one to grade. Its scope and ingenuity cannot fail to impress, but ultimately its appeal is limited by a lack of atmosphere and that crucial, elusive all-important ingredient X – playability.

■ Simon Shaw

Techspec SimLife takes a lot of memory, at least 2Mb total, and at least 1,750K free (combination of base and extended memory), and it will use more if you have it. In a large world it can use as much as 16Mb. In order for SimLife to run on a DOS machine, a DOS Extender by FlashTek is part of the program.

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	2.5Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✓		

Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✗	Keyboard	✓	Mouse	✓

Performance

Optimum speed	33MHz
Minimum memory	see note above
Free RAM required	2Mb minimum – see note above

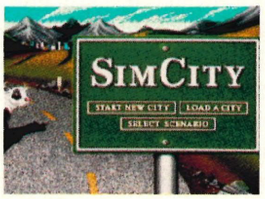
ligence and diet, habitat, and reproductive characteristics. You simply click around these 'flash cards' with the mouse button trying out permutations until you come up with a combination you fancy. You now get the chance to name your identikit creation (Frankenstein's always a popular choice) and it's ready for the injunction to go forth and multiply. All it needs is an icon.

Yes, an icon ... You wouldn't exactly expect to see this oddity striding/flying/swimming over the map. It's just going to be represented by a tiny moving pictogram, and although you can draw your own and colour it in as the fancy takes you, it's still only going to exist conceptually, not concretely.

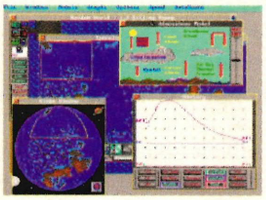
It's not easy to get emotionally involved with the fate of an icon. If it were, we'd have a picture of one on the box (incidentally, you can't actually recreate the aforementioned rhino/tiger or ostrich/giraffe in the biology lab; that's just artistic licence). It may seem perverse to dwell on the artwork, but the fact is that it suggests a flavour quite different from the actual taste of the package, which is relatively dry and, to reiterate the point, essentially abstract. Graphs,

PCreview 6

Alternatively...



SimCity
Infogrames, £30.64
The daddy of all sims may be a bit long in the tooth now, but this mould-breaking game has quite rightly achieved classic status. The main object here is to create and manage an urban environment. As with other sim products the aims can seem a little nebulous: you solve problems rather than cross a winning line, but the gameplay is interesting, if limited, by current standards.



SimEarth
Ocean, £40.86
Superficially at any rate, SimEarth looks at the natural world from one step back. You concentrate on creating the right conditions for the program's animal life to flourish — and a whole genus at a time, as opposed to individual species. SimEarth's model is based on the Gaia theory that the earth is a self-sustaining, 'living' organism, but you don't need to be an expert to play the game.



Civilization
MicroProse, £39.99
Rated 7, Issue 1.
Civilization doesn't have much in common with SimLife, but there again, what does? Graphics, sound, etc, are of the same low order, but it doesn't seem to matter. You must guide a tribe of primitive nomads from prehistory through to the space race. You could say it's a study in anthropological evolution; it's certainly the best strategy game available.

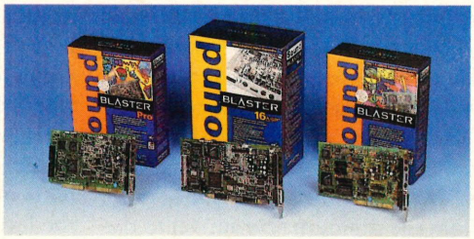


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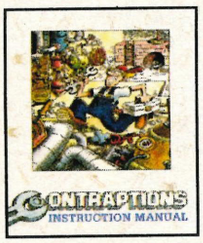
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Title	**Contraptions**
Publisher	**Mindscape**
Contact	**(0444) 246333**
Price	**£34.99**

Zack sets off on this level needing the players at the bottom right. However, there's a lot to do before you can get them, so it's up to the top right you go ...

Contraptions

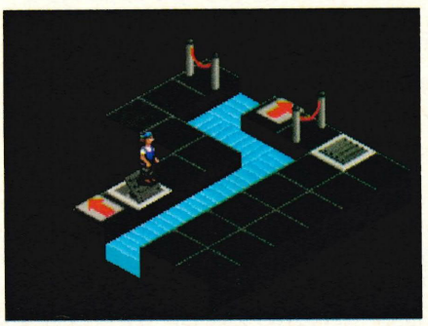
If you like to exercise the old grey matter from time to time, Mindscape's new game could be the mental work-out you've been looking for ...

Mindscape's follow-up to the extremely successful D\Generation is Contraptions, a game which continues where the former left off. Both games having been programmed by the same team of American designers, their style is unsurprisingly similar, although the background to Contraptions is definitely a more light-hearted affair.

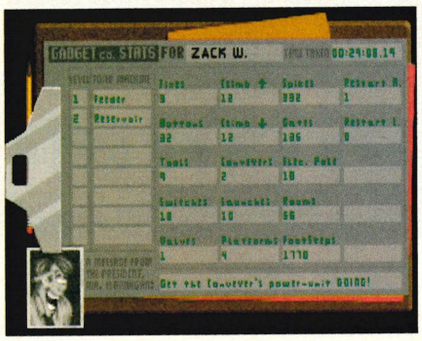
This time, instead of rescuing hostages from violent aliens, you must ensure that Zack, an engineer on his first day at work as a repairman for Gadgetco Inc, fixes all the faulty machinery at a gigantic power plant. Upon entering the plant you find that Zack's fellow workers have borrowed his tools and left them at various locations. There are nine tools in all — ranging from the titanium screwdriver to the hexnut wrench — and all of them have to be recovered if you are to progress throughout the game.

However, to gain access to his tools you have to overcome the first of many problems and conundrums that are placed in your way. If you have played D\Generation before, you will have some idea of their style, but for the uninitiated, this is the idea behind it. The puzzles you face are based on logic, reverse-logic, memory, rationality and lateral thinking. For example, in the first room the only exit is surrounded by a series of colour-coded spikes which protrude through the floor. A group of coloured blocks are also set in this floor, alongside a series of launch plates. The latter uses springs to propel Zack from one area of the plant to the other, but these are largely one-shot affairs and once Zack has used them, he is stranded where he lands. Moving Zack on top of the coloured blocks causes them — and some of the spikes of the same colour — to retract, but raises others in the process. It soon becomes a matter of experimentation to work out what plates to use and what blocks to depress before your way is made clear.

Initially, this kind of puzzle forms the basis of the game, although to increase the level of difficulty, some of them are timed and can lead to Zack being trapped



Zack is using one of the launch pads to get across the water. Launch pads can come in handy, but remember most of them are one-offs and once used, you can't return.



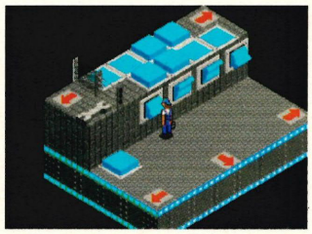
Two jobs down and six to go — and still Zack's boss is in a hurry.

in a certain section of the plant. The degree of difficulty increases the further you progress. Eventually you have to utilise the tools Zack finds to mend certain parts of the plant as well as see to it that certain sequences of events are completed in the right order. To complicate things further, your boss contacts you on a regular basis and asks you to perform specific tasks, such as fill up the reservoir, which you have to complete quickly or face the consequences.

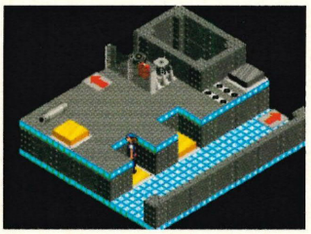
The ultimate aim of the game is to investigate every room, solve the puzzles therein and keep the power plant running to maximum efficiency. This means coping with over 60 rooms, each of which are spread over six levels and contain a wide variety of problems.

When I first started playing Contraptions, I was captivated. Each conundrum was different in style, yet they were neatly interlinked by logical ties. Solving one major problem meant visiting several rooms, correctly dealing with various sub-problems in a specific order and then returning to your original

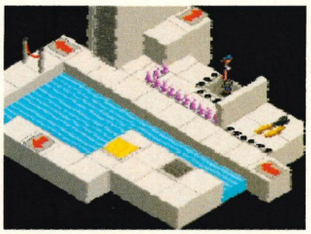
Two Minutes *of bursting balloons*



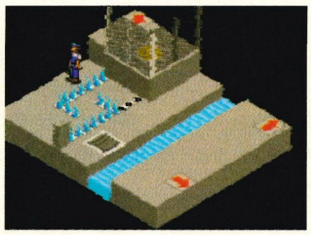
Here you will find that reverse logic is the best way forward. Making sure that all the blue blocks that would form a pathway are in the up position, jump on to the blue button and reveal the way to the spanner. Even the gate opens as well.



Ever onwards, it's into the reservoir next to press the left yellow button. This makes it extremely easy for you to collect the tools on the next level. It's a crucial development and, with not a moment to lose, you're making headway fast.



Once you've depressed the yellow button, you should flip nimbly over the water, climb up the wall, drop down and press the grey button, releasing the much needed players for easy collection. Timing is of the essence now.



Having immobilised the treadmill with the recently obtained players, it's time to move on. After pressing the yellow button, you have only a few seconds to get through the spiked corridor until the last row is raised again, trapping you in.

location to witness the results. After playing the game for many hours, I found that it required as much intense thinking as joystick dexterity. Other pluses were the graphics, and the scrolling, impressively fluid, both features enhancing the game considerably. Even the music that came through my sound card was varied and consistently listen-able!

Contraptions has one main drawback, however. When I saved my position, I found that the game didn't save in the position I had left it in: it saved it at the beginning of a level instead. This is a real pain, as you can play the game for quite a while, get to a stage where any progress is potentially dubious, save the game, and find yourself back at square one. Thus you have to do the work over again in order to get back to your previous position, a real chore, especially if you are unfortunate enough to make a mistake.

I found the best way to tackle this problem was to play the game over and over again, without saving, making copious notes along the way. Once you know what tool lies where, and how it needs to be applied to what part of the plant, you can work out what order you have to follow to get to the end of a level with one, long concentrated effort, where you can save the game and continue onwards.

Another word of advice: *don't* read the rule-book immediately — just get on with the game and find your feet, then return to it later. It is deliberately written in an official jargonese designed to confuse and terrify you, for example, "The water reservoir system provides needed friction inhibitors to the progressive balsamic oil lines enabling lubrication of all phalanx resistors." Once you have actually seen what is described, you'll be able to comprehend the rule-book. Honest!

Another criticism worth mentioning, albeit a minor one this time, is that the game inexplicably flashes up the same demo sequence at random intervals during gameplay, a constant source of irritation which merely serves to interrupt the enjoyable atmosphere of the whole experience. Most annoying.

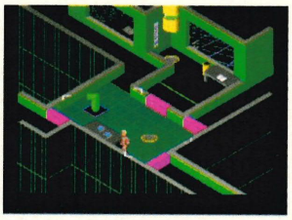
All in all, Contraptions is very much a play and discover game, which inevitably means that you will get stuck in hopeless positions over and over again with no option but to restart the game from a saved position.

If you are a devoted fan of isometric, 3D, puzzle action games, then no doubt you will come to terms with this hitch; if not, then I'm afraid going over the same parts of the game time and time again quickly gets somewhat tedious, not to say off-putting.

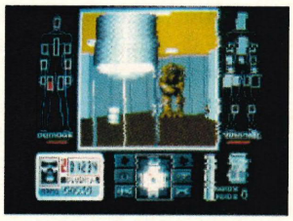
■ Wayne Legg

PCreview **6**

Alternatively...



D\Generation
Mindscape, £34.99
Rated 7, Issue 6.
Aliens have taken over a building and you have hostages to rescue, but the premises are heavily booby-trapped and guarded by a range of androids, monsters and other creatures. Full of puzzles, and problems, it is both playable and enjoyable as a diversion as well as being surprisingly thought-provoking at times. The classy 3D isometric viewpoint serves it well.



Corporation
Core Design, £34.99
If you like the plot of D\Generation rather than the gameplay, this role-playing extravaganza could be for you. Corporation, funnily enough, is also set in the offices of a genetic engineering company, and your task is to investigate alleged malpractice. A perfectly sound futuristic RPG/adventure with plenty of monsters to battle and no end of well thought-out brain-teasers. It's starting to show its age, though.

Techspec

Contraptions requires DOS 3.3 or higher to run and must be installed on to your hard drive. To be on the safe side, make sure that you have more than 590K memory available before you run the game, as it tended not to run if exactly that amount was free.

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	3Mb

Graphic modes

CGA	x	EGA	x	Tandy	x
VGA	✓	SVGA	x		

Soundboards

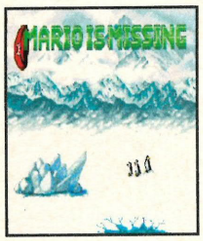
Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✓	Keyboard	✓	Mouse	x

Performance

Optimum speed	16MHz
Minimum memory	640K
Free RAM required	590K



Title	**Mario is Missing**
Publisher	**Mindscape**
Contact	**(0444) 246333**
Price	**£39.99**



Mario is Missing

It's Luigi's turn for the limelight, as he sets off to rescue Mario and save the world — learning a few lessons about culture along the way

For the two people in Nome, Alaska, unfamiliar with the legend, here is a potted history. Mario and Luigi are pipe-fitters who first appeared in a coin-op and an 8-bit Nintendo game. They have since conquered the earth. Mostly, Mario gets all the attention. All the games are named after him (Mario Bros, Super Mario Bros, Mario Teaches Typing, etc), and this release is no exception.

This time, however, Mario's brother Luigi is the star of the show. The hapless handymen have stumbled on a plot by their nemesis, Bowser, to melt the polar ice caps and steal the world's great treasures. If Bowser succeeds, penguins will die, polar bears will overheat and no one will be able to gawp at Big Ben and the Mona Lisa. Getting straight to the point, the dynamic duo venture to the South Pole and, while storming Bowser's castle, Mario is kidnapped.



An animated introduction sequence outlines Bowser's dastardly plot and sees Mario and Luigi attempting to foil him at the South Pole.

The result is an 'edutainment' release. Luigi vows to rescue his sibling and stop the culture thieves in their tracks, mainly by travelling around the world, learning loads of facts about world heritage and using them to solve simple puzzles.

This 'game' aims to cater for adults and children alike, but the arcade side of the action is too simple to keep a gameplayer interested. Going from location to location in a multitude of cities, asking people basic questions, reading up on tourist attractions and solving crude puzzles soon gets dull. Forget entertainment, and take it for what it is – a snazzy and thorough piece of educational software.

The game itself is basically a case of entering a city, walking its streets until you find a person to talk to, an object, or a koopa carrying a bag of loot, and returning artefacts to their rightful place. Luigi's first goal in any city is to find the koopas. These lime-green reptiles can be anywhere, but people tell you where they are if you ask, and you can stumble across one by accident anyway. Click on the koopa, it drops the swag and, hey presto, you have an item of cultural importance.

Once you have all the treasures in a location, it's time to find the information booths. These are marked quite clearly on the map: all you do is click on one to get there pronto. Examining a booth tells you which tourist attraction it serves, and why the attraction is closed.

Each booth also has a leaflet, vital in helping you answer questions when you return the correct artefact to its location, and a telephone number. Once you're sure you have the right treasure, you ring the telephone number on the booth and offer to return the stolen goods. You are then asked three detailed questions about

Two Minutes *spent desperately seeking Mario*

Fool that he is, Mario has gone and got himself kidnapped. That's the good news. The bad news is that the polar ice caps are about to melt and much of the world's cultural heritage has gone missing.



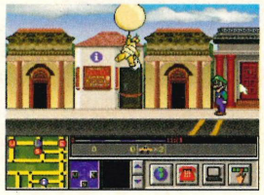
It's all Bowser's fault, of course. Luigi bravely storms Bowser's castle in the Antarctic where he is met by the Chief Koopa who tells him to choose one of these doors.



He opts for the middle one which leads him to Beijing's main street, Chang An Avenue. A policewoman tells him there are koopas nearby. Luigi decides to investigate further.



But what's that sound? The phone is ringing and it's Mayor McChan. McChan confirms Luigi's suspicions: all Beijing's tourist sites are closed because the koopas have stolen the artefacts!



Talking to people in the street, Luigi discovers that elusive koopa. A click on the mouse and the fiend drops his loot. It's the monument to the people's heroes! Time to find an info booth.

the artefact, such as 'What does Sistine mean?', and are rewarded for right answers. Spot the educational element. Take a photograph of the item and you're well on your way to being thoroughly clued up on world culture.

That, unfortunately, pretty well sums up the game, although Software Toolworks *has* provided minor distractions. Your search is occasionally interrupted by people ringing you up with amusing or informative messages. Then you have gadgets to aid your quest, including a personal computer which allows you to examine objects and recall what people have said There's also a cutely-illustrated world map so you can zoom in on countries and become a globetrotter. Once you've found all the stolen treasures, you can set off in search of Mario.

Mario Is Missing is by no means all bad. The quality of the graphics throughout is very good, with big, bright, colourful sprites and backgrounds; and the Ad Lib music is great, varying from location to location, and always appropriate to the country you're in. This visual and aural appeal plays a major part in willing you to continue. However, the main impetus to progress is the knowledge you pick up along the way. There really is a wealth of information, and I'd be surprised if most adults know a tenth of it. On top of this the game is very large indeed: five high density disks packed with global culture, each country with up to half a dozen cities to explore, each city filled with people, places and all kinds of objects.



There is a whole host of cities waiting to be explored once you complete your first mission. Just zoom in on your favourite country and rescue its cultural treasures.

As an edutainment release though, Mario is not up to scratch. It's not entertaining enough to keep older players engrossed, and it's a very pricey way to give yourself or your children a comprehensive knowledge about world heritage sites. A good, one-volume encyclopaedia is half the price, far more convenient and covers many more subjects – and whether or not it's more fun is debatable. Certainly, if you have a slow machine the enjoyment is considerably lessened, and even if you have a 486 the repetitive, simplistic nature of much of the action will soon become tedious. If you consider Mario Is Missing purely as an educational product and your kids have a good deal of patience and/or a liking for repetitive tasks, it's probably worth a look. Personally, I'd go for the encyclopaedia.

■ Gordon Houghton

Techspec **The game runs on anything from a 286 up, although at 12MHz animations are sluggish and disk loading times are lengthy. A mouse, virtually essential, makes exploring the globe child's play. Sound support includes ProAudio Spectrum, and musical accompaniment is really excellent.**

Disk requirements

High density	✓
Hard disk only	✓
Space taken on hard disk	4.8Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		

Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

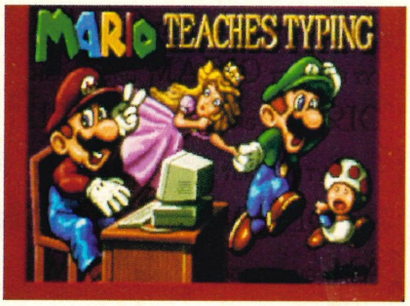
Joystick	✗	Keyboard	✓	Mouse	✓

Performance

Optimum speed	20MHz
Minimum memory	640K
Free RAM required	566K

PCreview 5

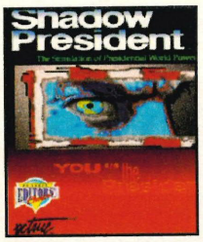
Alternatively...



Mario Teaches Typing
Interplay/Electronic Arts, £29.99
Rated 5, Issue 14
As if he wasn't talented enough, our cute pipe-fitting chum can also teach you how to type. Insufficient attention is devoted to basic skills such as pressing keys with the correct fingers, though, and sound and animation are a distraction rather than a help. Scoring and progress functions are good, but Software Toolworks' Mavis Beacon is a better tutor.

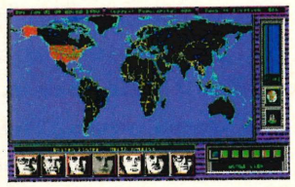


Castle of Dr Brain
Sierra On-Line, £39.99
Rated 8, Issue 4
Sierra's reputation was built on adult adventures, but it also does a fair range of educational software. Dr Brain hides its teaching behind the fun of playing a game. The castle is divided into four areas with 24 logic puzzles and mathematical problems at three difficulty levels, so there's enough to do to keep adults as well as children interested.

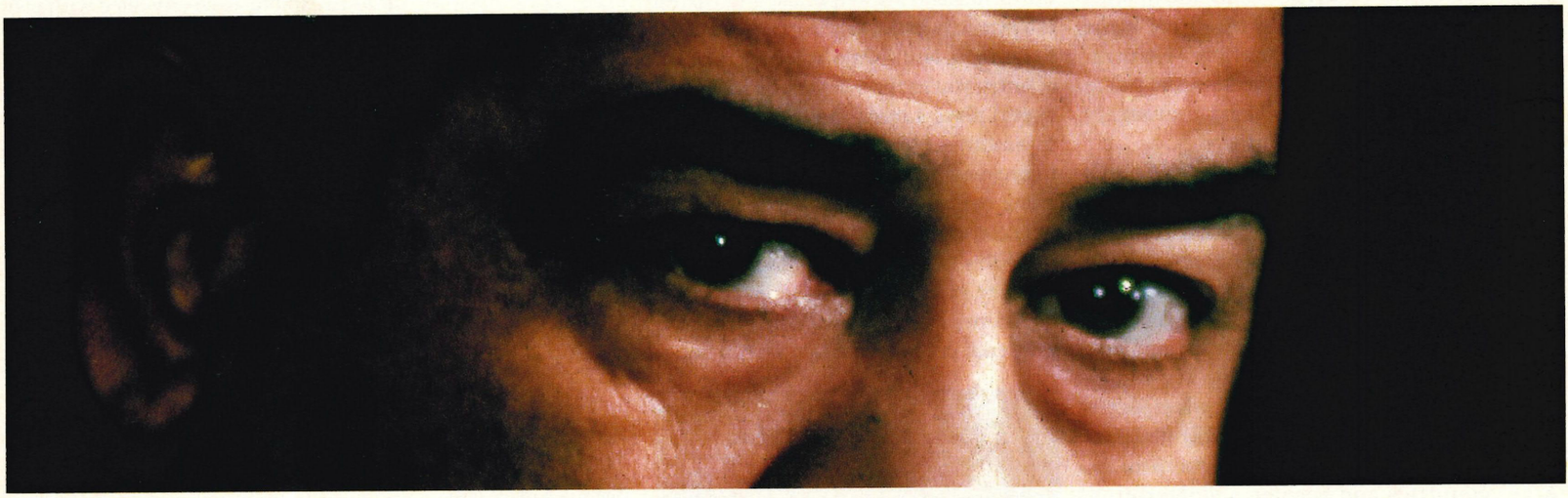


Title	**Shadow President**
Publisher	**DC True/Empire**
Contact	**(0268) 541126**
Price	**£34.99**

The beauty of Shadow President is that you set your own tone for world leadership — as George Bush, you can be as placatory or aggressive as you like. You can even be a raving lunatic — although you might not last long ...



Presidential power begins here, at the world map. Masses of data helps you adopt policies for almost every country on the globe. Whether you give a billion dollars in aid or launch a pre-emptive nuclear strike is entirely your decision.



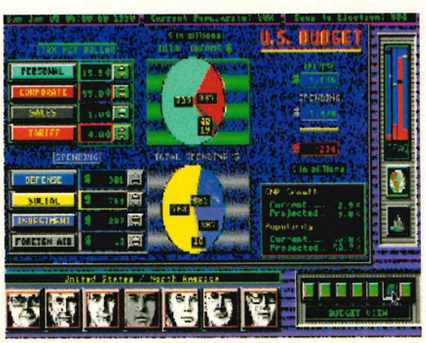
Shadow

Do you want to control the largest military and economic power on earth? Do you have the same shoe size as George Bush? If so, step back in time to 1990

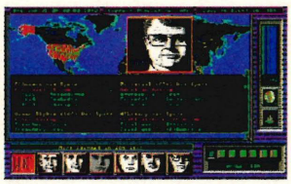
It's June 1st, 1990, and you are the president of the United States. Germany is reuniting, the Soviet Union is falling apart, and Iraq is about to invade Kuwait. If this sounds like a nightmare, you're probably not ideal US presidential material; if, on the other hand, you welcome the challenge of global politics, welcome to the Oval Office.

Well, not quite. You have to wait over an hour for the game to install and a further few minutes for the action to load, plus a few minutes more if you want to follow the tutorial — but once you're in, the world is your playground. Your aims are the same as they would be if you really were president: solving the problems of world hunger and economic deprivation, consolidating America's military domination of the globe, improving everyone's quality of life and getting re-elected. Quite a job description, eh? If you can avoid impeachment, assassination and coup attempts along the way, all well and good.

These goals raise the first, minor problem with the action: inevitably, since Shadow President has been developed by a US software company, DC True, it has a distinctly God Bless America tone. Unless you're firmly committed to the US political view of the world, you might wonder why you should bother to further American interests worldwide. OK, so it's only a game — but because the data is so well researched it's inevitable that you get involved, and there are times when you find yourself at odds with Shadow President's politics. It's not a serious conflict, but it's there.



The budget screen is vital to your personal success, allowing you to balance the unpopularity of increasing taxes against the demands of expenditure.



At least you aren't entirely alone: you have a direct line to the CIA, advisors on economics, defence and national security, a Secretary of State, a Press Secretary and assistance from the White House Chief of Staff. Use them wisely and you can't fail.



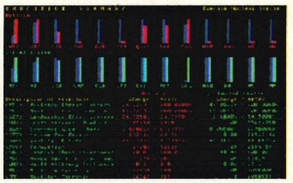
Having listened to all the relevant advice, you check out your position on the world stage. It's time to determine your goals: personal power, world peace and prosperity, continued wealth for the United States, or global nuclear war.



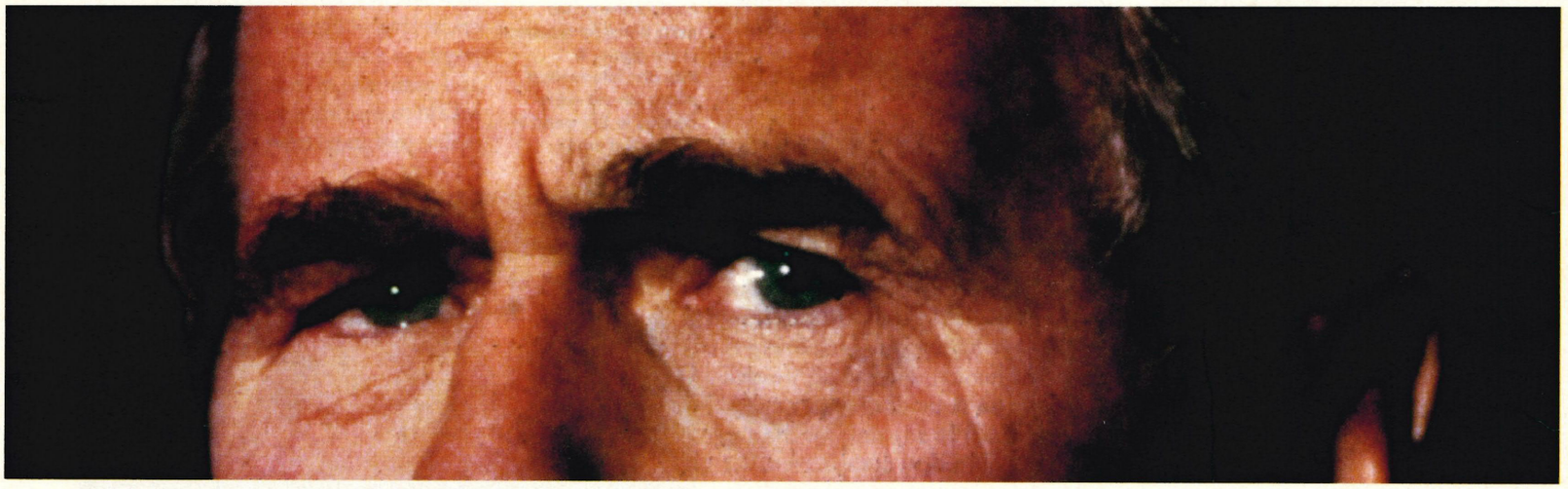
Unfortunately, the American public has elected a madman to the White House. In June 1990, you randomly decide to execute an all-out nuclear strike on Bolivia. Your advisors try to dissuade him, but you won't listen to reason. The button is pressed ...



... and 1.7 million people are instantly killed. Animated sequences such as this are interspersed with the strategic side of the game at crucial moments. However, actions as rash as random nuclear strikes do not go unnoticed by the rest of the world.



As you dance triumphantly around the Oval Office, you are presented with a grim summary of the effects of your actions. Your popularity plummets, you receive death threats, trade slumps, and advisors resign. It'll be over soon. Hardly surprising.



President

The basics of power

Before you begin, it's a good idea to take a glance at the manual and/or play through the pre-game tutorial. The manual is well structured because it prioritises information and doesn't oblige you to read every single word — and even if you can't be bothered to read any, the tutorial will take you through all the major controls. Once you feel at home in the presidential Hush Puppies, it's time to get down to business.

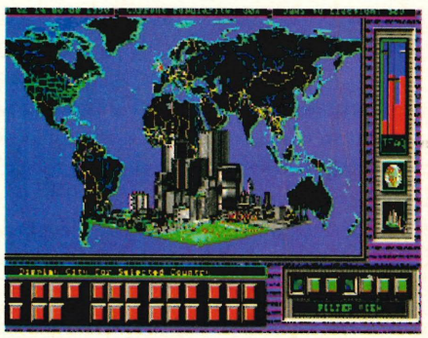
The first thing you'll see is the world map, with the United States highlighted in red. Movement around the globe is easiest with a mouse, although there are a few short-cut keys for some of the menu options. If you want to examine any country in detail, all you do is point and click; if you can't find the country because of the scale of the map, a couple of key-presses take you through an alphabetical list of over 150 nations.

