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Dune: stunning graphics in the game of the film



PC review

ISSUE 8
JUNE 1992

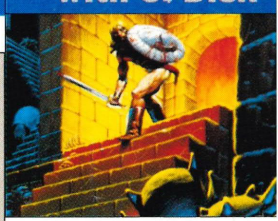
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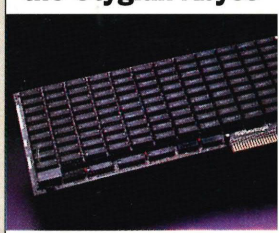
PC games packages: more for your money?



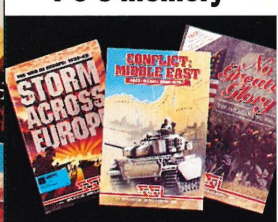
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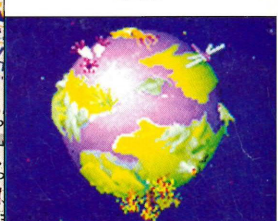
Ultima Underworld: the Stygian Abyss



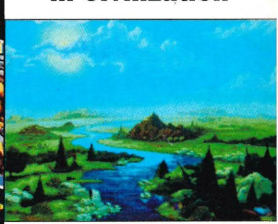
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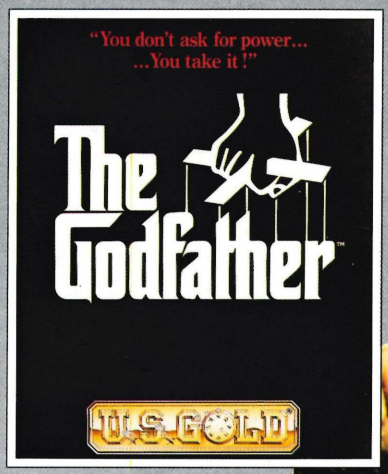
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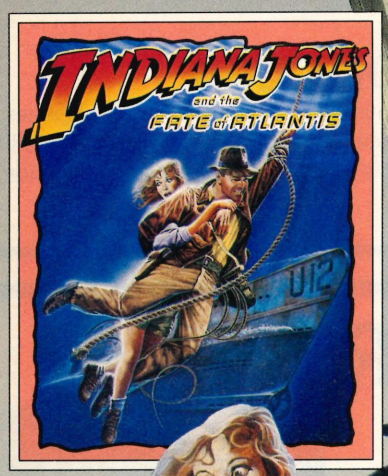
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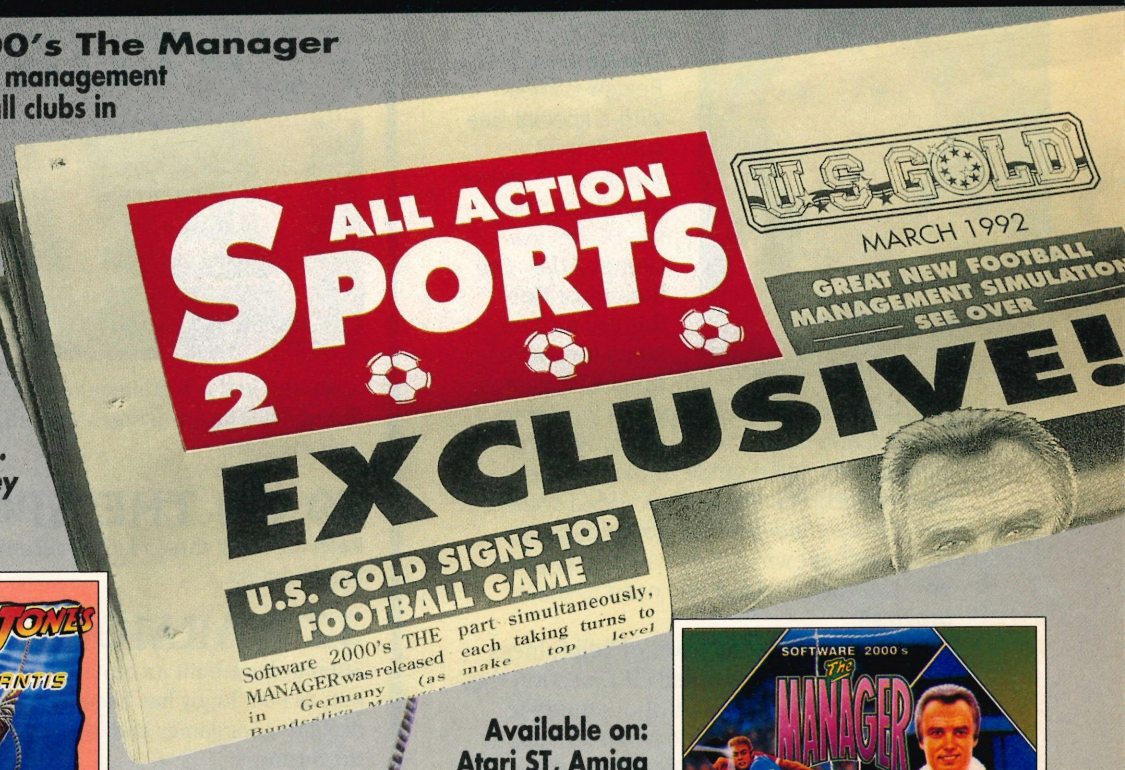
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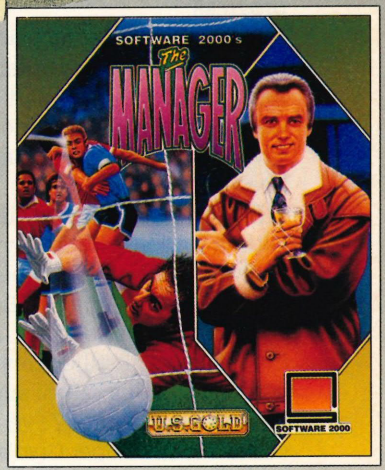
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Contents



FREE GAME GUIDES

This edition of PC Review comes with a special free supplement, which we've rather grandly entitled the PC Review Games Atlas. Our illustrator Rob Carter has created maps for a selection of PC games, which you should help you find your way around, and each one is annotated with screenshots and a guide to playing the game effectively. We've also added some specific tips and 'hot key' combinations, some well-known, others which may just give you the short cut you need to make progress.

In keeping with this spirit of helpfulness we have another expanded QED section this month, with the next part of our guide to Gods, and a playing guide to the excellent Civilization which everyone in the office has been putting to good use.

Elsewhere, it's something of a relief to see Ultima Underworld finally make it on to the shelves. Origin was promising all manner of great things for this EOTB-style dungeon adventures, and for once, it looks as though the hype was justified; reviewer Paul Presley was fast running out of superlatives to describe the game. We've also got a review of French developer Cryo's Dune, which looked astonishingly beautiful in beta versions and when we previewed it in Issue 2. We've all seen games which look wonderful but prove virtually impossible to play – see the verdict for yourself on page 44.

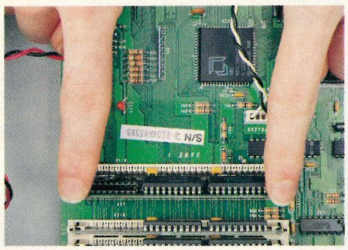
Christina Erskine

PC REVIEW ISSUE 8

Free cover disk and Games Atlas

If your disk or supplement is missing, please check with your newsagent

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COVER DISK 88

DISK 8

We've a bumper crop this month, kicking off with a complete match from European Championship 1992. There's also a set of useful utilities, two more games from the author of Blox, and more ...



SHAREWARE 123

Software doesn't have to be expensive to be good, as we prove in our comprehensive shareware guide. You'll find a list of recommended titles, each one described in detail, and an exclusive order form.

PC review

PC Review Issue Eight May 1992
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Orion's super games PC is just one of the bundles reviewed in this month's cover feature, and one could soon be yours.

COVER STORY

22 PCs MADE FOR PLAYING

Since Amstrad launched its PC games pack last year, half a dozen manufacturers have jumped on the bandwagon. Christina Erskine looks at the pros and cons of games bundles and puts three recent offerings through their paces.



94 COMPETITION

You could win an Orion games PC bundle worth over £1,000!

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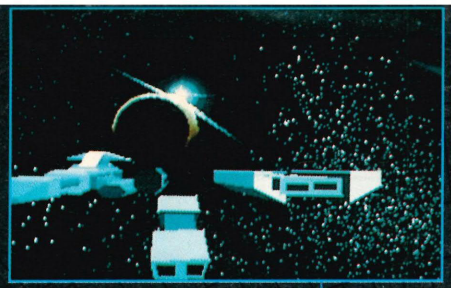
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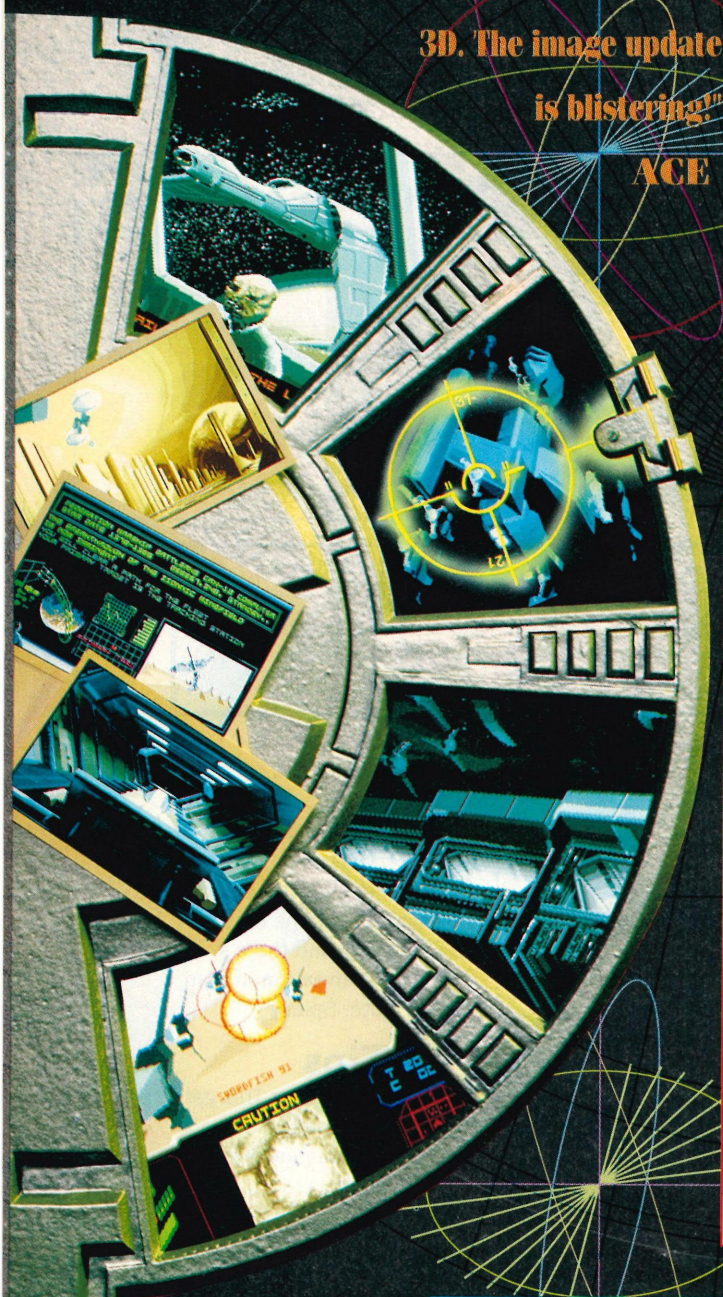
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"Miss this and you will regret it forever"



"Fast just isn't the word for this 3D. The image update is blistering!"
ACE

"Anyone who has been keeping an eye out for this will not be disappointed, and should await its release with bated breath...Epic is one of the best products I have ever played - the depth of gameplay and graphics are of a truly stunning standard."
GAMES X





"The overall feeling you get is one of awe"
ST ACTION





"The game's graphics and presentation are nothing short of stunning, and there's a great wad of playability in there too. Ocean have never had it so good!"
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News

CD VISION OF THE FUTURE

California-based Media Vision chose last month's CeBIT show in Hanover to launch its range of sound enhancers and multimedia CD-ROM players into Europe.

Top of the range is the fully-integrated multimedia subsystem, the CDPC. Combining a high-fidelity 100w audio amplifier with specially designed high-performance speakers and a CD-ROM drive, this is a fully external system which is compatible with the Multimedia PC (MPC) standard.

The standalone unit also incorporates a MIDI port and is fully compatible with Sound Blaster and Ad Lib standards. This range of functions and features does come with a price however, as the unit comes in at £895.95.

Commenting on the unit, Media Vision's chief executive officer Paul Jain said, "Computer users are confused about multimedia. We've provided a product that functions like a high-end home stereo system, yet easily interfaces to a computer. By connecting the CDPC to their computer, home users will be able to enjoy audio enriched reference materials such as encyclopaedias, dictionaries, travel guides and a large selection of colour and sound-rich video games."



For those of you who don't mind delving into the innards of your CPU, the Pro 16 Multimedia System (£849.95) offers a similar set-up to the CDPC, although this time it's all built in to your computer. Another major difference is that this package incorporates a double-speed Hitachi CD-ROM drive with twice the normal access speed. The Multimedia PC Upgrade Kit (£695.95) offers similar features with a standard-speed drive.

The four remaining Media Vision peripherals launched at CeBIT include the Pro AudioSpectrum 16, Pro AudioSpectrum Plus, the Audio Port and the Thunderboard for Windows package.

Priced at £219.95, the PAS 16 offers true 16-bit CD-quality stereo PC sound, while the PAS Plus (£179.95) presents 8-bit sound with a 16-bit bus.

Specially designed for portable computers (and for those who hate to take the lids off their PCs), the Audio Port is an external plug-in sound adaptor with built-in speaker and sockets for microphone and speakers. Powered by battery, or the supplied AC adapter, the Audio Port is priced at £124.95.

Finally, Thunderboard is a fully Ad Lib and Sound Blaster compatible sound card specifically designed for use with Windows 3. Complete with built-in amplifier and joystick port, it costs £99.95.

All of the prices quoted above are exclusive of VAT. Further details are available from P&P New Technologies on (0706) 217744.

PLAY IN A DAY

Hardware giant Wang once raised a few eyebrows when it tried to introduce the American advertising slogan "Wang Cares" into the European marketplace. Now, however, it's not a large hardware manufacturer which is claiming to care, but an Ilford-based training company, Comp-Tutor.

Comp-Tutor Services on (081) 551 7275 cares enough to offer the new PC owner a one-day course which "assumes no prior knowledge of computers or keyboard skills". The course should see the newly-confident user proficient in the ways of word processing, databases and spreadsheets.

Getting Started With Personal Computers cost £129 (including VAT) for the day and guarantee a maximum of five delegates per class.

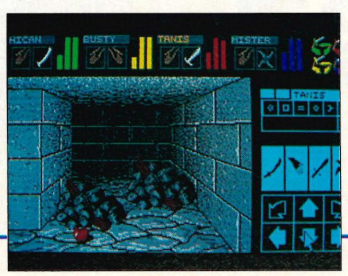
RELEASE AT LAST FOR DUNGEON DWELLERS

The long, long Dungeon Master release saga seems to be nearing an end, with the announcement that Liverpool-based publisher Psygnosis (051 709 5755) has picked up the rights to release the classic role-player.

Although it's been around on other computer formats for many years now, and has even spawned numerous clones – most notably the Eye Of The Beholder series – the original (and some say best) three-dimensional dungeon-based adventure has never actually been released in any PC incarnation.

Following numerous rumours and false starts, this momentous event was finally scheduled to happen last Christmas, but like so many other product releases it was prevented at the last minute by the well-documented demise of Mirrorsoft, which previously owned the game's European publishing rights. The fate of this long-awaited tale of swords and sorcery hung in the balance for the ensuing months, but now the RPG's US-based developer, FTL, has signed a European publishing agreement with Psygnosis which will result in the game finally seeing the light of day later this month.

Or will it? Watch out for a full review in the near future.



MAKING THE HEADLINES

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9 Matching **speakers** from Spectravideo
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8 Letts publishes beginners's **books**
9 The perfect **CV** – on your PC
12 Gadgets and gimmickry from Misco

FEAT OF CLAY

Way back in PC Review Issue 5, we reviewed an animated adventure game from a new American developer, Cineplay. Despite the involvement of such luminaries as Kellyn Beck (whose previous credits included Defender of the Crown, Rocket Ranger and Centurion – Defender of Rome) and Will Vinton (an Oscar-winning animator who has the famous California Raisins advert and some of the animation in Michael Jackson's Moonwalker to his credit) the game turned out to be somewhat disappointing, with a rating of just four.

However, the game did make draw on Vinton's Claymation modelling and animation techniques, using digitisations of original, distinctively animated clay figures for close-ups in the game.

Readers who were intrigued by the effects created, will be interested to hear that Cineplay is to follow up Free DC with the release of an animation package, Playmation, which takes advantage of these techniques and allows the user to create similar effects of their own.

Coming complete with a specially commissioned video, Joyride, which shows off the software's capabilities, Playmation takes advantage of a complex polygon rendering technique which uses 'splines' to create intricate curved shapes and shaded surfaces.

The main drawback is that users will need to have a good deal of computing power at their disposal – a machine with at least a 386 processor is essential, while a maths coprocessor and at least 4Mb of RAM is also recommended.

Playmation will be available in early July and is to be distributed in Europe by US Gold (021 625 3366).

COMMANDER TAKES OFF

A unique link-up between a manufacturer of professional hardware-based flight simulators and one of the top entertainment software companies in the world has resulted in The Commander, a high-tech video game console which promises to deliver a new experience in entertainment simulation.



Sussex-based Rediffusion Simulation (which is renowned for its multi-million dollar simulators of aircraft such as the Boeing 747 and the Tornado) and California's LucasArts Entertainment (George Lucas' software publishing arm responsible for such classic games as Monkey Island and the Indiana Jones series) have combined to create this futuristically styled two-seater capsule.

Combining multiple joystick control with high-resolution graphics and stereo sound (from two chair-mounted speakers), The Commander can be set up as any type of vehicle, either land, sea or air based, although the first cabinets in the arcades in June will feature Air-2-Air, a combat game based on modern fighter plane technology.

Specific game prices can be altered at the operator's discretion, but Rediffusion estimates that Air-2-Air will cost in the region of £3 per turn when it first appears. Contact them for further details on (0923) 561156.

LEARN BY THE BOOK

Letts Of London has announced the arrival of four US books, each designed to help you get more out of your PC.

PS Secrets (Tips & Tricks to Maximise the Power of your Personal Computer), Rookie Programming (A Newcomer's Guide to Programming in BASIC, C and Pascal), Hundreds of Fascinating & Unique Ways to Use your Computer and Future Computer Opportunities (Visions of Computers into the Year 2000) are all on the shelves now, priced at 9.95.

PC Secrets is described as a "collection of the most useful and personal computer tips and secrets passed around by experienced users". Written by Andrew Rathbone, editor of the San Diego-based ComputerEdge magazine, it covers everything from DOS commands to printers and Windows.

Rookie Programming by Ron Dippold is, as the title suggests, a beginner's guide to writing your own software. Covering the three main programming languages, this book takes you all the way through the routine, from selecting a programming language to 'debugging' a finished program.

Tina Rathbone's Hundreds of Fascinating & Unique Ways to Use your Computer is a guide to some of the more unusual uses for the IBM-compatible, including monitoring diets and workouts, gaining insight into your love and relationship skills and learning a foreign language, beautifying your home and even balancing your cheque book!

In Future Computer Opportunities, author Jack Dunning imagines a number of future scenarios involving computer applications and examines how computers may become involved in everyday life. Dunning also presents advice to budding entrepreneurs as to how to incorporate computers into specific moneymaking ventures.

More information on these and other Letts computer-related publications from (071) 407 8891.