Time passes pretty rapidly (at its fastest, one day per second), so it's a good idea to stop the clock as soon as you're sitting comfortably. Stopping the clock is useful at any time, since it allows you to look around the world and load up a series of actions to be executed. If the game is consistently running at around four hours per second, global events will soon overtake you.

There are four scenarios. This may not sound like very many, but, because of the game's comprehensive political scope, one scenario on its own would have been plenty. The default mission recreates the world as it was on June 1, 1990: events such as the Soviet coup, the Gulf War and the reunification of Germany have yet to happen.

Other scenarios — which, if you have a low-end PC, take almost as long to load as the default game itself — take a step back from reality and pose the question, 'what if ...?'.

'Super-Iraq' hypothesises that Iraq is a great power with its own nuclear weapons, controlling 46% of the world's oil; Saudi Arabia has fallen, the commu-



Shadow President's displays are as imaginative as they are functional. A country's quality of life, economy and military resources are represented as cities. Here you can see what the programmers think of the UK.

nists have lost power in the Soviet Union and Israel is threatened. 'Resource wars' creates an explosion of nationalism across the globe, due to depletion of oil and mineral deposits: developing countries have stronger economies, war threatens central and South America and northeast Asia, and nuclear anxiety throughout the world is high.

Finally, there's 'US economic decline', in which the Japanese and Germans are prospering, and Japan has begun a nuclear weapons program.

If this all sounds a little heavy, it is. Shadow President is a serious game: you can't exactly muck about throwing missiles at people and you haven't got a bottomless purse. There are some options you can fiddle with to make life easier — such as 'turning off' elections and natural disasters — but if you're looking for laughs, forget it.

International relations

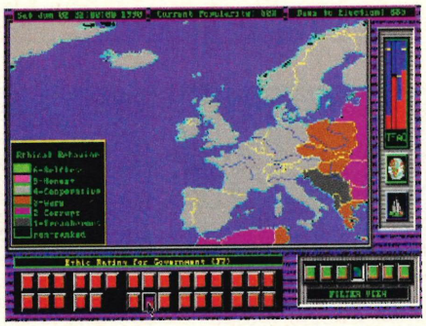
What you do get in abundance is advice. At the very beginning, the White House chief of staff pops up with a full list of world problems which you can examine at your leisure. If you click on any country he'll tell you what the indigenous population is concerned about, and he also acts as an index to your other advisors (more about them later).

Dealing with other nations is a complex business, partly because there are so many countries and partly because you can behave in so many different ways to each one. On top of this, each nation has its own style of leadership ranging from ruthlessly ambitious to cooperative. Fortunately, there are plenty of ways in which you can discover exactly what a country is like.

The principal source of information is the CIA, whose World Factbook was used during research for the game. Despite the fact that this tome is available as a standalone CD-ROM product, DC True has managed to squeeze it down to fit comfortably within the 7.5Mb of hard disk space that Shadow President takes up.

Anyway, the US intelligence network has reams of "non-classified" data and speculation on just about everyone, and most of it seems to have been crammed into this program.

The statistics can be fascinating, and not just for bores who want to compare the life expectancy of an average Peruvian against that of an Australian. It's generally excellent, sketching the economic, military and political face of a country — but it has its faults. For example, maps are described in half a dozen lines rather



The world map can be narrowed down to a region (shown here) or to an individual country. This screen reveals the ethical behaviour of Western Europe.

than simply drawn, and some of the information is either facile or meaningless to a UK audience — the UK itself is described as 'slightly smaller than Oregon'. These aren't serious complaints, though, and with over 600 pages of facts at your fingertips you can be as involved or detached as you like.

Advice and more advice

Apart from the White House chief of staff, you have six other aides: the national security advisor, secretary of state, secretary of defence, press secretary, director of the CIA, and economic advisor. The information they give you generally depends on whether you are looking at the global situation, a region (ie, western Europe), or an individual country. You can select them at any time by clicking on the faces at the foot of the screen, but in addition each advisor gives news flashes if anything important happens.

There are three other on-screen indicators which offer a quick guide to a country's status. The first is the city display — an imaginative representation of a chosen nation's military capability, quality of life, per capita income and gross national product. It takes some getting used to, but once you learn how to recognise the different graphic depictions of each category, you couldn't find a more original and useful system.

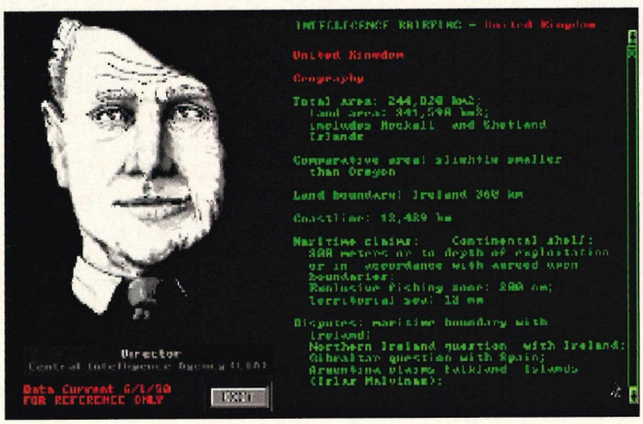
The second indicator is the world influence bar chart at the top right of the screen. This allows you to compare the US world position with any other country of your choosing, in the diverse categories of total influence, ethics, ambition and quality of life.

These factors are probably the most important in the game. Influence is a weighted average of a country's economic and military power: ethics and ambition determine how likely a country is to initiate hostile actions or react to them, and quality of life determines the mood of the population.

The final and most useful quick indicator is the filter view system. Using colour legends on the world map, the filters provide an overview of international relationships and how countries in a region or across the globe compare to each other. Like the CIA factbook, this information can be fascinating in itself, but its principal functions are to enable you to target specific countries in a region for military or financial aid, for example, or occasionally to play off one nation against another.

There are five groups of filters, profiling social, economic, political, military and anxiety levels. Each section has half a dozen sub-categories — for example, the social profile will tell you information about the comparative quality of life, population, population growth rate, literacy, level of oppression and aid requirements in a region. It may sound very dry and academic, but in practice it's a useful aid to making decisions and an interesting tool in its own right.

The CIA world factbook is one of the most powerful features in the game. It includes information about almost every country in the world in exhaustive detail.



Techspec

The game comes on three high-density disks which must be installed to a hard drive. You'll need a powerful machine to enjoy the action fully: on a 286 the loading delays can be agonizingly slow, particularly when you make decisions which invite a global response, but at 20MHz and above, with disk caching, delays are less irksome. The graphics are imaginative as well as functional, but the sound support is less impressive (though the general lack of sound is barely missed during play). A mouse is recommended, though not essential, and works best in conjunction with keys.

Disk requirements							
	High density				✓		
	Hard disk only				✓		
	Space taken on hard disk				***7.5Mb***		
Graphic modes							
	CGA	✗	***EGA***	✗	***Tandy***	✗	
	VGA	✓	***SVGA***	✓			
Soundboards							
	Ad Lib	✓	***Roland***	✗	***Sound Blaster***	✓	
Control							
	Joystick	✗	***Keyboard***	✓	***Mouse***	✓	
Performance							
	Optimum speed				***33MHz***		
	Minimum memory				***640K***		
	Free RAM required				***550K***		

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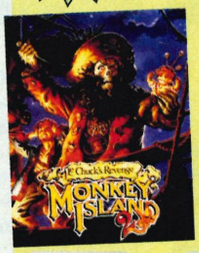
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Paying for your actions

So what do you do with all this information? There are two main options: you can either offer aid or carry out actions.

Aid is divided into five kinds: humanitarian, economic, intelligence, military and nuclear. Electing to send aid to a country of your choice brings up a series of statistics detailing how much the country needs, how much you are already contributing (if anything), and how much your main rivals are giving. Obviously, the more money you offer the better your relations are, though you need to bear in mind the limits of your budget.

Carrying out actions is slightly more complex. Again, there are five kinds of action: social and diplomatic, economic, CIA/covert, military and nuclear. Each has a related sub-set of commands — for example, the nuclear actions include discouraging or encouraging nuclear spending and executing a nuclear strike, and the economic commands include encouraging investment, regulating, restricting or blocking trade, and awarding most favoured nation status. You can get advice from your aides whenever you make a choice — and for drastic commands, you are told bluntly whether they think it's a good or bad idea, and repeatedly asked to confirm your decision.

Naturally, all these decisions have to be paid for at some stage, and that's where the budget screen comes in. Here you can adjust the personal, corporate, sales and tariff taxation rates once a year, and allocate funds to defence, society as a whole, investment or foreign aid. Projected growth estimates help you set appropriate taxation levels, and any deficit is clearly shown.

It might sound like the ideal utility for budding actuaries, but it's more interesting in practice.

Ultimate goals

If you're wondering what the point of all this is — well, there isn't one as such. You could claim that your aim is to get re-elected, or at least avoid assassination, but it's less specific than that. There are a whole series of aims, but they all boil down to the indefinable quality of making the world a better place, and taking the credit for it.

You can certainly pat yourself on the back if you are re-elected in 1992 (thus defying history). You can also defy time, by playing the long way and attempting to remain in power for 100 years, but the game isn't structured a single quest in the way that many are.

You can try to be a dictator who spreads his military might around the globe, but it's a dangerous road which usually ends up in impeachment or death. A balance of strength and compassion appears to be the most politically acceptable goal.

Quality of life

If at any time you are curious to see how successful you are, you can check out the world evaluation screen. This shows the current level of world peace, the total influence the United States exerts on global politics, the effectiveness of your leadership (which determines the success of your actions), the average world city, and the quality of life.

Achieving perfection in all these areas is virtually impossible, but trying to get there is what makes Shadow President so interesting to play.

There are some criticisms, however, not least of which is the prohibitively slow speed at which the game runs on low-end PCs. Any claims that you'll get much long-term enjoyment on anything less than a 386 are optimistic, since the delays are frustratingly long. On faster PCs with disk caching, the loading times are much easier to bear.

The controls, as well, could have been better: they are occasionally a little oversensitive, and the way the menus are structured sometimes means you have to take two or three steps when one would have been a lot more convenient. Other drawbacks — such as the lack of an option to use your own name as president — are less important.

On a more intangible level, cultural values have been almost completely ignored — the often-repeated 'quality of life' factor appears to be entirely materialistic. I'm not suggesting that you should be able to make a bid to stage Wagner's Ring Cycle, or even the World Darts Championship, but a little more culturally orientated decision-making would have counteracted the heavy weight of all that military and political manoeuvring.

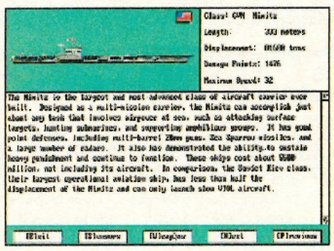
Shadow President's strength lies in its diversity. It may not be the most hardware-friendly game, or the most visually and aurally impressive, but its statistical depth and level of involvement in virtual world politics make it fascinating to play and explore. The in-depth strategy required makes it intellectually demanding, rather than providing a quick fix for the player. If your computer is powerful enough and you've been waiting for a seriously good game, check it out.

■ Gordon Houghton



Sending aid to a country usually improves your relations with the recipient. Choose from humanitarian, economic, intelligence, military or nuclear assistance.

Alternatively...



Harpoon
Three-Sixty/Electronic Arts, £34.99
Harpoon is old enough to have generated four data disks and a scenario editor. Its success relies on its attention to detail: masses of data on all aspects of naval conflict make it the most accurate naval strategy simulation around. If you think Shadow President is short on tactical minutiae, try this; but if you like strategy with a lot of arcade action, forget it.



Civilization
MicroProse, £39.99
Rated 7, Issue 1
If Shadow President provides contemporary entertainment for anyone wanting to rule the world, Civilization takes you through almost the entire course of human history. You have to build a civilisation fit to survive a 1,000 years of conflict, trade and scientific advances. It is very subtle, and random factors make it well worth playing and replaying.



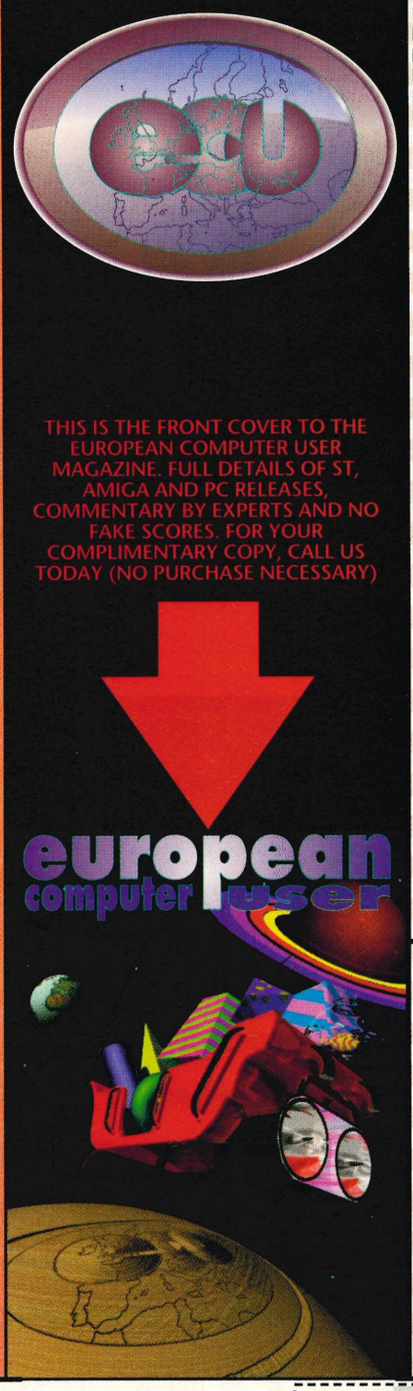
SimEarth
Maxis/Ocean, £40.86
If political and military power-plays aren't your scene, you could go green with Maxis' superb planetary environment simulator. Influence the way life itself develops by altering the conditions that affect the biosphere. Its complexity is impressive, but you also have the reward of watching microbes grow into multicellular life-forms. It's as educational as it is entertaining.



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PC REVIEW MARCH 93

PC REVIEW

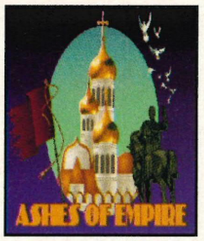


Ashes of Empire

If Nero fiddled while Rome burned, what will you do with the débris of a collapsed empire in eastern Europe?



Just to put you in a suitably jolly frame of mind, the game opens with a sequence of graphics to illustrate the misery of poverty, hunger, pillage and massacre in the countries of the former empire. Things can only get better from here on in.



Title	**Ashes of Empire**
Publisher	**Mirage**
Contact	***(0260) 299919***
Price	**£45.99**

They say you can't please all of the people all of the time. Nevertheless, Ashes Of Empire has a pretty good try! Combining strategy, role-playing and simulation, it should (in theory, anyway) have something for just about everyone

Strategy is at the very heart of this game — in order to get anywhere you have to develop and execute a plan to infiltrate the command centres of various different countries and recruit teams of highly-placed people. To do this, the Ashes adopts many of the conventions of role-playing adventures. For example, you must collect valuable items and use them to barter with the people you meet. And finally, for simulation enthusiasts, there are complex 3D landscapes that you can traverse in land vehicles or fly-over in aeroplanes. You can also explore under water in submersibles.

Although Ashes Of Empire is set in a fantasy world, it makes no secret of the fact that it is based upon the real-life events in Eastern Europe since the dissolution of the USSR. It is open to question whether or not the conflict there is the stuff of which games are made. I personally would have been just as happy if



Gameplay starts with this map which displays the five republics that are currently in turmoil. You have to click on the one to which you want to bring peace. If only Gorbachev had used this game, things might never have got this bad in the first place.



This is a magnified view of one of the republics. The red dots represent towns. The personal organiser gives a few useful details of the major buildings in the town over which the pointer has been placed. Now the time has come to get down to making peace ...



... and, as in real life, this bizarrely involves making a bit of war on the side. Here I have used a special microwave device to disable a mobile rocket launcher. I'll then be able to commandeer the launcher and do some real damage with those missiles!



But first, I think the time has come to recruit a top ranking military leader to my side. Here I have entered a building and I am currently wasting time talking to a minion. These conversations are controlled by clicking on the icons at the bottom of the screen.



At last I get to meet Strike Marshal Saldjuq (whose head seen here, revolves for no better reason than to show off a bit of snazzy 3D effect animation). My wonderful personality, together with a good bit of bribery and corruption, soon wins him over.

this game, like its predecessors Midwinter and Flames of Freedom, had stuck entirely to its fictional empire.

We come in peace

The first thing you have to do when playing the game is to decide which of the five republics you intend to pacify first. In real life, this is a task which has defeated numerous world leaders over a period of many years. In the game, however, you alone are expected to accomplish this daunting task in a matter of just a few days. If you fail to do this in the allotted time, there is a risk that an enemy will make a nuclear attack on the region. And, as the manual puts it with admirable understatement, once a nuclear missile goes off it becomes 'very difficult indeed' to pacify the province.

I *bet* it does!

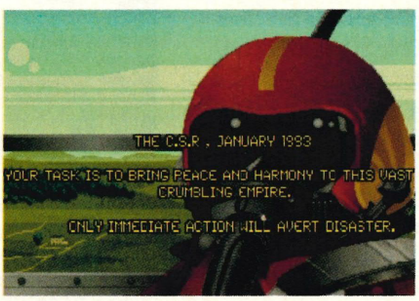
A map display lets you choose a province, using your mouse or joystick. You can then zoom the display to see greater detail of the area including its major towns, roads and forests. To help you decide where to go first, you are provided with an on-screen personal organiser that pops up when you place the pointer over each town. The organiser states the name of the town, the main buildings in it and any significant characters residing there.

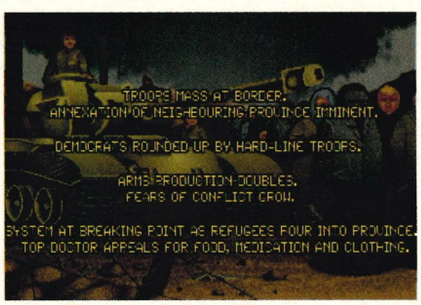
Before the action really gets going, you must first check on your specific objectives. You do this by pressing a function key to display the latest news report from your HQ. This report will tell you if martial law or curfews have been imposed and will inform you if supplies such as medicine or food are at critical levels. It is your job to tackle the most urgent requirements if you have any hope of bringing peace to the area.

Next you must check on the supplies and weapons currently in your possession. These include the vehicles and fuel available for your own use, the official papers needed to enter certain buildings and the troops at your disposal. During the course of your campaign you will use up many of these commodities and you must be able to replenish them from within the republic itself.

So far, so dull, you may think. You've already been playing the game for an age and a half and there still hasn't been any action. Fear not, now you've gone through all the preliminaries, the fun is just about to begin.

In the next stage of play you find yourself either on foot or in a vehicle, moving across the landscape in the vicinity of your selected town. As far as I am concerned, this is the best bit of the entire game. The landscape is very effectively rendered in solid light-sourced geometrical shapes and includes a variety of buildings, trees and mobile vehicles.





Your task is to bring peace and harmony to this vast crumbling empire. Only immediate action will avert disaster.

When you encounter other vehicles, you can either ignore them, immobilise them with convenient pulses of microwave radiation or — if you currently have missiles in your possession — you can fire on them.

Once immobilised, a vehicle can be commandeered for your own use. This gives you the chance to try out all kinds of interesting inventions including some peculiar amphibious craft such as the flying sub and a thing called a sea spider which turns out to be a bit like a four-poster bed on wheels.

To move vehicles around a landscape (or the cursor around a map) you will need either a mouse or a joystick. Unlike the majority of simulation games, Ashes of Empire responds very well to mouse control so a joystick can be regarded as purely optional.

The art of persuasion

The principal characters in the story can be found inside buildings such as power stations, hospitals and factories. You can attempt to recruit these characters by trading supplies or simply by persuading them. If you opt for the latter, you are given eight alternative icons each of which represents a different means of persuasion. These let you try everything from a charming approach to threats of violence. You have to be cautious, though. It's no good just selecting a method at random since only two of them have any chance of working with any given character.

The icon interface is not used solely when interacting with characters. There are also icons to let you view political or

topographical maps, to reveal the underwater landscape or to enable you to move quickly to a new destination.

The interface is far from consistent, however. One moment you have some easy-to-use icons, but the next moment you are completely on your own. Again and again I had to refer to the documentation to figure out how to carry out possible actions in the game.

Key bored

I have to say I don't at all care for the haphazard way in which the keyboard has been put to use. Not only are the 10 function keys pressed into service but so too are the 10 numeric keys, not to mention the plus and minus keys at the top of the keyboard.

It's just as well that keyboard templates are provided. Without them it would be almost impossible to remember which key is used to enter a building (the 3 key as it happens) and which ones are used to perform other actions such as checking your stocks or aiming a missile (F5 and F9 respectively). For a game that comes so close to being state-of-the-art, it is surprising to find the kind of irrational keyboard usage that I'd assumed had gone out with the dinosaurs (or with the Multimate word processor, which amounts to the same thing).

The game's developers implicitly acknowledge the potential difficulties of playing Ashes Of Empire since they actually include an instructional video as part of the set. The tape lasts around 20 minutes and is divided into two sections. The first section takes you through the somewhat eccentric keyboard and icon interface. And the second section takes you (a little too rapidly) through a sample game session. It's worth studying this video closely, preferably sitting at the keyboard with the video remote-control to hand — assuming, of course, that your video player happens to be within viewing distance of your PC!

In addition to the numerous intentional problems that have to be solved during the game there is one infuriating problem that is definitely unintentional. In other words, it's a bug. There is a long tradition that when bugs get documented they become 'features'. This one isn't documented, so I feel confident in saying it is definitely a bug.

Techspec ***Although the publishers say that 12MHz (and thus a 286) is the minimum speed for the game, we'd recommend a 386 of some kind for smooth playing. You also get a tutorial video with the package.***

Disk requirements					
High density	✓				
Hard disk only	✓				
Space taken on hard disk	**4Mb**				
Graphic modes					
CGA	✗	**EGA**	✗	**Tandy**	✗
VGA	✓	**SVGA**	✗		
Soundboards					
Ad Lib	✓	**Roland**	✓	**Sound Blaster**	✓
Control					
Joystick	✓	**Keyboard**	✓	**Mouse**	✓
Performance					
Optimum speed	**20MHz**				
Minimum memory	**1Mb**				
Free RAM required	**520K**				



Having taken over a rocket launcher, I am firing on an enemy vehicle.

PCreview 7

What happens is, you load up the game and the PC hangs. Take my word for it, that's kind of annoying. It hangs so badly that you can't even reboot it using Ctrl-Alt-Del. The game provides you with an error message telling you there is a disk loading error and that it is something to do with a file named Object00. If you check your disk, you will discover that there is no such file.

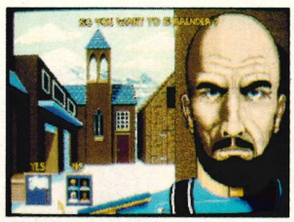
Having spoken to the game's developers, I've learnt that Object00 is only created by the game after you have saved a mission to disk. So if you happen to run the game once but do not save, the PC will hang the next time the game is loaded. If you find yourself in this situation, the fix for it is to delete all the files in the \ashes\commison directory. Yes, I know this sounds a bit extreme, but it really does work.

In spite of these criticisms, there are some excellent things in Ashes Of Empire. The mix of several different genres works, on the whole, fairly well. There's a steep learning curve involved but, if you are prepared to put in the effort, this can be a challenging and rewarding game.

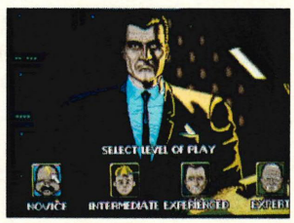
■ Huw Collingbourne



Alternatively...



Midwinter
MicroProse, £35.75
Midwinter is an earlier game devised by Mike Singleton, the man responsible for Ashes Of Empire. In common with Ashes, it combines elements of strategy and simulation. It tells the story of a future world in which global catastrophe has brought about a new Ice Age. The peaceful island of Midwinter is being threatened by the dictatorial General Masters and, naturally, it's your task to defeat the baddies.



Flames of Freedom
Microprose, £44.99
Rated 7, Issue 5.
This sequel to Midwinter tells the story of the island community of Agora (populated by the survivors of Midwinter) threatened by yet another evil dictator. The basic formula is the same as that of its predecessor and, indeed, of Ashes Of Empire: namely strategy, interactive characters and simulations by land, sea and air. If you like the other games, you'll no doubt like this one.

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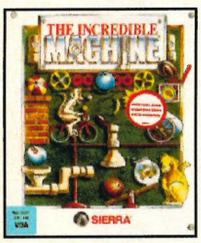
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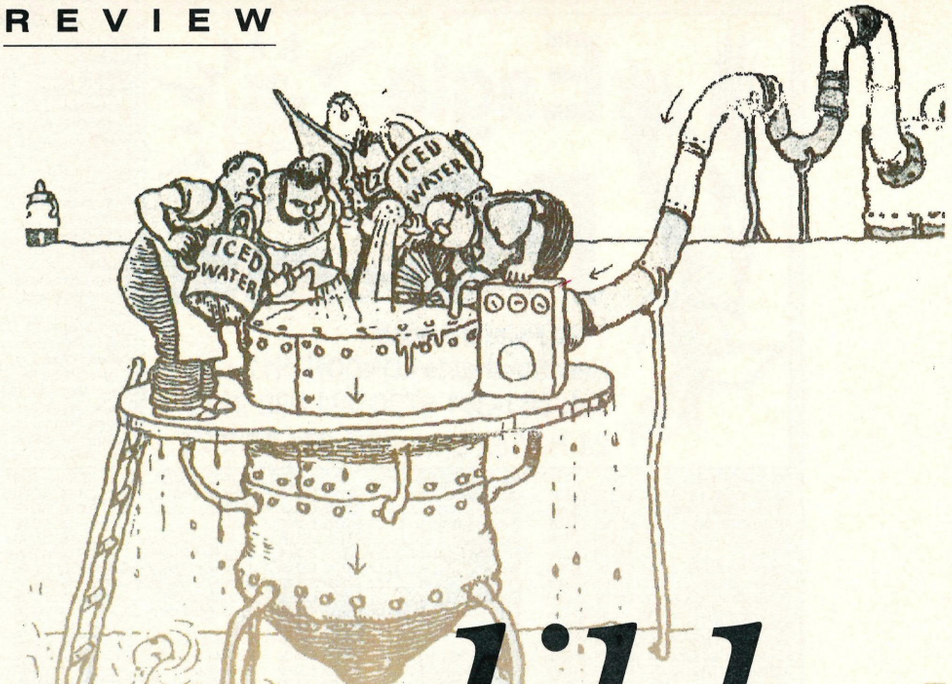
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The Incredible

Is Sierra asking for money for old rope? Yes! But not just old rope: its latest also offers fishbowls, bowling balls, dynamite and monkeys on bicycles in an arcade puzzler that makes Lemmings look positively normal

When budding development duo Jeff Tunnell and Damon Slye formed the fledgeling Dynamix company in 1984, they had an idea for a puzzle-solving game making use of the sort of wacky inventions usually confined to the homes of nutty professors in Hollywood movies.

As fortune would have it, none of the major publishers which the pair approached showed a great deal of interest, so the idea was shelved to allow the team to begin work on Electronic Arts' Arctic Fox – which proved to be a blessing in disguise, as subsequent history has seen Dynamix grow to become one of the leading lights in simulation development.

However, a good idea can't be kept down forever, and now that one half of the original Dynamix pair has 'gone solo' to form Jeff Tunnell Productions (which, like Dynamix itself, operates from under the Sierra umbrella), this germ of an idea has grown into what we now see before us ... The Incredible Machine.

Like some sort of computerised Meccano set, The Incredible Machine (TIM) presents the player with a vast array of component parts (45, to be precise), any combination of which can be bolted together to achieve a given end result. This is quite a difficult concept to describe, but the Two Minutes panel illustrates what I mean.

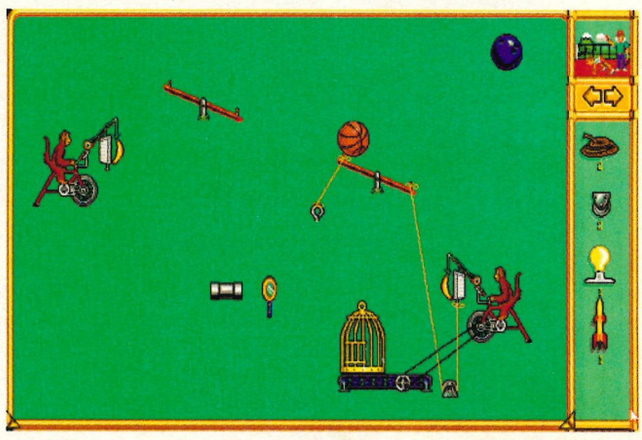
Although the solution in the panel may seem a little structured, one of TIM's greatest strengths is that most of its puzzles give the impression that there are endless ways to achieve the goal. Because the components act almost the way they would in real life, the only restrictions on the player are in the number of accessible pieces, as displayed on the inventory panel to the right of the screen.

And what a motley crew of gadgets they are. Just about everything's here except the kitchen sink, and there are times when you're sure that even that might come in useful. The pieces provided range in complexity from the humble balloon, string and see-saw, through the aforementioned mouse engine to a monkey on a bicycle who begins pedalling furiously when a blind is opened to reveal a banana on a fishing rod which dangles in front of him.

Guns bang, balloons pop, hair is pulled out in frustration, and the mission is accomplished ... with a bit of luck. However, after the opening handful of tutorial screens have been completed, the puzzles don't really increase in difficulty as the levels progress, but then that's probably because it's more or less impossible to gauge the relative merits of puzzles of this type in the first place.

As these aren't exactly logic testers (the solution is usually found by a mixture of common sense and trial and error) a problem which seems next to unsolvable to you might be solved in seconds by someone with a different perspective.

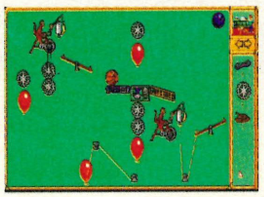
And even when all 87 levels have been conquered, there's still more to do. Those whose natural inclination is towards invention rather than puzzle solving can while away their time in the 'free form' mode, which provides a limitless supply of each of the game's 30 or so objects and a blank canvas to place them on.



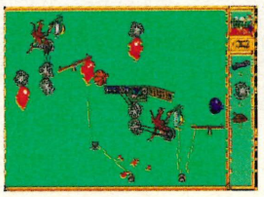
You want monkeys on bicycles? You got 'em! On level 19, the aptly named 'Monkey Business' simply asks you to set both 'monkey motors into action' - but how? Maybe the falling bird cage holds the key ...

Two Minutes *of bursting balloons*

Puzzle 22, a little beauty which goes by the psychedelia-inspired name of 'Turn, turn, turn ... pop, pop, pop', asks you to burst all of the balloons.



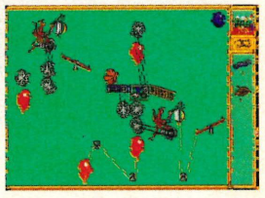
The bowling ball (top right) drops on to the first monkey engine, while spinning gears pop balloons, so attach the engine to the cog below the mouse motor, then a belt from the second cog to the conveyor belt below the basketball.



Nope – maybe not such a bright idea after all. That doesn't work in the slightest, because it sends the conveyor belt in the wrong direction ... now what on earth can it be? Time to put your thinking cap on in earnest.



Now hang on just a second ... if you attach a third cog wheel to the cog directly below the mouse engine and subsequently try attaching that in turn to the conveyor belt. That will probably do the trick, I should imagine.



Bingo! Now if we string a belt between the mouse engine and the cog immediately above it, that should easily take care of the balloon which is hovering between them. It's all a simple matter of trial and error really.

Machine

Imaginations can run riot in this section, which more or less provides a cross between a level builder and an invention 'doodler' of sorts (a trio of bizarre but amusing samples are provided to kick-start slower imaginations).

However, there is one small but important omission from this feature. Because there seems to be no way to limit the number of objects available in the inventory screen once you've created an invention, there's no way to generate taxing puzzles to amaze your friends with.

OK, so you can build a fully-functioning machine, remove a few parts and see if anyone can rebuild it, but this is hardly a true challenge when the player always has a limitless supply of machine components at his or her disposal.

This does seem to be the only oversight, though, in what's otherwise a virtually seamless package. The game itself is imaginative, absorbing and beautifully constructed and packaged.

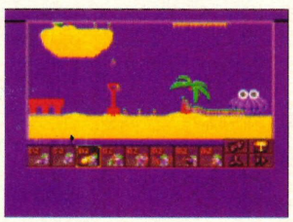
But above all, The Incredible Machine is good clean fun.

It's inevitable that this formula will eventually become just another gaming cliché, as rivals come along with look-a-likes and Sierra feeds the addiction of those of us who get hooked with extra levels and sequels (ominously, the package has a flyer for the first add-on disk).

But until that does eventually happen, there's a whole new world of invention waiting to be explored for anyone with a few spare ounces of imagination and a whole lot of time to spend.

■ Ciarán Brennan

Alternatively...



Lemmings
Psygnosis, £34.99
The ultimate puzzle game? It's very likely as Lemmings has been firmly established as one of the greatest games of all time. Guide the small brightly coloured rodents around different obstacle courses, preventing their deaths. Highly original gameplay coupled with a unique control system. The Incredible Machine is similar in premise, but different in execution. Lemmings is still the better game.



Meccano
Meccano, £varies
Why not build your own incredible machines for real with the ever-popular children's toy? Meccano has been around since the Dark Ages at least and is as popular now (especially with adults) as it was then. Boxes full of nuts, bolts, gears, pulleys, etc, combine to create anything from a crane to an industrial housing estate (well, almost). Give yourself a treat and get away from the computer for a while.

PCreview 8

Techspec

The Incredible Machine makes efficient use of a 'smart install' program which automatically selects the optimum hardware configuration. One small point to note also is that although the packaging states that a hard drive is required, the game will run from the single floppy disk provided.

Disk requirements

High density	✓
Hard disk only	✗
Space taken on hard disk	1Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
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Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✗	Keyboard	✓	Mouse	✓

Performance

Optimum speed	20MHz
Minimum memory	640K
Free RAM required	500K

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- Quarter Printing Facility
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9 PIN 192 CPS 80 COLUMN



- Citizen Swift 9 - 9 pin - 80 col
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- Citizen Swift 24x - 24 pin - 136 col
- 192cps Draft, 64cps NLQ
- 8K Printer Buffer + 4 Fonts
- Parallel Interface
- Graphics Resolution: 360 x 360dpi
- Epson, IBM and NEC P6 Emulation
- Colour Option Available
- FREE Silica Printer Starter Kit

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192 CPS 136 COLUMN



- Citizen PN48 Notebook Printer
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64 CPS 80 COLUMN



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360 CPS 80 COLUMN



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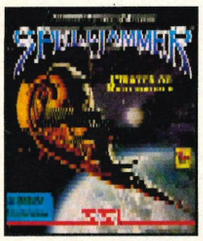
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Title	**Spelljammer: Pirates of Realmspace**
Publisher	**US Gold**
Contact	**(021) 356 3388**
Price	**£34.99**

With a job already arranged — taking merchants to the planet Garden — we set sail. Space travel can be a pretty risky business, though, even at the best of times.

Spelljammer
Pirates of Realmspace

With Spelljammer: Pirates of Realmspace, SSI has mixed traditional AD&D with space travel — but does the mix really work?

For the computerised version of TSR's Spelljammer role-playing, SSI has modified its traditional interface in order to render many actions simpler to perform, making moving around and selecting options less cumbersome and time-consuming — a welcome (if not overdue) improvement.

Like many games now being released, Spelljammer is designed to run on more powerful PCs. It requires at least a 386 machine that runs at 33MHz or better — plus 1Mb of Ram, and Dos 5.0 or DR Dos 6.0 loaded into high memory — in order to work properly.

The orbiting garden



Installing the game takes nearly an hour, so it was something of a relief that the opening screens at least were impressive. The game begins by confirming that Spelljamming is the conversion of magical energy — via a special magical helm — into motive force giving ordinary ships the ability to travel in space. You are then invited to construct an individual who has the ability to spelljam. However, just because Spelljammer has an intergalactic background, don't expect the game to be stuffed with futuristic settings or weaponry; this is simply traditional AD&D style scenarios in a different setting.

As with other AD&D games, you create a character who will be under your control using the character creation process recognisable to anyone who's ever played a role-playing game, the usual procedure of deciding upon a character's class, race and gender, then settling on a set of statistics that best benefits your creation. The game proper begins in the city of Waterdeep on the planet Toril. Your character has just sold everything to invest in a spelljamming vessel and a helm to operate it. Putting together a crew, your character is ready to sail for a life of adventure on the waves of inner and outer space.

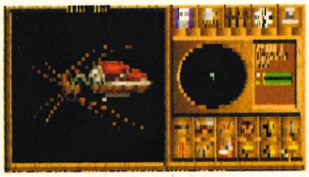
Upon boarding your ship, you find five icons at the top of the screen. Two of these allow you to save the game to disk and to change the preferences, while the others allow you to study the status of the crew, your vessel and navigate. Each icon, when selected, changes into drop down menus which themselves contain various commands appertaining to the icon's main subject. A quick look at the crew menu allows you to select and organise them, as well as promote some



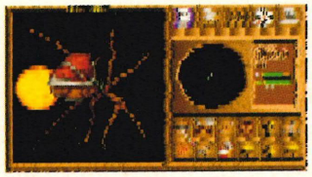
Pools of Darkness
SSI, £30.00
Rated 5, Issue 1.
The final episode of the Pools of Radiance series for the Forgotten Realms. A strong storyline supports a combat orientated game taking you back to the town of Phlan, where the adventure first began. The best AD&D orientated game from SSI until Spelljammer was released, although Darkness still retains the edge as far as the plot and non-player character interaction is concerned.



On Garden, our first stop is Clint the Fearsome where we collect £4,000 for a job well done. We cast off in search of pirates – and they find us!



The pirates turn out to be travelling on a death spider, one of the deadliest ships in the galaxy. Still, we recklessly involve it in combat ...



... and take a real pasting too! Luckily we manage to board it and get involved in hand-to-hand combat, where we should have the advantage.



With superior magic, we begin to whittle away our opponents' strength. Eventually we win the battle and are allowed to take over their ship!

of them to officers, an important feature, as you control your captain and all five officers when combat occurs. Once your ship is sorted out, it's time to adventure.

The best thing to do first is dock at the nearest planet and visit a tavern or a merchant's. Here you will be offered work, be it transporting goods to faraway planets or chasing renegade pirate vessels. Initially I recommend completing a few trading runs as this earns you some money, with which to pay bills, upgrade your ship, recruit more crew and, most importantly, equip them. If you run into any enemy ships at this point, turn and run as your lightly armoured ship will escape them easily. You can have a lot of crew members under your command, and they ought to be fully equipped, so you get the best out of them in combat situations, as combat is basically what Spelljammer is all about.

Admittedly there are plenty of interesting adventures to complete, but the crux of the game lies in the two types of conflict available. When you first meet another vessel in space, the screen divides in two: the left hand side a first-person, 3D viewpoint of your opponent and the right your combat screen. This is where you decide your strategy. You can try and slug it out via the use of catapults and ballista, try and shear their rigging, ram them or attack with your grapple so you can fight inside your opponents' ship.



Travelling through space, we see a squid ship a long way off. Believing discretion to be the better part of valour we run away — fast!

As all ship-to-ship combat is performed in real-time, the game turns into a highly enjoyable fantasy flight simulator. I was very impressed with the graphics here, as each vessel is marvellously designed and coloured, and the animation is incredibly smooth and detailed. This, together with the exceptional combat sounds via the sound card, makes for great gameplay.

If you don't destroy your opponent with missiles, the next option is to board or be boarded. Once a hull is breached, both sides attempt to engage the other in hand-to-hand combat. The combat screens are like those in previous AD&D games, but are better designed and work faster.

Spelljammer also has three levels of difficulty which prolong the life of the game substantially. Indeed, completing the game on the hardest level is a challenge that will test the metal of even the most experienced gamers.

All in all, Spelljammer combines several types of games in one — tactical, strategical, war gaming and flight simulation — and does it well. It just goes to prove that AD&D and space travel do mix!

■ Wayne Legg

PC review **7**

Alternatively...

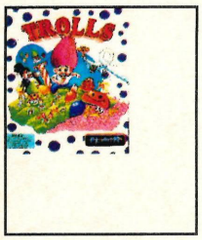


Megatraveller II
Paragon, £30.00
The much improved sequel to a rather disappointing first release. A friendly interface, coupled with a huge gaming world and lots of planets to explore all make a very solid game indeed. The combat systems is also greatly improved, although the game is much more based around interaction between the player and non-player characters than Spelljammer.

Techspec

Spelljammer requires both 1Mb of RAM and DOS 5.0 or DR Dos 6.0 loaded into high memory before it can run. If the game still runs slowly, use disk cache software Smartdrv.exe (for Windows) or Smartdrv.sys (Dos) to improve speed. It may also cause erratic movement with some bus mice. Spelljammer is not compatible with the Thunderboard.

Disk requirements					
	High density				✓
	Hard disk only				✓
	Space taken on hard disk				***8.5Mb***
Graphic modes					
	CGA	✗	***EGA***	✗	***Tandy*** ✗
	VGA	✓	***SVGA***	✗	
Soundboards					
	Ad Lib	✓	***Roland***	✓	***Sound Blaster*** ✓
Control					
	Joystick	✓	***Keyboard***	✓	***Mouse*** ✓
Performance					
	Optimum speed				***33MHz (386)***
	Minimum memory				***640K***
	Free RAM required				***640K***



Title	**Trolls**
Publisher	**Flair Software**
Contact	**(0661) 860260**
Price	**£25.99**

Your task as the troll of the title is to jump around each level rescuing as many babies as you can. Plots like these are always silly, but who really cares?

Trolls

They don't live at the bottom of the garden, they don't grant three wishes and they don't lie under bridges demanding tolls from goats. They do jump around on platforms though ...

We've got flight sims, we've got sport sims, we've got strategy and war. We've got interactive movies and sims of driving cars. We've got sound and we've got graphics that are second to none. What ain't we got? We ain't got fun.

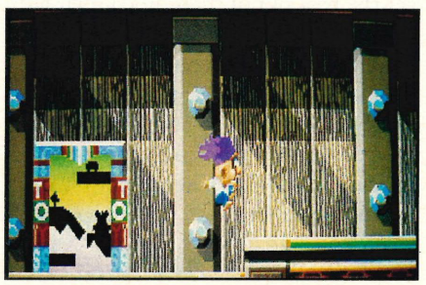
Forgive my momentary lapse into Rodgers and Hammerstein, but you have to agree, when it comes to games of mindless enjoyment the PC is not exactly overly blessed. What is essentially bread and butter material for Amigas and STs — games such as Robocod, Zool, Fire and Ice — are few and far between over here in PC land. Sure we've had Gods, Prince of Persia and even Rick Dangerous but almost all PC platform games have several things in common. First, they're all pretty old now. Secondly, they've all been converted from original games on the Amiga and ST. And finally, with the exception of Rick Dangerous, they all take themselves very seriously and don't leave much in the way of light-hearted entertainment. Atmosphere, tense nervous atmosphere, yes. Humour, no. An obvious exception to this rule is the Commander Keen shareware series, which manages to combine all of these features well. But it's only one set of games. We've got dozens of flight sims, dozens of graphic adventures. Why only one or two arcade style platformers?

Trolls is attempting to change all that (apart from the 'being converted from Amiga' part) and at first glance I can honestly say that I haven't seen a PC game like it before. Yes, I've seen platform games, but they've always had a certain PC-ness about them. Trolls looks and plays as though it has come straight out of an Amiga.

This is evident when reading the installation instructions in the manual. Make a directory, copy the files into it, etc. Usually I'm ready to condemn for-



Many weird and wonderful levels lie in wait for the skilful player. Media land puts you in the world of newspapers and magazines, while toy land (below) pits you against snakes, ladders and dice.



Techspec **Trolls is pretty undemanding and even helps out owners of slower machines by allowing you to turn off certain processor-consuming graphical effects.**

Disk requirements

High density	***x***
Hard disk only	***x***
Space taken on hard disk	***2Mb***

Graphic modes

CGA	***x***	***EGA***	***x***	***Tandy***	***x***
VGA	***✓***	***SVGA***	***x***		

Soundboards

Ad Lib	***✓***	***Roland***	***x***	***Sound Blaster***	***✓***

Control

Joystick	***✓***	***Keyboard***	***✓***	***Mouse***	***x***

Performance

Optimum speed	***16MHz***
Minimum memory	***640K***
Free RAM required	***550K***



Starting in toy land you are initially weaponless and surrounded by bad guys. First task — to find a yo-yo inside one of these balloons. Carefully get past this bouncing chappie and we'll see what lies below.



A toy car, several building blocks and passages going left and right. Jumping on the roof of the car will get rid of it temporarily and give you a little breathing space. So, here goes nothing ... geronimo!



With the car behind us you continue heading right and find a couple of balloons floating about. Popping one reveals the yo-yo so you jump to collect it. Now you can really go to town on the bad guys.



"Swinging in the game, I'm swinging in the game". Attaching the yo-yo to an overhead platform you can now swing in a large circle and knock off the bad guys left, right and centre. Better start finding those babies, though.

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ever a game that doesn't have its own installation program but for once I'm going to be lenient because, being such a simple, happy-go-lucky kind of a game, this does mean that you can play it straight from the floppies, a task that isn't really as arduous as it sounds. It's certainly nice to be able to load up your machine and have a quick play with something that doesn't have to be installed first. It's also a boon to those of you not able to fit something on to an already crowded hard drive.

I understand that as far as platform games go, on the Amiga and ST Trolls is nothing special. The PC version must be quite a different game then, as in my mind it is certainly one of the more enjoyable ones. It's fast, even on a slow machine, varied enough to sustain interest and packed with bonuses, secret rooms and special control methods.

We all know that when it comes to joysticks, PCs don't exactly rule the world, and that for fast action arcade games, keyboard controls aren't the best, but while I was playing Trolls there was never once a time when I was frustrated at the game for having to battle the system. There were plenty of times when I was frustrated at my own gameplaying inadequacies, but I never felt annoyance at the controls.

In fact, for a game that appears to have been developed 'over there', so to speak, it caters incredibly well for PC users. If your machine isn't fast enough to cope with the speedy scrolling and multiple sprite-emulating action, you can turn off certain graphic features (such as the fake parallax colour bars on the background). It also supports both analogue and digital joysticks so that nobody is left out.

What of the game's content though? Well, you've got plenty to keep you occupied, with dozens of levels split across seven different scenarios, everything from media land filled with printers, pens, newspapers and office equipment, to fairground land filled with circus types and funfair equipment.

Bonuses are constantly lying around, all adding to the ever-increasing score, while balloons offer important extras boosting speed, power of jumps or giving you the all-important yo-yo weapon. The yo-yo is a marvellous device, allowing you to knock off bad guys from a safe distance and to swing from the rafters to access previously unreachable areas.



The one part of the game I didn't really understand was the constant stream of golden stars that appear whenever you do, well, anything. As soon as you start you are surrounded by falling stars. Every time you pick up a bonus you get stars. Every time you hit a wall with your yo-yo you get stars. Never once did anything tell me why! Ah, well. Life's little mysteries, eh?

The other thing that's important to all good comical platform romps is that all of the graphics look cute. Everything has eyes, from the clouds in the sky to the most mundane of background scenery. The cute factor of the game is overwhelming, the lovable old elephants, the adorable little rabbits and the unbelievably cute babies that cry as soon as you get anywhere near them.

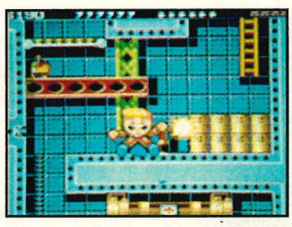
Trolls is fun, colourful, enjoyable and completely undemanding (except when it comes to fast reflexes). It's by no means the best game ever. It's by no means the best platform game ever. It's by no means the best arcade game ever. But it is fun and likely to keep you loading up, selecting your level and swearing blindly as your character gets hit over the head by yet another annoyingly cute bad guy.

You may think I'm a little over-excited about what is essentially just a platform game, but having experienced the likes of Robocod on the Amiga and Super Mario World on the Super Nintendo machines, this is probably the closest we'll get to that kind of fun and imagination on a PC. Don't get me wrong, I'm certainly not saying that Trolls comes anywhere close to Mario, but since the only incarnations of the Italian plumber in DOS land have been on a typing tutor and an geographical educational product, it's the closest we'll get.

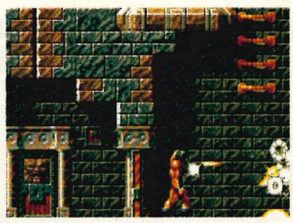
Left: the lovable old toymaker as he slowly makes his way to bed, unaware of the magical arcade action about to ensue.

■ Paul Presley

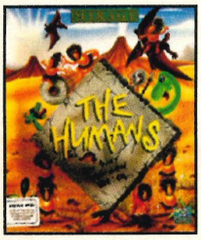
Alternatively...



Rick Dangerous 2
Kixx, £9.99
One of the earliest platform romps and still one of the best. Guide our hapless hero around five levels of madcap mayhem and lunacy in this very addictive sequel. A better example for cartoon tomfoolery there has never been, as Rick 2 is much older than Trolls and slightly better due to its complete devotion to not taking itself seriously. If you want a quick laugh, Rick's yer man.



Gods
Renegade, £34.99
Rated 8, Issue 4
The dark side of platform games. Highly acclaimed, Gods is mean, moody and infinitely better than Trolls. Don't approach if what you want is a quick bit of fun, Gods is addictive, challenging and downright nasty (in attitude that is). Coming from the Bitmap Brothers, you'd expect it to be a little bit more than a typical platform game.



Title	**The Humans**
Publisher	**Mirage**
Contact	**(0260) 299909**
Price	**£29.99**

The Humans

Following what seems to have been an eternity of hype and controversy fuelled by its alleged likeness to Psygnosis's classic, Lemmings, Mirage's prehistoric puzzle game has finally emerged from the swamp to take its place with the rest of the species.

But despite all the talk, the truth is that it's not really all that similar to the suicidal green-hairs after all. True, both games involve a combination of logical puzzle solving and arcade dexterity, but the almost sedate, constructive atmosphere generated by The Humans is a world away from the manic, life-saving pandemonium of Lemmings.

What the games do have in common, however, is that both of them require the player to accomplish a set task within a limited environment and inside a certain time. The principal difference is that in The Humans the emphasis is on evolution, with your hirsute and hapless characters picking up new tools and skills as the 100 levels progress.

Here you are, let loose in the wild with nothing to aid you but your fellow neanderthals and anything else which you happen to find on the floor.



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Although they're entertaining enough in their own right, the between-level animation screens suffer from the usual problem of familiarity breeding contempt. However, to its credit, the programming team has included an option to switch them off, so they can be enjoyed once and then forgotten if that's your choice.

For example, the first implement you chance upon is a spear, which is not only used for the time-honoured purpose of impaling prehistoric creatures and/or other humans but also for vaulting chasms and leaping broken bridges. Once this comparatively simple skill has been developed, the flaming torch is introduced ... and so it goes.

There's no set pattern to what needs to be achieved from level to level. For example, sometimes the goal is simply to reach a seemingly inaccessible part of the landscape, while at other times it may be to kill a dinosaur or rescue a trapped friend, but whatever the problem (and occasionally, working out what needs to be done can take almost as long as actually doing it, believe it or not), it can only ever be sorted out by making your on-screen characters work together.

But it's precisely this thread of similarity between the levels which presents The Humans' greatest weakness. By the time the first 20 levels or so have been successfully completed, the player should be familiar with the vast majority of aids and obstacles which are there to be faced – and while each of the puzzles is certainly absorbing enough, there's a certain sameness about them which does take something away from the considerable enjoyment which has been created by both the gameplay itself and the sense of humour which undoubtedly pervades the package as a whole.

Another fault which should be brought up is that the loading instructions on the second page of the manual contain the immortal words "just make sure that your Amiga is turned off ..." (the PC-specific instructions don't appear until page 36 of the 40-page booklet).

This may seem like a nit-picking criticism, but it does take the shine off what's otherwise a nicely polished package. After all, the programmers have gone to the trouble of creating a true PC product (right down to the 'create a boot disk' option), so a little more care in the packaging wouldn't have gone amiss.

Despite its faults, The Humans is an entertaining and engrossing experience (although not as gripping as other games of the type) which will appeal to those of you who enjoy Lemmings and the like. The disappointing thing is that, with a little more variety and maybe a couple of surprises thrown in, it could have been so much more.

Maybe this will eventually happen though, as rumours abound of a sequel. If Humans II (or whatever it's called) can iron out the wrinkles, then perhaps we're in for some truly evolutionary gameplay after all.

■ Ciarán Brennan

Techspec **Unlike most PC games, The Humans can be played quite adequately without a hard drive, sound card, mouse or joystick. However, the access time from floppy disk is understandably slow, the joystick option is infinitely preferable to using the keyboard and, like all arcade-style games, it does benefit greatly from its soundtrack and incidental noises.**

Disk requirements

High density	***x***
Hard disk only	***x***
Space taken on hard disk	***2.7Mb***

Graphic modes

CGA	***x***	***EGA***	***x***	***Tandy***	***x***
VGA	***✓***	***SVGA***	***x***		

Soundboards

Ad Lib	***✓***	***Roland***	***✓***	***Sound Blaster***	***✓***

Control

Joystick	***✓***	***Keyboard***	***✓***	***Mouse***	***x***

Performance

Optimum speed	***20MHz***
Minimum memory	***640K***
Free RAM required	***600K***



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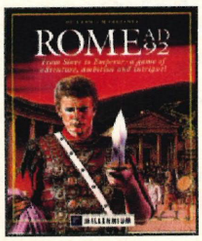
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Title	**Rome AD92**
Publisher	**Millenium/Electronic Arts**
Contact	**(0753) 549442**
Price	**£34.99**

When in Rome, do as the Romans do: keep your head down, don't force contact on social superiors, and don't joke about Caligula's love of horses. Luckily, you're not in Rome ... yet.



You are the slave Hector in the town Herculaneum, a place with a brief future. Your master, the lawyer Habeus Corpus, hands you a message for his friend, Segamus Megadrivus.

ROME

Millennium's latest arcade adventure proves that all roads lead to Rome ... by way of Robin Hood and Populous

Even Kirk Douglas couldn't defeat the Roman Empire. As Spartacus, in the eponymous 1960 film, he escaped from gladiator school, freed all the slaves he encountered, only to be defeated in battle and crucified on the Appian Way outside the gates of Rome. It's something for you to think about before you consider playing this game.

You take on the role of Hector, a slave who lives in the town of Herculaneum in AD92. (If there are any ancient historians reading this, that date alone will surprise them, since Herculaneum was destroyed by the eruption of Vesuvius in AD79, and wasn't excavated until the 18th century. Let's assume Millennium knows something we don't.) With the imminent destruction of your home, you have the opportunity to pass yourself off as a citizen, grab as much money and goods as you can, and get out of town before the volcano sends you a death warrant.

And this is where the real action is. Being a lazy kind of slave who doesn't pay much attention to his superiors, you decide to take a stroll around town before delivering the message. Busy place, Herculaneum.

Veni

At first glance, Rome AD92 bears a strong resemblance to two games. Inevitably, comparisons will be drawn with Populous, but apart from the obvious graphical inspiration there are no other substantial similarities. In fact, it's much closer to programmer Steve Grand's previous PC game, Robin Hood. Both share the isometric 3D display, a point-and-click movement command, a strong sense of humour, understated sound effects and independent characters. There are major differences — this game is much bigger than Hood, the control interface is more flexible and the action more varied — but, on the whole, if you've played Hood you'll have some idea of what this is like.





Rome at last! Hector must visit the capital three times if he is ever to control his own troops and challenge the Emperor.

If you haven't played Robin Hood, let me explain. Ancient Rome is displayed as a push-scrolling isometric 3D environment. Any characters you might meet, such as priests, soldiers, consuls or slaves, have independent lives. If you don't talk to them, they go about their own business. You move about the terrain in three ways: by pointing at an area of landscape and clicking with the mouse, by looking at the map and clicking the cursor on your desired destination, or by using the movement arrows in the menu to fine tune your position on the screen. If you want to speed things up, you can also run.

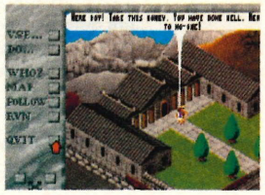
There are five commands on the main menu, apart from 'map' and 'run'. 'Quit' allows you to save a game or restart the level; 'use' lets you utilise (on yourself or other characters) any objects you find; 'do' accesses a whole range of commands which expand as you progress, but begins with basics such as enquiries, threats, payment for goods and stealing; 'follow' orders Hector to trail anyone you choose; and the 'who?' feature reveals brief details about any character in the game.

Vidi

The problems you encounter aren't particularly sophisticated and tend to be sequential. For example, on the first level (Herculaneum), you are asked to deliver a message; when you do, you're rewarded with enough money to buy a weapon or passage on a boat. Similarly, on level two you can use any spare cash to buy a slave, who may then be entered into the



Eventually you consult your map and, despite being tempted to explore the entire area on foot, you finally decide to head for Segamus' house in the west of the town.



On delivering the letter, you notice that Segamus seems keen to flee the town as quickly as possible. He rewards you with enough money to buy your passage on a boat or get a dagger.



You've waited too long. Vesuvius has erupted, spewing lava down the mountain and burying the town in ash. Your boat has disappeared, and death is just a few seconds away.

AD92

Tech*spec* **Rome AD92 wasn't built in a day, but it was easily crammed on to three low-density disks. However, the files are compressed so you'll need a hard disk. Otherwise the demands are modest: the action is playable enough on a 286 (if a mite sluggish at times) and a mouse is essential for ease of use. The sound itself is adequate, mostly sparse atmospheric effects, but the VGA graphics throughout are excellent.**

Disk requirements

High density	✗
Hard disk only	✓
Space taken on hard disk	4.2Mb

Graphic modes

CGA	✗	EGA	✗	Tandy	✗
VGA	✓	SVGA	✗		

Soundboards

Ad Lib	✓	Roland	✓	Sound Blaster	✓

Control

Joystick	✗	Keyboard	✓	Mouse	✓

Performance

Optimum speed	16MHz
Minimum memory	640K
Free RAM required	540K

games at the coliseum. One nice feature is that if you don't always acquire everything from one level, your progress is merely made harder — not impossible.