IN BRIEF

ALL FALL DOWN



● Liverpool-based publisher Psygnosis pulled off something of a transatlantic coup this month, as its original and highly-acclaimed Lemmings picked up two awards at the US Software Publishers Association's Excellence In Software Awards ceremony.

The titles of Best Home Entertainment Package and Best Action/Arcade Program were bestowed on the game, which a Psygnosis spokesperson described as a "once in a decade product".

KEY DECISIONS

● Replacement keyboards may not be



SCREEN BEAT

Have you just splashed out on some new stereo circuitry to beef up your gaming pleasure? Then why not match it up with a set of speakers created specifically to match your computer system in style and colour?

Spectravideo's Screen Beat stereo speaker system claims to do just this, as its cream coloured units are designed to attach directly to the sides of your monitor. Not only this, but each speaker has its own volume control and can be adjusted to the correct angle for the best stereo effect.

The Screen Beat is compatible with all PC sound cards and is available now priced at £29.99. Call Spectravideo on (081) 902 2211 for further details.

THE GONG SHOW

The European Computer Trade Show awards ceremony took place at London's Limelight night club last month, hosted by Dominik Diamond, presenter of the Channel 4 computer games show Gamesmaster.

Winners this time around included Sim City (best CD game), 3D Construction Kit (best packaging), Wing Commander II (best sound and best graphics), Eye Of The Beholder (best adventure/role-playing game), Railroad Tycoon (best simulation), Civilization (most original game), Lemmings (game of the year) and MicroProse (software publisher of the year.

ALL WHITE ON THE NIGHT FOR PC SNOOKER

If a game's pedigree can be measured by the amount of awards it picks up, then Jimmy White's Whirlwind Snooker must be a strong contender for best of breed, with Golden Joystick and technical merit awards under its belt.

Developed initially for the Commodore Amiga by veteran big-name programmer Archer MacLean (who has been developing hit games on various home computers since the early 1980s), the game is now all but finished for PCs and about to make its competitive debut.

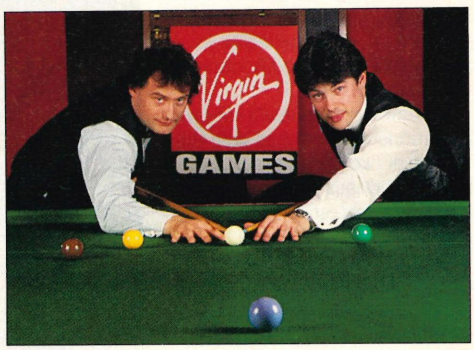
In technical terms, this latest version is almost identical to its predecessor, with all the main features included. The table can be rotated through 360 degrees and viewed from just about any angle, while all manner of spin and other tricks can be employed by more serious players – you even have to chalk the tip of your cue to avoid the dreaded 'miscue' which can disrupt even the best of breaks.

One and two player modes are supported, with the computerised opposition ranging in skill from the fairly difficult right up to Jimmy White himself. All of the main functions can be carried out via the keyboard, but the game is best appreciated when played using a two-button mouse.

MacLean is quite proud of the latest incarnation of his game, which has taken almost two years to complete. He also believes that it should be accessible with the minimum hardware requirements. "We've not bothered to include CGA or Hercules modes," he says, "but the game runs perfectly well in EGA on even a standard 286 machine at 12Mhz. In fact, the game's actual speed won't change whatever the machine speed, as the balls always travel in real-time."

And what of the Jimmy White connection? The normal practice with endorsed games is for the celebrity in question to show up for a brief photo session and leave it at that. However, MacLean claims that Jimmy White has shown a good deal more interest than that in the development of this one – making numerous appearances to endorse the game, and even potting a few digital balls himself when he gets a spare moment.

"Jimmy's actually quite good at the game you know," claims MacLean, "although he has difficulty getting to grips with the mouse. But if he gets myself or someone else who's more used to using a computer to manipulate the controls for him then he rarely misses a shot – which makes me think that I must be doing something right."



Jimmy White and Archer MacLean discuss the finer points of Whirlwind Snooker

Jimmy White's Whirlwind Snooker will be out next month on the Virgin Games label (call (081) 960 2255), while the same publisher will probably release a pool version later this year.

"The pool game should follow quite quickly," explains MacLean. "The reason for this is that, technically at least, it uses the same 'engine' as snooker, but incorporates all of the rules of the various different types of pool. There are some major differences though – the table will be smaller, the pockets will be bigger, the opposition will have different tactics and the balls will react slightly differently – in fact, it will be about as close to snooker as the real thing is basically."

There's also a possibility that MacLean may produce a snooker-based sequel, incorporating some new elements which only occurred to him after the first game was finished, but as he also has a number of other projects under way – including updated versions of his classic shoot 'em up Dropzone, and beat 'em up IK+ – there's no guarantee that this will actually happen.

"There are only 24 hours in a day," he exclaims. "But I would like to get Snooker 2 out at some stage. It's amazing what you can get into a game if you actually have the time to devote to it."

the most glamorous of PC peripherals, but in the importance stakes they rank up there somewhere along with the monitor.

Read Cosine (on (0202) 632274/5) has extended its range of replacement keyboards with the introduction of the T102 LITE.

This extended keyboard incorporates advanced controller circuitry and autosensing for AT and PS/2 or PC/XT modes (although the manual switching facility has also been retained). The T102 LITE retails from £35 and comes complete with a three-year warranty.

The complete Read Cosine line-up ranges from the standard-weight T102 to the Memory Pro, a 122-key programmable extended keyboard.

ADVANCED CIVILIZATION

If you'd like to dig deeper into Sid Meier's complex Civilization game, and even our guidelines in this month's QED can't help, you may be interested in a new book by Prima Publishing, called, simply, Sid Meier's Civilization. Available from Computer Bookshops and other outlets, it costs £17.45.



ACCOLADE TAMES THE GOLDEN BEAR

Following the release of its latest tie-in with the Golden Bear himself, Jack Nicklaus' Unlimited Golf And Course Design: Signature Edition, Accolade has extended its agreement with the former 'greatest golfer in the world' to retain the exclusive rights to produce games using his name until the mid 1990s.

The new agreement will continue a relationship which has seen the release of two previous simulations bearing Nicklaus' name – Jack Nicklaus' Greatest 18 Holes Of Championship Golf and Jack Nicklaus Unlimited Golf And Course Design – and covers all formats including video game consoles and, more importantly, the emerging CD-ROM players.



Commenting on the agreement, Accolade's chairman and chief executive officer Alan Miller said: "With the assistance of the creative golf professionals at Jack Nicklaus Productions, Golden Bear International and Jack Nicklaus himself, Accolade will continue to set new standards in golf simulations."

Nicklaus himself offered that Accolade: "... have performed effectively at producing and distributing our computer software and video game products and I have always appreciated their insistence upon excellence."

Jack Nicklaus' Unlimited Golf And Course Design: Signature Edition is available now. Further information can be obtained from Accolade Europe on (081) 877 0880.

JUST THE JOB

Are you out there in the job market, chasing every entry in the Situations Vacant columns with hundreds of other applicants? One way of making your mark and standing out from the crowd is to produce an informative and distinctive CV – but tailoring your CV to every new job application can be a tiring and time-consuming task, even using the benefits offered by your PC.

To speed up this process, US software developer Permax Systems has developed The Perfect CV Computer Kit, an integrated database and word processing package, specifically designed to produce bespoke CVs, structured for every new job application.

Based on a bestselling book – The Perfect CV, by management consultant Tom Jackson, which has sold over 300,000 copies in America and has just gone into its second printing in Britain – the software package consists of two modules: Career Counsellor, which uses 300 suggested inputs to help the user to create his or her own career information database, and CV Builder, which uses this information to create and print a variety of CVs.

The program has been translated from the original American and is now available at £35. Further information is available from Kontext International Marketing Services on (04865) 3406.

RETURN OF THE CAPED CRUSADER

The scourge of 'Batmania' which swept the country in 1989 is due to strike all over again, as the inevitable follow-up to the high-grossing movie nears completion.

Batman Returns is due to hit the silver screens in the middle of July, although PC gamers will have to wait until November to play the equally inevitable game of the movie, which is to be published by the Japanese games giant Konami.

Konami has also popped up with the rights to release Elite II, David Braben's follow-up to his original Elite, which is the biggest selling computer game of all time, later this year.

Further details on both of these up and coming titles can be had from (081) 429 2446.

IBM TAKES IT EASY

IBM is making yet another attempt to conquer the elusive home computer market, by launching the 'Easy PC' – a software-led facelift for its existing PS/1 range of 'starter' PCs.

However, rather than offering any significant technological advantages over the previous range, IBM claims that its new models are instead designed to make the hardware easier to use for novice owners.

Comprising the system unit (an 386SX-based model), monitor, mouse, cables and manual, the Easy PC also comes with an instructional video and comprehensive user support.

As before, all PS/1 models are pre-installed with an operating system and a range of productivity software, while the new Easy PC set-up also includes one of four separate add-on software configurations – a 'family' bundle, two educational packages and an integrated business suite.

Details on price and availability from IBM on (071) 928 1777.

ALL CHANGE TO CD

The MicroProse catalogue of CD-ROM games, as announced in PC Review Issue 6, has been bolstered by the addition of Sid Meier's unique business simulator, Railroad Tycoon. Not so much a train set as a mixture of Monopoly and Thomas the Tank Engine, Railroad Tycoon was highly acclaimed on its floppy disk debut, walking away with the prestigious PC Game Of The Year title at the 1991 Golden Joystick awards.



The PC CD-ROM version costs £39.99 and should be arriving in your shops at any time now, barring accidents such as the wrong type of snow or leaves on the track.

Further timetable details are available from MicroProse on (0666) 504326.

ETERNAM

Welcome in a new world...
...where time has lost its meaning



TRACY

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I would like to have some free information about INFOGRAMES' game software.

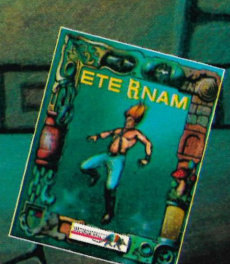
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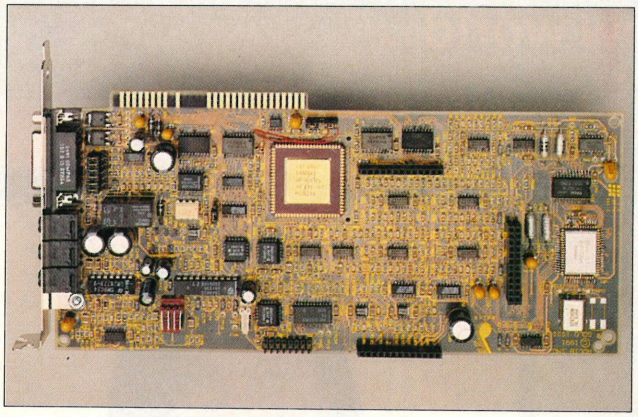


© INFOGRAMES 1992
Screenshots PC VGA

AD LIB GOES STEREO

Ad Lib has added a new card to the top end of its line-up of PC sound enhancers, with the introduction of the Ad Lib Gold 1000 Stereo Sound Adapter.

Although it's priced at a hefty £249.99 (inclusive of Vat), this latest Ad Lib card does offer a good deal for the price. Apart from the obvious stereo advantages (the new card offers 20 independent stereo channels – with further two channels reserved for digital recording and playback), it also incorporates a 16-bit stereo FM digital/analogue converter – which allows the user to digitise and play back real sounds at will.



Other features include a joystick socket which doubles as a games port, amplified stereo output, built-in compression and decompression for storing sound files and stereo sampling rates of up to 44KHz – higher than that offered by many audio CD players.

Software bundled with the card includes Voice Pad, a utility which allows the recording, selecting and playing back of 'voice memos' and the programming of voice alarms (fancy your PC actually telling you when it's time for tea?), and a selection of 'juke box' tunes which have been recorded to demonstrate the new stereo capabilities.

Ad Lib is also working on a new widget which will work with the stereo card to allow your PC to become a digital telephone answering service.

Unsurprisingly, the first games to support the new card's features will come from the hardware's UK distributor Mindscape. The latest versions of the RPG Legend will be tweaked to support the sound module, while all future games from Mindscape and its related companies will include Ad Lib stereo sound as a matter of course. Furthermore, all of the major MS-DOS leisure software developers have been supplied with the hardware to add the necessary enhancements to their own forthcoming releases.

In addition, the new hardware is downwardly compatible with all previous Ad Lib-supporting games – that is, any games which you currently own which work with a standard Ad Lib card will work equally well with the new set-up.

For more sound advice, call (0444) 246333 and ask for the Ad Lib Gold information desk.

STICKY MOMENTS

Shrewsbury-based Westpoint Creative has gained the exclusive UK rights to distribute a range of joysticks from US specialist CH Products. The firm's line-up of 20 products includes games cards and track balls and ranges in price from £20-£100. Further details can be had from (0743) 248590.

ELONEX OPENS WITH WINDOWS

Never the types to let the grass grow under their feet, the chaps at Elonex are now offering a copy of the latest version of Microsoft's Windows operating system, Windows 3.1, with every new PC they sell.

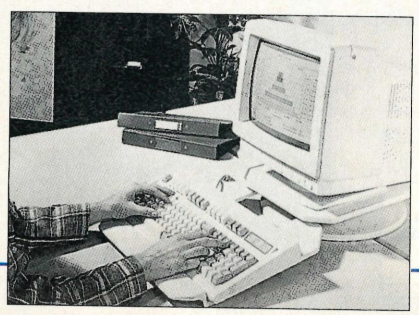
This offer came into effect on April 6th, the very day of the new system's worldwide launch – users who purchased Elonex machines prior to that date can upgrade to the latest version for a fee of £25 plus VAT.

Commenting on the new deal, Elonex managing director Israel Wetrin says: "Our aim with hardware has always been to offer state of the art performance at a competitive price. Making Windows 3.1 available to our customers immediately is an extension of the same philosophy to software."

For further details of this, and Elonex's full range of Pc compatible machines, call (081) 452 4444.

AND MANY, MANY MORE ...

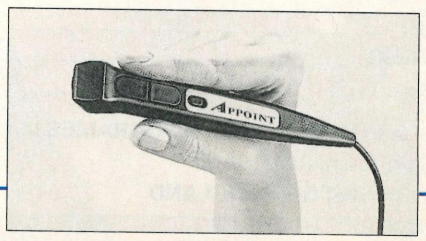
Northampton-based Misco Computer Supplies is staking its claim as the Ronco (who can forget such "as advertised on TV" classics as the water-powered potato peeler, or the classic Thighmaster?) of the computer world with its latest catalogue of peripherals, loosely related to personal computing.



Featuring such essentials as the FlexiStand, the MousePen, the Design Plus diskette case range and the Ergonomic Turntable, the completely free Misco catalogue can be ordered by calling (0933) 400000.

However, for those of you who can't wait for the return of post, here's a quick guide to what's available ...

- The Laptop Master: a "solution to the problems of unnecessary desk clutter", this £199 moving platform allows the user to swing into action with his or her laptop and then stow it away with "fingertip control" at a moment's notice.
- The Mini-Vacuum: a Swedish-designed rechargeable office equipment cleaner which operates for half an hour when fully charged.
- The Ergonomic Turntable: a monitor and keyboard platform which rotates through 360 degrees, designed to alleviate the symptoms of the dreaded Carpel Tunnel Syndrome (CTS) and Repetitive Strain Injury (RSI).
- The FlexiStand: a fully-adjustable, three platform set-up with room for monitor, work surface and printer – comes complete with a clip-on basket!
- The Mouse Pen: designed specifically for use with laptops, this is the 'Papermate' of controllers as its friction-based operation allows it to work at any angle – even upside down!

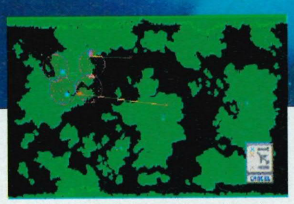


MILLENNIUM PUTS THE WORLD IN YOUR HANDS

GLOBAL EFFECT



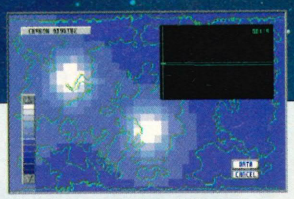
Build power sources to supply and expand your cities.



Build military bases for offensive and defensive action.



Plant forests and parklands to counter world pollution.



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Survey for natural resources and seismic stability.

A distant world - a new civilisation. You control the delicate balance of the natural world. Confront the many challenges of a true world leader - your actions can save the world from global warming and city pollution... your forces can destroy the enemy trying to blast your cities or poison your planet.

The world is in your hands - take control!



Constantly monitor the state of your planet.

**Amiga screen shots*

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Tornado

PC review On a Screen Near YOU

Title: Tornado
Publisher: Digital Integration
Genre: Flight simulator
Programming Team: n/a
Release Date: September
Price: £TBA
Softography: F-16 Combat Pilot, Supaplex

British-made flight sim of a British-made plane



When Falcon 3 came along just recently, everyone turned their heads and drew a collective sharp intake of breath. Despite the bugs, thoughts were that this surely must be the best flight simulator and how could anything surpass this? Seven confident men, nestled deep within an industrial centre in Camberley, Surrey, think they know the answer.

Digital Integration is no stranger to flight sims. Its first product, an F-15 Eagle simulator on the Sinclair Spectrum, took the then-young world of computer games by storm and when it followed with the Apache helicopter simulator Tomahawk, things just got better. The product that really took flight sims to new heights was F-16 Combat Pilot in 1989, a critically acclaimed title which has since been produced on almost every computer format going.

Since then DI has been pretty quiet on the flight sim front, releasing several low-key action games and the Boulderdash variant Supaplex (see PC Review Issue 5 for review and cover disk). The reason for this has been down to the seriously hard work that's been put into developing Tornado, the latest (and possibly greatest if the technical specifications are anything to go by) flight sim so far.

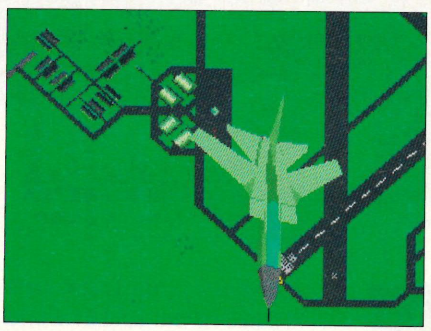
Based, as you would expect, on the RAF's multi-role Strike/Interceptor, Tornado is hailed as the most accurate simulator yet, covering all three variants of the aircraft, containing the most realistic 3D modelling yet seen and giving the player a 25 mile visibility range, allowing the terrain to be generated smoothly outside the aircraft, preventing the 'pop-up' hills effect you get in most other games.

Because the Tornado's prime role is as a low-level flyer, DI has had to take great care to make the ground terrain as realistic as possible. This has been achieved through the use of contoured hills and plenty of tree coverage on the ground. Having clumps of trees constantly flying underneath you gives a very impressive sense of speed and although the process is nothing new (previous games usually cover the ground with single black pixels to give the same impression), using trees to produce the effect adds a great sense of realism.

The 3D modelling is one of the most astounding aspects of the game, with objects actually looking almost exactly like their real-life counterparts and helping the player when it comes to identification of

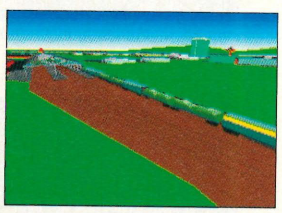


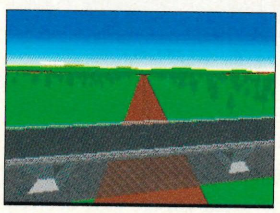


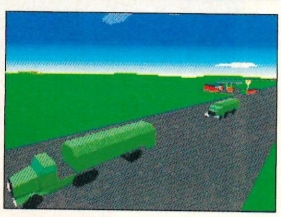


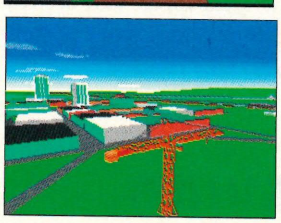
Inside the Tornado you get to see things not only as the pilot, but as the navigator sitting in the back. From this position you can select and position waypoints, arm and control your weapons and generally do everything except fly the plane. One other thing is the use of the pilot's kneeboards. The real things usually contain mission information, for Tornado however, it's limited to game options. These are the Castle Wall and the Severed Arms Pub in both 256-colour VGA and 16-colour EGA. As you can see, for EGA it's very detailed.