Because of its simplicity, the puzzle element tends to be overshadowed by the fun of simply wandering around and talking to people. There are so many characters in the game that it's a pleasure finding out what each one is doing and whether they are of any use to your quest. It can be tiresome asking people how they are and constantly receiving a bland response, but you soon learn to read the in-game clues to discover who can really help you.

As you work through the game (there are six levels in all, though they're not quite as 'massive' as the box claims) new skills are required. For example, levels three and five call for tactical skills as you command troops in Britannia and Egypt, whereas levels four and six are a matter of doing the right things in the right place at the right time.

Vici

If you think this all sounds like a fairly easy and dull progress towards success, think again. There are plenty of ways to die — whether it's beneath a wave of molten lava or on the end of someone's dagger — and if you do, you have to start over again. This wouldn't be so bad if saving was a simple process, but it's not: there is no 'save and continue' option, so you have to quit the game and reload. It's a fine disincentive to saving your position too often, but if you've been playing a while and you make one mistake, you must retrace your steps, and this can be tedious.

There are many other problems with the system which prevent Rome AD92 being more than just an enjoyable arcade adventure. For example, you can't repeat commands unless you actually go back to the icon and click on it repeatedly — most noticeable when you want to use 'who?' on several people, for instance.

The lack of diagonal movement for Hector is a severe drawback, making journeys between locations a bizarre and time-consuming sequence of right-angled turns; nor does Hector always appear to understand what you've asked him to do, sometimes setting off in the opposite direction before changing his mind and heading for the right destination.

Slightly less annoying than any of these is the push-scrolling on low-end machines. When you watch Hector moving on the map screen and then quit to the isometric 3D display, the screen has to push-scroll until it rediscovers Hector's position. On a 286 this is annoyingly slow.

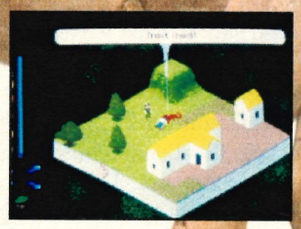
More minor criticisms include the lack of interior views. In games such as the Ultima series you can enter buildings and talk to people; here you simply can't. If there is anything going on inside a building (and it's all too rare), the action switches to an animated flat-screen view.

These criticisms shouldn't put you off Rome AD92. If you want to cut out the time-wasting program calculations, I'd recommend a 386 or better; apart from that there isn't anything for which you could roundly condemn it. The graphics throughout are beautifully drawn: the sprites help create an illusion of life with just 16 pixels, and the backgrounds change to reflect variations in the gameplay. The variety provided by different missions on each level, and the freedom to explore, create an interesting balance of strategy and arcade action. But, above all, it's the engaging humour of the game which provide much of the humour which keeps you going and gives the game's characters a life of their own.

■ **Gordon Houghton**

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Alternatively...



Robin Hood Millennium, £34.99
Steve Grand's first 3D isometric adventure is similar in style but smaller in scope than Rome AD 92. The game system is limited to a few basic movement and action commands, and most of the fun comes from interacting with the wide cast of characters. A time limit adds tension and a good sense of humour keeps you interested, but the basic plot (reclaim your castle, kill Nottingham and woo Marian) is a little lightweight.



Populous Bullfrog/Star Performers, £10.99. Also in double pack with Sim City, £29.99
Rome's graphical style was undoubtedly influenced by the original isometric 3D world simulator, now almost three years old. It's all about power: you control a deity attempting to thwart the forces of evil on any one of 500 landscapes with your divine power, aiming to aid the growth of your own population by levelling land, and squashing the opposition.



Title	**A-Train Construction Set**
Publisher	**Maxis/Ocean**
Contact	**(061) 832 6633**
Price	**£34.99**

Techspec **You need a copy of the original A-Train installed on your hard disk, and, like A-Train (obviously), a 286 processor or higher. Note, however, that the program and the Construction Set support Hercules and MCGA graphics as well as the more usual EGA, VGA permutation.**

Disk requirements

High density	***x***
Hard disk only	***✓***
Space taken on hard disk	***640K***

Graphic modes

CGA	***x***	***EGA***	***✓***	***Tandy***	***x***
VGA	***✓***	***SVGA***	***x***		

Soundboards

Ad Lib	***✓***	***Roland***	***✓***	***Sound Blaster***	***✓***

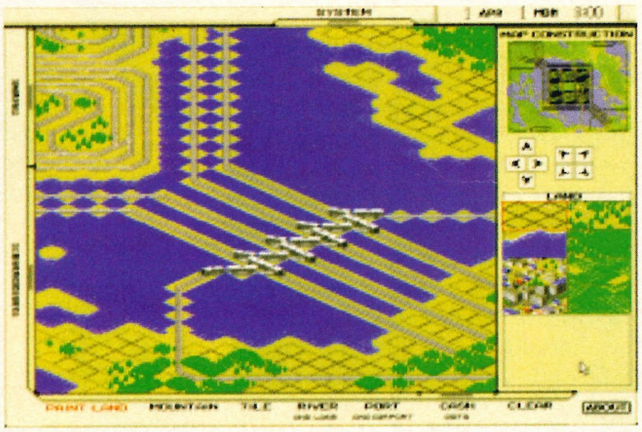
Control

Joystick	***x***	***Keyboard***	***✓***	***Mouse***	***✓***

Performance

Optimum speed	***20MHz***
Minimum memory	***640K***
Free RAM required	***540K***

A-Train
Construction Set



Another demonstration of the 1,001 pointless things you can do with the Construction Set. It must have been one hell of a leaf on the line to cause this little pile-up!

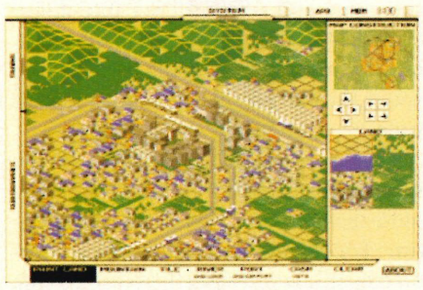
Although A-Train was only released recently in the UK, the original was published in Japan as long ago as 1986, so what we really got was an evolved third version. Now, with hardly time to shunt into its siding, it's followed by this add-on kit, giving the impression that, like London buses, railway games come in pairs. The question is, do you lose anything by failing to make your connection?

The answer, I'm afraid, is not a great deal. Although the construction set is an attractive package with some nice touches, it's more a question of rearranging the sandwiches in the buffet car than offering a radically new menu. A-Train is a fine game, but it has faults, and none of them are addressed in this new addition.

What you do get, as the title suggests, is a tool for altering the environment in which the game is played. Once you've loaded the new floppy disk(s) into your A-Train directory you type AT-Set and up come the familiar landscape and menus. The game scores its first plus here: there is no music. The A-Train soundtrack is probably the worst thing of its kind ever heard on the PC, and its absence from the new product strongly prejudiced me in its favour. However, no sooner did a sound effect happen than it took serious issue with my trusty old Ad Lib card and reduced my speakers to buzzing incoherence. With the score at 15-all, I restarted the game, turned off the sound (no loss at all) and tried again.

One useful feature is that it automatically loads in any saved games it finds in the original directory. You also get a half dozen examples, in effect the basis for potential new scenarios. At the top is one simply titled 'blank'. It may not sound like much, but it's the business.

In place of the normal menus along the bottom offering access to railroad reports, etc, you are offered 'paint land', 'mountain', 'tile', 'river', 'lake', 'port', 'airport' and 'cash'. Aside from the last, these are the tools to construct your landscape.



You can load up any game already in the A-Train directory and doctor it to create a fresh scenario. The only difference is that hills will be automatically turned into mountains. Now you can really let your imagination run riot.

The railways and subsidiaries menus operate exactly as in A-Train, but with the vital difference that in the construction environment you don't actually pay for anything. Not only can you now pepper your landscape with as many expensive lease buildings, golf courses and amusement arcades as you like, you also have the option of owning them. There wouldn't be much point in playing the game if you owned too many, though. You can also lay as much track as you like without paying for it, though this will belong to you. Finally, by returning to the cash menu, you can adjust the amount of money with which you begin, though again, if you give yourself too much there won't be a lot of point in playing. When you've finished sculpting the environment you simply save the game, restart A-Train, and there it is ready to play.

This is all good fun, but I did wonder where it was getting me. This package allows you to do amazing things, but when the novelty has worn off will you want to? Further, although this is an attractive toy to play with, it doesn't improve the actual gameplay. It offers innumerable permutations, but in my opinion the last thing A-Train needs is to be even more open-ended. The chief flaws in the game are the arbitrariness of the targets and the lack of computerised opposition. What would really lift it out of the good category into the outstanding is the sense of rivalry you get in Railroad Tycoon. Maybe version four will have it. If it does, it could be a classic.

■ Simon Shaw

PC review 5

ADVANTAGE HOT 100

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DIY COMPUTING

	No of Disks
* ❐ GALAXY PRO-LITE Very quick and easy multi feature WP	1
* ❐ PC-WRITE Popular Quicksoft WP Split screen	2
❐ MULTIWORD Very useful Pop-up thesaurus for any WP	2
❐ READABILITY PLUS Practical and versatile text analyser	1
* ❐ PC-FILE 5 The most popular, easy to use database system	3
* ❐ ZEPHYR Recommended powerful Foxpro-based data'b system	3
* ❐ FILE X Referential database system - easy to get started	1
❐ DATAMASTER Dbase file viewer, editor with mailmerge	1
* ❐ AS-EASY-AS Probably the closest you'll get to Lotus 123	1
* ❐ PC-CALC 2 Well-known multi-feature Spreadsheets programe	3
❐ PRINTER TOOLBOX An essential collection of utilities	1
❐ LQ Printer Fonts improves performance of any 9-pin printer	1
❐ NEO PAINT Best for drawing, painting, image manipulation	2
❐ DESKTOP PAINT Create/ edit PCX drawings for your DTP	2
❐ EGA COLOURING BOOK 5 Pictures to colour in, save and print	2
❐ GRAPHICS WORKSHOP Converts between most image formats	1
❐ CLIP ART COLLECTION Wide range of quality PCX pictures	3
❐ SHOW PARTNER LITE Screen capture/slide show system	2
❐ PC-KEY DRAW Scale drawing, graphics and text DTP systems	4
* ❐ PRINT PARTNER Create Signs, Posters, Banners, Calendars	1
* ❐ ENVISION Flexible, easy to use, true Desk Top Publisher	2

IN BUSINESS

* ❐ OLIVE ACCOUNTS CONTROLLER SNR Highly recommended	2
* ❐ OLIVE ACCOUNTS CONTROLLER JNR Intuitively easy to use	2
* ❐ OLIVE SALES & PURCHASE ORDERING Ideal for non-accountants	1
* ❐ FREEWAY CASHBOOK Features 5 cheque and 5 cash accounts	3
* ❐ PAGE FINANCIAL CONTROLLER Powerful accounts system	2
* ❐ FREEWAY PAYEMASTER Payroll uses UK tax & DHSS rules	3
❐ LABEL MAKER A nice, straightforward label printer	1
❐ MAILSHOT Works with Royal Mail Mailsort system	2
❐ EASY PROJECT Plan schedule and track without the hassle	1
❐ SUPERSTOCK Stock control system for small businesses	2
❐ 600 BUSINESS LETTERS Huge collection of letters to use	3
❐ FORMGEN Powerful easy to use form designer	1
❐ FORMGEN FILL Makes filling in and printing forms easy	1
❐ PC-DESKTEAM Very popular, easy to use pop-up organiser	1
❐ DESK COMMANDO Pop-up Diary, Notepad, Calculator, Alarm	1
❐ EARLY BIRD Offers simple or complex reminder types	1

AT HOME

* ❐ PAGE CHEQUEBOOK Control and track all home finances	1
❐ HOME ACCOUNTS Clean, practical solution to the problem	1
* ❐ RECORD COLLECTOR Catalogue your record collection	2
❐ EDNA'S COOKBOOK Systematic way of storing recipes	1
❐ MEAL MASTER Print ready-supplied recipes and add your own	2
❐ MEDPAS Integrated medical information system for home	3
❐ BIORHYTHM PLOTTER Find the best(or worst) time of month	1
❐ JOB HUNT Keep your CV up to date. Track interviews	1
❐ SAVE THE PLANET Explains global warming. Tips and quiz	1
❐ FOOTBALL FORECASTER Use your PC to predict scoredraws	1
❐ FAMILY HISTORY One of the best known genealogy programs	2
* ❐ BROTHERS KEEPER Well-presented and flexible genealogy	3
❐ CROSSWORD SOLVER Updatable dictionary, anagram generator	1
❐ CROSSWORD CREATOR Produce and print your own crossword	1
E WHO-AM-I Character analysis based on how you draw pictures	1

EDUCATION

	No of disks
❐ AMY'S FIRST PRIMER Pre-school alphabet, matching, songs	1
❐ WORD GALLERY Associate words with objects multi-lingual	2
❐ ANIMATED SHAPES Correct answers rewarded by animation	1
❐ ANIMATED ALPHABET Fascinating animation for each letter	4
❐ ANIMATED MEMORY GAME Tests memory skills with animations	1
❐ ANIMATED MATHS Rewards correct answers with animations	1
* ❐ HOORAY FOR HENRIETTA Tests arithmetic with animations	1
* ❐ HENRIETTA'S BOOK OF SPELLS Tests spelling with animations	1
❐ TEACH YOUR CHILDREN Maths Music Composition Art English	1
❐ EDUCATING JUNIOR Mosaic, Alphabet, Animals, Clockgame	1
❐ TALKING TEACHER Learn to talk,write, spell- Soundblaster	2
❐ ANDY'S WORD GAMES Opposites Word Find Synonyms Odd Word	1
❐ FUN WITH LETTER & WORDS Makes it interesting and fun	1
❐ FUN WITH MATHS Keeps them entertained while learning	1
❐ FUN WITH DESIGN Stimulates creativity and recognition	1
❐ EXPLORING WORDS Hangman, Spelling, WP for Children	1
❐ EXPLORING MATHS Algerbra, Fractions, Areas, Volumes	1
❐ EXPLORING CHEMISTRY Periodic Table & Molecules	1
❐ EXPLORING PHYSICS Covers classical and modern physics	1
❐ WHERE'S THAT MOUSE Interactive story for youngsters	1
* ❐ WORD RESCUE Teaches spelling, logic, word meanings	1
❐ LEARNING MATHS Teaches basic arithmetic for youngsters	1
* ❐ MATHS RESCUE Teaches maths while playing arcade adventure	1
❐ MATHS TUTOR Covers most aspects from age 6 to adult	1
❐ WORLD ATLAS Displays simple maps of any part of world	1
❐ MAP MAKER Useful system to produce print out of maps	1
❐ THE WORLD ABOUT US Maps and info about the world	1
❐ WORLD NAME GAME Quiz or tutorial on capitals & countries	1
❐ FRENCH TUTOR Exercises French-English & English-French	1
❐ FRENCH GCSE Learn, test and revision aid on the language	1
❐ TUTOR COM Thorough course on use of computers and MSDOS	1
❐ FASTYPE Graphics typing tutor with a variety of exercises	1
❐ PHYSICS GCSE REVISION A teacher's novel aid to study	2
❐ COMPUTER SCIENCE GCSE REVISION A novel aid to study	2

SPECIAL INTEREST

❐ T- SQUARE Brilliant, accurate 2-D draughting package	4
* ❐ PC DRAFT CAD Professional quality computer aided design	1
❐ HOME PLAN Draw, save, edit and print plans of your house	1
❐ COMPOSER Use on screen stave to compose a tune, play it	1
❐ PIANO MAN Turn you PC keyboard into a musical one	1
❐ GUITARISTS TOOLBOX An essential set of musical tools	
❐ MELODY MASTER Lets you ctreate, save, edit and play music	1
* ❐ ODYSSEY A comprehensive UK communications program	2
❐ NIGHTSKY A computer planetarium. Fully illustrated	4
❐ SKYGLOBE Amazing display of sky at night printing	1
❐ DISCOVER THE BIBLE Produces a daily quotation and quiz	1
❐ SAMFINDEX Complete Holy Bible with text search, find etc..	7
❐ SEEDMASTER is an extensive Bible concordance	9
❐ POWER MENU Quick access too all programs at touch of key	2
❐ MENU DIRECT GOLD Comprehensive & award winning system	2
❐ FLEXIBAK PLUS Fast easy to use hard disc back up system	2
❐ DISK COMMANDO Shareware equivalent of Norton utilities	2
❐ INTEGRITY MASTER Anti-virus and data integrity checker	1
❐ PK ZIP The latest ZIP archiving/dearchiving systems	1
❐ 4-DOS A sensible alternative to MSDOS	2
❐ ESSENTIAL UTILITIES Large collection of firm favourites	1

ENTERTAINMENT

	No of disks
❐ JUMPJET Fly over enemy territory bombing and blasting	1
❐ SANDSTORM Action with Scud missiles, Jets, Tomahawks	1
❐ ARMY MANOEUVRES Strategy board game with good graphics	1
❐ FACING THE EMPIRE One-player interstellar conflict	1
❐ SPACE SHADES Places you in cockpit of a space cruiser	1
❐ SHOOTING GALLERY Good simulation of fairground attraction	1
❐ KUNG FU LOUIE Two karate students have added their touch	3
❐ SLITHER New version of Hungry Snake. Soundblaster compat	1
❐ JILL OF THE JUNGLE Play a female version of Tarzan	1
❐ OILCAP Like Pipemania only with more features	1
❐ GALATIX Amazing graphics and sound on updated Invaders	1
* ❐ CAPTAIN COMIC High quality animated graphics arcade game	1
* ❐ ROBOMAZE II Employing sophisticated animated graphics	1
* ❐ ROBOMAZE III The natural successor to ROBOMAZE II	1
❐ BOLO Try to get Mr Bolo out of the 40 room maze	1
❐ BOLO 2 Forty more more rooms to challenge you and Mr Bolo	1
* ❐ MONUMENTS OF MARS Animated arcade game set on Mars	1
* ❐ PHAROAHS TOMB Nevada Smith in Raiders of the Lost Tomb	1
* ❐ ARCTIC EXPLORER Second adventure of the famous explorer	1
* ❐ JUMPMAN LIVES Another great arcade game from Apogee	1
* ❐ COMMANDER KEEN Invasion of The Vorticons. Very good	1
* ❐ COMMANDER KEEN 2 Goodbye Galaxy-2nd series	2
❐ KEEN DREAMS Rescue children from the Viscious Vegetables	1
* ❐ ALIENS ATE MY BABYSITTER Special edition of Com Keen	1
* ❐ COSMO'S COSMIC ADVENTURE Young alien on way to Disney	1
* ❐ WOLFENSTEIN Unique virtual reality game. Outstanding	1
❐ WOLFENSTEIN Hints, Cheats, maps and other info on game	3
* ❐ CATACOMB ABYSS Spooky virtual reality game. Haunting	1
* ❐ DUKE NUKEM An absolute gem! Features4-Way scrolling	1
* ❐ SECRET AGENT Superb animated action and top gameplay	1
❐ DRACULA IN LONDON Very good interactive roleplaying	1
❐ DARK AGES Animated adventuring in medieval world	1
❐ HUGOS HOUSE OF HORROR Creepy but enthralling game	1
❐ HUGO II WHODUNNIT Excellent sequel featuring Penelope	1
❐ HUGO III JUNGLE OF DOOM Third and final episode	1
❐ REALM OF HAKROM VOL 1 The Axe of Fargrim. Superb	4
❐ VAMPYR: THE TALISMAN OF INVOCATION Extensive gameplay	2
❐ CAVES OF THOR Loads of puzzles and traps to investigate	1
❐ COLOSSAL CAVE ADVENTURE The one that started it all	1
❐ DUNGEONS & DRAGONS Fascinating and complex adventure	1
❐ JACARANDA JIM Escape from the planet Ibberspleen IV	1
❐ ANOTHER LIFELESS PLANE And Me With No Beer. Amusing	1
❐ FORD SIMULATOR III Popular driving simulation test drive	4
❐ CADDIE HACK Very realistic full feature golf simulation	1
❐ STICKY WICKET Good cricket simulation. Choice of teams	1
❐ FOOTBALL MANAGER Extensive simulation from UK author	1
❐ PC-ONOPOLY Based on the well-known buy-&-rent board game	1
❐ SCRAMBLE Excellent PC version of the popoularword game	1
❐ SLEUTH Whodunnit based on the Cluedo - different each time	1
❐ POWER CHESS Probably the best version of computer chess	1
❐ TRIBOLO Interesting 3-way Othello game. Each board differs	1
❐ MUMMY'S BUSY Face Count, Battle Higher or Lower etc.	1
❐ CLASSIC GAMES Space Invaders, Pacman, Bricks, Donkey Kong, Q-Bert,	1
❐ FUN AND GAMES Pango Babies Elevator Centipede Pyramid+	1
❐ GOLDEN NUGGETS Striker Paratrooper Sopwith Flightmare +	1
❐ KEEP THEM AMUSED Burger Grime Racer Ninja Caverns Galaxy	1
❐ SPORTING LIFE Golf, Bowling, Basketball, Volleyball	1
❐ WIBLING WILF & THE DUNJAX Wilf BitBat Robotron Dunjax	1
❐ TETRIS ADDICTS 3 Games - Tetris, Doublink and Beyond Blox	1

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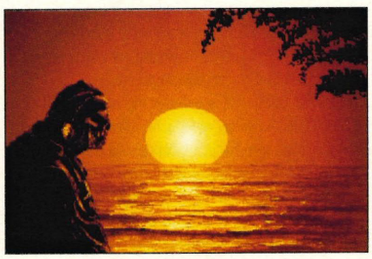
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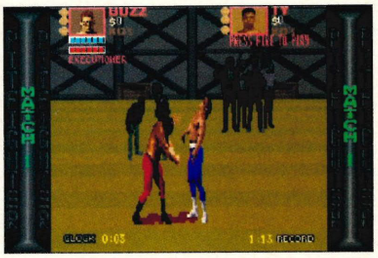
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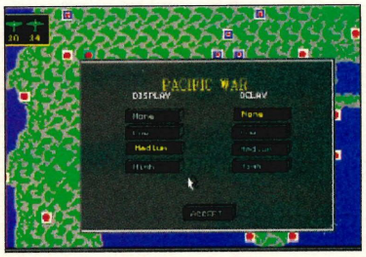
The games that got away



Inca



Pitfighter



Pacific War



Curse of Enchantia

We'd like to review everything, really we would. But we can't, so we don't. What we do do is look at everything else that comes in and give you our general impressions of each game. Hence this reviews round-up.

CD-ROM is the name of this month's game. Three games already seen, reviewed and bought by the PC games world are on offer, two from Sierra, the other from Coktel Vision. Inca was reviewed back in issue 14 where it scored a very worthy 8 rating, Inca CD-ROM (Coktel Vision, £44.99) is just as visually stunning as the disk-based version was, if not more so.

In fact the graphics have all been smartened up and the presentation is now even smoother than before (if such a thing is possible). If you liked the look of it originally but were holding out – and if you own a CD-ROM player – now's the best time to give it a go.

A far more excruciating use of your CD-ROM is Willy Beamish (Dynamix, £44.99). Proudly emblazoned on the box is a sticker exclaiming "Willy Talks!". Unfortunately he Talks! in exactly the way you'd expect, the typical precocious American schoolbrat ... er, kid. Apart from that it's the same game as before (ie, all graphics and little game). Willy CD-ROM is for the very, very young or the most devoted Sierra/Dynamix fan.

Reviewed this issue

The Incredible Machine	**8**
Shadow President	**8**
Stunt Island	**8**
Ashes of the Empire	**7**
The Humans	**7**
Spelljammer	**7**
Trolls	**7**
Contraptions	**6**
Harrier Jump Jet	**6**
Rome AD92	**6**
SimLife	**6**
A-Train Construction Set	**5**
Mario is Missing	**5**



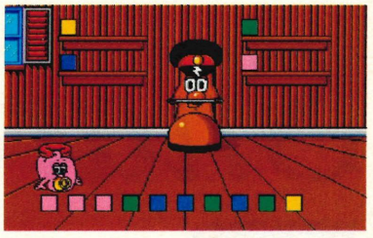
Paint & Create



Merlin's Maths



The Adventures of Willy Beamish



First Class

This month's other CD-ROM product is also from Sierra. Space Quest IV (Sierra, £39.99) – Roger Wilco and the Time Rippers – sees our hapless hero zipping back and forth in time (from Space Quest I to Space Quest XII) as he battles against the dreaded sequel police. All the usual CD-ROM enhancements are there and nothing much is added to the game's content at all. SQIV was always the weakest of the series, despite its brand new graphic interface, principally because of the lack of game. Good fun for Roger's followers but not much there for anyone else.

Turning away from CD-ROM we come to the first of Access's Links 386 Pro course disks. Mauna Kea (Access, £21.99) on the island of Hawaii is the setting and what a setting it is. Super VGA is used to its best here amidst the palm trees, the beautiful skies and the rolling surf of the beach. Essential for any Links player.

Also essential, but this time for owners of Great Naval Battles is Super Ships of the Atlantic (US Gold/SSI, £19.99). Nine new battleships to play around with as well as ten brand new scenarios ensure that the lasting appeal of the original game is doubled.

Staying along similar lines is Pacific War (US Gold/SSI, £39.99) from long-time SSI strategist Gary Grigsby. Although it doesn't contain any of the fancy graphics of GNB or Task Force 1942, what it does have is one of the most detailed war game engines yet seen. Control land, air and naval forces as you try to gain control of the Pacific after the attack on Pearl Harbour. Play on either side, controlling from either a Supreme Commander's position or coming right down to individual commands to a single ship. Detail is the watchword here and boy, is it detailed.

For those of you on a tighter budget are this month's bargain releases. From the Hit Squad (both at £9.99) are Pit-Fighter and Rack 'Em, the first a brutal beat 'em up, the second a collection of various pool and snooker games. Pit-Fighter was never the best game in the world and even now, on budget, it can hardly be called value for money. Shoddy graphics, poor presentation and terrible gameplay just help to bury it. When it comes to beat 'em ups, Street Fighter 2 has nothing to worry about.

Rack 'Em is also nothing special, being a barely passable compilation of pool, snooker and billiards. There's already a vastly superior snooker game on the market and within a metter of months we'll see the pool follow-up. It may be cheep, but it sure ain't cheerful.

The final piece of budget software is First Class, starring television's The Shoe People (GBH, £11.99). Intended as an educational product for pre-school kids, First Class has the added advantage of starring characters that kids are already familiar with. To this end (and taking into account its price) it's not that bad a product.

Also in the educational way are the Fun School Specials, a series of specially designed educational products, for children wanting to focus on a particular area. Paint and Create (Europress, £25.99) is like a junior version of Deluxe Paint, containing a basic drawing utility, a music creator, a Mr Potato Head style monster creator and various other activities. Paint and Create is designed to encourage a youngster's creative skills and is certainly manages to do a decent job.

Similarly Merlin's Maths (Europress, £29.99) is designed to hone a child's mathematic skills by using a collection of games, puzzles and activities. Both products come across as fun, informative and completely non-patronising to kids. Fun School has always managed to lead the way in education software, the specials now seem set to carve out their own special niche.

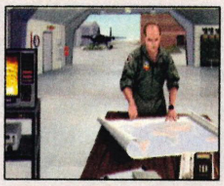
Back in the full-price range is Curse of Enchantia (Core, £34.99), an adventure set to rival anything that LucasArts can throw at us. Well, let's not be too hasty. Certainly Curse is pretty and it's far from being the worst adventure ever produced. The trouble is it doesn't do anything innovative, just collating a lot of ideas and styles already seen elsewhere and putting them together in one package.

PC Review's best buys

What are the best games currently available? PC Review's Best Buys are taken from the last three months of reviews in order to give you a good idea of what to shell out for.



Car & Driver
Electronic Arts, £34.99
If F1GP is the king of the racing simulations, C&D is certainly the best plain driving game. Take the world's top sports cars and drive like there's no tomorrow.



F-15 Strike Eagle III
MicroProse, £44.99
The third in MicroProse's long line of F-15 sims is a satisfying challenge and a half-decent simulation. It may not be the best flight sim the 'Prose has ever done, but it's certainly one of the better ones.



Formula One Grand Prix
MicroProse, £44.99
The long delay in its appearance on PC may have taken the edge off the excitement, but F1GP is still fast, graphically exciting and highly playable. The best PC racer currently going.



AV8b Harrier Assault
Domark, £39.99
MicroProse's forthcoming Harrer Jump Jet is going to have to be very good to topple Simis and Domark's effort. It may be single-mission only, but the attention to detail is without peer, and the combination of strategy and playability is a winner.



Populous II
Bullfrog, £34.99
The power and the glory that was Populous returns with a several of new features — volcanoes, baptismal fonts, head-to-head capability — but essentially more of the same as you create your peoples and control their destiny.



Alone in the Dark
Infogrames, £44.99
One that we've all fallen in love with here at PC Review, Alone in the Dark combines action, strategy, superb graphics and animation with a crackingly spooky story. Above all, a game with atmosphere.

Shareware Reviews

Sam McKenzie has been seeing off the aliens and building up his contacts book with the new version of Marketeer in this month's round-up of shareware releases

Marketeer

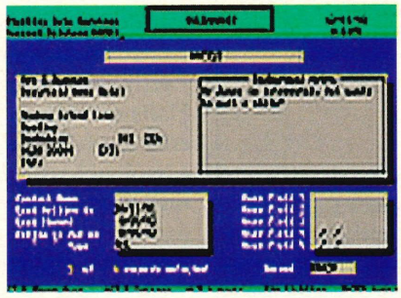
Marketeer, which is featured on this month's 3.5" coverdisk, is a shareware package that you will help you manage contacts, and a new version is now available. The package was designed for use in managing direct sales, and has all the facilities you need to keep track of your potential customers. The options include a word processor, database, appointment scheduler, to do list, and alarm clock.

The main part of the program is the database. This is customised for use as a contacts manager, with options to take care of telephone conversations, client appointments, and mail shots. The database's format is fixed, but there are five fields in the structure that you can define for your own use. Within the database you can calculate totals and averages in any user defined field.

The data entry options offer as much help as possible. Whenever you enter a new record, a check is made for any duplicates already in the database. As you type in the name of the town, the county and the first three letters of the postcode are entered automatically, if possible. In large cities such as London, or small towns, the postcode is not suggested, but an attempt is made for quite a few well-known towns. If you later change details of the town, the county and postcode are automatically changed for you.



The package doesn't limit you to a single database, you can have different databases to hold information for separate activities: one suggestion is a separate list for each salesperson. If necessary, you can move or copy records between files.



The word processor option is probably better described as a text editor. You can use it to enter text and you can include database fields, and there is support for templates holding the database fields, and the page layout in terms of width of the page. Within the editor you can copy and paste blocks of text, but there is no support for using special fonts, or for operations such as checking the spelling of your document.

When you make a mail shot using the word processor the details are immediately logged, so that you can retarget the selection. You can also print out mailing labels of a variety of layouts and sizes up to three across the page.

As you talk to your client, you can enter the details of the conversation into a pop-up box on screen. You can also look at the details of all the phone calls made to that particular client, as well as all the letters that you have sent to them.

More generally, you can select records from, and search for information within, your database in a number of ways. You can search on any of the fields within the database, including the 'free text' general notes and phone notes fields.

The appointment scheduler is linked to the database. It shows a week at a time in the format of a wall planner, highlighting any conflicts between scheduled meetings.

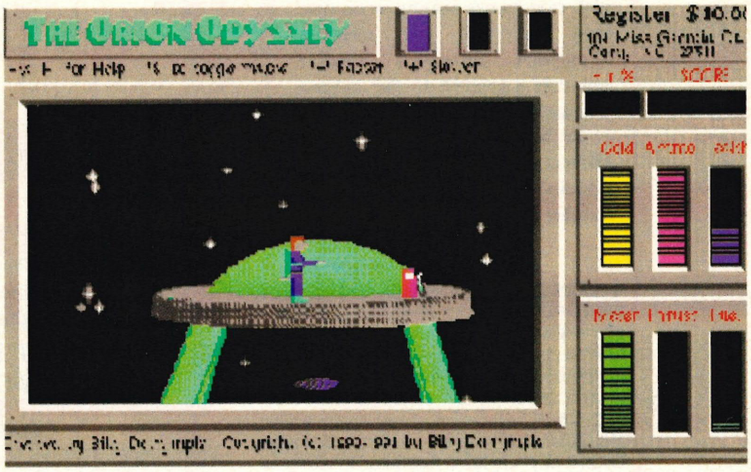
While you can use the word processor within Marketeer to write letters to your customers, and to do mail shots, the package also comes with support for WordStar, WordPerfect, and Microsoft Word for MS-DOS. You can either launch the word processor from within Marketeer, or you can create a mail merge file in the format that you have selected.

Other features of Marketeer are a scientific calculator, calendar, and if you have a modem, the program will dial the numbers in your database for you, though this is frowned upon by British Telecom. You can add password protection to your files if the information is confidential, and the package has context sensitive help throughout.

This is a useful package which shows all the hallmarks of having been developed by someone who is doing the job of marketing, rather than a non specialist programmer.

Product:	**Marketeer**
Supplier:	**Sterling Data Services**
Tel:	**(0734) 427333**
Product Code:	**Marketeer**
Price:	**£5.00**
Registration price:	**£49.00**
What you get for registering:	**Free upgrade to next version, printed manual, utilities pack, free telephone support**
Specification:	**PC**
Disk space:	**1.5Mb**
Graphic modes:	**DOS**
Soundboards:	**N/A**
Control:	**Keyboard**





Duke Nukem

Last time I all too briefly mentioned Duke Nukem, a platform game from Apogee. Since then I have enjoyed playing it for another month, and therefore I think it is worth bringing it some more to your attention.

The plot follows that the world is threatened by the evil Dr Proton. Following a radiation accident this brilliant scientist has turned mad, and wants to take over the world. He and his band of evil robots called techbots are holed up in a skyscraper in Shrapnel City. The CIA has asked you to drop from a plane, and do your best to save the world — this might well be the last chance for the world.

This tale of gloom and doom sets the scene, with shots of a muscular US marine type figure. Once into the actual game the hero bears rather more resemblance to a Captain Comic or Commander Keene who's been body building.

Anyway, size not withstanding, you leap around the skyscraper, shooting robots and poisonous green beasties, exploding boxes, and generally causing havoc in your search for Dr Proton. He keeps track of you, in return, by using the sets of video cameras attached to the ceiling, so it's a good defence plan to shoot them down. Likewise, you are expected to destroy the nuclear reactors that the evil doctor has built for his nefarious purposes.

The game is organised into levels, and one criticism of the organisation is that you can only save your game in the hallway between the levels. When I got stuck on one level, this meant playing the same part time and time again, with no chance to benefit from the hours until I could find the exit. It also means that if you get called away, you lose all the work back to the previous level. Unhappily, this can get a bit tedious and disrupting.

As you would expect from Apogee, this is an exciting game to pay, with good graphics and plenty of surprises. When you register, you get a further two episodes of adventures against the evil doctor, one on the moon and one in which you warp to the future. If you're a fan of platform games, then you shouldn't miss this one.

Product:	**Duke Nukem**
Supplier:	**Precision Software Publishing**
Tel:	**(0233) 208288**
Product code:	**Duke**
Price:	**£3.00 on 3.5" disk, £2.50 on 5.25"**
Registration Price:	**£29.00**
What you get for registering:	**further 2 episodes, hints and tips, cheat password, latest version of the game**
Specification:	**XT**
Disk space:	**1Mb**
Graphic modes:	**EGA,VGA**
Soundboards:	**Ad Lib, Soundblaster**
Control:	**keyboard, mouse, joystick**



The Orion Odyssey

The Orion game takes its name from the glamorously galactic setting of the adventure — on a planet somewhere in the Orion cluster of stars. Our noble hero, Wally, is a skilled space flier with a gun, rocket blaster backpack, gold (for the necessary purchase of fuel and ammunition), and health.

In many senses, this is a platform game which makes use of the air as well as the ground, and as such this gives you one more thing to worry about — not only do you have to move around and shoot your opponents, you also have to avoid crash landing. That should keep you on your toes for while. All this, and find the secret ankh too!

Within the Orion constellation itself, the action of the game takes place in a number of different settings. Some are situated above the planet surface, some in deep chasms, and others in internal cave systems below ground level.

It is always well worth checking to find out what each particular feature has to offer you, as it could possibly lead you directly into another part of the game. As you move around you will inevitably come upon useful items of interest to collect such as swords, keys, bombs, and a golden goose!

The version of Orion which is readily available at the moment does not offer any support for mice or joysticks, unfortunately, so you have no choice but to use the keyboard for manoeuvring your space flier around the planet.

Nor is there support for sound cards. Of course, the advantage of all this is that is does make the game equally accessible and fun on machines which are not set up specifically for playing games.

By adding flying to the catalogue of more usual actions like running and jumping, the Orion Odyssey does make for extra interest even for avid platform game fans, and you should not write off it simply because there isn't an end point.

The game is most certainly fun, and using the rocket blaster adds enough interest in its own right to keep you spellbound by the Odyssey for quite some time.

Product:	**Orion Odyssey**
Supplier:	**Transend**
Tel:	**(0274) 622228**
Product code:	**Orion Odyssey**
Price:	**£5.00**
Registration Price:	**$10.00**
What you get for registering:	**further 8 levels**
Specification:	**PC**
Disk space:	**1Mb**
Graphic modes:	**EGA**
Soundboards:	**none**
Control:	**keyboard**



Quality Shareware (PC only) with easy to use menus or on disc help to get you started. Shareware programs require separate payment to the author if found useful. Number of discs is in brackets after the name. HD=requires hard disc. Please remember to state disc size and to total up the number of discs.

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0423 880471(9 to 5 only)
FAX: 0423 889728

WORD PROCESSING

GALAXY LITE (1) WordStar Compat. & menus.
WORD FUGUE (2)(HD) Another brilliant WP.
PCTYPE 4 (4)(HD) One of the best.
SIMON (1) Excellent pop-up text editor.
POPSAURUS (2)(HD) Pop-up thesaurus.
SHARE SPELL (1) Stand alone spell checker.
PRO-CR (1)(HD) Optical character recognition.
MR LABEL (1) Flexible label printing program.
LASER LETTERHEAD PLUS (2)(HD) & logos.

DATABASE MANAGEMENT

WAMPUM (1) develop your own relational dBase
ZEPHYR (2)(HD) Menu driven relational dBase.
PCFILE 5 (3)(HD) dBase compat. menu driven.
DATAWORKS (3)(HD) Relational database.
FILE EXPRESS (3)(HD) Easy to use database.
CLUB (1) Simple membership system.

SPREADSHEETS

AS EASY AS (1) 123-style popular spreadsheet.
PC CALC (3)(HD) Menus and online help.
TUTOR 1-2-3 (1) Interactive tutor for Lotus 123.
INSTACALC (1) Pop-up spreadsheet.
EXPRESS CALC (2) Easy to use spreadsheet.
ON-SIDE (1) Sideways printing for spreadsheets.
PIVOT! (1) Print AsEasyAs worksheets sideways.

INTEGRATED PROGRAMS

ALT (1)(HD) Editor/calc./address book/calendar.
ACTIVE LIFE FOR DOS (2) Appointments, etc.
FRIDAY (1)(HD) Pop-up Organiser, diary.

BUSINESS APPLICATIONS

FORMGEN (1) Form designing program.
TASK-PRO (1)(HD) Project management.
OPTIMA (1)(HD) Organise, shedule a project.
TIME TRAK (1) Display of time dependent events.
ONLINE PHONE MANAGER (1)(LAN) log system.
MANAGEMENT TRAINING (1) Teaches skills.
CONTACT PLUS (1)(HD) Client tracking.
LEADMASTER (2) Sales office system.
MARKET FINDER (1) Follow up sales leads.
MARKETEER (2)(HD) Database/mailshot/WP.
SALESMAN (1)(HD) Client management system.
THE FRONT OFFICE (3)(HD) Sales/suppliers.

FINANCE

PAGE FINANCE CONTROL (2)(HD) Accounts.
INVOICE MASTER (1) Free text invoicing system.
EASY STOCK MANAGER (1) Stock Control.

MS WINDOWS PROGRAMS

BACKROOM BOY (2) UK Personal Organiser.
PAINTSHOP PRO (1) Popular picture file util.
WINSPELL (1) Checks spelling in any MSW prog.
BIGDESK (1) Increases the size of the Desktop.
ZIP MANAGER (1) Controls, PKZIP, LHAR, etc.
GRAPHIC WORKSHOP FOR WINDOWS (1)
SCREEN PEACE (1) Screen saver.
WINDOWS ICONS (1) Hundreds of icons.
ICON TOOLS (1) Edit, draw or view icons.
WINDOWS TOOLS #5 (1) including WINZIP.
SOUNDER (2) Digitised sounds through speaker.
ACTIVE LIFE (1) Calendar, appointments, dialler.
ORGANISE (1) Personal information manager.
CHOMP (1) PacMan game.
WINDOWS GAMES (1) 12 games, Yahtzee. etc.
WINDOWS BACKGAMMON (1) Very good.
WINCHESS (1) Very good chess game.
BATTLE ON DISTANT PLANETS (1) Combat.
CASTLE OF THE WINDS (1) Fantasy role play.

GRAPHICS

ENVISION PUBLISHER (2)(HD) Fantastic DTP.
PRINT PARTNER (1) Banners, letterheads, signs.
PCX SUPERSHOW (2)(HD) Create presentations..
PCX SUPERTOOLS (1) Edit and manipulate PCX.
GRAPHIC WORKSHOP (1)(HD) Convert/view/edit pics
DRAFT CHOICE (1) Easy and very popular CAD.
EASY DRAW (1) Technical drawing.
CHARTS UNLIMITED (1) Flowcharts, Org. charts, etc.
DESKTOP PAINT 16 (1)(HD) New 16 colour drawing.
NEO PAINT (1)(HD) 256 or 16 colour PCX/GIF drawing.
FINGERPAINT (1) B/W PCX drawing program.
FINGER VGA (1) 256 colour PCX drawing program.
VGA PAINT (1) 248 colour drawing.
COOPER SET (2) Over 1500 pics, choose pcx/img/mac

DOS UTILITIES

POWERMENU 6 (2)(HD) Friendly menus.
PKZIP/PKUNZIP (1) THE file archiver!
PKZMENU & PKLITE (1) Two utilities for PKZIP.
HYPERDISK (1)(HD) Disc Caching.
4DOS 4 (2) Alternative to DOS.
BOOT SYS (1) Set up different boot-up requirements.
POWERBATCH (1) Write batch files & converts to .COM
DAZZLE (1)(EGA) Favourite 256 colour kaleidoscope.
SAFEPACK (1)(HD) Hard disc de-fragmenter.
FLEXIBAK PLUS (1)(HD) The best hard disc back-up.
MCAFEE VIRUS TOOLS (2) Anti virus programs.

PROGRAMMING

C TUTOR (2) Excellent tutorial with examples.
PERSONAL C COMPILER (1) Best shareware compiler
A86/D86 (1) Fast Assembler/debugger.
TURBO PASCAL TUTOR (2) Very good tutorial.

HOBBIES & INTERESTS

BROTHER'S KEEPER (4) Friendly, popular genealogy.
FAMILY TREE (1) Prints family tree chart or book.
FOOTBALL FORECAST (1) Pools/fixed odds system.
PUNTER'S PAL (1) UK horse racing analysis.
RACEMATE (1) Horse race ratings.
ORGANIZE! (1) Choose: Music,Books,Stamps,Videos
ASTROMART (1)(HD) Calculates Astral Charts.
ELECTRIC ALMANAC (1) Astrology, IChing, Tarot.
PALMISTRY FOR ALL (3)(HD) Detailed readings given.
HANDWRITING ANALYST (1) Detailed Graphology.
ONLINE BIBLE (8)(HD) Old and New Testament.
GREEK/HEBREW LEXICON (4) For the Online Bible.
CROSS REFERENCES (1) For the Online Bible.

TESTWARE USER GROUP

When you order goods from Testware you receive a FREE membership to the user group. Members receive regular copies of our newsletter, TESTWARE NEWS, together with money-off vouchers and special offers. Testware News keeps members informed of the latest Shareware releases and other news from the world of Shareware, So for special offers only available to members, money-off vouchers and regular copies of TESTWARE NEWS, order from us today and get your FREE membership!

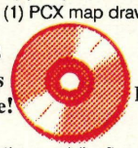
EGA/VGA GAMES (Need Hard Disc)

COMMANDER KEEN I (1)
COMMANDER KEEN II (2)
COMMANDER KEEN III (1)
JILL OF THE JUNGLE (1)
WOLFENSTEIN 3D (1)
SHOOTING GALLERY (1)
BOLO ADVENTURES (1)
FORD SIMULATOR III (4)
LADDERMAN (1)
CRYSTAL CAVES (1)
CORNCOB 3D (1)
SECRET AGENT (1)
LAST HALF/DARKNESS (1)
JUMPMAN LIVES (1)
SANDSTORM (1)
EGA TREK (1)
CAPTAIN COMIC (1)
BASS CLASS (1)
BOLO II (1)
MINDCUBE (1)
GOLDHUNT (1)
DOMINATION (1)
BANANOID (1)
COSMO'S ... (1)
DARK AGES (1)
HUGO III (2)
F-117A (3)
ANCIENTS I (1)
GALACTIX (2)
PHYLOX (1)
STARFIRE (1)
DUKE NUKEM (1)
KEEN DREAMS (1)
HOOSIER CITY (1)
CRUSHER (1)
PAGANITZU (1)
BOLOBALL (1)
KILOBLASTER (1)
KUNG FU LOUIE (3)
EGAINT (1)
ALPHAMAN (1)
OILCAP (1)
CUBER (1)
TRIBOLO (1)
AVARICIUS (1)
ROBOMAZE III (1)

EDUCATION

HOORAY FOR HENRIETTA (1)(VGA)(HD)(3.5")
HENRIETTA'S BOOK/SPELLS (VGA)(HD)(3.5")
SPELLBOUND! (VGA)(HD)(3.5") Age 7 to adult.
MONKEY BUSINESS (1)(HD)(EGA)(286) Age 7+
WHERE'S THAT MOUSE? (1)(HD)(EGA)(286) 4+
PC LEARNING GAMES (4)(EGA) Age 2 to 8
FUNNY FACE II (3)(HD)(CGA) Crazy faces.
WORD RESCUE (1)(EGA)(HD)(3.5") Age 4 up.
MATHS RESCUE (1)(EGA)(HD)(3.5") Age 4 up.
ANIMATED WORDS (2)(HD)(EGA) Age 2 to 6.
ANIMATED MATHS (1)(HD)(EGA) Age 2 to 6.
TOUCH TYPE TUTOR (1) Easy to use tutor.
FRENCH TUTORS 1 & 2 (2) Multiple choice test
GEOCLOCK UK (1) Map/time with moving sun.
FINGER MAPS (1) PCX map drawing program.

CD-ROMS 3 GigaBytes of Shareware!



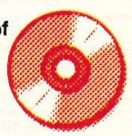
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Mach3

Mach3 is a fast moving space flying game, which despite being simple, got my vote as the most fun short term game this month. In a familiar scenario, you control a space ship as it flies along a canyon, with opposing space ships flying in the opposite direction.

The aim of the game is not to get splatted, either by the opposition, the mines which explode if you go too near the ground, or even the occasional meteorite.

What makes this a good game is not the plot, it is the fact that the ship is extremely controllable, the animation works well, and you get the feel of flying very low and very fast. All right, so it's not intellectually demanding, but you do have a lot of fun trying to get into the high score table.

Like Xerix, right, this isn't a game that you would want to spend a lot of money on, but it is worth getting as a filler if you are ordering other things. Mach3 is freeware, so you don't have to pay a registration fee, just enjoy the game.

Product:	**Mach3**
Supplier:	**Benetech**
Tel:	**(0533) 611231**
Product code:	**Mach3**
Price:	**£2.35**
Registration price:	**n/a**
What you get for registering:	**n/a**
Specification:	**PC**
Disk space:	**500K**
Graphic modes:	**VGA**
Soundboards:	**none**
Control:	**keyboard, mouse, joystick**

Xerix

In Xerix, you take the part of a pilot in a mission to save the world from a huge alien spaceship, which has already destroyed the previous unmanned reconnaissance spaceship, and two thirds of Los Angeles.

The action takes place within the ship, along the wide corridors, Star Wars fashion. As you travel in your ship, alien objects come towards you, bouncing from wall to wall.

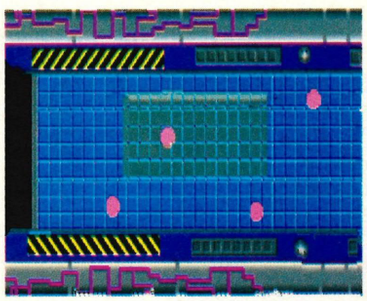
If one should touch you, you lose a life. There are also fixed sets of cannons which you have to negotiate, avoiding their random sprays of bullets.

While the idea is old and familiar, the bouncing motion of the aliens adds a certain degree of interest, and it takes quite a while to get the hang of avoiding them, while firing, and avoiding the cannons.

At the end of each level you have to deal with a rather more substantial alien in order to proceed and to get more lives.

Xerix is not the most exciting game I have ever played, but it does have the bouncing aliens to make it that bit slightly different.

It is also freeware, so if you are getting something else from a shareware library, it is probably worth having a look at — after all, you won't have to pay to register it.



Product:	**Xerix**
Supplier:	**Benetech**
Tel:	**(0533) 611231**
Product code:	**Xerix**
Price:	**£2.35**
Registration price:	**free**
What you get for registering:	**n/a**
Specification:	**286 or better**
Disk space:	**500K**
Graphic modes:	**VGA, SVGA**
Soundboards:	**Ad Lib, Soundblaster**
Control:	**keyboard, mouse, joystick**

Shareware Finder Service

In the PC Review, Issue 15, I asked if any readers know of a Spectrum emulator, and three readers sent in suggestions. S Westlake of Guildford recommends a version available from B G Services, 64, Roebuck Road, Chessington, Surrey, KT9 1JX. This costs £3.00, and works very well.

John Raby of Torrance has seen one from Daniel Thomas, 101 Gardner Street, Cliffe Vale, Stoke, Staffordshire, ST4 7AX. This costs £2.00, but John has not actually tried it himself.

Finally, Mike the Aardvark uses a Spectrum emulator which he downloaded from the Mission Impossible bulletin board on 0602 653247. This is called Vgaspec.zip, and it expects you to be using a VGA monitor. By the way, Mike says he downloaded this particular file because he thought that it was the specification for the VGA standard!

Do you know of any software for knitting pattern designs and for transferring drawings to patterns?
Amanda Mills
Crosby, Liverpool

There is a program called Knitwit, obtainable from Advantage (0242) 224340. At first glance it looks as though this will do exactly want but not being a knitter myself, I can't be certain! It allows you to draw your design and then converts this to a pattern.

If you would like to take advantage of the Shareware Finder Service, fill in the form, right, or reproduce it in letter form, and send it to PC Review, Shareware Finder Service, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. You can also fax your request to (071) 972 6710, or e-mail it to pcreview@CIX.compulink.co.uk.

Please note that PC Review doesn't undertake to supply you with the software we come up with, but we will identify the product we believe will suit your purpose, and make our own, necessarily subjective, evaluation of it.

Name .....
Address .....
.....
.....
Daytime tel no (in case we need more details).....
PC system specifications:
Processor .....RAM.....Hard/floppy disk .....
Graphics .....DOS. .....Windows .....
I am looking for software which will perform the following task.....
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QED

At long last we continue our detailed guide to the classic game that launched a hundred clones. Robin Matthews picks up where we last camped out at the end of Level Two

Dungeon Master

the story continues...

Level three

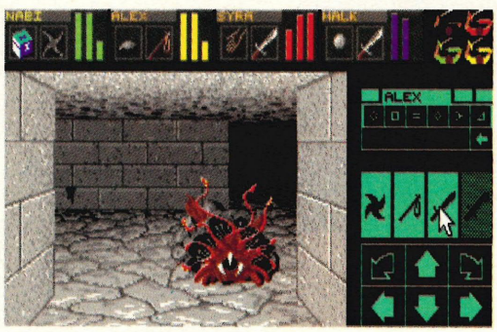
So, straight back into the swing of things with a level that gives a taste of what's to come. Lots of combat with plenty of hidden areas, secret buttons and puzzles.

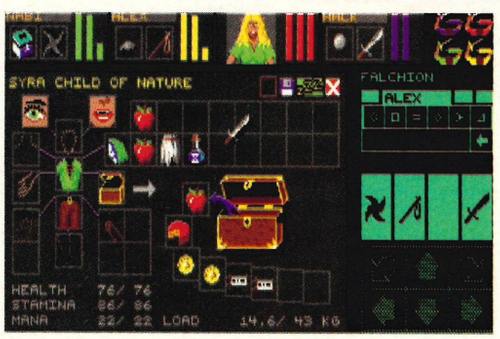
Divided into seven distinct areas, the last one will allow you to reach level four – as long as you have found four of the six gold keys. (Note a fifth key will give you a good bonus).

The six main areas are the vault (various monsters, worth the effort as there are lots of goodies), creature cavern (fights only, no real treasure so can be ignored if you have five keys), room of the gem (go left before straight ahead), time is of the essence (several small teasers), the matrix (nice beginners area), chamber of the guardians (easy once you've killed off the rock monster – use the closing door trick).

A long level to complete with plenty to do. Lots of food but no real water: trips back to fountain on level two may be needed.

Scrolls on level three tell you about three spells, YA (stamina potion), ZO (open door), and DES EW (weaken non-material beings).





Level four

This is almost relaxation after the high anxiety of the previous level. Designed to give you a breather and to allow you to practise your spell casting and combat techniques.

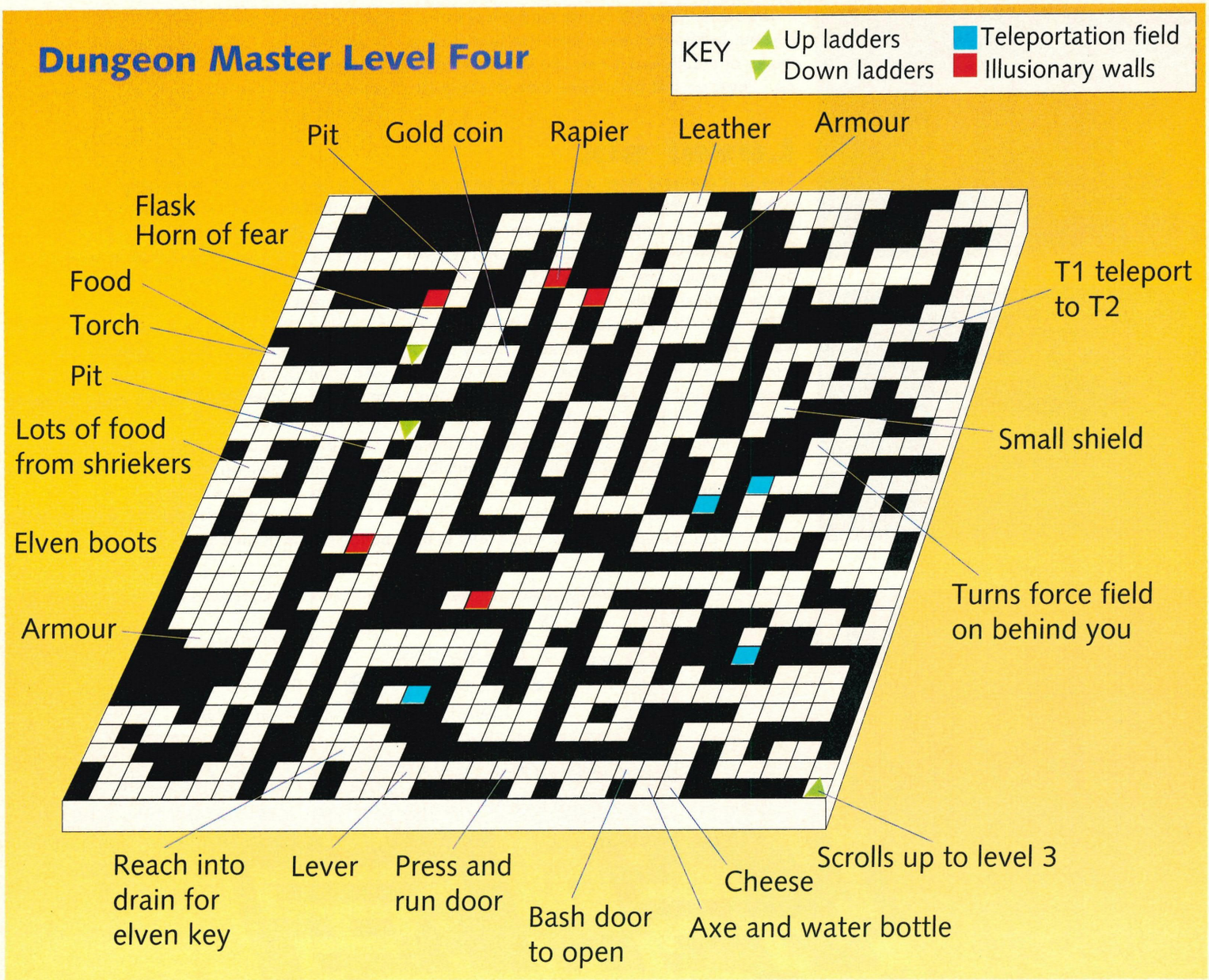
Make sure that you use all players in the party to cast light spells and also use all characters to make lots of cure poison and heal potions. Don't forget that practice not only makes perfect, in Dungeon Master it also bumps up characters' stats.

There are only four 'official' food items on this level, but the shriekers and purple worms will provide enough sustenance. There are no fountains, but there is a flask as you enter the level, and it is a simple job to pop up to the plentiful supplies on level two.

Main items are the elven boots and the teowand, but there are also odds and ends of armour and weapons plus magic boxes.

Monsters are limited to ghosts (use the harm non-materials spells), giant wasp (fireball), mummy (fireball again), rock monsters and purple worms. With the latter two groups the closing

Dungeon Master Level Four



door routine is still one of the best approaches! Gold is the colour here. A coin will turn off an annoying forcefield and a key will activate teleport facilities. There is one way up to level three, two ways down to level five.

Scrolls reveal spells of OH VEN (poison cloud), and YA BRO (potion of magical shield).

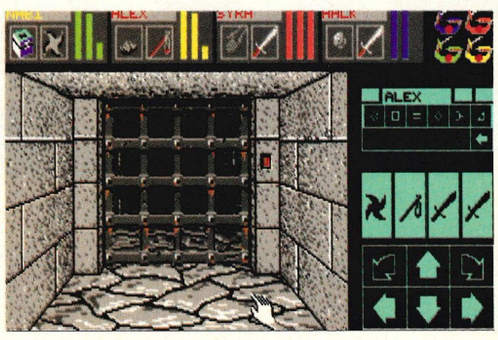
Each member of the party should go up a level or so, but, if not, do not rush away from level four – it's a lot friendlier than most!