A number of towns are situated between the hills and the valleys of Tornado's game worlds. Trains follow their routes (usually carrying military supplies such as covered tanks and the like), trucks carry fuel from petrol station to petrol station and life generally goes on as normally as it can in wartime.

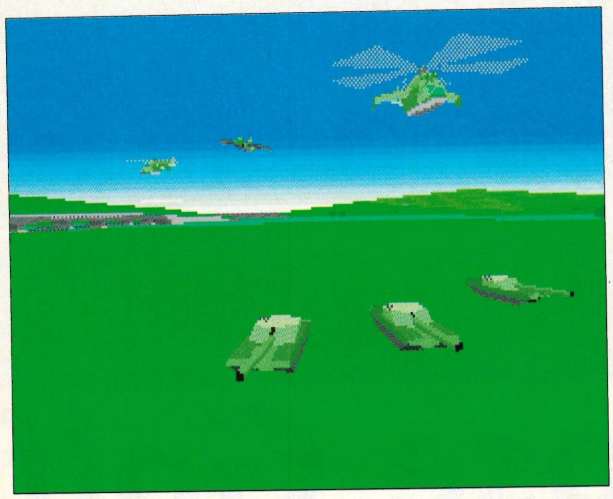


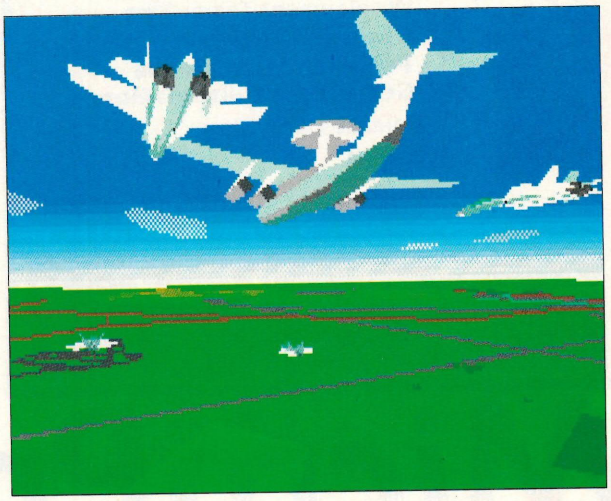




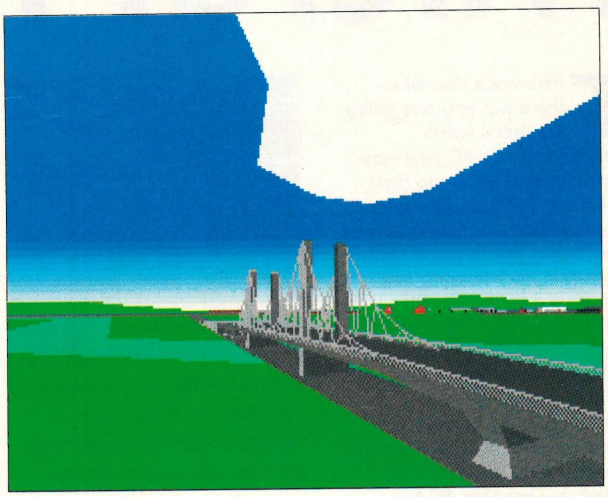


There's plenty of hardware scattered around the combat zone, with most of the objects actually looking like their real-life counterparts, right down to the aerials on the tanks.

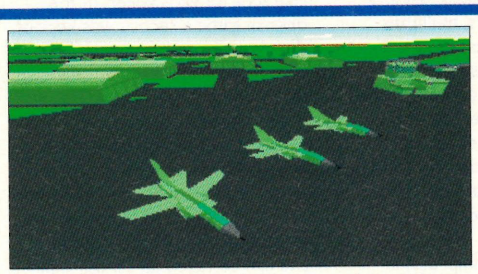








good guys from bad guys. Of course, when you're in the seat of a supersonic aircraft you don't get much time to stop and admire the scenery, so to make sure you get a chance to really appreciate the graphical splendour, DI is including a 'free tour' of the combat areas within the finished game. At the moment, this is achieved by simulating an Apache helicopter as well as a Tornado and flying around the area at a much more leisurely pace. DI intends to use this device when it comes to demonstrating the game at computer shows and it is a good example of how easy it is to apply Tornado's technology to other flight sims or data disks in the future.

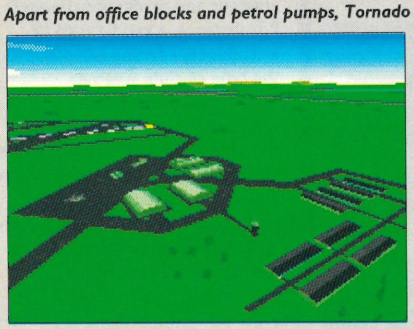


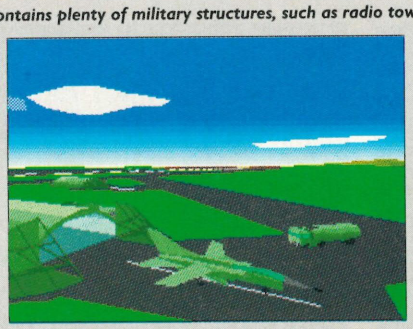
The plane itself, doing what it does best ... showing off.

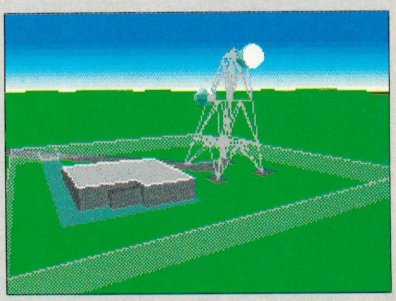
Apart from the 'flyabout', you can practice in a simulated training simulator, go on single flights with unarmed opposition, take part on single unconnected missions or take part in an actual ongoing war situation, with you acting as commander of an entire Tornado squadron, planning missions from scratch, providing aid to other military commanders and actually flying the missions with anything up to four wingmen. A nice touch is that Tornado can be linked to another PC allowing for two players to either fight together or against each other.

Tornado is currently scheduled for a September release and will support most machine set-ups, using digitised video clips for special sequences and digitised sound (supplied by British Aerospace) on Sound Blaster boards. Is this the start of a new era for British-made flight sims? With Vektor Grafix's B17 Flying Fortress and Argonaut's ATAC expected soon and Tornado leading the way, the Americans are going to have a real dogfight.

Apart from office blocks and petrol pumps, Tornado contains plenty of military structures, such as radio towers, power stations and fully operating airfields.







PC review On a Screen Near YOU

Title: **MicroProse Golf**
Development Team: **The Thought Train**
Publisher: **MicroProse**
Genre: **Sport simulation**
Release Date: **May**
Price: **TBA**

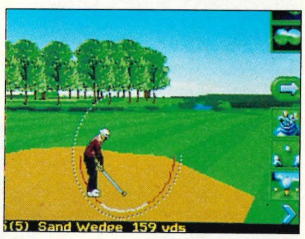
Conversion of the hit 16-bit golf simulation



MicroProse Golf

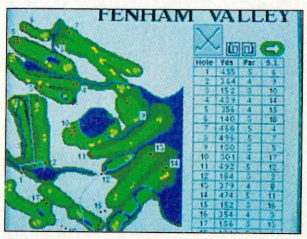
There was a time when there was only one golfing simulation worth considering on the PC (and most other computers come to that), PGA Tour Golf from Electronic Arts. In recent months a couple of other quality golfing games have hit the market, each boasting new features and better gameplay. Links and its many course disks and Jack Nicklaus's variety of titles have both given the original classic a run for its money, but somehow it's managed to stay just one step ahead. Another game was released recently on the Amiga and ST though, and has given PGA its strongest test yet, in some ways proving to be superior. Now MicroProse Golf is winging its way towards the PC but it's not going to be ported indiscriminately from the earlier 16-bit versions.

The original game has been changed in many ways, including the addition of enhanced 256-colour graphics, more realistic landscapes, fully digitised trees, digitised sprites with different graphics for different types of shot, male and female golfers, left and right handed players, mulligans (which allow you to retake a shot), the ability to practise any hole, digitised sound effects with speech on the Sound Blaster, different clubhouses for the different courses (replacing the 'cold' menus from the original) and two new courses based on genuine American ones.



Something that drew criticisms of the original game were the graphics used for the trees. Deemed too unrealistic, MicroProse has changed them completely, transforming them into the marvellous conifers seen here.

One of the most impressive changes concerns the actual character of each golfer. In the original game a record was kept of the player's scores on each hole of each course and this gradually built into a complete database. This was used to award the player a handicap and this gave a nice feeling of growth each time the game was played. In the PC version not only is a record of scores kept, every shot ever played is recorded and can be called up on the video replay screen at any time. As the player develops, so the database grows. You can review any shot you ever played or cross reference shots, calling up, let's say, every shot that you ever played from a bunker that ended up in the hole!



As well as the original game courses (all updated and improved), MicroProse has added two genuine US courses. Data disks are planned, with eight courses on each, and a course designer is being considered.



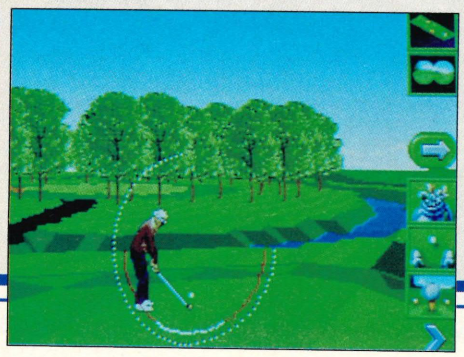
MicroProse has added clubhouses to each of the courses, giving a stronger feeling of 'being there'. Developed using CAD 3D to give depth to each screen, the genuine courses are, matched by their genuine clubhouses.

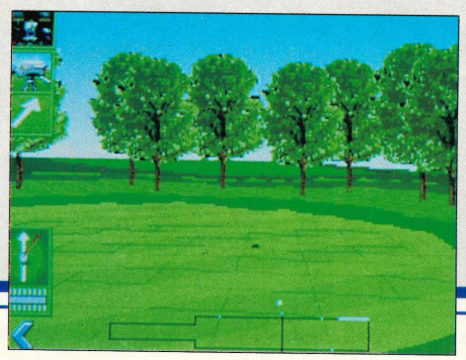
There will also be the option to link two or more PCs together through cables or modems allowing for massive tournaments to take place with up to four players on each machine. The linking system is still being worked on and a limit to the number of players that can play at once has yet to be determined, but it should be interesting to see 'Ryder Cups' taking place between England, Scotland, Ireland and Wales.

MicroProse is also keen to enhance the differences between amateur and professional players. For instance, a caddie is to be introduced, advising the player on the type of club, weather conditions, offering more advice at the lower levels and gradually allowing the player to make more of the decisions for himself. There are also plans to make certain shots easier at novice levels, such as indicating recommended strength levels for chipping.

The swing meter system has remained in the PC version but with MicroProse making distinct improvements. Firstly, it was decided that a separate chipping bar is to be included on the easier levels, the absence of which drew a fair few complaints on the earlier 16-bit versions.

Secondly, putting is to be completely different, with another swing meter replacing the original power bar (shown in this early version). This will allow the player to adjust hook and slice and have more control over the ball.

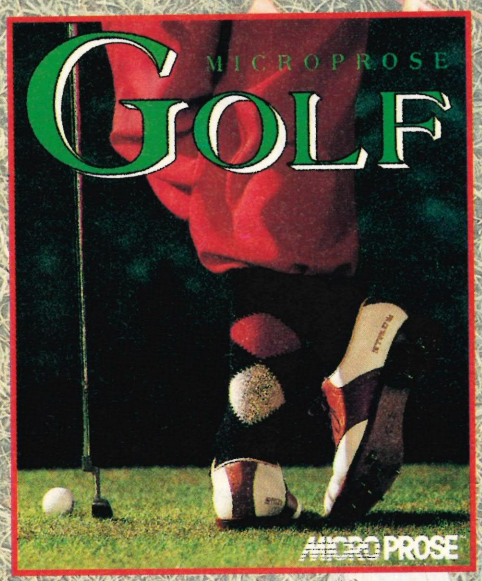


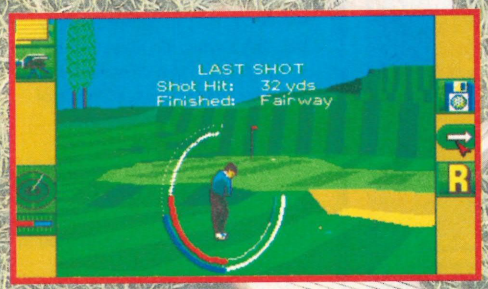


MICROPROSE

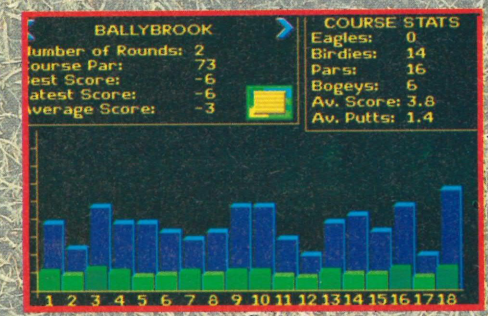
GOLF

A fair way ahead of the field...









"...No minor detail is overlooked....there's a wealth of statistics... enough course data to keep any ardent fan more than happy".

ST ACTION Jan '92

"Technically the game is superb...The handicapping system is a great idea...its real strength is its long term appeal...extremely rewarding, offering more variety than PGA".

The ONE Jan '92

"Graphics are excellent, the five option camera mode allowing you to view the path of the ball from a variety of angles...the speed and fluidity of movement would put Steven Spielberg to shame...a classic...the game is as complete as it could be without you actually getting out there".

CU AMIGA

- *"Excellent graphics mean it's good to look at as well as to play.*
- *Guaranteed to keep you playing for a long, long time.*
- *The details really make it shine - how many other golf sims allow you to alter tee height"?*

ST FORMAT Oct '91

"All other golfing sims must bow in the wake of this brilliant piece of programming from MicroProse. Go ahead and treat yourself...you will not be disappointed".

COMPUNET

...lies a hole new ball game

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PC review On a Screen Near YOU

Title: Crisis in the Kremlin
Developer: Spectrum Holybyte
Softography: Tetris, Falcon, Tank, Flight Of The Intruder, Falcon 3.0, Super Tetris
Genre: Strategy
Publisher: MicroProse
Release Date: May/June

Detailed look at life as a Russian premier



Crisis in the Kremlin

For a company that has always excelled in American flight sims, Spectrum Holobyte has entered completely new territory with its latest work. No less than the crumbling Soviet Union with an appropriately (and topically) titled Crisis in the Kremlin. It's not completely virgin ground for the firm that has reached global success with titles such as Falcon 3.0 and Flight of the Intruder, as it was the birthplace of Tetris (and its creator Alexey Pajitnov), a game that has proven to be as much a moral success for Russian game design as it has been a commercial success for the flight sim masters (for more see the Super Tetris review on page 64).

Crisis takes you into the murky world of Russian politics, casting you as the premier of the USSR and throwing everything from food shortages to housing problems to military coups at you. In fact, the mathematics of the game have proven to be so realistic that it actually managed to predict the real-life Soviet coup before the event happened.

"We were kind of surprised at that," says chief developer Larry Barbu. "We set up the conditions, the policies and the budgets and so on that were roughly the same as those that existed at the time just before the coup, and out it came that there was a coup with the KGB saying that your health was impaired and so forth, right down the line, which as you might expect got a lot of publicity."

The mechanics behind Crisis are a series of complex economic and political mathematical models, all created by Barbu to closely match today's own figures.

"I've been working with computers on the commercial side since the 60s and have done all kinds of economic models and so on. Recently I got interested in the Soviet situation and thought that this would be an ideal way to come up with a game that combined the modelling with what was going on.

"It's quite thorough, although frankly, it wasn't easy to get the numbers on the Soviet economy. We got the best we could and it seems to be matching reasonably well, but Russia was not easy to grab hold of."

To give the player some idea of what effect his policies, budgets and decisions are having on the world around him, a constant stream of messages, faxes, newspaper stories and even television news broadcasts are included in the game.

"If it was a pure economic model, it would just come out with a bunch of tables, results and numbers and we thought that the user – the player – should have different ways of having the information presented. So we have the newspapers, TV and video simulations and so on. As the model progresses and things happen you get messages of the events in these forms rather than just dry tables. Diplomatic pouches is another way, the BBC, CNN – we don't use the names directly but that's what it's meant to be like – letters from the directors of various departments, all kinds of different ways of getting the messages across," says Larry.

Most of the video images have been taken from (CNN) Cable News Network, the American tv news service, and are presented in the form of newsflashes.

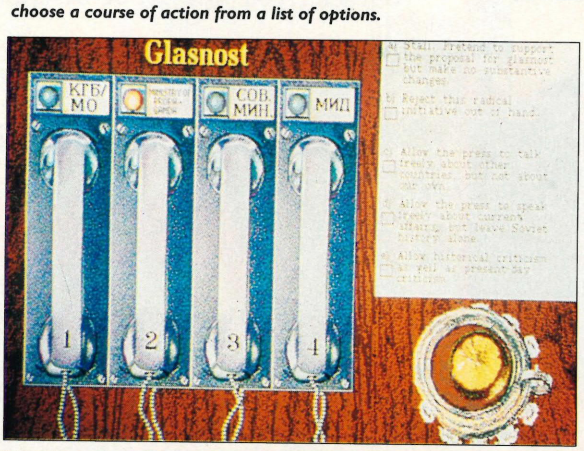
Both Larry and Sphere Inc. have been working on Crisis for more than 18 months, Larry responsible for the main design and the maths and Sphere for graphics and technical side. Alexey Pajitnov has also been commenting and offering his opinions.

"He seems to like it," adds Larry. "I suspect that parts of it will be played by the Russian government, no doubt about it, although we haven't had any calls yet. I think it's going to be quite a game. I don't know if there are many games that have all the things it has. It's got the simulations, it's got the economics, it's got the excitement of the CNN loops and so on, excellent artwork, music ... It's chock-full of pretty good stuff. Power politics, business and economics, international give-and-take." In late May/early June you can judge for yourselves.

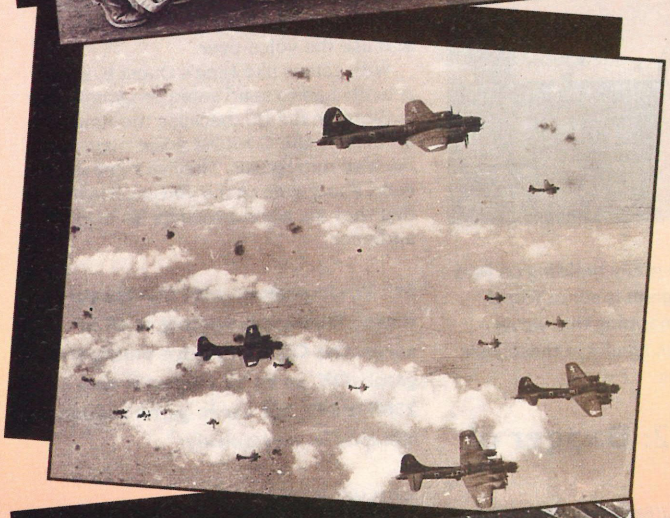
Most of the game is played from the central map screen. Tables and charts can be called up to show everything from popularity to environmental status.

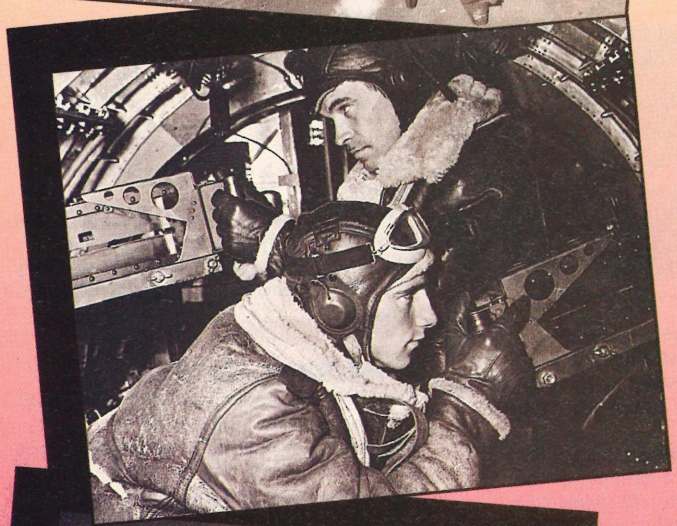


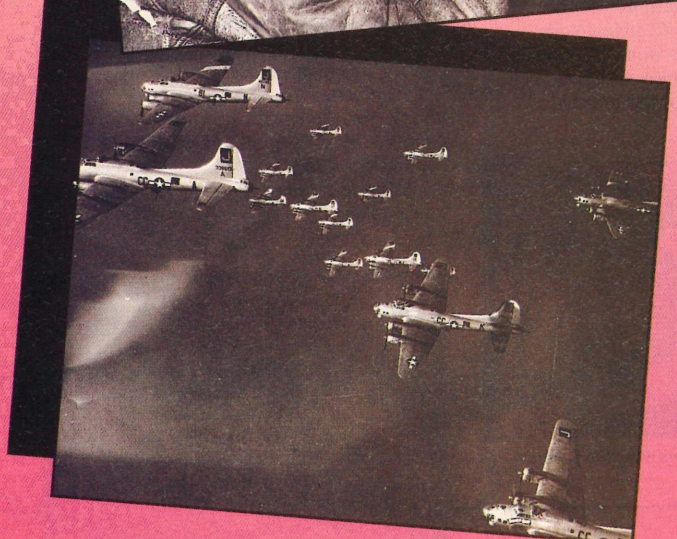
Every action you take, every decision you make, all affect the way the program calculates life in the USSR. When something important is deemed to happen, you are taken to the crisis screen where you get to choose a course of action from a list of options.











B17 Flying Fortress

It's a flying experience you'll never forget

We were just kids really and it was our first time away from home. We had 25 tough combat missions to complete before we finished our tour.

We called her a Fortress but she sure didn't seem like one when we were stuck in tight bomb run formation over the enemy target with devilish black flak clouds bursting all around us.

Then, after the bombardier yelled 'Bombs gone!' the mad scramble for home. All ten of us watching for bandits and calling them out: 'Tail gunner, belly gunner, right-waist gunner' as they swept past spitting out shells.

When we had a good run, knocked out a few fighters and were approaching the English coast, still in tight formation; that's when she felt like a Flying Fortress.

B-17 Flying Fortress.
Command the supreme daylight bomber of World War Two, navigate accurately across Europe, locate and bomb strategic targets and defend the plane from furious enemy attacks.

It's a flying experience you'll never forget.

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ON THE SPOT
SIERRA

The European headquarters of Sierra On-Line played host to its first batch of PC Review visitors. Sean Nugent, Steve Lai and Wendy March were able to play an early version of Dynamix's follow-up to Red Baron, Aces of the Pacific, plus Conquests of the Longbow and King's Quest V on CD-ROM with previews of other forthcoming Sierra releases.

For PC Review

Steve Lai
Plays most of his games at home: "The office systems just aren't good enough to play games on."

Sean Nugent
A big Dynamix fan, who particularly enjoys flight simulations.

Wendy March
A long-standing Sierra aficionado, Wendy has played every single one of the Williams's Quest titles, and her children are now hooked on Mixed Up Mother Goose.

For Sierra

Lydia Phillips
marketing manager

"Sierra On-Line began on a kitchen table in Los Angeles in 1980, where Roberta Williams wrote the storyline for Mystery House and her husband Ken programmed it into an Apple II computer.

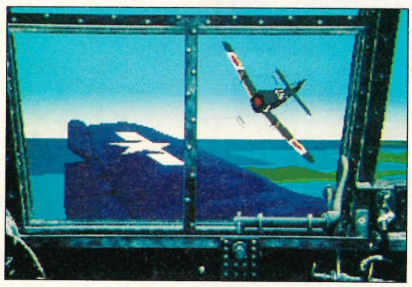
It incorporated graphics with the text input, the first adventure game to do so. In that year the Williamses produced two more computer games, The Wizard and the Princess, and Mission Asteroid, and they set up the company as Sierra On-Line. They continued with the Apple II at first, and then in 1984, wrote the first King's Quest game specifically for IBM to show off the capabilities of the then new PCjr computer (the first 'home' version of the PC). That game was the first 3D animated adventure.

Sierra has done rather better since then than the IBM PCjr machine. The company has grown and expanded consistently, and while Roberta continues to write many of the games, such as the other King's Quest titles, and games for younger children, such as Mixed Up Mother Goose, the company now has a number of associate game designers, such as Al Lowe, with the Leisure Suit Larry series, and the team from our sister company Dynamix.

Sierra's UK office was set up in 1990; previously we had used Activision to sell our products in Europe. This office handles all the distribution for Sierra and Dynamix throughout Europe and also arranges the native language versions for French, German and Spanish markets.

Although Sierra's animated interactive adventures are published on a number of computers, the PC forms by far the bulk of our business now, and we're also heavily involved in producing PC CD-ROM versions of our games."

Aces of the Pacific



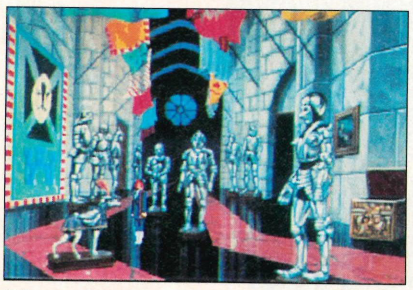
LP: With Aces, we're really building on Red Baron, only this program is set in World War II. The texture-mapping that we're using for the graphics results in these very atmospheric pictures.

Laura Bow 2: Dagger of Amon Ra



LP: This is the sequel to Colonel's Bequest. It's an atmospheric whodunnit, where you must investigate the theft of the dagger of Amon Ra, a priceless Egyptian artefact.

The action takes place in both the Egyptian section of a natural history museum, and also in 1920s New York. We've used actors, who were video-taped, the pictures hand-painted and then transferred to screen for the graphic effects.



Videotaped footage of actors was used for the characters in Laura Bow 2

King's Quest V

LP: On the disk versions of our games, you can see text on-screen where one character is talking to another. For the CD-ROM versions, we can simply take the text off and use the voice-over.

With games like King's Quest V, we've actually had to send some programs back to Sierra in the US, because the American accents on the CD-ROM voice-overs have been so outrageous. They've been very good about getting the voices changed, so that they are appropriate for an English audience.

SN: I'm impressed with this because there's hardly any waiting at all to access the CD-ROM drive during the game. OK, so we're playing it on a 25MHz 386, but the in-game sequences still load in very quickly.

Magician

LP: Dynamix has just signed up its first licence, for a game which will be its first role-playing style adventure. The licence is the novel Magician by Raymond E Feist, which is a huge blockbusting fantasy adventure and has sold extremely well in the US.

All we know about the game so far is that it will be very visual in nature and should be out at the end of the year. In fact, it may not end up being called Magician when it's released!

Customer service

LP: In the UK, Sierra is currently setting up a button-activated system for its telephone helplines. This means that when you phone up, you'll be asked to key in numbers on your telephone according to what sort of help you want: catalogues, general information or hints and tips.

We've also revamped the Sierra newsletter, so that it's now a proper 80 page glossy magazine and that will be coming out every quarter. That will be available to registered users who fill in the warranty card.

PC Review would like to thank Lydia Phillips and everyone at Sierra who went to so much trouble to make our On the Spot visit enjoyable and informative for all of us who took part.

If you would like to take part in a PC Review On the Spot visit, see page 143 for an entry form and further details.

Darklands™

The Journey of a Lifetime



In Medieval Germany, reality is more horrifying than fantasy

Deep in the twilight of the Black Forest, you and your companions crouch before the robber-knight's tower. Hans the alchemist, places a mysterious potion by the heavy oak door. Ebhard the monk implores Saint Dunstan to bless your weapons and armour. Gretchen and you unsheathe your broadswords ready to jump into the fray.

With a thundering crash, the door explodes into fragments. You and your companions charge inside swinging swords and maces from side to side.

Gerhard the Red Wolf, the infamous robber knight waits for you surrounded by his evil henchmen. They are ready with weapons drawn. Suddenly, Hans tosses a choking potion into their faces, they reel from the effect and in that precious moment you race into them. The lonely tower, set deep within the vast Black Forest, echoes with the sound of clashing steel.

Darklands. The first realistic fantasy role-playing game. By leading a band of adventurers across the sinister lands of 15th century Germany you'll encounter the real Middle Ages steeped in fear, myth and legend. Travel hundreds of miles, visit over ninety cities and watch savage battles unfold before your eyes!

Your quest, or series of quests, may take you through raucous city streets, down deep dank mine shafts or into witches' covens in search of fame and fortune. So prepare yourself for the wonders and mysteries of Darklands!

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Darklands is available for IBM PC compatibles.
Look for the box in all good software stores or telephone now for your free MicroProse Catalogue. 0666 504 326.



COVER STORY

PC g the p

Amstrad launched the first PC packaged specifically for games-playing late last year. This year everyone, it seems, wants to get in on the bundling act. Christina Erskine looks at a selection of all-in-one PC systems and the advantages and disadvantages of buying ready-packaged PCs

ames packs: rice is right?

First there was the Amstrad 5286 Games Pack, now PC manufacturers are falling over themselves to configure their machines for the games-player. Component prices are plummeting, competition in the business market is fierce (in recessionary times, data processing managers are inclined to repair rather than replace) and the hardware companies need to find a way of making their wares attractive to a new audience.

Enter the 'games packs'. From the buyer's point of view, these do away with all the notorious complications of PCs. Where with video game consoles, you buy the unit, plug in and go, the PC is attended by all sorts of ramifications, such as which processor to choose, what hard disk capacity, how much system memory, what kind of graphics? Your notional budget vanishes as dealers, magazines and colleagues all talk up the necessity of buying extra this and that, until it sounds as though you'll need a degree in engineering just to put the thing together. In theory, the games pack should give you everything you need at once, ready configured, so that you return to the plug in and go philosophy.

Amstrad the pioneer

In practice, of course, it's already more complex than that. Of the packages emerging from PC manufacturers, there are already two distinct categories: bundles that have been 'built down' to a price point that the company believes the buyer will find irresistible, and bundles which have been 'built up' to a specification. The pioneer Amstrad Games Pack, for example, is built down to a price, with its 286 processor, 40Mb hard disk, and sound speakers virtually invisible to the naked eye. We reviewed the Amstrad pack in Issue 1, with the conclusion that it represented excellent value for money, with the soundboard, speakers and joystick included, and high quality games bundled (Prince of Persia, Links, F15 Strike Eagle), but that a question mark had to remain over the decision to base it on a PC with a 286 processor. But since it was the first in this market, you'll find many PC bundlers comparing their offerings with Amstrad's, either on the grounds that theirs is cheaper for similar extras, or better specified for the games-playing specialist.

The PC games pack is essentially a marketing ploy. The base PC which hosts all these extras and add-ons isn't specially built to play games — the extra system memory or integral soundboard, for example, are both items you can easily buy and fit yourself. If there's a price advantage in the games pack, it's because the manufacturer has bought the peripherals in bulk. If you buy just the PC, you have the advantage of being able to upgrade as and when your wish list demands it, so that you spread the cost over months — or even years — and also of being able to buy precisely the extras that you want, rather than the items in the pack.

However, it's also important to stress that just because you buy a PC games package, it doesn't mean that games-playing is its sole function. All the packages currently on offer are based on genuinely functional PCs, which will run PC software such as word processors, databases, etc, just as well as games titles. Those with long memories who can remember the very first home-orientated PC, Amstrad's ill-fated Sinclair 200 (which has nothing to do with Amstrad's current PC range) can rest assured that the days when a PC used for games was considered to be a crippled and bastardised beast are long gone.



Amstrad's 5286 Games Pack: the box that pioneered the all-in-one leisure PC boom.

What can you expect from these all-in-one boxes? There is a remarkable consensus over what the best-dressed entertainment PC is wearing these days. A VGA graphics card and VGA colour monitor is a must — and a number of manufacturers are keeping an eye on the future by offering Super VGA. System memory over the 640K minimum is also considered essential, and a hard disk is mandatory, although in my view, every single one of the packages we've looked at in this article is seriously skimpy on hard disk capacity. Do manufacturers realise that on the standard 40Mb offered here, you can just about squeeze two and a half Origin games before your hard disk is full? And if they think we enjoy clearing out a hard disk every month, do they also realise that several games (Origin's again, but also Star Trek and current Lucasfilm titles) will each take up an hour to reinstall?

Another item rightly considered essential is a soundboard. Nothing takes PC games-playing on to a different atmospheric plane altogether than the addition of a soundboard, and the fact that in the past you have always had to buy one separately and go through the process of fitting it yourself (after all, business PCs may come with VGA colour monitors and mice, but introductory music and stirring aural effects aren't considered necessary for WordPerfect or dBase IV) often proves daunting. The ready-fitted soundboard is perhaps the single most attractive item in the games pack, and, for exactly the same reasons, the inclusion of a joystick comes a close second. These two items, more than anything else, distinguish the PC entertainment bundles from any other PC package you might buy.

Counting the cost

As mentioned above, PC games packs tend to be built down to a price. The manufacturers hit on a price point which they think the largest number of potential buyers will be prepared and able to pay, and the quality of the add-ons and power of the base system will be dependent on it.



Amstrad thought £899 sounded right for its game pack (and has since reduced the price to £680 – that's £799 inclusive of VAT), and this is the key reason why it comes with a 286 processor PC.

With regard to this, it is unfortunate that the PC is currently the machine on which programmers are letting their creative and technological juices flow at a frightening rate. Give them the opportunity to program on fast 32-bit 386 machines, several megabytes of system memory, with high resolution 256-colour capabilities and almost infinite storage space for data, and they'll take it. Already on a 286 machine, you cannot play Ultima Underworld, you won't be able to play Strike Commander, and it can take you longer to configure your set-up properly for Wing Commander than it does to play the game in its entirety. OK, so all these programs come from the same company, and the number of games requiring 386-based PCs only represents a trickle as yet, but in a year's time, there will be more of them, and you do want your PC to last longer than that, don't you?

Realistically, the 286 is going to remain a sensible minimum level even for 'power' games for a good while yet, but it is always wise to buy with future proofing in mind. Hard disks can be traded up relatively easily, graphics standards improved with a new card and monitor ... processors aren't quite so easy (as Peter Gloster explained in our First Steps article in Issue 7).

Much is said about tumbling PC prices, and advertisements in the business press frequently scream that 386-based PCs can be bought for under £1,000, 486s for a shade over, so the prices on offer here for PC games packs may look high in comparison. The games enthusiast would do well to treat these very low prices with some caution. Check the hard disk capacity, the amount of system memory and how much the 2Mb equivalent machine costs, check also that this comes with a VGA colour monitor rather than monochrome (business users don't need colour in the way that games players do). You may well find that the price rises alarmingly once you've taken these into account and you haven't considered the soundboard, joystick or speakers yet. The games pack idea doesn't necessarily deliver the cheapest way of buying a PC, but on the whole they do represent excellent value for money.

We've picked the following three packages as representative of the type of 'leisure pack' available on the market. They're not identical either in content or their 'target buyer', but each has its own particular emphasis, so we haven't made too many direct comparisons or attempted to rate them, but the commentaries below should help you decide whether the all-in-one PC entertainment system is suitable for you.

Goldstar Sound Blaster system



Korean-built Goldstar PCs are generally pretty unexciting beasts, a bit plasticky, but nothing to complain too loudly about. The Sound Blaster System comes unsurprisingly, with the soundboard ready fitted, with 1Mb RAM, but Goldstar reckons a 286 processor will do, and the hard disk is back to the good old 40Mb minimum. The picture on the supplied Goldstar monitor is noticeably not as crisp as, for instance, the monitors bundled with the Orion and TechnoLOG systems (see below). It is also supplied with MS-DOS 4.01, possibly the most unwieldy version Goldstar could have chosen, and one which leaves the least memory free for running games (since one of the games included in the bundle is the original Wing Commander, requiring 550000 bytes to run, this could become important quite quickly).

It's a compact, slimline model, which will certainly look neat on your desktop, but this also means that there's no room inside for a second hard drive or floppy disk. With the Sound Blaster in place, you have only two 16-bit expansion slots free, so you'd better not go mad with the internal modems, hard cards, CD-ROM drives, etc.

The tall Zy-fi speakers are rapidly becoming standard fare for bundles of this type. The software is a curious mixed bag. The Sound Blaster's complement of Intelligent Organ, Jukebox, etc, is there, and under the all-encompassing title of 'knowledge software' (appealing to the Concerned Parents here), we get Life and Death II: the Brain, Software Toolworks' interesting attempt to make an entertainment out of computerised brain surgery, Mavis Beacon Teaches Typing, and two shareware titles: Hooray for Henrietta and Henrietta's Book of Spells, which are 'early learning' spelling and numeracy programs. Completing the package is the Bitmaps' Gods, and Wing Commander.

The base machine in this bundle, the GT212, is available on its own for £399, and with a VGA colour monitor for £599 (plus VAT), so you are paying £200-plus for the Sound Blaster, not the new Sound Blaster Pro), speakers and software. If you take on board the fact that Commodore's Player Pack will be coming out at £699 ex VAT for the 286 version, and Amstrad now undercuts it considerably, the Goldstar looks less of a bargain. Which is curious, because for another £200, you could buy Goldstar's Multimedia System (see PC Review, Issue 5), with the same sound facilities, a CD-ROM drive and CD-ROM software — this last pack represents much better value for money in my book.

Conclusion: concentrating on the sound facilities, the Goldstar Sound System also offers the most varied range of 'free' software. Again, it has the big drawback of both Amstrad and Commodore's packs: it's based around a 286 processor. Given the contents of the Goldstar package, the Commodore looks better value for money (and so do some of Goldstar's other bundles).

GamePro-DX Leisure PC system

This is a good old chunky desktop, with little quarter given to slim 1990s styling. This is the most highly specified of the four PCs here (apart from the CD-ROM extras in TechnoLOG's offering) and at just over £1,000, is good value for money. Orion will also sell you a similar set of extras based around a 386SX PC, or, indeed, a 486SX. Overall, the build quality of the PC is good: solid casing, quality keyboard and a nice chunky mouse. However, I was a little concerned when fitting the soundboard to find the main circuit board bending and bowing alarmingly as the board was eased in.

The GamePro-DX comes with DR-DOS 6.0 rather than MS-DOS. If Digital Research's rival operating system to Microsoft's has never claimed as much of the limelight, rest assured that this is not because it is an inferior product. In general, there are three areas where DR-DOS 6.0 offers features distinct from MS-DOS 5.0: it contains memory management facilities which should enable you to free up more memory than with the same system set up under DOS 5.0 (which is the least memory-hungry of the MS-DOS versions); it gives you more thorough, more flexible and easier system configuration, both when you initially install the operating system, and also with the use of the

The Gamepro-DX and some of its optional extras: joystick, Flightstick and speakers.



The Goldstar Sound Blaster System: the slim, compact styling leaves little room for expansion.