Level five

Hope that you enjoyed your hols on level four, but now it's back to business. Level five is a taxing level divided into fairly self-contained sections, entry being gained from the central 4 x 4 room.

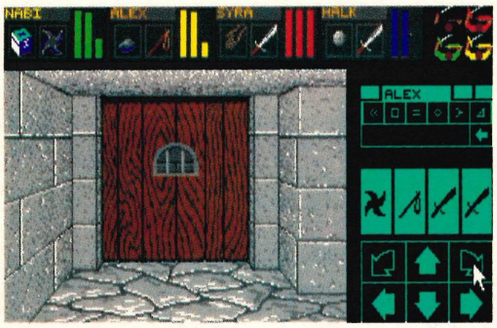
Exits are north, south, west and east: the southerly is probably the easiest, the northernly into the room of pits the most difficult. The best course is to leave this exit until last.

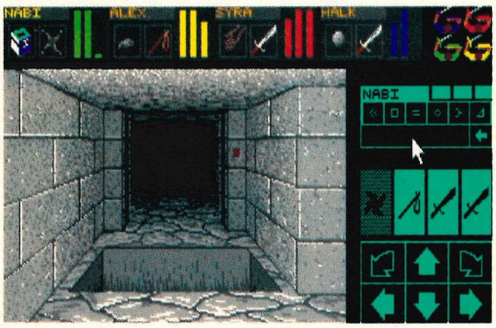
The southerly exit features two new monsters – tentacled shriekers and the nasty flying snakes. To solve this puzzle there are a series of buttons and hidden alcoves. Press the button within the main room and an area is uncovered. Press the button in this area, return to the main button and press again. Repeat this technique and eventually you will get through to the hidden chamber. The easterly exit will take you through to the staff of claws which is very useful when dealing with those flying snakes. To conquer the teleports on the way, press the button in the large 6 x 6 room and then go clockwise around the walls.



The room of pits is a real test, with flying snakes everywhere.The staff of claws above will help as it will temporarily scare them off. Try and follow and dispose of them before their appetite for the fray returns.To negotiate the actual pits, the following directions should get you across to the easterly exit: forward x 3, back, left, forward, left x 2. To get across to the other side of the room try left x 2, right, forward, right, forward, right x 3.

Watch out for illusionary walls: good old fashioned wall-banging is the best tactic. This level is full of potions and very useful armour, so check out every square.





The stairs in the SW corner are the way to level six, but before you leave level five take a deep intake of breath, put a new pot of coffee on the go – level six will take some time to complete.

Level six

This is a cracking level with a good balance of combat and some genuine puzzles. The main aim of the level is to find three iron keys to progress further downwards, but there are another two available which give access to some extremely handy magical boxes.

The monsters are plentiful, and the likes of wasps and beholders require some heavy use of magic. Fireball will sort most of these out, but husband your mana resources carefully; ie, don't waste spells on lower monsters.

There is also a good supply of new armour and weapons, the vorpal blade being very useful later on, as is the slayer.

Some of the puzzles may bring you to a halt, so here are some specific hints which refer to the detailed map of level six:

At point A, your party must face west and the strongest member must throw an object seven to eight squares west to trigger a pressure plate. Resort to strength potions if needed.

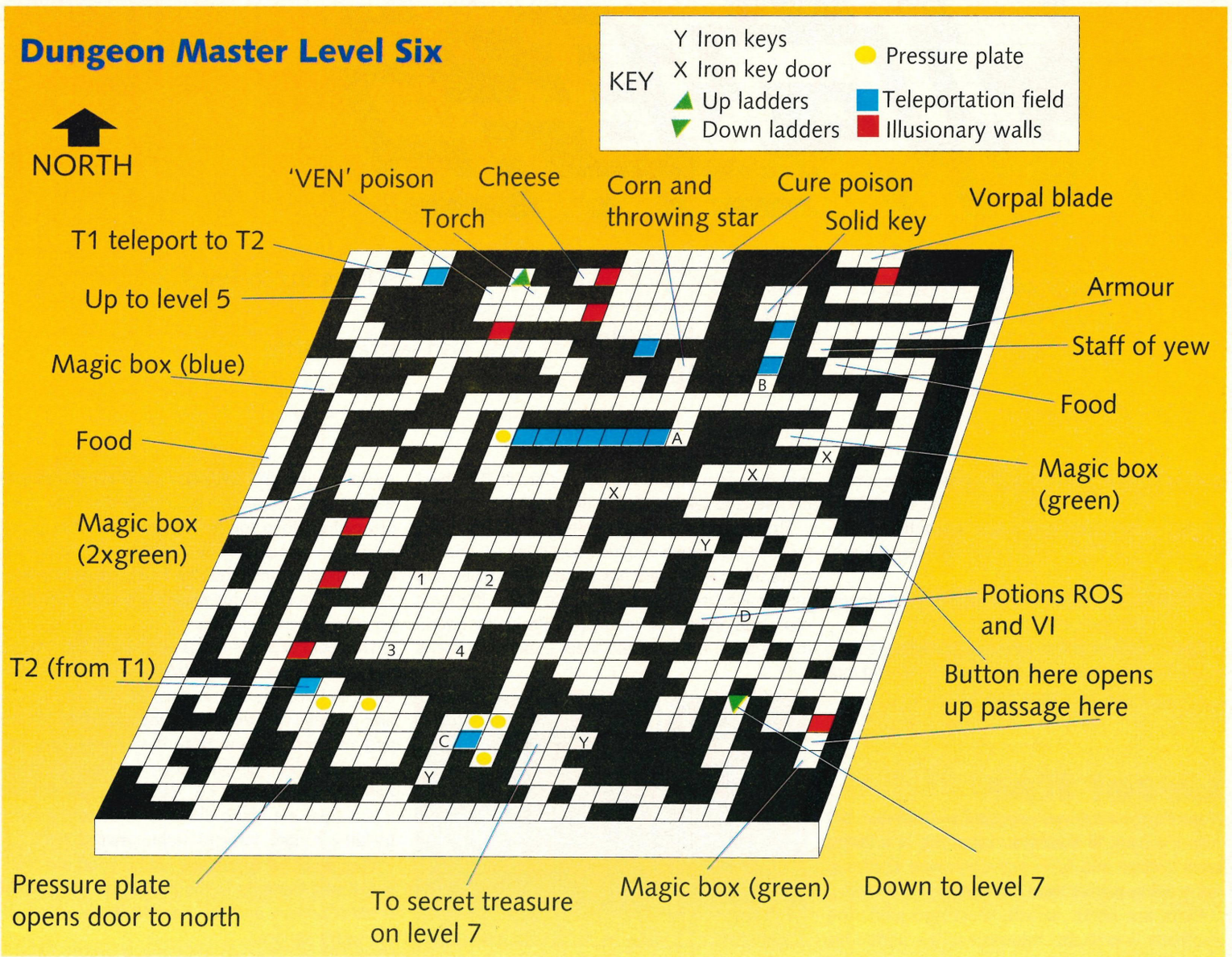
At point B, timing is the crunch. Notice carefully how the field flickers and time your move so as the field blinks off you can get through and press the button. A similar approach is needed to get into the room.

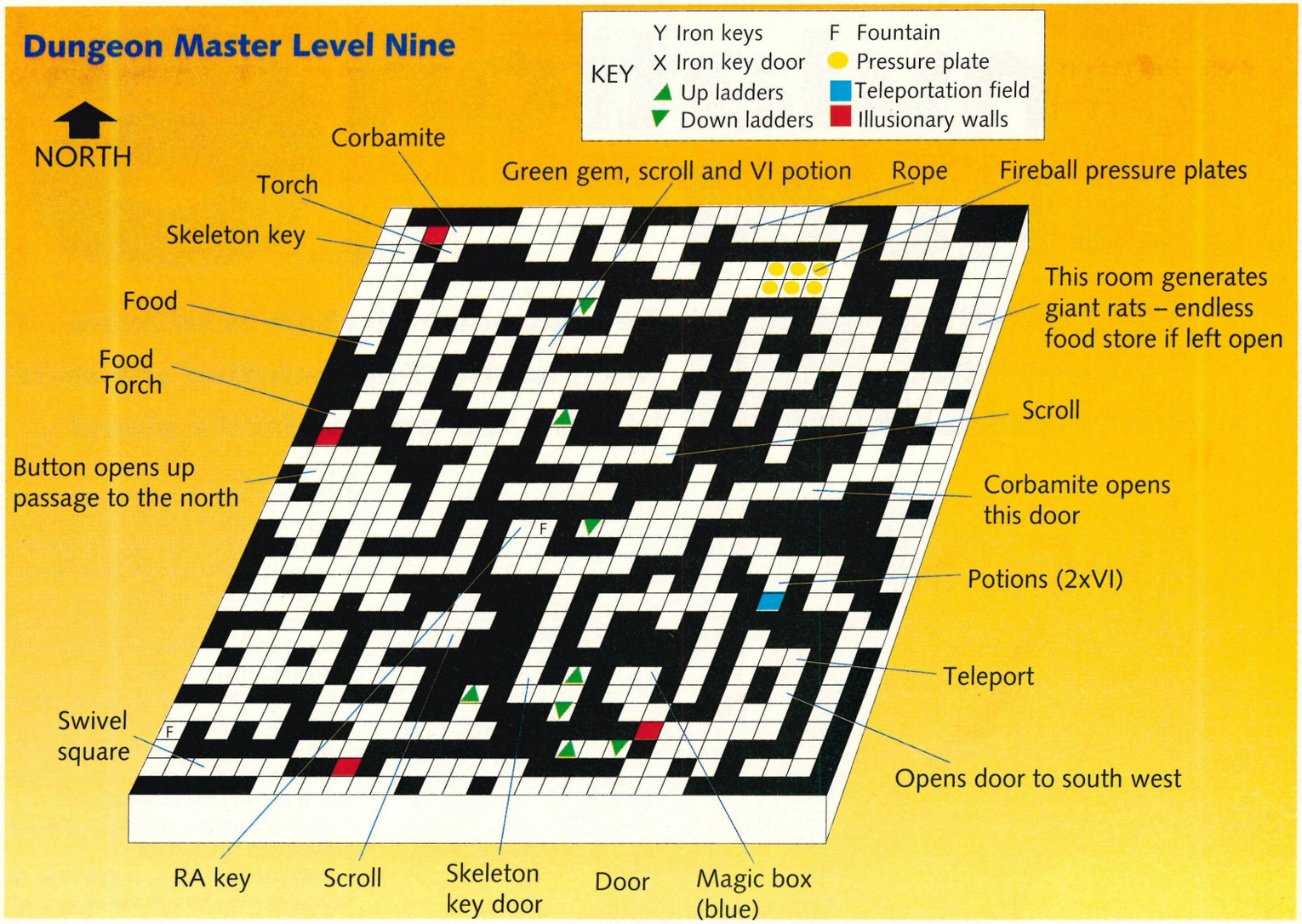
At point C, a complicated ritual is necessary to open the door. Press the button and turn through 180 degrees. Place any item in the field and the door will open. To retrieve the item, step into the field and press the button to close the pit.

At point D, this is a weighty problem and is beyond your inventory. The help must be enlisted of some other inhabitants of the dungeon.

The pressure plate controls entry to a secret room: bait some monsters on to the plate, cast a magic box to hold them there.

This will open up the room, and then press the button on the north wall.





Points 1, 2, 3 and 4 (referring to map) require you to place certain items, the mirror of dawn, a gold coin, a blue gem and a bow, in the alcoves. The door to the east opens if three of these are correctly placed, but a secret alcove will also open if the fourth is used.

There is so much on level six it is very easy to miss items or hidden areas. Take your time and have a close look at the detailed map provided. No scrolls as such on level six, but potions of ROS, VI and VEN.

Level seven

A testing level which cannot really be attempted until you have probably completed level 12 and obtained the relevant articles.

In some ways, it is better to go all the way down to level 14 and return here later. Be careful! The main aim of level seven is to restore a certain item, but if you do this certain levels will be sealed. Do not alter this item until you are completely ready!

The tips to this level (which has some 12 scrolls will be included in the third and final part of the PC Review guide to Dungeon Master).

Level eight

Not a very difficult level comprising mainly of a huge 'open-plan' cavern. This is sparsely populated and there are not that many objects.

This main area is full of teleports and swivel squares so take your time as you explore. The items may be lacking in quantity, but they more than make up for it in quality. FUL bombs, delta sword, and some tasty staffs and maces make this a level worth persevering with.

Scrolls reveal spells of YA BRO RUS (magical footprints) and four potions that increase skills – FUL BRO KU, YA BRO DAIN, OH BROROS and YA BRO NETA. Hardly any food and even less water! Keep an eye on these levels and return to higher levels if things get tight.

Level nine

Another 'rest' level with lots of hidden passages and false walls.

Half a dozen pieces of food are found on level nine, but the giant rats, although tough will also yield rat spare ribs! The rats are generated in a room in the northeast corner, so make sure you close/open this to regulate the flow of vermin.

Water is a critical item, as on this level there are the last two fountains until level 14! Drink to the limit and fill up when you can, and carefully note the position of the two fountains.

The one will be quite convenient for refilling. The fireball pressure plates are tough, place an object on each and then try and get out of the way. Some damage may be unavoidable.

Corbamite can be found in an alcove on this level, which will open a door on the east side. Two main scrolls are also to be found, OHKATH RA, a powerful lightning bolt spell, and OH EW RA, magic vision.

Monster wise, with the exception of the giant rats all is straightforward, the sorcerers give quite a blast and one of them holds a skeleton key which will be required to open up the central stairway. He will be located in the hidden passages in the NW. So enjoy the relative peace when you can, as now you're into the real crux of the game. You have been warned.

Next month we bring you the third and final part of our comprehensive guide. Levels ten and beyond. Betcha can't wait ...

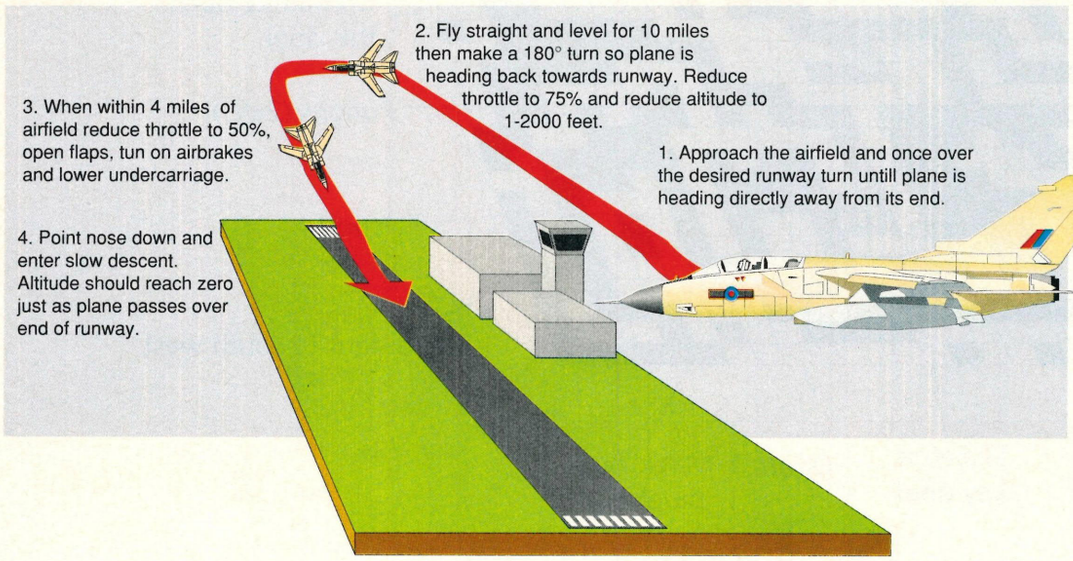
QED

Simulation School

Lesson 6

Landing techniques

You may know all there is to know about dogfighting, bombing and aerial trickery. But can you land a plane?



There are many ways to land a plane, but not all of them involve the pilot coming down at the same time. If I had a penny for every time I've heard the old, "I destroyed both the primary and secondary targets, shot down half the enemy's air force and even took out a command post, but screwed it all up when I crashed into the carrier" story, I'd have about £5.19.

This month I'm focusing on the types of landing that cause the most problems, the simple runway landing and that old bugbear, the carrier landing. I'll also be looking at vertical landings for both helicopters and VSTOL aircraft such as Harriers.

Conventional landings

What could be easier than a standard landing on a normal runway? Gluing two elephants together with jelly perhaps? No matter what your plane is, no matter how large the runway, you are guaranteed to screw up at some stage. Maybe you'll try to come in at too sharp an angle. Maybe you'll be going too fast to stop before you reach the end of the runway. You might even stall just before touchdown, causing your plane to plough nose first into the tarmac. Landings are tricky and no amount of high-tech gadgetry can say otherwise.

Let me concentrate on modern aircraft, planes with HUDs as it's here that most people get confused. Assuming you're already in the air and ready to land, let's get her down. Firstly, turn off your ILS. That's right, turn it off. Most beginners tend to concentrate too much on the ILS, neglecting their own visual senses. This usually leads to many aborted landings and more than a few crashes. You should really try to master landing without instruments first as once you can pull that off, everything else is easy. Treat HUD images as helpful guides only, not as gospel. Use your eyes. Use your brain. Use the force, Luke.

Approach the airfield but don't try lining yourself up with anything yet. Once you're over the desired runway, turn until you're heading directly away from its end. Continue flying straight and level for about 10 miles, then turn through 180 degrees so that you're heading back towards it. Reduce the throttle to 75% and lower your altitude to 1-2,000ft. Once you are within four miles of the runway, reduce the throttle to 50%, open your flaps (if you have them), turn on the airbrakes and lower your undercarriage. Point your nose down and enter a slow descent. From here on in it's up to you. Concentrate only on your altitude, your airspeed and the approaching runway.

Try to gauge your approach. If you feel that you don't have enough speed to reach the strip, release the brakes. If you are going too fast, reduce the throttle even more (being careful not to stall). Try to get your altitude to reach zero just as you pass on to the end of the runway, thus leaving plenty of tarmac to slow down on.

During your final approach there are three things to remember:

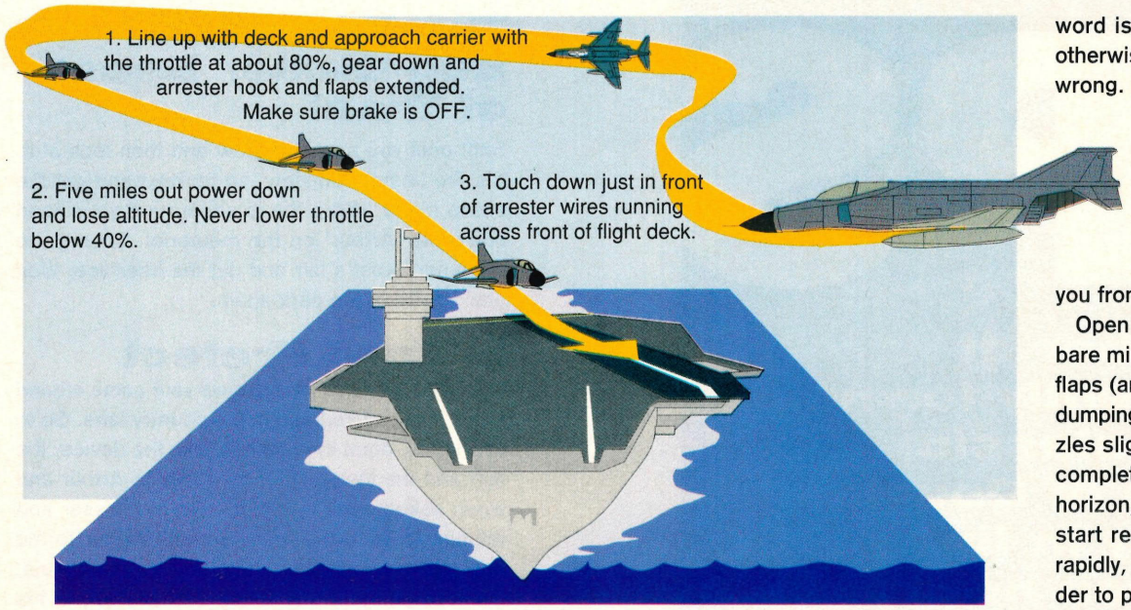
Never oversteer — if you have to adjust your line up with the runway, try to use the rudder to turn your plane. If you do have to make larger adjustments, be gentle with the stick. There's nothing worse than approaching the runway, turning the stick too hard and suddenly losing a vast amount of altitude.

Don't be afraid to abort — if it's all going wrong and you have any doubts whatsoever concerning the approach, power up, close the brakes, raise your landing gear and raise the flaps. Pull up and start again from scratch. It's far more important to get your plane down in one piece than to avoid bruising your ego.

It's not over until the plane stops moving — once you have touched down, immediately reduce the throttle to minimum, turn off the engines if you can. Apply the wheel brakes and make sure you keep the plane on the runway. Many simulators cause the plane to crash if it makes any ground contact other than a runway, so get into the practice of keeping your wheels on the tarmac.

Carrier landings

Many of the same principles for standard landings apply to carrier landings, especially the one about aborting if anything feels wrong. Too many people think that they can handle anything that goes wrong on the approach and end up plung-



ing into the sea. If anything at all goes wrong during a carrier approach, you should abort instantly and start again. Real-life pilots might have their cool images to worry about, all you have to deal with is your hard disk.

Line yourself up with the deck in the same manner as above. Give yourself an even longer run-in length if you feel the need. Approach the carrier with the throttles at about 80%, your gear down, your flaps extended but your brake off. Oh, and don't forget to lower the arrester hook, otherwise you'll just end up passing through the carrier's deck on your way to the bottom of the sea.

The aim is to touch down just in front of the arrester cables running across the front of the flight deck. These will hook on to your aircraft and bring you to a screeching halt. To this end it is important that you never lower your throttle below 40%. I'd even recommend staying above 50%, although you can't really approach too fast as if you snag a cable you will always stop before you reach the end of the deck.

At about five miles out, start to gradually power down and lose altitude. Remember you're not aiming to get down to 0ft, most carriers decks are at 30-40ft above sea level. Also remember that you don't approach a carrier's deck from 180 degrees behind it. The approach deck is slightly off to the right. The most common mistake at this point is to reduce speed so much that you end up losing too much altitude before you reach the carrier. If this happens ... eject! You probably won't have enough space to pull up without hitting the carrier so a bail out is the only viable option.

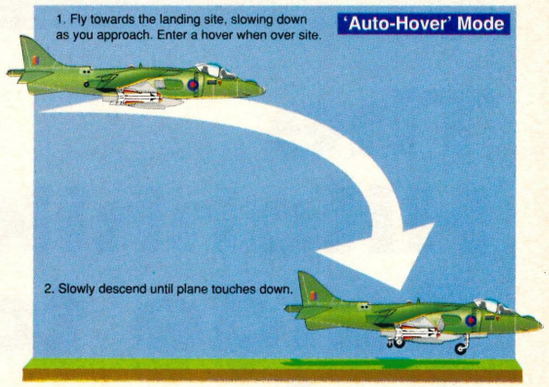
Once you've made a couple of successful carrier landings, try a couple with the ILS turned on. Still rely solely on your eyes to land, but watch how the ILS measures your approach. If you see the bars suddenly going off course, don't panic and try to adjust. Measure up the situation calmly in your own mind and make whatever correction you feel are necessary.

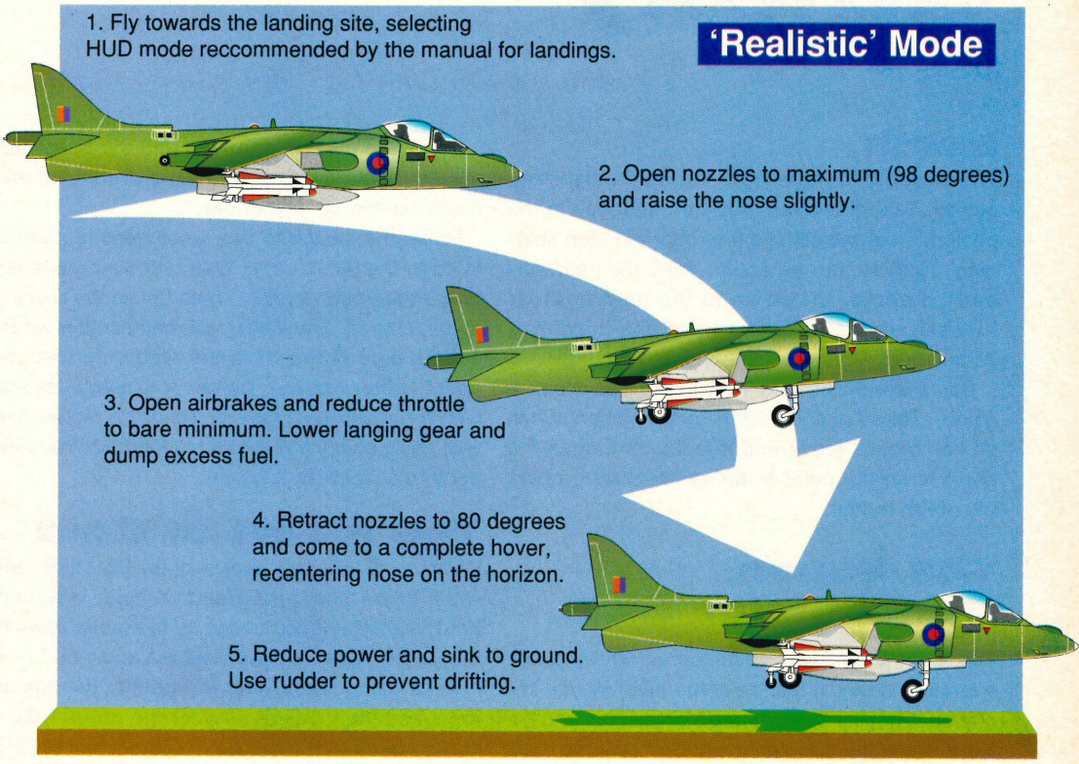
VSTOL and helicopter landings

Not too many sims cover planes with VSTOL capabilities, although there are one or two that have just been released. Depending on your simulator there can be two ways to perform a vertical landing. The first applies either to sims that allow an 'auto-hover' mode or to helicopter games. Quite simply fly towards your landing site, slow down as you approach and enter a hover as soon as you are over it. Next, slowly descend until you touch down. Don't go too fast as some games don't like rough landings that much.

For sims with a more realistic touch the key word is slow. Take it very slowly, step by step otherwise something is virtually guaranteed to go wrong. Again the first step is to fly towards the landing site, changing the HUD mode to whatever is recommended by the manual for landings. As you approach open your nozzles to maximum (around 98 degrees) and raise your nose slightly. This helps slow you down, stopping you from overshooting the runway.

Open the airbrakes and reduce the throttle to a bare minimum, lowering the landing gear and the flaps (and if you have a ultra-realistic flight model, dumping any excess fuel as well). Retract the nozzles slightly to around 80 degrees and come to a complete hover. Now re-centre your nose on the horizon, check that you are over the runway and start reducing power slowly. If you start falling rapidly, increase the power quickly. Use your rudder to prevent you from drifting left and right and slowly put your wheels on the ground.





QED

TIPS

Due to a number of demands recently for help on Infocom's classic interpretation of Douglas Adams' trilogy in five parts, we print for you now the complete solution.

The Hitchhiker's Guide to the Galaxy

Earth

You wake up in the house. Put on the light and get up. Take the gown, put it on and look in the pocket. Take the pill and the room will stop spinning. Take all and go south. Take the junk mail and go south. Lie down in the mud until Mr Prosser agrees to lie in front of the bulldozer. Follow Ford along the lane and into the pub.

Buy a sandwich and wait until Ford drops a device. Take it and look at the green button. When all hell breaks loose and it looks as though the earth is on the point of being destroyed, press the green button.

The Vogon Constructor Ship

You are now in Dark. Smell the air until you see a shadow. Look at it and eat the peanuts you are offered. Once he's asleep, take his satchel and the towel. Hang the gown on the hook, cover the drain with the towel, block the panel with the satchel and put the mail on top of the satchel.

Press the dispenser button and the babel fish should fly through the air, hitting everything and finally ending up in your ear.

Press the switch to see what word is needed to open the glass case. Wait until you are taken to see the Vogon leader. When the poetry reading starts, enjoy it. The leader will read another verse. Take a note of the word the recording told you about (either fripping, lyshus or wimbgunts) and type it on to the keyboard. Take the plotter and wait until you are thrown into the airlock. You next get thrown into Dark (again).

The Heart of Gold

Listen until you can hear a hum. Go south and you'll be on board the Heart of Gold. Wait until Ford takes you to the bridge before going down to the gallery. Get the advanced tea and exit.

Keep going south until you go into the engine room and then look around for the drive. Take it and go back to the bridge. Put the small plug of the drive into the plotter and the plotter's dangly bit into the advanced tea. Press the drive button.

The Ravenous Bug-Blatter Beast of Traal

Sniff until you see a shadow and then look at it. It's the beast's shadow, so go east and get the sharp stone. Wrap the towel around your head and write 'Arthur' on the memorial. Then go to the inner beast's lair and get the interface. Wait until you're in the dark again.