	Commodore Player Pack	Goldstar Sound System	Orion GamePro DX	TechnoLOG DS
Hardware included				
(base system unless otherwise specified)				
Processor	286	286	386	386SX
Speed	16MHz	12MHz	40MHz	25MHz
RAM	1Mb	1Mb	1Mb	2Mb
Hard disk	40Mb	40Mb	45Mb	42Mb
Floppy disk	1 x 3.5"	1 x 3.5"	1 x 3.5"	1 x 3.5"
Exp slots free	1	2	5	4
Graphics	VGA	VGA	SVGA 256K	SVGA 1Mb
Monitor	14" VGA	14" VGA	14" SVGA	14" SVGA
Soundboard	Ad Lib	Sound Blaster	Megasound	Sound Blaster Pro
Speakers	yes	yes	yes	yes
Joystick	no		Quickshot Warrior 5	no
Mouse	PS/2/serial		serial	Logitech serial
CD-ROM drive	no	no	no	yes
Software included				
Operating sys	MS-DOS 5.0	MS-DOS 4.01	DR DOS 6.0	MS-DOS 5.0
Utilities	Commodore Key Office Manager	Sound Blaster software Mavis Beacon Teaches Typing		Windows plus Multimedia extensions TDS-Menu
Games	Wing Cmmdr Castle Master Hard Drivin 2 Robot Monsters MiG 29 Pit Fighter Super Space Invaders	Wing Cmmdr Gods Hooray for Henrietta Book of Spells Life and Death 2: The Brain	optional extra (MicroProse ready installed at £25 each)	
Price (for set-up listed here, inclusive of VAT)	£821.33	£984.66	£1,197.33	£1,432.33

command SET in your Config.sys, which gives you different options on start-up; it also includes password protection for both directories and files.

DR-DOS 6.0 won't give you any compatibility problems with games, but the syntax and most of the commands are identical to MS-DOS — it is not an easier-to-use alternative. Most people who simply want the operating system to launch their programs as simply and smoothly as possible will notice little difference between having DR-DOS 6.0 or MS-DOS 5.0. But if you're always having problems with games which require large amounts of free memory to run, or would like to streamline the configuration of your machine to best effect, then DR-DOS 6.0 may well be of interest.

With a 40MHz 386 processor, the GamePro should zip along and for the most part, it does, but the floppy disk drive is one of the slowest to access that I have ever come across in my life — several times I thought the computer must have crashed because it was taking so long just to produce a list of files.

While it has that fast 386 processor, Orion offers a basic 45Mbhard disk– that'll soon fill up.

Where the GamePro does score is in Orion's willingness to tailor the system for your individual preferences. Not only will it format your hard disk and install the operating system (not too much to ask, really), but for £25 a time, you can buy any



MicroProse game from its stock and have those set up and configured properly for you. If you have a particular need for a particular hardware item — say a 5.25" disk rather than a 3.5" because all your software is on 5.25", Orion will accommodate this. This is your chance to request at least an extra 20Mb on the hard disk. Other options include Gravis joysticks and the Gravis Flightstick, Sound Blaster or Sound Blaster Pro, RAM upgrades (4Mb will cost you an extra £90), and a 1Mb SVGA card. This flexibility takes away some of the disadvantages of buying a games bundle: that you have to accept the package 'as is'. Choosing extras and alternatives will, however, affect the base price quoted in the table over the page.

If the machine packs up, you can return it to the company within the 12 month warranty period free of charge. An on-site warranty (where an engineer will come out to fix the machine) costs an extra £50. It is highly desirable to take out an on-site warranty if you can afford it. Not only do you free yourself of the hassle of having to pack the machine up in its original box to return it , but it means you're not machine-less for an unnecessary length of time.

Conclusion: this pack, as it stands, is a bit sparse on the software side, but all the right hardware is there . The basic set-up, although over £1,000, represents good value for money — but if you want a package tailored to your own specifications, keep an eye on the price. Also, don't expect too much cossetting from the documentation; Orion says it is overhauling and beefing up the manuals — those which currently come with the system are somewhat minimalistic.

TechnoLOG DSM 325sx



TechnoLOG's mini-Tower system is built like a tank inside – note the built-in CD-ROM drive.

This fast SX package has been designed to conform to the MPC multimedia standard (see PC Review Issue 5, but basically a 386SX, 2Mb memory, CD-ROM drive, soundboard, VGA graphics, 30Mb or bigger hard disk, MIDI port, and Windows 3.0 with multimedia extensions). The soundboard in question here is the brand new Sound Blaster Pro (with MIDI port), rather than the long established Sound Blaster 2. The PC itself has a sturdy mini-Tower casing, and steel supports like girders inside (definitely at the Volvo end of the market). Also, the manufacturer has shown a bit of forethought and taped or tied together any loose bits of cabling inside, so that it is reasonably easy to get the lid back on once you have taken it off.

That Sound Blaster Pro is ready fitted and in addition to the game port on that card, there is a second game port, two parallel ports and a serial port. Further scope for add-ons comes with the four free expansion slots, although the slot above the soundboard is pretty cramped and a horror to fit anything more than a tiny 8-bit card into, so some swapping around of cards might be required.

This is a machine which has been built up to a spec, with Windows, the soundboard, SVGA monitor, etc. Although badged as a TechnoLOG system, the components have been sourced from all over the place. The integral CD-ROM drive is a Creative Technology model (from the home of the Sound Blaster), while the monitor is manufactured by Panasonic (and comes with a two year, on-site warranty, what's more), the keyboard from Cherry, and the mouse from Logitech — all well established brand names. The monitor gives a crisp, clear picture, with easily accessed brightness, contrast and horizontal/vertical hold switches behind a flip-down cover on the front of the unit. The Logitech mouse is smoothly designed, with very subtle bevelling on the buttons for comfort.

Apart from the relatively insignificant fact that none of the colours quite match (all varying shades of PC ivory), the only disappointment is the keyboard. Keyboards are (notoriously) matters of personal taste, but I preferred the keyboards suppliedwith the other packs – this one is decidedly spongy.

The hard disk is a 'mere' 40Mb, but of course, this time, you can argue that with the CD-ROM drive soaking up the big games, that 40Mb will go a lot further.

Conclusion: this is, not too surprisingly, the most expensive system of the four, but the build quality and performance is excellent. Documentation on the multimedia side of the PC is good and extensive; documentation on the PC itself pretty makeshift. A good, long-lasting PC.

Commodore Player Pack

Commodore's 16MHz 286-based PC has been dusted down, and bedecked with extras to form the Player Pack. Ask your dealer nicely and you should be able to buy the extras with a Commodore 386SX or 386DX instead, but it is the 286 machine and the £699 (ex VAT) price point that Commodore is concentrating on.

Commodore is of course already enormously successful in the computer games market with the Amiga, and the Amiga has always overshadowed Commodore PC business somewhat. Most Commodore PCs I've seen have been dull to look at, a bit slow and not exactly bursting any technological barriers. The 286-16, while a fast 286-based PC, is still a 286-based PC, and we've said often enough in PC Review that if you're buying now, you want to stretch your money to at least a 386SX.

While the Player Pack itself wasn't ready in time to be formally included in this article, the extras are standard fare and should be ready configured for you when you start up.

Of these, the Ad Lib soundboard is the standard Music Synthesizer Card rather than the new Gold 1000, and the Commodore Key front end is a nice idea designed to help anyone feeling nervous of the DOS prompt.

The bundled games are a touch long in the tooth, led by Wing Commander. The others are the titles which make up Domark's PC Collection, a motley assortment, ranging from pretty enjoyable (Hard Drivin' II, Pit Fighter), OK but dated (Castle Master, Mig 29), very dated (Super Space Invaders – even though it's the newest title here, Trivial Pursuit) and not much good when it was released on its own, anyway (Escape from the Planet of the Robot Monsters). A nice extra, though, is that Commodore has made concessions to the fact you may not be playing games all the time, and included The Software Toolworks' Office Manager, which comprises an integrated word processor, spreadsheet.

Slightly oddly, there is no joystick included in the Player Pack. This omission becomes less odd when you realise that with the Ad Lib soundboard in place, there is only one free expansion slot in the machine — add a game card and that's your lot as far as expansion goes. This may not worry you too much to start with, but it does seriously limit your options if you want to expand the machine in the future.

The inclusion of 12 months on-site warranty in the Player Pack makes it excellent value for money, especially if you have a limited budget — although since Amstrad has cannily dropped the price of its pack, there still isn't a price advantage here. But I would recommend trying for the 386SX version at £997.58 (inclusive of VAT) if you can, if only for the increased processing power.

Conclusion: it's probably highly unfair to draw conclusions without actually seeing the shiny box, and the finished pack, but I can confidentally tell you that the Player Pack is one of those that has been built down to a price. The sub-£1,000 system has a 286-based machine at its heart, the bundled games are getting a bit long in the tooth, and over half your hard disk will be taken up by one of them. Lack of expansion facilities makes this a surprisingly limited machine, but you certainly can't argue with the price.

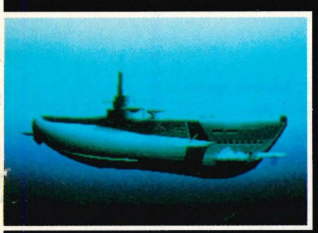
Take a test flight on a GamePRO from ORION ...



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"...for many recent releases a 386 PC is a minimum requirement." *PC Format '92*

It is a simple fact of computing that the more information you try to process the slower everything becomes. Not much fun when the subject is Gunship 2000 in glorious 256 colour graphics. Try playing the latest generation simulations on a 286 for example. The graphics are very 'jerky' and the response is fustratingly slow. The effect is unconvincing and not worthy of simulator status.

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GamePRO/MASTER SPECIFICATION

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14" SVGA Monitor, 1024x768, 0.28mm d.p.
256Kb SVGA Display Card
Slimline / Desktop / Mini-Tower Case & 102-Key Keyboard
Megasound 100% Ad-Lib comp. Soundcard
5Watt (2.5+2.5W) Stereo Speakers with Internal Amplifier
Stereo (in-ear) headphones
Analogue Joystick
3-button Microsoft compatible Mouse
Digital Research DOS v.6
LIFETIME Warranty

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ADDING EXTRA MEMORY

In this series of articles about the PC, hardware and software, we'll be taking you, step by step, through the ins and outs of using, controlling and upgrading your machine.
You'll find out what the PC's components are, how to use them, and how to use PC software to get the best out of your computer.

Finding your PC is falling short in the memory stakes is extremely frustrating but, as always, help is at hand from Peter Gloster. Memories are made of this ...

There's nothing more annoying than getting a message telling you there's not enough memory to run a program. At times like these many users' thoughts turn to adding more RAM to their machines. However, this seemingly simple course of action is fraught with difficulty, and you may find you can run your games quite satisfactorily by simply tidying up a few other files.

The memory your PC uses to run programs and load the operating system is more correctly called Random Access Memory (RAM). The amount your PC has is measured in kilobytes (K) or megabytes (Mb). The original IBM PC was supplied with a meagre 64K of RAM, which could be upgraded to 128K, but at the time this was more than enough to load DOS and a copy of WordStar. Programmers kept software simple, because most users just wanted basic word processing and graphics.

Gradually there came a move to 256K of RAM as standard (that's what my first PC had), and then to 640K; this was partly because programs were becoming bigger and more complicated and required more memory. At 640K, however, things came to a stop, because this was the maximum amount of memory which was available for DOS out of the total 1Mb the 8086 chip (see First Steps, Issue 7) could address – we'll see what happens to the other 384K later. This 640K memory area is called conventional memory.

However, with the advent of 286 and 386 chips, breaking this 640K DOS barrier became feasible, because a 286 chip could address (or use) up to 16Mb of memory, and the 386 a whopping four gigabytes (4Gb). Not only could the new microprocessors address more memory, but users were demanding software that added lots of functions and features, and graphics were becoming more sophisticated. All this created an impetus for someone to overcome the 640K limit.

With the advent of 286 and 386 chips, breaking the 640K DOS barrier became feasible

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 best-selling spreadsheet program (Lotus 1-2-3).

This 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 then make use of the extra RAM.

To understand this, we need to look at 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

Clean up your Autoexec.bat

A word of advice: don't overburden your PC with unnecessary memory-consuming clutter. Many PC users have Autoexec.bat and Config.sys files that are over long and confusing, sometimes with contradictory items. There's an easy rule: keep it simple. Every device driver uses some of your conventional memory, as does every TSR. Are all those commands useful? If in doubt, cut it out.

Here are my ideal suggestions that I implement whenever possible (we're assuming that you don't have Windows loaded).

CONFIG.SYS

```
files=20
buffers=20
country=044,,C:\DOS\COUNTRY.SYS
keyb uk,,C:\DOS\KEYBOARD.SYS
```

AUTOEXEC.BAT

```
@echo off
verify on
prompt $p$g
 path=C:\;C:\DOS [plus other relevant
directories]
 C:\DOS\mouse
 cls
```

If your files are any longer than this, you'd better have a good reason why! Reducing the number of files and buffers in Config.sys is another way of freeing up memory; the values in our example should work with most software, unless your games documentation specifies otherwise.

Your Config.sys will need to include a memory manager if you want expanded memory on a 386 PC, for example:

```
device=C:\QEMM386\QEMM.SYS
```

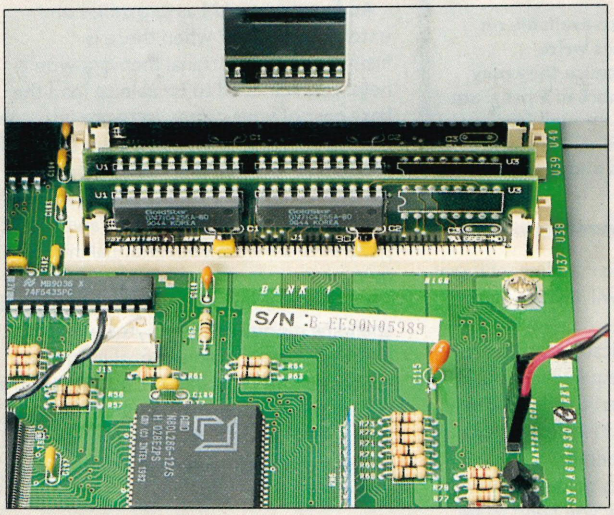
or

```
device=C:\DOS\EMM386.EXE
```

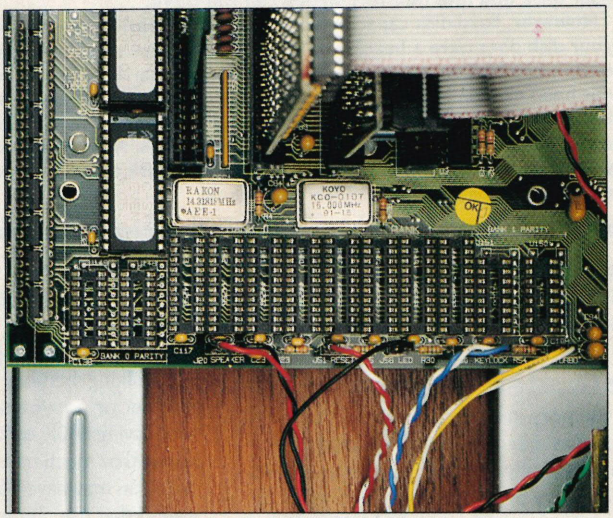
Many users will find that a careful cleansing of these two files provides them with more than enough memory for games – far cheaper and easier than a memory upgrade!

INSTALLING MEMORY

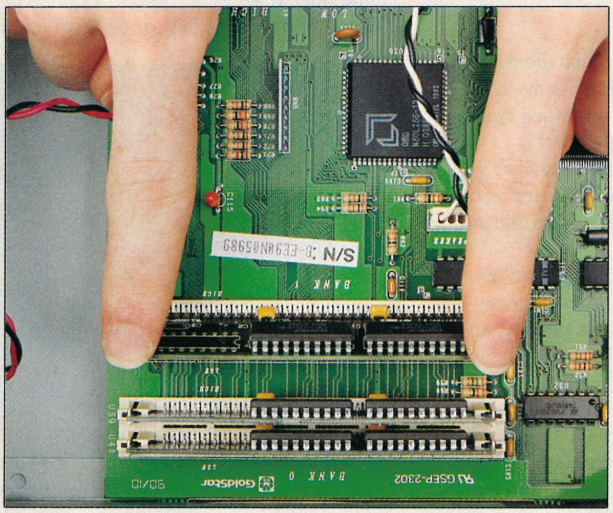
The most important point: earth yourself before you touch your memory! Static electricity does terrible things to chips. Earth yourself by touching some bare metal surface that's earthed, such as a copper central heating pipe.



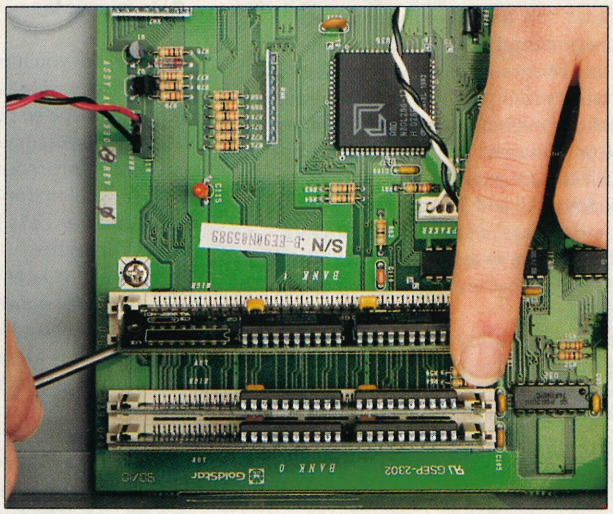
1. The first step is to track down what sort of memory your PC uses, whether it's older, socketed chips or newer SIMMs. The picture above shows a bank of SIMMs.



2. If it's socketed chips (as in the above picture), you need to insert additional ones into the sockets carefully (these may also be on a plug-in processor upgrade board).



3. SIMMs are easy to install, but make sure you get them the right way round. *Never* force a SIMM (or a chip) into place: you may bend the pins or break the plastic tabs that hold them in place.



4. SIMMs usually require that you angle the SIMM, place the base connector area in the slot first, then clip the edges into place. If the plastic clips are stiff, hold them away from the edge of the SIMMs with a small screwdriver or equivalent tool.

the high memory area, so software would think more RAM was available for it

It managed 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.

Later, AST, which was at that time heavily involved in selling memory boards, and two other companies came along and produced a new standard, Enhanced EMS, which allowed more than 64K of memory to be accessed at one time by allowing expanded memory to be mapped into (or referred to in) the conventional memory area. This standard eventually formed the basis for the current EMS standard, LIM/EMS 4.0.

While this was a convenient way to solve 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

FIRST STEPS WITH THE PC

STORAGE PROBLEMS

Don't confuse the amount of RAM your PC has with the question of storage. Hard disk storage is sometimes referred to as memory, but it's best not to think of it in this way: hard disk space refers to how much storage space you have; think of it like the capacity of the filing cabinets you've got in your office.

Having a 40Mb hard disk doesn't mean you've got 40Mb of memory for your programs, it means you can install up to 40Mb of software on to your hard disk. The amount of RAM you have is important when you come to load the programs on your hard disk into memory so you can run them.

However, hard disk capacity and, more importantly, the free space available on your disk does have a bearing on the way programs run. Many games write temporary files on your hard disk while they're running (usually because they may not need certain information at present and need to load another part of a program instead, or are merely keeping records), so it's important you have enough free space on your hard disk for the software to do this. Most games software will warn you in the instructions of how much spare hard disk space you need and remember that the figures given are usually minimums.

addresses in the 640K conventional memory area remain the only ones that are recognised by all programs.

Extended memory

All memory in a PC above the 1Mb limit is known as extended memory. Expanded memory really isn't any more than extended memory being used with EMS memory management software, which turns the extended memory into expanded memory. In the past all you could use this extended memory directly for was RAM disks.

Extended memory is available on PCs which 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 conventions, and likewise requires extended memory management software.

Now, however, there are applications which can use extended memory directly. Windows 3.0 and 3.1 can, and so can IBM's recently released new version of OS/2, OS/2 2.0. The extended memory specification these programs adhere to is called XMS 2.0.

It's worth bearing in mind 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.

Pushing the limits

This is all getting pretty complicated, so we'll leave it at that for now. Many programs aren't EMS or XMS-compatible, however. Most software adheres to the principle of the lowest common denominator — it'll run on the lowest-powered PC, with the smallest amount of memory, and the most basic graphics. Games software is no exception, although this is now changing.

A game should run within the basic 640K limit, and then extra features, for example, enhanced graphics or sound, can be supported if you've got extra memory. Read the instructions with your games software carefully to see if adding memory beyond the 640K limit will lead to any improvements.

There are two complicating factors in determining memory requirements, and whether or not you need to add memory:

(i) Having 640K of RAM isn't the same as having that much free memory;

(ii) You may have TSRs or device drivers loaded that use memory you need to be available for your 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 sound board) and any TSRs (terminate and stay resident programs).

In general, the later your version of DOS, the more conventional memory is used by the system files, leaving less and less of the 640K available for running applications in. Many games require more than 500K of free RAM, so you will often be pushing things. The situation where you get too much software chasing too little available memory is known as 'RAM cram.'

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).

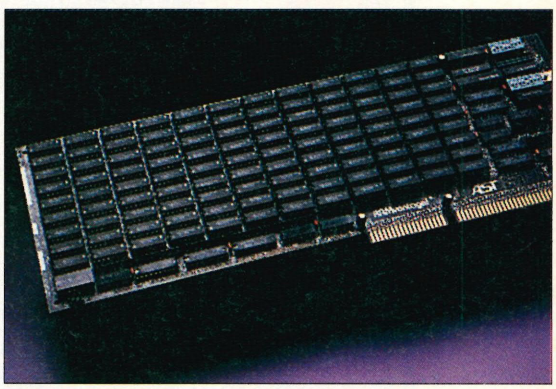
Adding extra RAM as expanded or extended memory when there is insufficient conventional memory won't help: you still need to be able to load the base part of your games software into conventional memory. If you're using DOS 5.0, in addition to removing TSRs and device drivers to free up conventional 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. You'll find some recommendations on pruning Autoexec.bat and Config.sys files to free up conventional memory in the box on page 29.

Adding memory

If you've decided your games would benefit from more memory, there are two ways to add RAM: a memory board or plugging in memory chips.

If you've only got 256K or 512K of RAM,



Memory boards are often the answer for 8086 and 80286-based machines, although they have lost out now that motherboards often have more space for adding RAM.

GLOSSARY

Autoexec.bat: A batch file DOS looks for when you boot up your PC. It contains a list of DOS commands, often including those to load TSRs.

Config.sys: A file looked at when you boot up that determines the way in which DOS is configured on your PC. It's this file that contains commands to load device drivers.

Conventional memory: This is the initial 640K area of memory used by DOS to run programs.

Device driver: A piece of software that communicates with a device, for example, a video adaptor or a memory card.

High memory: The 384K area of memory at the end of the conventional 640K memory area used by DOS for loading programs. This area is reserved for such uses as loading device drivers and system video. It's also called the upper memory area.

FIRST STEPS WITH THE PC

REMEMBERING WHERE YOUR MEMORY HAS GONE

The 384K area of high memory that DOS reserves for special uses gets asked to do an awful lot. In particular, it gets crammed with all sorts of addresses telling it where to find, for example, your games port, your VGA graphics card, or your soundboard.

Not surprisingly it can get pretty chaotic: if you end up with two devices trying to use the same memory address space you're heading for trouble. For many PC users, this grief comes in the way of network, scanner or video cards that conflict with something else loaded into memory.

Therefore, it's sometimes useful to see how your memory is allocated: you can type the MEM /C command if you're using DOS 5.0, or run Manifest, which is supplied with QEMM-386 and QRAM. If you've got Windows, type MSD in the Windows directory at the DOS prompt. All the program will give you an accurate, albeit rather technical, run-down of exactly what's using memory where. However, DOS, Manifest and Windows all come with helpful documentation that contains sensible advice on making the best use of your PC's memory.

If you've got a 386 PC and want to install extra RAM to configure as EMS, you'll probably need a 386 memory manager. One of the most popular, assuming that you're not using EMM386.EXE, which is supplied with DOS, is QEMM-386 from Quarterdeck. Another well-known product is 386MAX from Qualitas. With a 286, your best bet is probably Quarterdeck's QRAM.

Memory boards have rather lost out as 386 chips took over and motherboards started coming with more space for adding RAM

there may be empty RAM chip sockets on your motherboard. Filling these to increase memory to the 640K limit is often a matter of plugging in new, matching RAM chips. You'll need to check your PC's documentation carefully to see if you need to change any jumper switches on the motherboard and/or run a setup program. If the documentation is missing, contact a friendly dealer, the chip supplier or the original manufacturer.

Memory boards have rather lost out as 386 chips took over and motherboards started coming with more space for adding RAM, but to implement expanded memory on 8086 and 286-based machines, they're often the only answer. The extra memory on these boards can usually be configured to 'backfill' conventional memory, that is, topping up conventional memory on PCs with only 256K or 512K of RAM to 640K; the remainder of RAM on the board is, of course, used as extended/expanded memory.

I'd be pretty careful about who you get one of these from. There have been some pretty difficult to configure specimens around (including a ghastly extended memory board sitting in one of my PCs). Two of the best products are the Intel AboveBoard and AST Rampage boards. A memory board should be supplied with memory management software. Boards typically start with 512K of RAM, which you can add to by fixing on modular daughter boards with more RAM chips on.

Memory upgrade boards are a relatively expensive way of increasing the RAM on your PC. An Intel AboveBoard Plus with 1Mb of RAM is £80, and £390 with 2Mb; the AboveBoard Plus 8 with 2Mb is £390, and £590 with the maximum 8Mb. Intel has recently launched a new range of Matched Memory Classic boards, which upgrade using standard SIMMs. AST's Rampage PC with 1Mb of RAM is £280, and the RampagePlus 286 with 2Mb is £400. Both companies also supply versions of their boards for PCs with MCA bus slots.

Newer 386 and 486 PCs use SIMMs, Single In-line Memory Modules, to package RAM chips. These consist of a row of memory chips soldered to a small board that clips into a socket on your PC's motherboard. (Some PCs use similar modules called SIPs, which have pins along the bottom.) There's usually an even number of these slots, such as four or eight. If your PC has 1Mb of RAM, there's more than likely four 256K SIMMs in it; if it's 4Mb, probably four 1Mb SIMMs. You usually upgrade in obvious stages from 1Mb to 4Mb, or from 4Mb to 8Mb. Prices for SIMMs compare favourably with those of memory boards, you can reckon on roughly £40 per megabyte, although that will vary according to your PC.

Motherboard designs vary widely, so a word of warning: although most SIMM sockets are a standard size, some may not be. It's also important that you get matching memory: the speed of memory chips is rated in nanoseconds (ns). Older PCs use chips rated at 120ns, more recent ones 100ns or 80ns. Check with your potential memory supplier that you're getting the right SIMMs for your PC.

After inserting extra RAM in newer PCs, you'll need to enter a setup program and change the settings for the amount of RAM installed. There's usually a message telling you how to enter setup when you boot up your PC – Ctrl-Alt-Esc or Ctrl-Alt-S, for example.

More than likely your PC will issue an error message when you start it up after you've added memory, because it's detected a discrepancy; most machines will ask you to enter setup and change the settings. Some PCs can do this automatically, for some you'll need to tell them.

Assuming everything is correct, it only remains to adjust your Autoexec.bat and Config.sys files to include any memory management software. You should now find that your PC registers more memory when it does the RAM check at start up, and that running the command CHKDSK at the DOS prompt provides a figure that tallies with the amount you've installed.

Kilobyte: Usually abbreviated to K. It's equal to 1,024 bytes.

Megabyte: Usually abbreviated to Mb. It's equal to 1,024K or 1,048,576 bytes.

Memory address: A number indicating a location for the processor to look for a piece of memory, just like the number of a house in a street.

Shadow RAM: You may find a reference to enabling and disabling shadow RAM in the setup routine. The system and video BIOS are stored in Read-Only Memory (ROM), the contents of which, unlike RAM, can't be changed. However, ROM, which is 8-bit, is slow, particularly on 386 machines, and in the setup you can often choose to map these routines into memory — this process is called shadowing and speeds up performance. You can usually choose to allocate this special memory to shadow system and video ROM (enable shadowing) or to allocate it for use as extended/expanded memory (disable shadowing).

TSR: Stands for terminate and stay resident. A TSR is a program that initialises itself, hooks up to any system resources it needs, reserves some memory for itself and then returns you to the DOS prompt.

CONTACTS

AST Research on (081) 568 4350
IDS (for Qualitas products) on (071) 631 0548
Intel on (0793) 696000
Microsoft on (0344) 270001
Quarterdeck on (0245) 496699

DECLARA W

SPECIAL

Role-playing games specialist SSI is going back to its war game roots for its next series of releases. Paul Rigby sounds battle stations as the war clouds gather on the horizon

SSI is famous, or infamous depending on your point of view, for its role-playing games based on the AD&D licence. When the first of these, Pool of Radiance, hit the streets, SSI's financial fortunes took a turn for the better. Such has been the attention thrust upon SSI for its role-playing games, that new computer gamers could be forgiven for thinking SSI began life with AD&D.

Not so. In fact, as SSI boss and founder, Joel Billings, says, SSI has the roots of a different species. "We started in 1979 initially to do computer war games and other strategy games, but war games were the primary focus. I've been a war gamer for a long time."

In fact, 1979 saw Billings' first wargame production, Computer Bismarck, programmed on a now-defunct beast known as a North Star Horizon and converted over to the then popular Apple II Microcomputer.

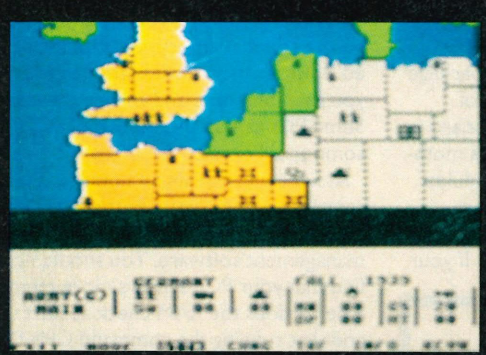
"We thought we would be a mail-order company but within a month we were inundated with orders from dealers. So, very quickly, we became a distributor to retail stores," said Joel.

From that time on, SSI never looked back. It was even at the forefront of game presentation as the first company to sell its games in boxes. Joel's bedroom was stacked full of the things – "If there had been an earthquake I would probably have never come out of it alive ..."

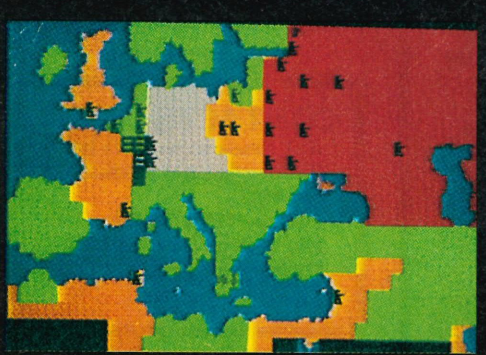
Although RPGs figured in SSI's release schedules, it was the war games which hit the headlines with the American press praising the quality of the early computer titles – Computer Bismarck, Computer Ambush, etc – through to greats such as War in Russia, Kampfgruppe, Carrier Force and Gettysburg.

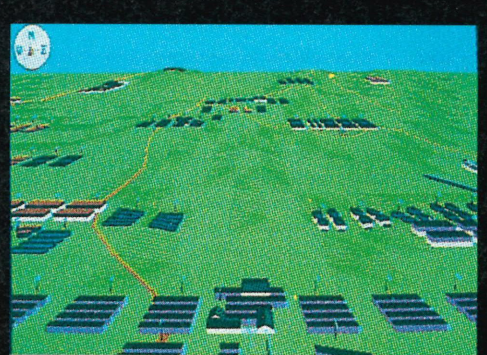
Warmongering

Since the AD&D licence, war games and strategy have played second fiddle, but recently SSI has announced a number of significant war game titles to signal a kind of renaissance for war gaming veterans. First on the list is Conflict: Korea, a one or two player, regimental (and upwards) game that is the next evolutionary development in the Conflict series that began with









A selection of SSI war games. Far left, top: German forces are ready to invade France in Storm Across Europe, while below shows the overall view of the game area. Left, top: Medieval Lords builds in elements of political and economic, as well as military strategy, against the background of Europe in the Middle Ages. Below: Waterloo uses English language commands and recreates this famous battle with a 3D perspective.

TIONS OF WAR

Conflict: In the Middle East. The game includes four tactical Korean War scenarios: three historical and one fictional. The first three include the allied break out of the 38th Parallel at the beginning of the war, the counter attack from the Koreans and the landing from Inchon. The fourth 'what if ...' scenario is based on the modern day tensions within Korea and features a possible attack from the North.

Features include the ability to toggle the hex overlay on or off, and a neat and tidy style of unit stacking that takes two or more units and combines them into one – merging rather than stacking. You are able to rename that new unit historically or otherwise. Other options include air support and a mouse interface with optional keyboard 'quick keys'. Conflict: Korea should appear around late-April.

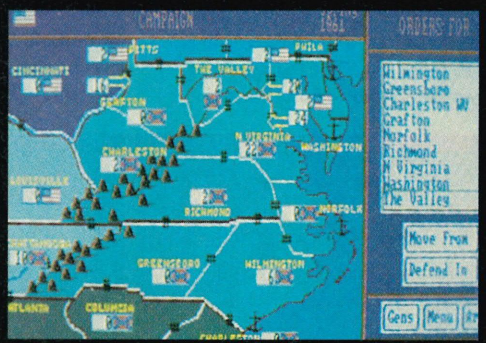
SSI war game titles ... "signal a kind of renaissance for war gaming veterans."

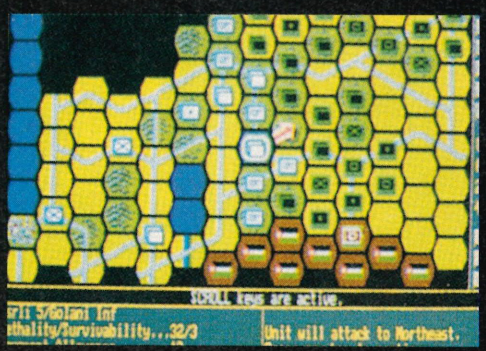
Line in the Sand is the computer version of the TSR board game of the same name, based in the Gulf/Middle East region. The game mechanics are a little different from the normal SSI war game, and it will appeal to those gamers who are attracted to the genre but are turned off by statistics and so on. A more abstract war game, if you like.

The game is full of variables. For example, countries can switch sides during a war, depending on what happens in the game. The situations are realistic, though. Scenarios include the fight for the Suez Canal, the invasion of Israel, the Gulf War and so on. A summer release is expected.

African Front, on the other hand, has a good chance of just making Christmas. This is another game based upon Gary Grigsby's successful 'Front' engine that has already spawned Second Front and Western









Far left, top: In Conflict: Middle East, the Israeli troops counterattack the Syrian thrust into the Golan Heights, and below shows the selection screen for the Israelis to pick an F4 Phantom to attack Arab targets. Left, top: the Allied armies are poised to break out from Normandy in Western Front: The Liberation of Europe 1944-45. Below: No Greater Glory is a simulation of the American Civil War.

DECLARATIONS OF WAR

Front. Based on the North African campaign in WW2, African Front should further improve upon the Front system whilst maintaining the popular gameplay.

War on two fronts

Rather more is known about another Front production known as Carrier Strike (one or two player). Set in WW2 during the Pacific War, you play the commander of a carrier task force. Yes, the game comes with a number of scenarios, but it is the campaign option which sounds the most appealing, if only because your task force's fortunes within each scenario are linked so that your complement within each successive scenario depends on how you did in the previous one. Scenarios include the Battle of the Coral Sea, Midway, Eastern Solomon Islands, Santa Cruz, the Marianas and, finally, Torokina (a fictitious battle) which acts as a 'what if...' fillip to the historical dabblers out there. This scenario does not feature in the campaign, though.

Additions to the basic Front engine include detailed flight operations which allow you to allocate flight patterns to aircraft, you also have to manage your aircraft in various ways. Right down to moving them from the flight deck to below decks to refuel, re-arm and place them back on the flight deck for re-launch. However, the more aircraft you move on your aircraft's elevators the more elevator capacity you take up. Therefore, you will need to arrange a set of priorities — all of which can become quite hectic during a battle scenario.

As any good WW2 carrier commander knows, search planes are your eyes. Therefore, expect to be using them a lot in Carrier Strike. However, reconnaissance such as this is rarely 100% accurate. You will find yourself having to send streams of search planes into different areas in an effort to piece together the jigsaw of enemy movements and intentions.

> *"We started in 1979 initially to do computer war games and other strategy games, but war games were the primary focus."*
>
> — **SSI *boss and founder,***
>
> ***Joel Billings***

Other management features include assigning CAP (Combat Air Patrol) and, at the same time, deciding how many aircraft should be sent on a particular strike. Time is a big factor, here. Clocks will denote exactly how much time you have got to complete certain moves. This means you will have to juggle your elevator capacity to get as many aircraft into the air as possible.

Graphical and audio niceties are plentiful. For example, when you get attacked you will see an overhead view of your task force. Explosions will be seen around your ship and when a bomb hits, suitable graphic and sound effects will cut in.. The scenes are by no means cinematic, but they do add atmosphere.

Maintaining the nautical theme is Great Naval Battles (previously known under the working title Bismarck), which could very well be the largest and most talked about SSI strategy/war game release of 1992.

Developed by the chaps who brought you Silent Service II (SS2), Great Naval Battles will offer a similar type of gameplay. The game covers the Battle of the Atlantic (1939-43) during WW2. It imitates the excellent SS2 feature of photographing models of theactual ships and digitising them to offer pinpoint representation, but with a full 360 degree view of all enemy ships.

As fleet commander, you have the option of taking part in several famous battles or basic missions or to go through the entire confrontation in a campaign option. So, depending on what battle/mission you have chosen, you will be given your objective such as convoy escort or to destroy a particular target. Something that was never placed into SS2 and will be put into Great Naval Battles is an instant replay which will track all of your movements to allow you to monitor your tactics.

In addition this 'docudrama' will, in a cinematic style, trigger and chronicle all of the major events that occurred during the war. So, for example, while you're tackling the Bismarck you will be hearing of other confrontations around the Atlantic.

Other options include aircraft spotters and aircraft attacks that can be ordered from carriers and land based stations, liaison with other fleet units such as cruisers and destroyers and weather (which affects visibility). You can also bounce between the bridges of different ships. Imagine commanding the British rces including Hood, Prince of Wales, Norfolk and Suffolk against the Bismarck and Prinz Eugen. You are allowed to transfer your control from the Hood to the Suffolk, back to the Hood, over to the Norfolk, etc.

It's pedigree signifies this game will be a true simulation with as many true-to-life options and details as possible. Due for release during July, Great Naval Battles has the capability to be a 'game of the year'. We will see.

In 1992, SSI is paying due homage to the genre which got the company off the ground in the first place. The quality of these new releases appear to be high, SSI and many war gaming fans will hope the sales are too.



What do you call the most superb role-playing adventure of them all?