In Ford Prefect

(It might be a good idea to save your game around now). You find yourself in the country lane. Go to the house, open the satchel, take the device, the fluff and the towel. Offer the towel to Arthur and when asked, type in "Idiot". Go to Prosser and tell him to lie in the mud. Go with Arthur to the pub and buy six pints of beer and some peanuts. Drink three pints and follow Arthur back to his home. Close the satchel and put the fluff on top of it. Wait until Dark (again).

In Zaphod Beeblebrox

First steer towards the cliff. The auto-pilot will do the rest. When the boat stops, stand up and take everything from it. Go north to the dais and wait around until Trillian appears. Tell the guards not to shoot and they will drop their guns. Shoot the guards and make a break for the Heart of Gold.

In Trillian

Look at Arthur. Remove the fluff by dropping the plate, getting the fluff, putting it in the handbag and taking the plate. Then wait around.

Back on the Heart of Gold

Get the interface and go to the gallery. Put the interface into the machine and go to the bridge. Put the large plug into the console and press the switch. Go to the gallery and get the tea. Drop everything except the thing from your aunt. Press the switch and you'll be inside a whale's stomach. Take the pot and wait.

Back on the Heart of Gold (again)

Go round the ship getting the four bits of fluff. Go back to the bridge, take the pot from the thing and plant the fluffs. Go into the sauna and look at the plant. Eat the fruit and take note of the tool needed. Take the tea and the no tea and go into Marvin's pantry. Show the door both the tea and no tea and before you enter the pantry, drink the tea. Then enter the aforementioned pantry and ask Marvin to open the hatch.

Get the tool and enter the access space. Marvin will soon arrive and open the hatch. Go to the hatchway and go down to finish the game.

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QED

HELP SUPPLIED

We're back. After the usual huge response to our full page pleas in Issue 13, we bring you the solutions (well, most of them) in no particular order.

Indiana Jones and the Fate of Atlantis - The Graphic Adventure

James Edwards, Middlesex

To free Sophia from the cage and to get the statue to work you have to do the following:

a) Before you enter the archway in the canal leading to the statue room you should have four statue parts, the bronze spoke wheel, the crescent-shaped gear, the statue part and the bronze gear.

b) First of all, when you get the crab motor running you should open the gate on the left and go through it and open the next gate and go through it and there should be a staircase on the right.

c) Go up the stairs and into the room. There should be a cupboard, when you have picked up the crescent-shaped gear, close the cupboard and then 'look at the cupboard'.

d) A diagram should appear which you should copy as it tells you how to work the statue.

e) Then go to the statue and 'use ladder with statue'.

f) Climb up the ladder, 'open the chestplate' and look at it.

g) Look at the diagram you copied and work out the right combination to move the statue's arm down.

h) Get down from the ladder and connect the chain to both loops.

i) Now go back to the chestplate and use the diagram to work out how to move the statue's arm back up again. This should pull the arm which pulls the chain which pulls the door down.

j) When the door comes down it should release a 'hinge pin' which you should pick up before going back to the dungeon.

k) Give the hinge pin to Sophia and then 'pick up' or 'open' the cage.

l) Tell Sophia you have a plan, and then tell her to use the hinge pin with the cage.

m) When Sophia is out of the cage, 'open' the cage again so the hinge pin falls over and then pick it up as you will need it later in Atlantis.

From: Chad Tolley, Loughborough

Star Trek 25th Anniversary

Jennifer and John Guttridge, Potters Bar

Use your own phaser to charge the phaser welder. With the charged welder, use it with the scraps of metal to make a bit for the transmogrifer. Combining these two items lets Spock repair the transporter, but he finds he needs a length of wire.

If you do have the red wire from the brig, Spock can use it to fix the transporter.

You must disable the forcefield surrounding the bridge by using the phaser welder at a point at the bottom left of the door. You can now beam on to the bridge taking the pirates by surprise, ordering them to surrender.

From: John Parkinson, Cheshire

Future Wars

Jennifer and John Guttridge, Potter's Bar

To remove the guard you first have to go into the toilet area (down the stairs) and open the fuse box. Replace the burnt fuse with a new one to turn on the floating television, attracting the guard. Now wait by the stairs until the woman at the desk looks at her mirror, then go up.

From: Peter Fletcher, Swiss Cottage

Leisure Suit Larry in the Land of the Lounge Lizards

Austin Price, Tyne & Wear

Give the man in the barrel a dollar for an apple and then give this to Eve to finish the game.

From: Susan Podmore, Darlington

Battle Command

Lee Smith, Cheltenham

The answer lies in the fact that laser beams need electricity. North west of the map lie two power stations which are linked with pylons. The simple answer is to destroy the pylons and the power stations (destroying them with mortars is highly recommended). Once this has been done return to the barrier which should have been destroyed. Collect the U-bomb and return to the pick up point.

From: Ben Brookes, Tonbridge

Eye of the Beholder II

Konrad Paszkiewicz, Hertfordshire

I would assume that the key you have found is the one guarded by the two clerics. I don't know if you have begun to fight the skeleton warriors yet, but to get to the room with the key you will need to turn right after the stairs and open the door using one of the plain grey keys. Go past the fireball trap to the skeleton warrior section. There will be many groups to combat until you reach the large room with much booty in it. To get in is another adventure in itself as the warriors keep coming and coming. The only reasonable course of action is to be cowardly and run back to the stairs when your party's energy gets depleted. When you have killed enough of them, you may be able to get into the room. When you are able to do this take a good look all around the large room.

From: Ben Brookes, Tonbridge

Space Quest I

R Barkaway, Norwich

On the floor of the crashed spacecraft is a box containing a highly pressurised can. Pick up the fragment of smashed window from outside. This glass immobilises the laser when placed in the beam.

From: Ben Brookes, Tonbridge

Kings Quest IV

Chris Bussell and Peter Strudwick, Avon

Climb out of the acid in the whale's stomach and up one side. You should be able to see the whale's epiglottis (a small dark object hanging from the roof). Use the feather on it to escape.

From: James McNorton, Blackpool

Monkey Island II

David Hall, Belfast

To obtain the monkey you should first make sure you have the banana. Use it with the metronome to distract him, then pick him up. You then use the monkey on the pump at the waterfall to stop it flowing. To get the co-ordinates for the sunken ship you'll have to swap the book in the governor's bedroom with one from the library.

From: Mike Talbot, Swindon

Keep sending those queries and solutions in folks. The usual address is the place, just mark the envelopes either Help Wanted or Help Supplied.

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Adding system memory

With increasing numbers of games demanding at least some extended or expanded memory, you may want to make use of the facility to increase the amount of RAM in your PC. Here we explain how the PC handles Random Access Memory and how increase the amount of RAM in your machine

The memory your PC uses to run programs and load the operating system in is more correctly called Random Access Memory (RAM). The amount of this that your PC has is measured in kilobytes (K) or megabytes (Mb). Back in the distant mists of time, 640K of RAM was decreed to be the maximum available to DOS out of the total of 1Mb that could be addressed by the (then state-of-the-art) 8086 processor. Since, at that time, you could comfortably load up DOS and a word processor into 64K, it didn't seem too limiting.

Nowadays, with 386 and 486 processors being the norm, and games becoming ever more memory-hungry, that 640K ceiling is restrictive. A 286 processor, for example can use up to 16Mb RAM, and a 386 is happy to handle up to four gigabytes (one gigabyte is 1,024 megabytes). Today's software is that much more demanding, mixing graphics, sound and lots of functions and features, so various ways have been devised to utilise RAM above that 640K of 'conventional memory'.

Furthermore, until recently, games programs expected to run within the original 640K, although a number would make use of extra memory if it was fitted. We are beginning to see, however, some games released which require extra memory above the 640K limit.

Expanded memory

The first solution for breaking the 640K barrier was developed by three companies: Lotus, Intel and Microsoft. Intel had provided the processor (the 8086), Microsoft the operating system (DOS), and Lotus a bestselling spreadsheet program (Lotus 1-2-3).

The new standard, called the Lotus-Intel-Microsoft Expanded Memory Specification (LIM/EMS), provided a way in which more memory could be added to a PC and programs could make use of it.

To understand this, we need to look at exactly what happens to that missing 384K of memory between 640K and 1,024K. In fact, a PC with 640K of RAM really has a total 1Mb of memory. This extra 384K of RAM beyond the end of the 640K memory area, which is called high memory, is reserved for basic system functions and hardware instructions, like the addresses of your video card and parallel, serial and games ports.

Within that memory area, some portions aren't used, but because it's still within the 1Mb limit, even an 8086 processor can address it. EMS used a clever trick whereby extra memory above 1Mb could be installed and 'seen' through a window in the high memory area, so that software would think more RAM was available for it to run in.

It did this by swapping up to four 16K blocks (64K in total) of the extra memory in and out of the high memory area; as an application demanded more memory, 16K blocks were swapped in and out until the application's hunger for memory was satisfied. The software that controls how memory is accessed is called an expanded memory manager.

While this was a neat way around the problem, software had to be rewritten to recognise and use this extra memory. Although all PCs can use EMS as a way to increase memory, even today the addresses in the 640K conventional memory area remain the only ones that are recognised by all programs.

Extended memory

Extended memory is available on PCs that have 286, 386 or 486 processors, because only they have the ability to address memory above 1,024K. Like EMS, the use of extended memory adheres to certain standard conventions, and likewise requires extended memory management software.

It's worth bearing in mind that a PC with 1Mb of RAM will have 640K of conventional memory and 384K of RAM that can be configured as expanded or extended memory; the 384K of high memory isn't usually counted.

Do I need extra memory?

There are two complicating factors in determining memory requirements, and whether or not you need to add memory:

- Having 640K of RAM isn't the same as having that much free memory;

● You may have TSRs (Terminate and Stay Resident programs) or device drivers loaded that use memory you need to be available for games.

You can tell how much RAM your PC has by running the following command at the DOS prompt:

C>chkdsk

This will tell you how much memory your PC has, and how much is available after you've loaded the operating system files, including Command.com, the command interpreter, other drivers you may have loaded (for example, for a soundboard) and any TSRs.

Chkdisk works with all versions of DOS. DOS 5.0 has a new command, MEM, which simply tells you how much free memory you have without trawling through the hard disk first:

C>MEM

Many games require 570K-plus of free RAM, so you will often be pushing things.

It's possible when you start a game that it won't load or run properly because you've got one or more TSRs loaded which are using memory your game needs. So try unloading any TSRs first (you will probably need to alter your Autoexec.bat file, where TSRs are usually loaded when you boot up your PC), and any unnecessary device drivers (usually set to load in your Config.sys file). See Issue 13 for more on altering Auto.exec and Config files.

Adding extra RAM as expanded/extended memory when there is insufficient conventional memory won't help: you still need to be able to load the base part of your games software into conventional memory. If you're using DOS 5.0, in addition to removing TSRs and device drivers to free up conventional memory, you can transfer device drivers and some parts of DOS from conventional into high memory.

It's important to understand this, because spending money on megabytes of extra RAM when your conventional memory space is limited is a waste.

Making the upgrade

If you are lucky enough to have a relatively recent machine then memory upgrade should be fairly simple. Modern machines use RAM organised into small plug-in modules called SIMMs — Single Inline Memory Modules. SIMMs come in 256K, 1Mb and 4Mb sizes and in a range of speeds typically 100ns, 80ns and 70ns. Adding extra memory in this case is generally just a matter of determining the size and speed of the SIMMs that you need and plugging the new components in. The only complication is that sometimes the existing memory configuration will fill all or part of the SIMM sockets needed for the upgrade. For example, if a 1Mb machine has four SIMM sockets then these will contain four 256K SIMMs to give the 1Mb. To upgrade the machine to 4Mb it is necessary to remove the existing 256K SIMMs and replace them with four new 1Mb SIMMs. Many users find having to 'throw away' the existing memory distasteful, but it has to be done!

Another rather odd restriction is the way that SIMMs have to be fitted in fixed numbers. For example, 286 and 386SX machines nearly always require SIMMs to be fitted in pairs and 386DX and 486 machines need SIMMs fitted in sets of four. When purchasing SIMMs you are usually safe in buying faster devices than you need. This doesn't make your machine go any faster — it just costs more. There are, however, one or two machines that will actually not work if the SIMM memory is too fast! So it is a very good idea to check out the speed you need before you proceed.

A new type of memory, 16-bit SIMM, has just started to appear in new machines. These modules are currently more expensive than the standard 8-bit SIMMs, but then they do carry twice the memory per module.

Machines from the era when SIMMs were just being introduced sometimes use SIP modules. SIP stands for Single Inline Package and they are like SIMMs, but with pins that plug into a simpler type of socket. SIPs are being phased out very quickly and you might have trouble finding them at a reasonable price.

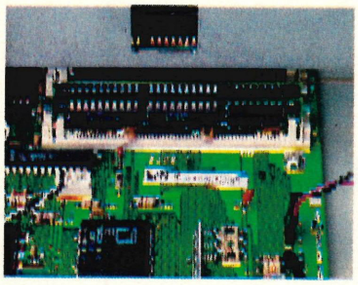
Before both SIMMs and SIPs, memory was fitted to the motherboard using lots and lots of DIP (Dual Inline Package) chips — the archetypal black chip with two rows of legs. If the motherboard has lots of empty chip sockets, usually arranged in rows, then you can upgrade the memory by plugging in extra chips. As with SIMMs, DIP chips vary according to their capacity, 64K, 256K, 1Mb, etc, and their speed. If the manual doesn't tell you which type you need, look at the chips in filled memory sockets and order the same type.

If the motherboard is full, and the majority of XT and early AT machines were built with a full complement of memory on the motherboard, you need a memory expansion card. Memory expansion cards come in three types — 8-bit, 16-bit and 32-bit proprietary cards. The rule is simple: buy an 8-bit card for an XT and a 16-bit card for an AT. The 32-bit cards are for 386/486 machines and there is no standard for them so they have to be bought from the company which made the motherboard. The XT and AT cards vary in the type of memory they take — DIP chips, SIP or SIMM — and in the type of memory they provide — conventional, expanded or extended. If you have an XT with less than 640K, you need a memory card that will 'back fill' memory to bring it up to 640K of conventional memory. After this the card has to provide expanded memory. In the case of an AT, a card can provided either extended or expanded memory. In most cases it is better to buy a card that can be set up to provide both types of memory. Notice that using a standard memory expansion card on any machine that runs faster than 10MHz will slow it down.

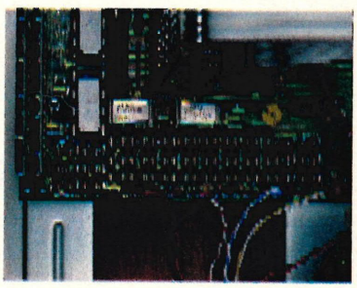
Finally, a DIY memory upgrade isn't a good idea unless you have a manual telling you how to do it, in particular which type of memory to buy and how to configure the motherboard to recognise it. Without a manual your best bet is to contact a memory supplier for advice.

Laser printer memory

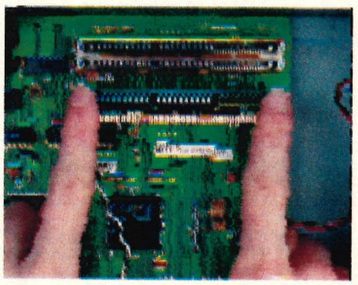
If you have a laser printer you may have come up against the limits of its supplied memory and want to install more. You can buy RAM upgrades for a laser printer in just the same way as for a PC, as SIMMS or add-on cards.



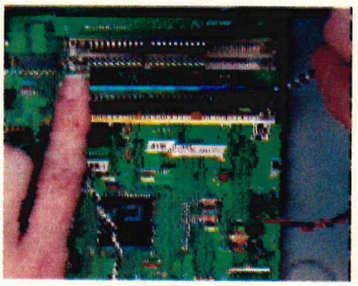
First, check which type of memory your PC uses. The picture above shows a bank of SIMMs. Before you touch your chips, earth yourself by touching an earthed metal surface (eg, copper piping).



Above are a row of sockets with individual chips. Take care that you do not squash the pins as you ease them into place. This type of memory may also be supplied on a processor upgrade board.



SIMMS are easy enough to install, but make sure you get them the right way round. Never force a SIMM, or chip, into place: you don't want to break the plastic tabs which hold them into place.



You need to angle the SIMM, place the base connector into the slot first, then clip in the edges. If the plastic clips are stiff, hold them away from the edge of the SIMMs with a small screwdriver or similar.

"The Thinking Man's Football Management Game" AM Action



SOCCER SUPREMO

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Yet another England manager has learnt the hard way that controlling an international squad is a very different ballgame to club management.
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Customisation. The game will allow you to take the European nation of your choice and you will be allocated an initial squad of 16 players. You can introduce a further 34 players, making 50 in all, whose names and skills (but not levels) You can define yourself. These players are introduced gradually as you discover the weaknesses in your squad and also to create the balance of skills that match your style of play. The original 16 players can be defined in the same way using the EDIT program (free with the game) if you wish as well as the teams that will make up the opposition.

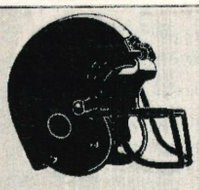
In the traditional number juggling soccer management game, wing backs, sweepers, formations, styles tactics are, at best , cosmetic. at worst, meaningless, The unique match simulation at the heart of Soccer Supremo restores all these and more, allowing genuine control over team performance. In addition to the visual feedback on your team, this match allows substitutions, tactical postional changes and workrate instructions to individual players which then influence the flow of the match. The increased realism and control transforms the supreme , but childish gameplay of the traditional game into a compulsive simulation.

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SUBSTITUTIONS
POSITIONAL CHANGES
OVERALL WORKRATE
IND. PLAYER WORKRATE



HEAD COACH V3

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Buyers' guide

Memory suppliers

Suppliers with a P* after their entry in the list below are specialists in laser printer memory as well as PC memory. PX* means printer memory only.

SIMM/SIP/DIPand machine specific upgrades

Chipboards plc,
Almac House, Church Lane, Bisley, Surrey GU24 9DR
tel (0483) 797959, fax (0483) 797702

Dabs Press,
22 Warwick Street, Prestwich, Manchester, M25 7HN
tel (061) 773 8632, fax (061) 773 8290 P*

Dealex Limited,
64 Chapel View, South Croydon, Surrey, CR2 7LF
tel (081) 668 4199, fax (081) 668 7429

Leader Electronics Ltd,
Greyhound House, 23-24 George Street, Richmond, Surrey, TW9 1VY
tel (081) 332 7311, fax (081) 332 7013 P*

Mediaware Limited,
Unit 9, Huntsbank Industrial Estate, Crewe Road, Wistaston, Crewe, Cheshire, CW2 6QT
tel (0270) 666616, fax (0270) 664236 P*

Memory Bank, Memory Direct,
31-33 Grosvenor Road, Aldershot, Hants, GU11 3DP
tel (0252) 316060, fax (0252) 341939

Memory Solutions,
31-32 Stephenson Road, St. Ives, Cambs, PE17 4WJ
tel (0480) 496467, fax (0480) 496621

Memoryworld,
86-90 High Street, Ylewsley, West Drayton, Middx, UB7 7DS
tel (0895) 420100, fax (0895) 442238

Nationwide Computers,
19 Progress Way, off Purley Way, Croydon,
Surrey CR0 4XD
tel (081) 681 6952, fax (081) 681 0347 PX*

Rexlight Ltd,
PO Box 141, Staines, Middx, TW18 4AT
tel (0784) 457517, fax (0784) 442631 P*

Semaphore Systems Ltd,
7 Moreland Court, Finchley Road, London, NW2 2PJ
tel (071) 435 6315

SMC Computers,
26 Farnham Road, Slogh, Berkshire, SL1 3TA
tel (0753) 575500, fax (0753) 524443

Technomatic Limited,
Techno House, 468 Church Lane, London NW9 8UF
tel (081) 205 9558, fax (081) 205 0190 P*

Memory cards

The price of memory depends on the dollar and so you can expect wide variations from month to month. Low prices quoted here may no longer be honoured due to recent decline in strength of the pound.

Card name	Machine	Type of memory	Amount	Price	Supplier
AST Rampage	*286+AT*	*expanded/extended*	*2Mb*	*£349*	*Chipboards*
				£160	*Memoryworld*
Boca	*AT*	*expanded/extended*	*2Mb exp to 8Mb*	*£130+ £60 per extra 2Mb*	*Memoryworld*
			2Mb	*£131*	*Memory Bank*
			empty	*£72*	*Rexlight*
Boca	*XT*	*expanded*	*1Mb*	*£79*	*Memory Bank*
DFI Megalith Card	*AT*	*expanded/extended*	*2Mb*	*£183*	*Memory*
Solutions					
			8Mb	*£327*	*Memory*
Solutions					
Everex Maximagic	*XT*	*expanded*	*1Mb*	*£80*	*Memory*
Solutions					
			2Mb	*£123*	*Memory*
Solutions					
Kingston ATA	*AT*	*expanded/extended*	*4Mb*	*£185*	*Memory Bank*
Orchid	*XT/AT*	*expanded/extended*	*2Mb exp to 8Mb*	*£160 + £50 per extra 2Mb*	*Memoryworld*
			empty	*£92*	*Rexlight*
Semaphore	*AT*	*expanded/extended*	*2Mb exp to 8Mb*	*£160 + £60 per extra 2Mb*	*Semaphore*
Semaphore	*XT*	*expanded*	*512K exp to 2Mb*	*£40 + £20 per extra 512K*	*Semaphore*
Semaphore	*384K*	*conventional (top-up 256K to 640K)*		*£30*	*Semaphore*
Unbranded	*XT*	*expanded*	*1Mb*	*£129*	*Chipboards*
Unbranded	*AT*	*expanded/extended*	*1Mb*	*£130*	*Chipboards*



Bemused, befuddled, or bewildered about your PC? If your hardware gives you headaches and you're stricken with software seize-ups, share your problem with Q&A's Mike James and he'll endeavour to help

Joystick quality again

Q I was interested to read about John Beardon's experiences with Suncom's joysticks. My Analog Extra has been taken apart any number of times in an endeavour to get it to perform reliably, and any such endeavours only last for a very short time.

For a dear joystick, the Analog Edge is poor value for money. Apart from erratic behaviour, I find games like Wing Commander disable the joystick after receiving from it erroneous values outside the calibration limits. The frustration factor is huge almost completing a mission only to find you are suddenly in keyboard mode because the program has given up trying to make sense of the joystick signals.

Martin Beenham
Hants

A *Many thanks for throwing light on why Wing Commander disables some joysticks and not others — this might be the explanation that a number of other readers are looking for. I have used a very low cost QuickShot joystick for years and more recently a Yoke without any trouble at all. Perhaps we should try to work out a set of tests for joysticks and publish a league table — I'll see what I can arrange!*

Upgrades in colour

Q I have used a Commodore SSL 386SX 20MHz PC for about six months now, having upgraded from an Amiga 500. When I bought this computer it was advertised as having CHIP UP upgrade technology.

On opening the machine to investigate, I noticed the 386 chip is on a daughter board. Having written to Commodore about 5 weeks ago about this upgrade I have still not heard anything from them. Could you shine any light on this query for me?

I also use a Star LC10 colour printer with my machine running it under IBM Proprinter II mode. Which driver should I use to print in colour? The applications I use mainly are Lotus 1-2-3 Release 3 and Windows 3.1 Write. Any help would be much appreciated.

Paul McDonough
Cheshire

A *When it comes to upgrading a Commodore machine, only Commodore can help you. There are and have been many machines designed to be upgradable by plugging in new daughter boards. The idea is that the prospective buyer is supposed to like the idea because it offers a future-proof investment.*

In practice, what most often happens is that the upgrade daughter boards are never produced because the company loses interest or, if they are produced, they are far more expensive than ripping out the motherboard and putting a new one in!

When you add this to the fact that the machine probably cost more in the first place so that it could boast the upgradability I don't think this is future proofing.

Many happy upgradable machine owners would disagree with me, but I would stick to simple straightforward machine designs with standard sized motherboards to make replacement easier.

As to the LC10 in colour the closest driver is the Epson JX-80 which is certainly an option under Windows 3.1. If a JX-80 driver isn't available then look for "IBM colour printer".

More RAM = slower machine

Q I have an annoying problem with my Elonex 386SXM/16 PC, which has 1Mb of RAM. The problem occurs when I try to configure the 384K of extended memory as expanded memory, with the use of EMM386.exe (MS-DOS 5).

Extended memory appears to have been converted correctly (Wing Commander and Links both recognise the presence of some expanded memory), but when any games are loaded they seem to run at half their normal speed, whether they use the memory or not.

In fact the whole system performance was slowed down! I know this isn't a fault of MS-DOS 5

because the same thing happened when I used DR-DOS 6.

J Wherlock
Bristol

A This is an interesting question – I bet there are a lot of 1Mb machine users who don't even know that their machine is running slower than it needs to! My best guess as to the cause of the slow down that you report is a loss of "shadow RAM". What is shadow RAM? To answer that question I first have to tell you about ROM. A large proportion of the fundamental software that works your machine's hardware – the BIOS or Basic Input Output System – is stored permanently in ROM – Read Only Memory.

The advantage of ROM is that is doesn't lose its contents when you switch the machine off so you don't have to reload the BIOS each time you start your machine. The disadvantage of ROM is that, compared to RAM, it is very slow. To get round this problem, most machines use the technique of copying the contents of the ROM into RAM and running the BIOS software from there. This is called shadow RAM because the RAM is moved into the location that the ROM actually occupies and behaves as if it was the real thing – only faster.

Now you might begin to see why using some memory for something else would slow your machine down. In the case of a 1Mb machine, 640K is used for conventional memory. The remaining 384K is used for shadow RAM — as long as it isn't used for anything else. If you set up EMM386 to provide expanded memory then the 384K is unavailable for ROM shadowing and so the machine slows down.

In my experience the slow down isn't as much as half normal speed but it is very noticeable. The only good solution is to add more RAM, so that you can have expanded memory and ROM shadowing. If this isn't possible you have to choose between a fast 1Mb machine or expanded memory.

How to write games

Q I would like to enquire about programming languages as I am interested in purchasing one to write some programs, with a friend, especially leisure software and games. I am looking for a language which is quite advanced, and sophisticated. What language do games programmers use?

I have heard C is a good language to learn, but there are many different versions at a wide range of prices, eg, Turbo C++ at £50, and Borland C++ at £200. What is the difference, and is it worth paying £150 more for the Borland when the Turbo version is a lot cheaper?

Also is it possible to import pictures from other sources like Deluxe Paint 2 Enhanced, because with a language like GW Basic, I have had to draw my own pictures, and with a very limited palette.

Hardware is not a problem, as my friend has a 386DX running at 40MHz, with a hard drive, and a VGA card. The price is not a real problem either, as long as it is not in excess of about £250.

Chris Pettifer
Surrey

A How to get started writing games is a difficult question because the level of programming skill required is very high. You really have to start by learning to program, then you need to learn something about computer hardware, and then you will be ready to take your first step in producing a game.

Writing a game is one of the most advanced things you can try to do with a PC and needs a lot of knowledge. It's one of the reasons why programmers very often write a game of some type as an apprentice piece, just to prove they can.

As to the differences between Turbo and Borland C++ — you get extra goodies with the Borland version but the main part of the two products, the C++ compiler, is the same. If I were you I'd start out with the Turbo version of the product and see how things go. You can use C for most aspects of a game but every now and again you will need to drop down to assembler — the language the machine works in — to get the necessary speed.

Even though C is widely used for programming commercial games, I can't recommend it as a starting point. Instead I would advise would-be programmers to start with Basic and see how they get on with programming in its rather more approachable environment.

QBasic is good starting point but Visual Basic for DOS or Windows are better and more fun. You will not be able to create fast arcade game type programs because Basic is too slow but you will have a lot of fun and what you learn will transfer across to any other language.

If you use Visual Basic for Windows then you will gain the ability you wanted — namely to load images from painting programs directly. In other languages you generally have to write a loader that reads the file and displays the image on the screen.

Good luck and don't underestimate the difficulty of what you are trying to do!

No Overdrive

Q I have just recently purchased a 486SX at 25MHz with a 42Mb hard drive and 1Mb RAM. When I took off the outer casing of the CPU I found that on the motherboard there wasn't a socket for the Overdrive chip or DX2 chip. Since there is no other socket how can I double up the processors speed at a later stage using the DX2 or Overdrive chip?

C. Burlison-Rush
East Sussex

A Without an Overdrive socket on the board upgrading your 486SX is more difficult — at the moment. The Overdrive chip for the SX does need the special socket and cannot be fitted in place of the original processor. There are two possible ways around this problem. The first is that if you are prepared to wait there are more new processors being announced than ever before and a higher speed replacement for the 486SX should be one of them. The second solution is to use the 487SX co-processor socket to plug in a clock-doubled 486DX2. This should work in principle, but at the moment Intel is warning everyone that the DX2 doesn't work in all motherboards.

With DX2 and Overdrive chips currently retailing at around £300 to £400, I can think of two ways in which this amount of cash can be spent on your machine with much larger effects on performance — buy more memory and change to a larger disk. For a 486SX 1Mb and 40Mb are very much on the small side.

Finally it is worth pointing out the mistake in thinking an Overdrive chip will double the speed of your machine. The processor may go twice as fast but the rest of the machine stays at the original speed. The result is that the speed gain is well below a factor of two.

Jumpers, drivers and low cost US PCs

Q I have a couple of questions to ask which are puzzling me. First of all, what are the jumper switches found on graphic cards and motherboards? Secondly, I keep reading about the different types of drivers you can get for Windows. Could you explain what these are and how they work?