LEGEND

❖

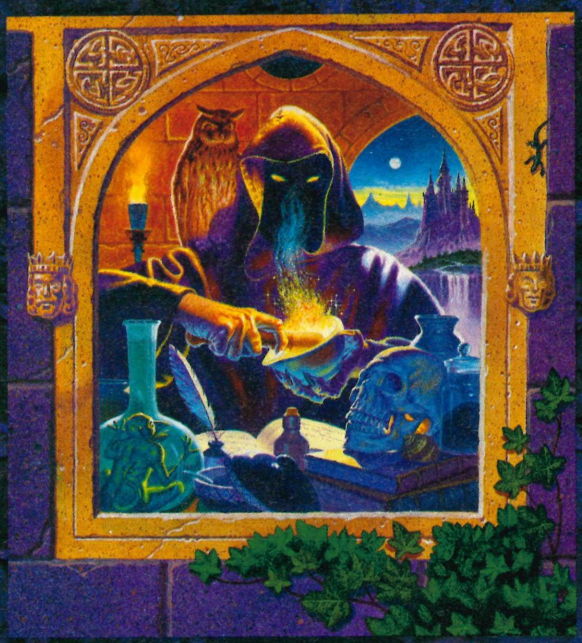
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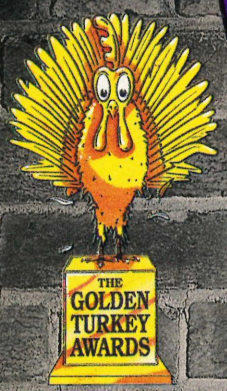


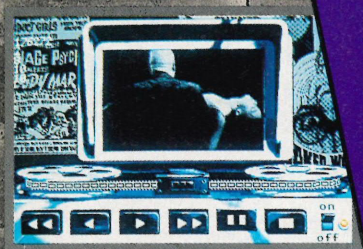
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VOTED THE WORST MOVIE OF ALL TIME...

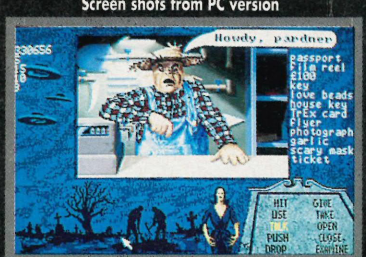








Screen shots from PC version





WHERE THE STRANGEST THINGS HAPPEN !!

Plan 9 From Outer Space ©1992 Wade Williams Productions, Licensed by Alter Ego Productions

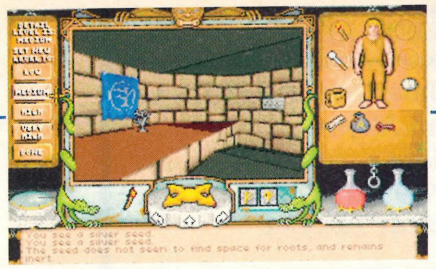
Gremlin Graphics Software Ltd.,
Carver House, 2-4 Carver Street, Sheffield S1 4FS.



Break new ground in interactive entertainment when you enter the world of Plan 9. You are the private investigator who must assist the legendary **Bela Lugosi**, the original **Vampira** and the totally forgettable **Tor Johnson**, to recover six missing film reels and rebuild the cult movie classic. CONTAINS ACTUAL FILM FOOTAGE TO SPLICE AND EDIT.



Reviews



Ultima Underworld –"an experience not to be missed."

A good month for strategy and adventure game players this month with eight titles to choose from. With Dune, Ultima Underworld, and King's Quest V on CD-ROM all ready for the full PC Review treatment, our reviewers have been working overtime to tell you how best to spend your money.

Alternatively

We believe games should be placed in context. If you like the sound of Eco Quest, for example (see page 66), you'll be interested in other games of a similar style. In all our major reviews, we offer comparisons with other titles on the market, some of which may be more suited to your tastes.

Hardware requirements

From this issue we've simplified the technical specifications panel by including the hardware requirements in the notes. If you need to know how much hard disk space a game will take up, how many floppies you'll find in the box, this is where to look.

Don't worry – we've retained our no-messing, no-guessing guide to the hardware supported by the game. And if there's anything unusual about the specs, or any additional information, we'll note it along with the hardware requirements.

Two minutes

The Two Minutes panel is the nearest thing to seeing the game in action, as we take you through selected screens and note the gameplay required.

You'll find our reviews concentrate on the atmosphere generated by the program and the gameplay involved, rather than regurgitating reams about the background story. You can always read the novella when you buy the game – our job is to help you decide whether you want to buy it in the first place.

Our rating system

We're as fed up as you are of over-complicated rating systems that mark everything from packaging to intro sequences and tell you nothing about the real quality of the game. That's why we've made our rating system simple and consequently useful. We give a single mark out of 10, based on the game's overall quality and how enjoyable it is to play.

You'll find the marks in PC Review are frequently not as high as in some computer games magazines. This is deliberate – not everything is worth the equivalent of 80 per cent. As a general yardstick, anything which gets more than five is, in our opinion, an above average game; seven is good, and eight or over is excellent.

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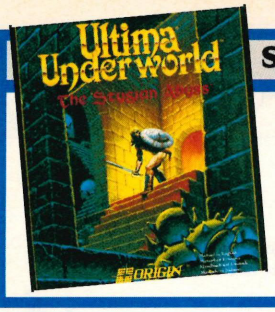
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A quick round up of everything that we promised you last month but failed to deliver due to circumstances beyond our control.



SOFTWARE REVIEW

- **Ultima Underworld: The Stygian Abyss**
- **Origin**
- **£39.99**
- **(0444) 246333**

Never one to do things by half, Origin jumps on to the Dungeon Master bandwagon, but does it with a certain amount of flair

Ultima Un

The Stygian Abyss

And on the first day there was Dungeon Master (on the Amiga and ST) and the people played it and the people saw that it was good. And on the second day there were PCs and the people used them and the people saw that they too were good. And on the third day work began on the PC version of Dungeon Master and it was hit by bugs, delays, company closures and non-floating publishers, and this was bad.

And on the fourth day PC programmers started to bring out their own Dungeon Master clones and the people played them and saw that while they weren't quite as good as the original. Yet seeing as how they had nothing else they would make do with them until DM arrived. And on the fifth day Origin saw Dungeon Master and the clones and saw that they were basically pretty good but didn't stretch the machine to the limits and since it had produced the Ultima series and the Wing Commander games it could do one, and make it a whole lot better. And on the sixth day Ultima Underworld appeared and knocked the socks off everything that came before it and made the completion of PC Dungeon Master a bit of a lost cause really. On the seventh day? I received a review copy (and saw that it was good, damned good).

It's kind of odd. Just as the industry feeling towards Origin is starting to pale (with everyone realising that just because the games look and sound like nothing on Earth, they don't necessarily play that way), the ground-breakers from Texas come up trumps with a game that scores in almost every aspect, from graphics to gameplay, from aesthetics to atmosphere and, most importantly, from beginning to end. Ultima Underworld is not the kind of game that's going to gather dust in a hurry.

Here we go again

Hordes of you are no doubt already running for cover at the mention of Origin, clutching your 286s and 20Mb hard drives tightly to your chest and kicking yourselves for not buying a machine with three or four megs of memory. While it's true that Underworld needs a pretty powerful machine to run on (see the Hardware Requirements panel for full details), Origin has actually put in some thought for the low-end owners and the installation guide that comes with the box is extremely helpful for working out exactly how to set your machine up.

It describes in detail the minimum set-up, then proceeds to take you through the installation process step by step, informing you how much memory and hard disk space each of the 'optional extras' takes up. It's wise to read through this manual before you start, making notes on what you can and can't do with your particular machine, thereby speeding up the whole process. One point definitely worth noting is that it even describes a procedure for making and booting up your system with a bootable floppy disk, freeing up as much memory as possible by backing up your autoexec.bat and config.sys files, then modifying them. In all, this manual (just one of three that comes with the game) is clear enough to take even the most novice of DOS users through the ins and outs of memory usage and DOS setup procedures. It's more than about time Origin started caring about the 'less fortunate' owners and this guide does the job perfectly.

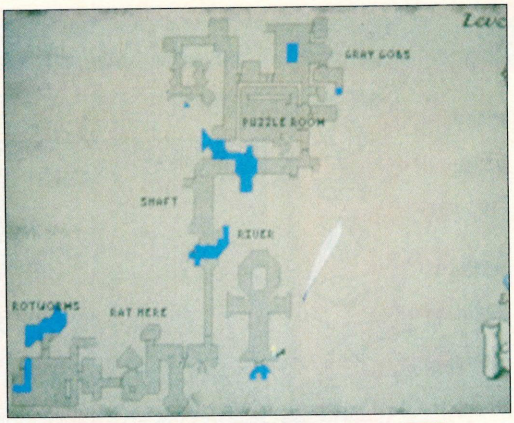
It's also strange that what is possibly Origin's most technically complex game to date comes on a measly four high-density 3.5" disks. From the people that brought you the 14 disk (and two separate package) Wing Commander 2 affair, you can't help but feel a little disappointed, worried even, that the game might not be as big and spectacular as you thought. Ah, ye of little faith! This is Origin we're talking about here. Just take a look in the box.

I've never known a game to need *four* manuals before. I've known DTP packages to need four manuals and spreadsheet software to need four manuals, but never a game. Apart from the installation guide, you get a 32-page player's guide which takes you through the opening stages of the game and details all the controls, the different screens and the different aspects of play (swimming, combat, magic, etc,), a 30-page reference guide that describes much the same thing but reduces it to a 'what button does what' list and a 30-page 'Memoirs of Cabirus', which is the usual fictional account of life in Britannia and the Underworld.

It describes the various monsters, spells, character types and so on, in the style of a scribe to the aforementioned Sir Cabirus, an adventurer who ventured into the Stygian Abyss (the Underworld's official name) many moons ago with a grand

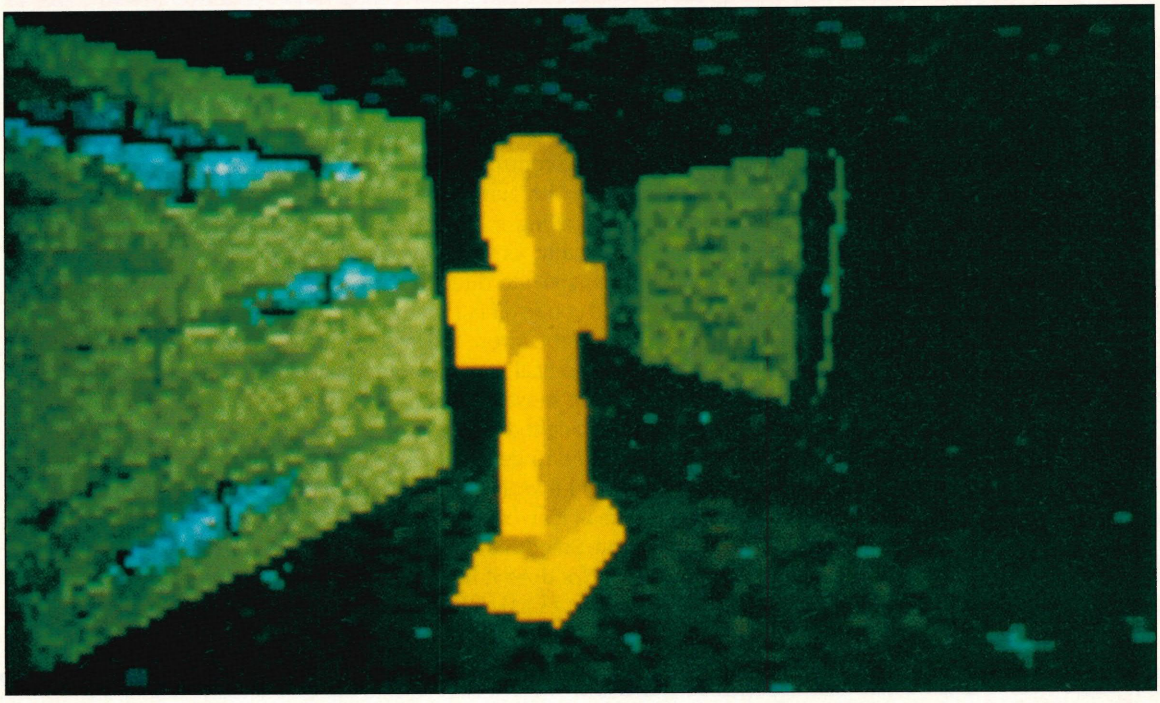


Not all movement takes place on land. Should you fall, jump or run into any water, you'll have to swim around until you find some land again.



Thanks to a handy auto-mapping system, the days of pencil and paper are gone. You can jot down notes to remind you of any special areas.

derworld:



As you adventure in the Underworld, you gain experience and your character subsequently rises in skill levels. To take advantage of this fact you have to visit a shrine and chant a mantra.

idea of uniting several 'surface' tribes and creating a (for want of a better term) 'master race' under the ground. Oh, you also get a hand drawn map of level one to accompany this tome and a little cloth pouch full of 'magic' runes, just to add to that feeling of 'being there' (yes, I know it looks silly throwing little pieces of tin at a screen and shouting "Magic Arrow", but it's all atmosphere, luvvy, okay?).

On the whole the manuals do a pretty good job of guiding the player around the game, but as was the case with the previous Ultima titles (not to mention a good number of other RPGs) most of the information is just padding and I can't see anyone really bothering to pause the game before fighting a giant rat just to look up its description in the manual and find out whether it has any weak spots. The only really useful function the in-game manuals serve is to remind you which runes equal which spells.

Before we begin

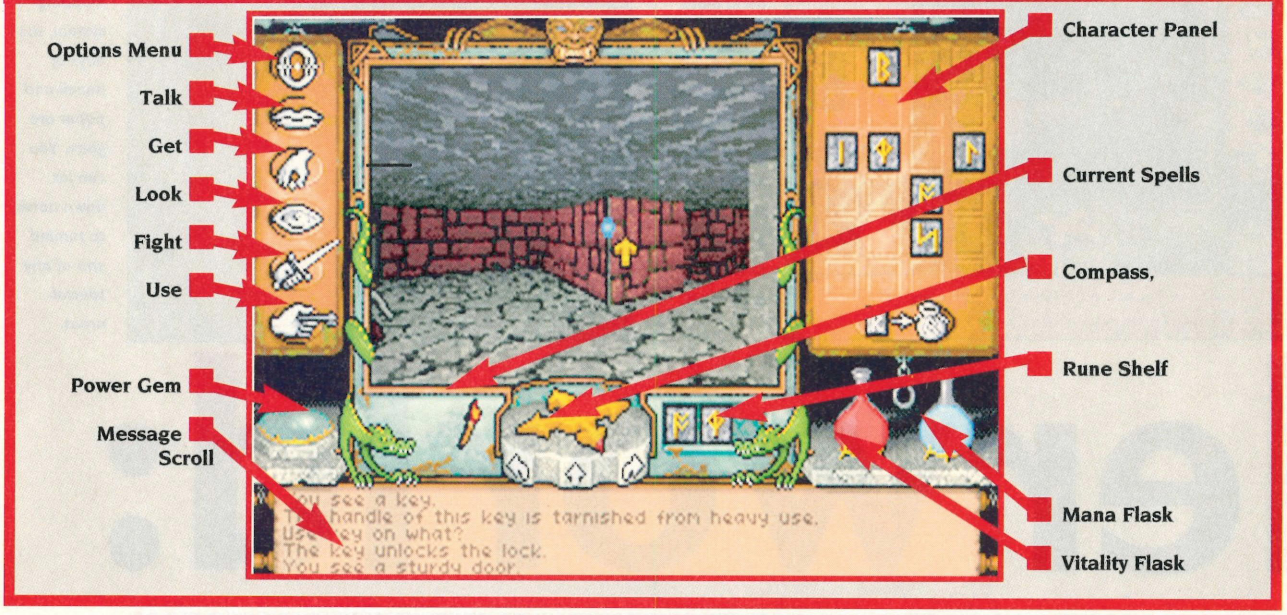
Once the game is installed and you've finally managed to eliminate the 'Sorry you do not have enough memory' messages, you are in for a real treat. I played this version with all the trimmings and believe me, it's worth it. Underworld starts with an unintentionally hilarious intro sequence, depicting the kidnapping of Baron Almric's lovely daughter by hideous fiends and your arrival on the scene just in time to be blamed for it all.

I say hilarious because of the speech. I had to listen to it two or three times before I fully grasped what was going on because for the first couple of times I was falling about laughing at the badly-dubbed Dick Van Dyke cockney accents that all those lovable Americans think we sound like (you know, "Awl-right Guv'noor, oop the happle un stairs!"). At least Kevin Costner didn't even bother to insult our intelligence ...

Still, it's nicely done and sounds pretty impressive through a decent pair of speakers. It's a shame that the speech couldn't

Ultima Underworld

What's what in the Underworld



have been kept up throughout the game though, in conversation with characters and in the dream sequences. It may have taken another speech accessory pack to do it, but anyone that's managed to find a machine big enough to run it with limited speech would surely have enough power to support one more optional extra.

Sadly, the introduction doesn't really do the game justice and gives the appearance of being developed completely separately from the rest of the game (and knowing the size of Origin, it wouldn't surprise me if it was). It built up a very different image of what I was expecting once the dungeon doors had slammed shut behind me. Thankfully, what I was expecting fell way short of what I actually got.

Running before you can walk

Things were initially very dark, but very detailed. Although I'd promised myself that I'd stick to the walk-through in the player's guide, the urge just to wander off and marvel at the graphics was too strong and I soon found myself walking, running, jumping, activating pull-chains, opening doors and picking up objects. The guide has you spending at least 20 minutes in the first corridor, getting used to each of the icons and learning how to interact with objects but I doubt anyone could restrain themselves for this length of time when there's this much sexy technology just waiting to be moved around the screen.

The controls are clever, very clever. They were easy to get to grips with and it was quite amazing how quickly I got used to controlling my every movement in the subterranean world. Basically, as you move the cursor around the view window it changes into direction arrows. Click on the left mouse button and you're off in that direction. The further from the centre you move the arrow, the faster you move, starting with a very slow, methodical step to a breakneck sprint down a corridor. While you're moving, pushing the right button causes you to jump, the height dependent on the speed. As I said, it was incredibly simple to get to grips with and after a few minutes practice I found myself moving from a gentle trot to a quick dash to a small leap over a gap without ever taking my finger off the button. Smooth doesn't even begin to describe it ...

Nor does it begin to describe the graphics. It didn't sink in at first exactly how fast and smooth everything was moving and how little the machine stopped to update the screen, usually

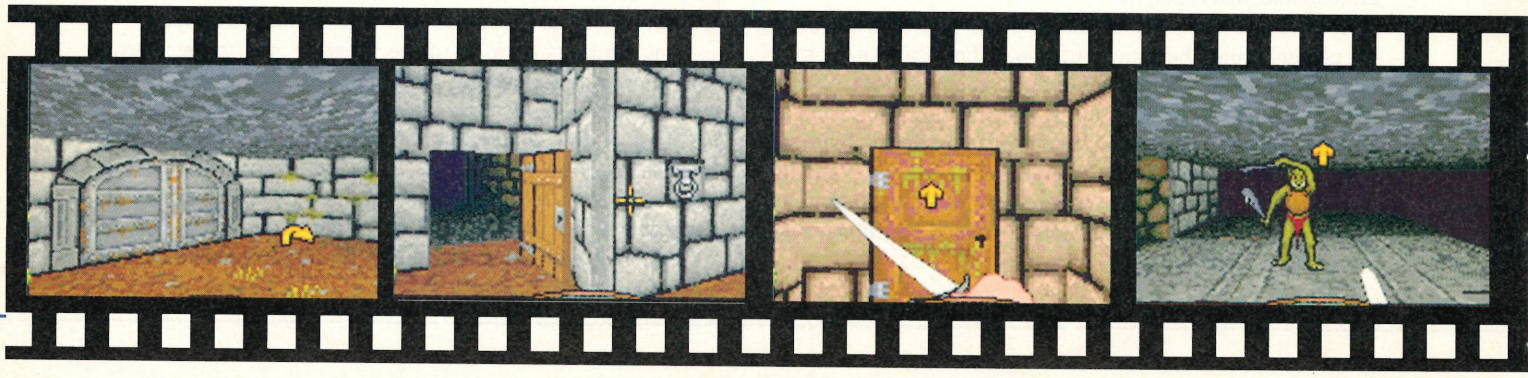
TWO MINUTES OF SUBTERRANEAN ADVENTURE ...