Thirdly, why are computers in the US so cheap? For example, I've seen an advert from an American company called North American Research advertising a 486SXat-25 MHz, 128K CPU cache RAM, 4Mb expansible to 64Mb RAM, 120Mb hard disk, 3.5" high density disk drive, 14" SVGA non-interlaced low radiation monitor, 1Mb accelerator graphics card and MS-DOS 5 for only £799! Is this a bargain or a computer with low quality components that help bring the price down?

Last, but not least, I would like to know how you would go about setting up your own business in designing, putting together and selling computers, like major computer companies such as Dell, Austin and Elonex. Many readers might well end up managing their own computer companies in the future, so some advice would be handy.

Jamie Purchas
Wiltshire

A Jumpers are small plugs that connect metal pins together to make or break a connection. DIP (Dual Inline Package) switches are just small switches arranged in sets that do the same job as a group of jumpers.

Both are used to configure the very basic operation of hardware — what type of graphics mode to start up in, how fast is the memory fitted, is the monitor colour or monochrome, etc. In all cases you really do need to

read the manual for the hardware to find out what the jumpers/DIP switches do in any given case.

Drivers are small programs that allow other software to use particular types of hardware. The job of a driver is to provide a standard way for software to work with hardware no matter what it is.

In the case of Windows drivers you need a specific driver for each item of hardware that Windows is going to work with. You need a video driver to allow it to work with the video card you have installed, a printer driver for the printer, a mouse driver for the mouse, etc. In the case of common hardware, VGA cards, Microsoft mouse etc, the driver is supplied as part of Windows in other cases it is supplied by the hardware manufacturer.

As to PCs being cheap in the USA, I would disagree. A quick look through a few advertisements produced a list of machines with almost identical specifications to the one you quote at £800 plus or minus £20. So I suggest you shop around the UK more carefully.

Your final question — about starting your own PC manufacturing company — is a bit on the ambitious side! Nobody, well nearly nobody, designs PCs from scratch any more. The tens of new computer firms that spring up every year are simply buying standard modules from a small number of manufacturers, usually based in Taiwan, and putting their own badge on the case. So I suppose the answer is that if you want to be a PC manufacturer buy a metal badge making machine!

BBSs and turbo buttons

Q I am considering buying a modem, but I am not sure how much use it would be. Where I can find out about the various BBSs and online services, what kind of service they provide, and of course, their numbers?

Now to my second question. I am the proud owner of a 486DX running at 33MHz. On my machine (and all other) there is a turbo button, and when I switch the turbo off the machine runs at 8MHz. It is quite a jump from 33MHz to 8MHz.

Now I wonder if it is possible, with a piece of software, to change the CPU speed. Some games run too fast on 33MHz and too slow on 8MHz, it would be nice to be able to control the CPU speed and set it to, for example, 20MHz.

Steen Petersen
Denmark

Send your queries to Q&A, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU, or, if you have access to CIX, the Compulink Information Exchange, you can e-mail us at: pcreview@cix.compulink.co.uk.

Mike James can only reply to your problems on this page, so please don't enclose SAEs or requests for personal replies.

A *The trouble with BBS lists is they go out of date very rapidly as smaller bulletin boards close down and new ones start up. Many modems come with a list of better known BBSs complete with phone numbers and information to connect them.*

Until quite recently, the majority of 'general PC' magazines listed bulletin board numbers as a rule but now seem to have stopped doing so. Perhaps this reflects the fact that the two 'big' bulletin boards, CIX and CompuServe, have soaked up so much of the interest. If readers know of an easy to obtain, regularly updated list of BBSs, please write in and let us know.

There have been machines produced with more than one turbo setting, ie, 8, 10, 16 and 25MHz, but adding one to an existing machine would be difficult. Instead, what can be done is to write a short program that introduces a pause every so often. This doesn't really slow down the machine's clock but in most cases it produces the same effect.

The only problem is that such a speed controlling program has to make use of a timer interrupt which other software might also want to use and so they sometimes result in unexpected system crashes.

If you want to give such a program a try, get hold of AT-Slow which is a shareware utility (you can contact Advantage on (0242) 224340). PC Review listed a number of BBSs in our Dial a Game feature in Issue 16, which concentrated on services offered by leisure software houses.

What's the cache? Q&A update

Just when you think you've got this memory business under control someone comes along and tells you yet another twist to the story! This time it's cache memory. When PCs were based on fairly slow processors (the original XT worked at less than 5MHz) memory chips found it easy enough to keep up. The processor never had to wait for the memory to be ready to read data from it or to write date to it. With the first AT class machines things became forever more complicated. At clock speeds of around 12 to 16Mhz, standard memory chips just cannot keep up with the processor. One solution would be to use faster memory chips, but this would put the cost of a machine up ten-fold or more. To keep the price down the early machines used slow memory with "wait states", a phrase not heard much these days. A wait state was simply a clock pulse when the processor didn't do anything to give the memory time to catch up. Instead of speeding up the memory the result was to slow the processor down.

Early 386 machines also used wait states to force a match between the speedy processor and the slow memory. However as 386 clock speeds reached 20MHz, then 25MHz and on to the dizzy height of 33MHz something had to be done because wait states were throwing most of the extra power away. There are a number of possibilities that work for machines running at 16-20MHz, such as interleaving and page access, but only one that works at all speeds, caching. A cache is small chunk of fast memory that is used as a sort of 'speed equaliser'. It is fitted between the processor and the main bulk of the memory. When the processor wants to write to memory it doesn't have to hang about waiting for it to wake up. Instead it writes to the cache which is always ready and the cache posts the data on to the main memory when it is ready.

You can see how a cache speeds up writing to memory but what about reading? If the processor wants to read something from memory the cache has to ask the memory to provide the data and this takes time. In this case the processor and the cache have to wait for main memory to cough up the data — this is called a 'cache miss'. But it is a fundamental of computing that once an item of data is needed it will almost certainly be needed again very soon. To take advantage of this the cache keeps any item of data that has been read and if the processor wants it again the cache supplies it without having to bother main memory — a 'cache hit'. Of course when the cache gets full of data something is discarded to allow new data to be cached. Usually data that hasn't been used for a while is the best bet for throwing away.

Now, and this is the difficult bit to believe, if you have a cache of only 64K in size most processor requests for data result in cache hits — around 85%. If you make the cache 128K this rises to 90% and with a 256K cache this reaches 98%. Cache size follows a law of diminishing returns so after 256K the improvement is small. You can think of cache misses as the equivalent of an otherwise smoothly running engine sputtering every now and again. The effectiveness of a cache also depends on the average size of program that you are trying to run and on how many programs you are trying to run at the same time. This means that a 64K or smaller cache is fine for MS-DOS but a 128K bigger cache is a good idea for Windows.

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Letters

PC Review welcomes letters on any subject under the PC sun. The editor will chop them to fit if need be, and we'll assume letters are for publication unless you state otherwise. Send your mail to letters, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. Star letters win software prizes

Great memory battles

I am writing to you after having read your January 1993 issue. In particular I refer to the star letter from Richard Pitman regarding the current state of PC software. I too am lucky enough to own a fairly fast machine (386DX 33 with cache, SVGA, sound card, etc) and have recently purchased Great Naval Battles by SSI. You coincidentally reviewed the game in the same issue. Although your TechSpec optimises 16MHz and a free RAM of 585K, plus another 700K for sound, I have found this is not enough. My experience is that it will run with no sound in 585K, but if you configure the computer to include the extra 700K for sound the program crashes on loading.

After some experimentation I discovered that the programneeds in excess of 600K plus another 700K for the sound to run. Even then the computer is constantly accessing the hard disk during play and the graphics are a bit jerky. I got over the problem by writing a special Config.sys file and Autoexec.bat file to release as much base memory as possible plus I added a full 1Mb of EMS. The game now runs smoothly and hardly reads the hard disk during play at all times. In addition, it has improved the quality of the ship silhouette graphics. Fortunately, I have the hardware to do this but it is a great pity that a really excellent game should be so difficult to run.

My point is this. Were the programmers aware of this situation and was it caused by sloppy programming as discussed by Mr Pitman, or did the software house know the problem but chose to ignore it because it would limit the market for the program to faster machines? I make no judgements but trust the above will help any prospective purchasers of the game to make their buying decision.

Simon Haines
Norfolk

Domark delight

With reference to your Issue 15, January 1993, I would like to point out a possible error found in your review of Domark's AV8B Harrier Assault.

In the section TechSpec under performance, you state that 560K of free RAM is required. Well, I would like to point out to readers thinking of buying AV8B, and I suggest they do, that in fact 2Mb of free RAM is required for the game simulation to run correctly.

I have a 386 with 2Mb of RAM and although there is a Config.sys file with the game to minimise the use of memory on boot up, only 1.7Mb approximately remains of free RAM. Consequently parts of the game simulation fail as a result of not enough memory. There is a Readme.txt file that states 2Mb of free RAM is required for trouble free enjoyment.

Having said all this though, I find that there is so much enjoyment from this game that this problem seems less important, after all what's a few blank screens now and then compared to the outstanding enjoyment and gameplay of AV8B.

Well done Domark!

Kevin Adams
Essex

The Free RAM required slot in the TechSpec column refers to the amount of RAM neded from your base 640K. The idea is to warn you if TSRs need to be removed before installation, or if making a boot disk would be advisable. Above this line is the Minimum memory slot, which stated that 2Mb of RAM in total is needed to run the game.

Scrambled Scrabble

I have just paid £30.99 for US Gold's Scrabble. I already have Scramble, the shareware Scrabble which, apart from the limited dictionary, has excellent graphics and is a doddle to use. I read the advertisement put in the November issue of PC Review by US Gold and I was led to believe that this would be a really superior product – how wrong I was.

The small print is almost unteadable, the method of placing tiles is nothing short of awful, the game crashes very often for no apparent reason, it is a long-winded operation to load up, it needs **both** the hard disk **and** the floppy, it doesn't really seem to know if it is mouse or keyboard-controlled, and for the price asked it seems to me to be a good example of the public being fleeced with shoddy products.

If the authors of Scramble can present a good product for what little they charge, what are organisations such as US Gold (with the resources that they presumably have) doing by foisting upon us such awful work and having the audacity to charge enormous sums for so doing, and as an aside they couldn't even produce a square board! Does anyone out there like it?

Paul W Hunt
Suffolk

Well, we didn't think it was as bad as you make out when we reviewed it in the February issue, although I have to say I think your points are valid: the tiddly on-screen text and the cumbersome controls were both mentioned in the review. Our copy didn't, however, crash, so I don't know if it's something in your set-up or your program disks which is causing this.

Any port in a storm

I have been trying to sort out how to connect two joysticks to my PC for several months. Dual-port cards are no good since the existing game port **cannot** be disabled. I don't really want to mess around with the floppy disk interface, the hard disk, interface, the serial ports, and the parallel port, just to solve that problem (I had enough trouble getting things working as it is).

Other magazines have referred to splitter leads, without giving any details. None of the dealers I have approached have ever heard of them. Now you have given a clear diagram of what is involved in making one.

Of course, now I have to get the bits and scorch my fingers with my soldering iron. With dual-port cards being so cheap, I can see why splitter leads are hard to get hold of. But not everyone is as happy to furkle around in the guts of a PC as I am. Maybe there is an alternative for some bold manufacturer. We are already seeing some more complicated joysticks — how about a stick with a built-in splitter?

At the moment I'm also considering making the lead long enough to put the connectors at the front of the PC, probably in a neat box. I already do this for my spare serial port, since sometimes I use a modem and sometimes I use a null-modem link to my old Z88. The modem end of a standard PC modem-lead is identical to the 25-pin connector on the back of a PC.

David Bell
Lincoln

Self-centred flying

Two points arising from your January issue. Firstly I agree with Nick Edelston of Bucks regarding reviewing flight simulation applications, and I am pleased to note that you propose to take this on board. Please cast your eye over the Light Aircraft Simulator, from R C Sims, which seems expensive at £70. If it is good I should buy it, but can it be better than F S 4? Notes on the quality of various scenery disks would be helpful. Can ATP be recommended?

Secondly the article on joysticks, although useful, did not refer to self-centring, or otherwise. The preferred sticks for FS have self-centring for the ailerons, but not for the elevators. Such a system allows hands off flying at times. Is this available?

To sum up a review of what is best in hardware and software for the pilot (non-combat) would be very welcome. A lot of us flying solo do not know what other people are achieving. Could a monthly section in PC Review be devoted to this?

Finally, just for fun, I can recommend flying the microlight around the control tower as a radio controlled plane, available from various FS 4 programs.

Tony Hackman
Hertfordshire

Starletter

Value for money?

I read with interest the article in January's PC Review where industry figures were interviewed about where they thought the PC would go in 1993. I agreed with many points raised, but nearly choked when I read the comments on pricing. Gary Bracey's comments about prices being cheaper than ever *must* have come from Norman Lamont's bumper book of crap excuses. Who is he trying to kid? Games now cost at least £39.99 and the newer 'big' games are beginning to cost upwards of £45. The excuse that a lot of effort goes into these games is rubbish – I've just paid £45 for F15 Strike Eagle III and I've never felt more ripped off in my life. I'm running it on a 386DX 40MHz machine, not the fastest PC in the world, and while I could live with sluggish controls if the graphics were impressive, they're not. At first I thought there was a mass of corrupt data at the bottom of my screen until I realised it was the ground! Another example is Comanche which is very impressive graphically and aurally, but I completed it within a couple of hours.

Many companies justify high prices by claiming to produce quality games, but all I seem to see is quality intros and boring or just plain poor games. Maybe the companies responsible should stop filling my hard drive with speech and animations and concentrate on the important bit — the game.

I agree software piracy is wrong and I always pay for my software, but I object when companies make claims about their software and then I pay nearly £50 for a game that looks great in adverts but fails to deliver. It is impossible to try games first because the places that have PCs available for demonstration powerful enough to run a game like F15-III aren't willing to spend time installing it and magazines don't always carry reviews for games when they are released.

Companies which claim to be at the forefront of PC games and boast that their games only run on 386s and above, as well as those who put high prices down to high production costs, should remember that a game doesn't have to be like a film production with a cast of thousands, and no amount of whizzy graphics and sound will hide a game that is basically duff in the first place.

With PC software now costing between £40 and £50 per game, the points raised in your article about Amiga owners converting to PCs en masse are beginning to look unlikely (I am a convert myself and many of my friends who were going to get PCs are now considering an A1200 instead) and unless games get better or at least cheaper, then I might consider abandoning the PC as a gaming platform myself and let my PC live out its life as a word processor.

Stephens Higgins
Cheshire

Flight club expands

The response our club (UKFSC) had due to a mention on your letters page early last year, highlighted how much the Microsoft Flight Simulator program has been neglected in the UK. Scores of your readers wrote in and joined our club.

The club has now expanded into the BBS world (dragged into BBS would be a better way of putting it!). I thought that perhaps your readers would like an opportunity to log on to our BBS to sample some of our files. We have only just started up the BBS and cater for Flight Simulator 4, Aircraft and Adventure Factory, Tracon, ATP, flight sim related shareware programs, etc.

Access is limited to certain areas for non members, but PC Review readers will have access to USA scenery, Tracon files, ATP files, shareware programs, new bulletins and a message areas.

Our BBS number is (0908) 319291 and on-line times are Tuesday-Thursday 6pm-9pm and Sunday 10.00am-2.00pm (UK local times).

Steve Harding
Milton Keynes

Revolution was a revelation

As the owner of a 286 PC I am much more aware of how efficiently games have being programmed than users with more powerful PCs. For example, F29 Retaliator (works nearly as well on my 286 as a 486 whereas F117a and F15 Strike Eagle II are unplayable on my 286.

In "1993 and all that" (PC Review, Issue 15), a number of software companies expressed their attitudes towards the future of the 8086/8 and 286 and I was very interested by the sensible attitude of Charles Cecil, the director of Revolution Software.

Could you please tell me some of Revolution Software's products as I have not come across them before?

Robert Lightbody
Glasgow

Revolution Software was set up by Charles Cecil, formerly of Mirrorsoft and Activision, in order to develop the 'virtual theatre' game engine, and its first release based on this, Lure of the Temptress, came out just last

year. This year's Revolution offering is Beneath a Steel Sky (formerly to be titled Beyond the Abyss), which is previewed in this issue on page 44.

Set in the Dark Ages

I am writing to you in the hope that you will pass on a word of advice to those of your readers who are thinking of parting with their hard earned cash to buy the much publicised Darklands ... don't!

I have been playing the game for three weeks now. I can forgive the programmers for designing and painting about 10 picture screens that are used over and over to replicate different bits of every single town and city in the Holy Roman Empire. I can even forgive the game designer who decided to produce a role-playing game that has absolutely no point at all ... seriously, folks, there is no wizard to conquer, no gold to get, no maiden to rescue, just miles and miles of bloody countryside to tramp over to gain a few 'fame' points.

What I can't forgive, however, and I doubt anyone else will, is an RPG in which the only way to return to a previously saved game is to exit to DOS and re-enter the game from the opening notes of the introductory music after first re-typing the word 'Darklands' and pressing Enter. Try doing this about 20 times an hour at 1.5 minutes a time.

Maybe I am just sulking, having played Ultima Underworld (now that is a game), but not only did I find that Darklands was set in the middle ages, the file management system was obviously programmed at that time as well.

J Richard Mascall
York

The price is wrong

May I firstly comment on the excellence of Byron Alexander's star letter in Issue 14 and say that I wholeheartedly agree that most games (normally the best presented and rated ones) are too hard for (and I quote) "us humble folk".

Your reviewer Paul Presley often mentions how easy a lot of mind sticking games are. He must be a genius or I am humbler than humble has ever been, for I am hopelessly stuck on even Lure of the Temptress.

That little piece done I would now like to have a quick dig at the prices of games. They are nigh on outrageous! If manufacturers really want people to buy games they had better reduce these figures quick sharp.

I know there's inflation and I know there's piracy but if you look at mail order charges which still aren't cheap, they're a darn sight better than in the shops.

It's the same in the music industry. Compact discs cost nearly £15 now I think but for £3 you can get over an hour's music with the purchase of a certain magazine on CD.

When Indiana Jones and the Fate of Atlantis appeared on the scene the old piggy bank got the chop and it was soon apparent I would have to save a little bit more.

Then a masterpiece like Alone in the Dark comes along and another £5-£10 has to show up and so it will probably go on. It has taken a fair few deep breaths to bring myself to criticise something so life dependent but if everyone did the same perhaps happiness would come of it.

James Fairman
Manchester

COMPETITION*WINNERS*

Snooker demo (Issue 13)

This competition was incorporated on to the cover disk in Issue 13, and the winners of the five snooker cues are as follows: Oliver Beddall, of Cambridge; John Duff, of Forfar, Angus; Mark Harknett, of London SE22; Martin Prince, of Quedgley, Glos, and Mr D Rogers, of Clevedon, Avon. Space doesn't permit us to list the 100 runners-up here, but those 100 should already have their T-shirts, and a winners list is available from PC Review at the usual address.

The answer was, of course, that there were 11 balls on the table at the start of the demo.

ON THE SPOT

PC Review arranges regular visits to the UK's top PC companies, taking with us a selection of readers who have filled in the form below. This gives you the chance to talk to various movers and shakers within the industry: interview them, ask them about their PC plans, how they design, write, produce their games, what they hope to be doing in the future. The exact nature of the visit, and the degree of formality, depends on the companies concerned, but you usually get a chance to see some sneak previews of forthcoming products, meet the programmers, and have a guided tour of company HQ.

A full report of the visit then appears in a later PC Review – useful for those who didn't go, because they'll read the answers to the questions you asked. In other words, the issues which you, the readers, care about, rather than we think is important.

We're currently planning a second trip to Electronic Arts, and we've added the company to the list below. If you want to visit a company other than those mentioned below, tell us, and if there's enough interest we'll try to arrange it.

If you want to take part in an On the Spot visit, fill in the form below and send it to: On the Spot, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

Note: we don't take very many people at any one time, so that if selected, you'll have every chance to have your say. Because of this, the places get filled quickly, but we'll be doing return visits to all the most popular companies. If you miss out the first time round, sit tight, because another visit to the same place will come up and we don't throw your forms away.

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NB if you are under 16, please get your parent or guardian to sign this form as well giving their consent for you to take part.

Which company would you like to visit?
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PC Review March 1993

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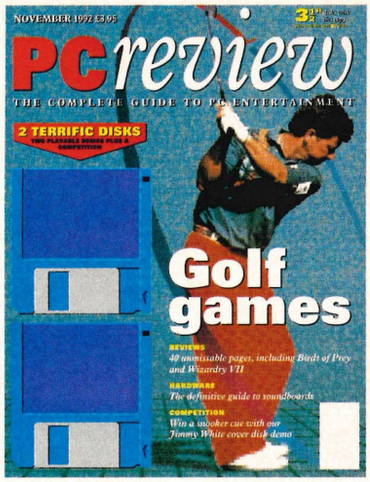
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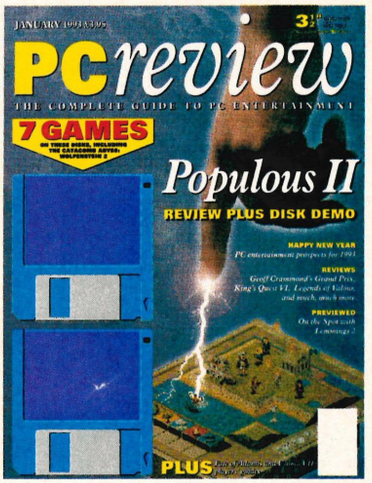
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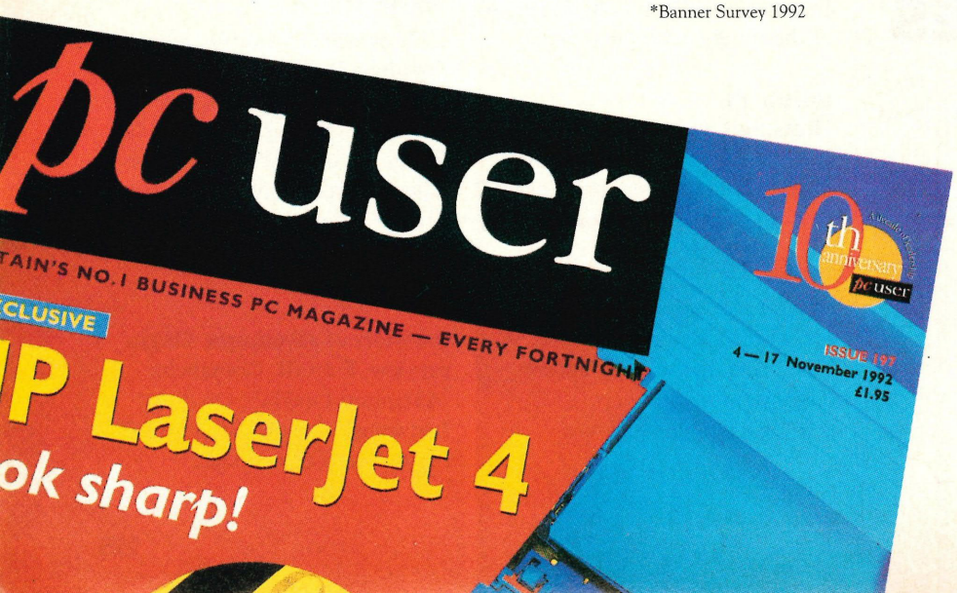
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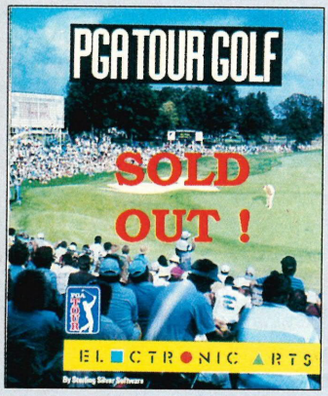
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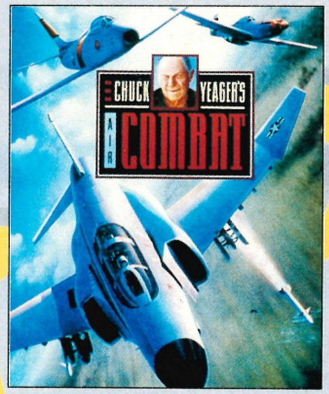


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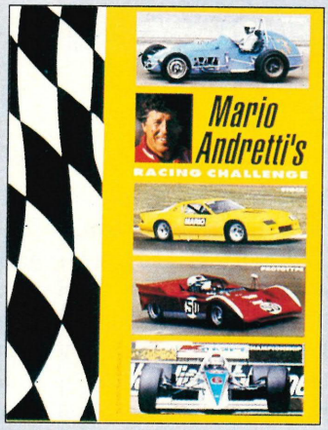
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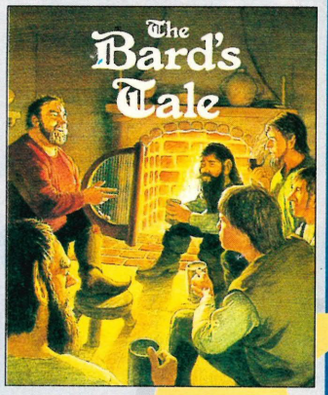
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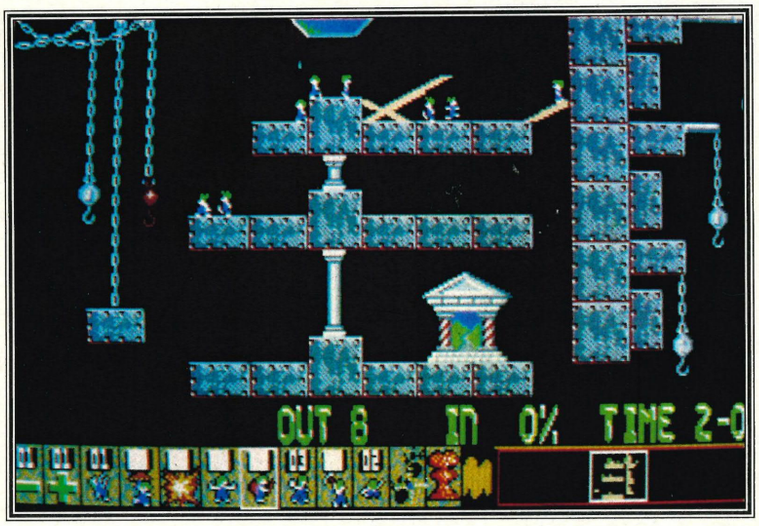
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Mike Singleton's *Classic* GAME OF THE MONTH



Lemmings



"Lemmings is based on such a beautifully simple and original concept. These minutely animated creatures march blithely on their way to oblivion until you intercede. Change the behaviour of the lemming and the whole column alters course — perhaps for just a different precipice or perhaps towards safety. The whole game is instantly addictive, but a single level can be played in those all too brief gaps in a hectic day's schedule."

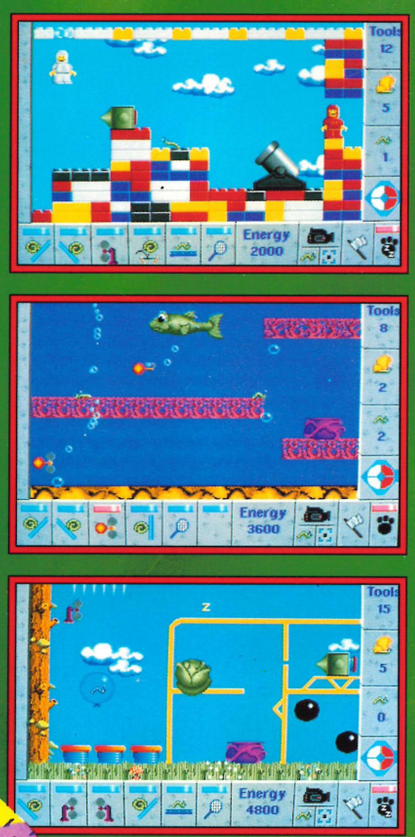
Lemmings was launched on an unsuspecting world in 1989, and quickly found fame for its originality and quirky appeal. Play is based on a series of screens littered with obstacles and platforms, and the lemmings themselves marching from the left to the 'exit', screen right. Since lemmings will simply march on until they either fall down a hole or meet a wall, it's up to the player to create bridges, or knock down walls to enable them to reach safety. You do this by assigning 'tasks' to one or more of the on-screen Lemmings — a lemming bridge-builder will construct a path across a ravine, a digger can tunnel through the walls, and so on.

Given the immediate success of the Lemmings and the anticipation surrounding the forthcoming Lemmings 2, it's interesting to note that publisher Psygnosis originally turned the game down when it was submitted by developer DMA Design.

PROFILE

Mike Singleton, now heading up the development house Maelstrom, began programming games in 1980 on the vintage Commodore PET machine. In 1981, he notched up his first hit with the Games Pack 1, which ran on the ZX81, and went on to write one of the most admired games of 1984, Lords of Midnight. Mike continued the Lords of Midnight theme with Doomdark's Revenge and War in Middle Earth, as well as a number of other titles, including Quake Minus One, Dark Sceptre and Whirligig, for 8-bit machines such as the Spectrum and Commodore 64. In 1989, he moved to the 16-bit field with Midwinter, which won praise for its graphics — the playing area was seen entirely through your character's ski goggles — and multi-character interaction. Midwinter II continued this theme, while Maelstrom's latest release, Ashes of Empire, is reviewed in this issue. See also Previews for a look at Starfighter Ace, which is currently in development.

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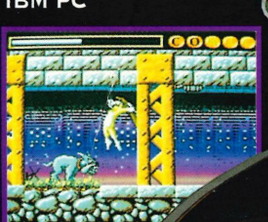


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