As the huge doors slam shut behind you, your first task is to find a weapon. All that's lying around is a blunt daggers. Any port in a storm ...

You venture along the initial corridor until you come to a closed door and a chain on the wall. A quick pull reveals a room filled with bones and blood.

Doors to the north and south won't budge without a key or a quick battering with a cudgel The north door weakens enough to push it open.

As you reach a bridge of some sort, you are attacked by a goblin. Dodging his rocks you close the gap and start hitting with your blunt dagger.



only occurring when I'd stopped moving to get my bearings (although this was probably coincidence more than clever programming). It's not all 100% smooth 3D though. In fact most of the animated objects to be found in the Stygian Abyss is made of two dimensional bitmap graphics (similar to the graphics seen in Empire's Pacific Islands – see review in issue 7).

This strange mix wasn't always pleasing and I often found the two styles contrasting drastically, depending on the situation. A solitary bat flying around the rafters looked very basic, almost amateurish, while a room full of goblins going about their business looked fine. Objects that could be carried around fared much better, drawn to look as in tune with the surface they were resting on as possible. Granted, it's still early days for this new technology and no doubt whatever Origin decides to do with this system next will be immeasurably better, but I can't help thinking that if it doesn't look very good, maybe it'd be better left out.

Size *is* important

Underworld scores much bigger points during its exploration stages than it does with the combat. The map that comes with the game is designed to guide you around level one, allowing you to get used to the controls, the characters and the ambience of the abyss without having to worry about getting lost. I found it an invaluable aid when exploring the initial sections of the game, but when I eventually made it on to level two I was immediately at a loss at where to go next. I had become way too dependent on the map and because I knew Underworld was such a huge game, I found it almost impossible to decide whether to go left or right, to take the first turning on the left or the second or whether to go straight back up the stairs and remain on level one for the rest of the game (where at least I knew where I'd be going).

Origin's biggest problem is that it has made Underworld too big. No sooner had I managed to fill one of the map screens and annotated all of the important areas, when I was faced with a completely blank page and had to start all over again. It was a very daunting task just to start moving on level two. I think fear may also have had something to do with it. Once I'd run out of pre-generated map to look at, and when combined with the terrific atmosphere generated by the game, I was getting nervous when it came to just rounding the corners in case something was lurking (I shock easily in case you hadn't guessed). Still, faint hearts never wrote detailed reviews so ...

The question you have to ask yourself is are you a major fan of the Dungeon Master/Eye of the Beholder genre? If so then you're likely to do flips over Underworld. I hate to keep mentioning the graphics but they really are the focus of the whole game and when they provide the answer to all of the criticisms levelled at Eye and the gang (static flick screens) you can't help but be impressed. There will be other games that will make this look primitive, but not for a long while yet.

Judging it by today's standards Ultima Underworld doesn't have an equal. It really is the best of the bunch and everything else that comes along will no doubt be judged by it. It's a shame that it kind of overshadows the forthcoming release of Dungeon Master (nostalgics will probably be no less enthusiastic though), but it does highlight one area that all of these first-person perspective games have suffered from. DM, Eye,

What about us low-end users?

If you find that your copy of Underworld seems to run fairly slowly (and let's face it, any game that describes a 20Mhz 386 machine as slow, needs some processing power), you have the option of turning down the detail level of the graphics. You can start with full detail...



... remove the detail from the roof



... remove the roof and the floor ...



... and remove the roof, floor and walls altogether, just leaving the bitmaps for the objects. This certainly speeds the game up, but it does tend to ruin the whole point that Origin is trying to make

Before you travel any further, it's wise to check your map. It might be worthwhile checking out the rest of the southern passages before you go on.

Bashing your way through the southern door in the previous chamber, you emerge in an altar of rebirth. The silver sapling allows you to 'save' your position.

Taking the corridor off of the first passage leads you to a path strewn with runes. You've heard of dark magic in here and these runes might just be the ticket.

Continuing along the corridor you eventually come across another human, scavenging for goods on a recent battle site. He tells you of a human enclosure to the north.





Monsters abound in the underground. You start off facing rats and slugs and fareing rather well. You end up facing skeletons that make your life sheer hell!

Eye II, Might and Magic III: they're all more or less the same game with slightly different plots. They all look more or less identical and play the same way, the only real differences being the control methods. Underworld is at least a little more creative than that, sketching out an entire underground community, goblins that are good guys as well as bad, races that in other game would attack on sight here give you the benefit of the doubt, allowing you to talk to them, get to know them and then (but only if you initiate hostilities) attacking you. The entire Ultima series has always prospered on one thing, the strength of its storytelling. It's easy to mock Richard Garriot for his Lord British monicker, but he can create believable worlds, characters and stories and this high level of realism has been carried across all of the Ultima games, no matter what their style of play is. Underworld benefits mostly in this area. If a rip in the earth were to be found tomorrow by news crews, I'd expect it to look like this.

PC review 9

But as a game (and not a philosophical issue) I can't find any major faults to Ultima Underworld. It may not look like a Rembrandt when up close (it's more like a Picasso), but you spend so much time moving you hardly care a whit. The size may be daunting, but it's more of a challenge than a put-off. The controls are unbelievably easy when you get the hang of them and the whole system is very clever indeed. It's probably not the hardest game you'll ever play and despite the realism, it's easy to live without it, but I can see anyone that does venture into the abyss having a whale of a time. I have heard reports of people already claiming to have completed it, but I suspect these are the kind of people that can play the average arcade game with their feet and still clock it. For the rest of us mere mortals it's a wonderful game and an experience not to be missed.

PAUL PRESLEY

REQUIREMENTS

HARDWARE

Let's start by running through the bare minimum requirements to play Underworld. You must have a 386SX or higher to achieve a decent speed, you must have a VGA card to see anything, you must have at least 640K of RAM (522K of which must be available at the DOS prompt) and you must have at least 480K of expanded memory. Oh, and 8Mbof hard disk space (plus a further 700K to save your games – it won't run without it).

This is the basic game, without sound effects, music or speech and probably not running with maximum detail on screen. For the full experience you'll need all of the above plus 557K of RAM free, a maximum of 1Mb of expanded memory, 13Mb of hard disk space (plus the extra 700K) and whatever sound boards you can cram into the back.



ALTERNATIVELY...

Eye of the Beholder

US Gold/SSI, £30.99



The first of its kind on the PC, Eye provided an audience hungry for Dungeon Master with a suitable meal. Basing itself around the ever-popular AD&D series, it featured excellent graphics, easy to use controls and a superb sense of atmosphere that was matched only by its offspring.

At the time of its release there was nothing to touch it, but in the wake of Underworld it pales dreadfully. After playing a game that features smooth 3D scrolling, I can't see anyone wanting to turn back and play a flick-screen affair. It's still a good game (as is the sequel) and SSI will no doubt continue the series ad infinitum, improving things as it goes and probably attempting a smooth-scroller of its own one day.

Might and Magic III

US Gold/New World Computing, £40.99

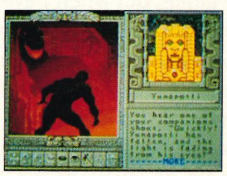


It had the potential to outdo Eye of the Beholder, it had the looks to outshine Eye of the Beholder and it had the size to outplay Eye of the Beholder, but New World's magnum opus turned out to be a flawed masterpiece. Bugged to pieces and shoddy programming meant that the trilogy ended with a whimper rather than a bang.

Don't be fooled by box artwork or marketing blurb, if you see MM3 and Underworld side by side on the shelf, go for the Origin game every time.

The Worlds of Ultima series

Origin, £35.99 each (approx.)



While Underworld represents a new theme for the RPG masters, the Worlds series was an old theme given a new twist. Forget the Wing Commanders, this is what Origin does best. RPGs are at the very core of Origin's being, from the earliest Ultima through Autoduel and Bad Blood to the Worlds of Ultima series. If you thought Ultima VI was good, take a look at either The Savage Empire or Martian Dreams. Atmosphere oozes, playability flows and quality shines throughout.

Thanks to all the character interaction and the storytelling, Underworld plays very much like an Ultima game viewed from head-on. If you fancy a change from all the first-person perspectives on offer, the Worlds of Ultima (and in fact most of the Ultimas) offer the perfect distraction.

Dungeon Master

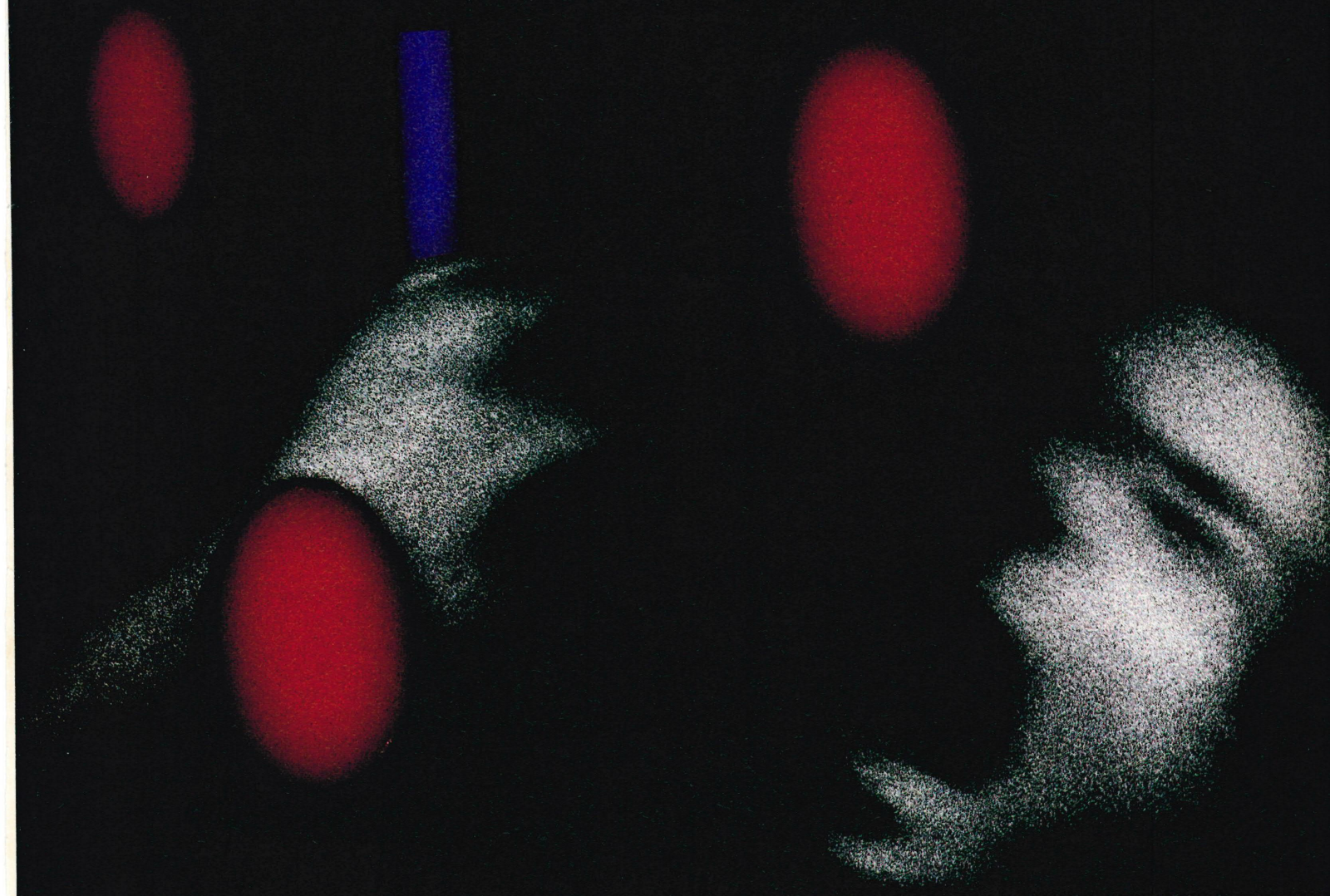
FTL, £TBA



It's still not arrived, but the game that started them all is currently scheduled for a May release. Dungeon Master is a classic in every sense of the word. It introduced a grateful world to the delights on offer from RPGs and opened the whole genre to a completely new audience that had always been put off by the number-crunching feel previous games had offered.It's still overshadowed by Underworld, but when it comes out (provided the translation from the other home computers hasn't gone badly) it should be snapped up by anyone with an ounce of sense.

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It's..

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SOFTWARE REVIEW

- Dune
- Virgin
- (081) 960 2255
- £35.99

It may have been a long time in coming but Virgin's French sleeper has finally awakened

Dune

Watching a David Lynch film is bad enough, but I've often dreaded the task of actually trying to play one. Fortunately, because Mr. Lynch had little to do with the original set of books Dune isn't nearly as baffling as Wild At Heart or the staggeringly odd Twin Peaks. I must admit, my experience with this sci-fi cult hit is limited only to the heavily edited two-hour version of Lynch's film, so how faithful this game is to Frank Herbert's novels I really couldn't tell you. Therefore (and to avoid offending any die-hard fans of Mr. Herbert), expect this review to concentrate on how well Dune the game interprets Dune the celluloid version. It does, to be fair, only deal with this area of the genre anyway and contains some good likenesses of said film's breathtaking cinematography.

What it doesn't do is contain stunning likenesses of the film's stars. A few of them turn up – Kyle McLachlan as Paul Atreides and Sting as Feyd Rautha Harkonnen (but due to numerous copyrighting and legal reasons, Sting doesn't look much like Sting at all) – but in general the artists at Cryo (the development house) have had a free hand in designing the look of the characters.

This does give the game a slightly odd feel. Just as you're getting used to things looking like the film, a couple of central characters come along looking completely and utterley different from their on-screen personae throwing you right off balance (I do wish Cryo had been able to use Patrick 'Captain Picard' Stewart for Gurney Halleck as the game's version really doesn't suit the role of military specialist).

The plot is pretty much adhered to, with a spot of artistic licensing in the interests of gameplay. You start already on the planet of Dune with a brief to begin spice mining for the emperor. Most of Dune is already occupied by your family's arch-rivals, the House Harkonnen, and your task throughout the game is to gradually take over the planet and eventually oust the enemy.

The novel approach

This plot is closely followed by the traditional 'good vs evil' theme. The Harkonnens are sadistic slave-drivers, treating the native Fremen like dirt and generally making life as unpleasant as possible. Naturally you discover this and being the nice guy that you are, you realise that your main job is to free the natives and bring about happiness for all again. You can't really argue with a plot that's sold millions and been turned into a film and Cryo has managed to include most of the major events without sacrificing freedom of play. Thanks to Paul Atreides's limited psychic ability, you are informed of things as and when they happen and it's up to you whether or not you respond to them.

Dune's core is its strategy element. Once you've been guided through the opening stages by the cast, you have a free hand to control the Fremen as you see fit. The one drawback of this is that you often find yourself waiting for something to happen, spending the odd night in the desert, clicking on Wait Until Morning. As a strategy game though, it'll probably manage to keep you challenged until you finish the thing. Every time you solve one problem, another is bound to crop up sooner or later, usually in the shape of attacking worms or messages from the Emperor.

PC review: TWO MINUTES OF SPICY INTRIGUE

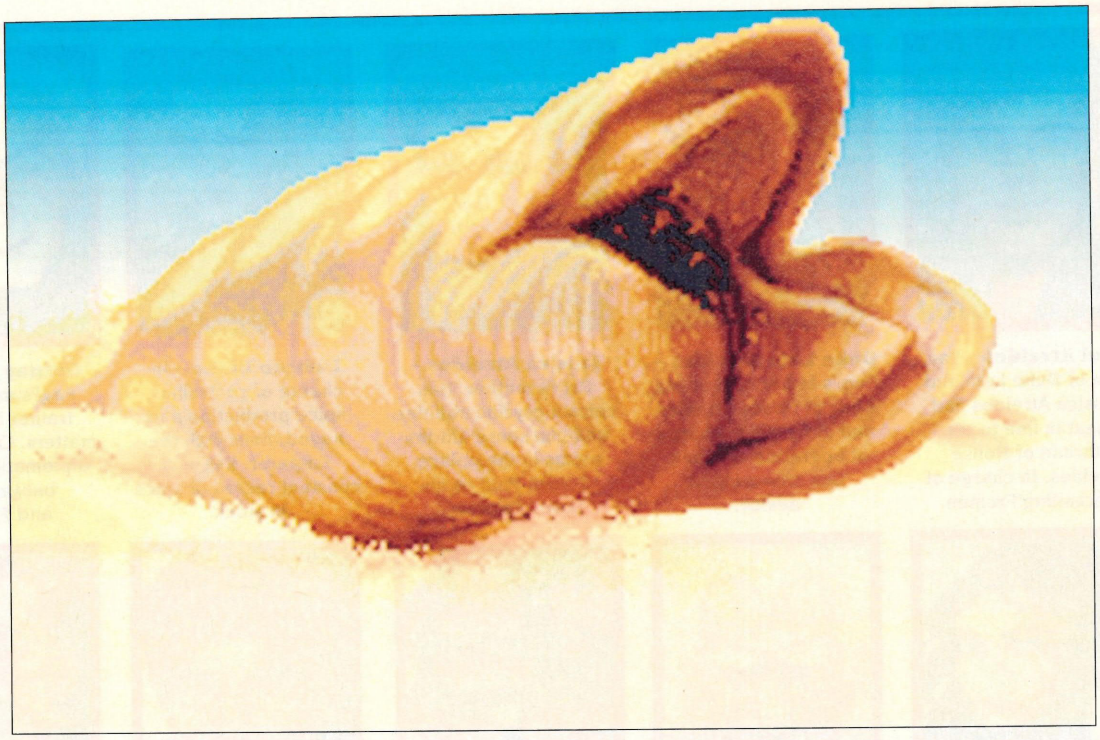
Duke Leto. Having just arrived on the planet, you control very little at the start. First find a couple of Fremen to start producing spice.

Gurney Halleck is currently visiting the Fremen of three nearby sietchs. Thanks to her telepathic powers, your mother Jessica senses danger.

Hopping into a parked ornithopter, you find Carthag-Tuek (the sietch) on the map and set the coordinates. Within minutes you've arrived.

Inside sietch you find Gurney in with the Fremen chief. A chat about prophecies and chosen ones convinces the chief to work for you.





Initially worms are a source of danger, attacking spice production plants and destroying equipment. As Paul grows in power, the worms can be tamed and used either as transport or to attack fortresses.

Dune is without a doubt the most beautiful game I've seen and heard on the PC for a long time. All the artistic quality you've come to expect from French developers is contained within, and then some. The graphics are nothing short of stunning and the music is to die for. I've always been partial to French keyboard music (Jean-Michel Jarre and all that) and Dune lives up to these standards with ease. As is rapidly becoming the trend in France these days, the game's music is to appear on a CD at some stage and within the game you get the choice of having the music match the events or running as a CD with each tune playing in its entirety, looping back to the first once they've all been played (you can even select a 'shuffle' facility to play them in a random order).

Thankfully this lavish care and attention to presentation remains right through to the end. Sunsets fade in and out wherever you are, no single character looks the same as another (which is quite a feat considering there are over 90 characters in the game) and spot effects are right on. The only place this falters is, oddly enough, in the intro where a digitised Paul Atreides bellows, "Father? The sleeper has awakened!" completely out of sync.

Still, playing Dune – and indeed watching Dune being played – is quite an experience and you'd have to be tough indeed to want to criticise such an aesthetically pleasing game. Unfortunately I'm the kind of guy who pulls wings off flies and listens to Des O'Connor records at four in the morning just to annoy the neighbours.

Missed chances

Dune is far from unplayable. It's well planned, with the start of the game being just linear enough to let you know what to do, gradually becoming more and more open towards the end. It's easy to get to grips with, the controls being simplicity itself and options to perform any action you wish appearing at practically any stage of the game. Most of the elements of the film are included (if not all of the characters) and everything appears to my untrained eye to be very faithful to the Dune genre.

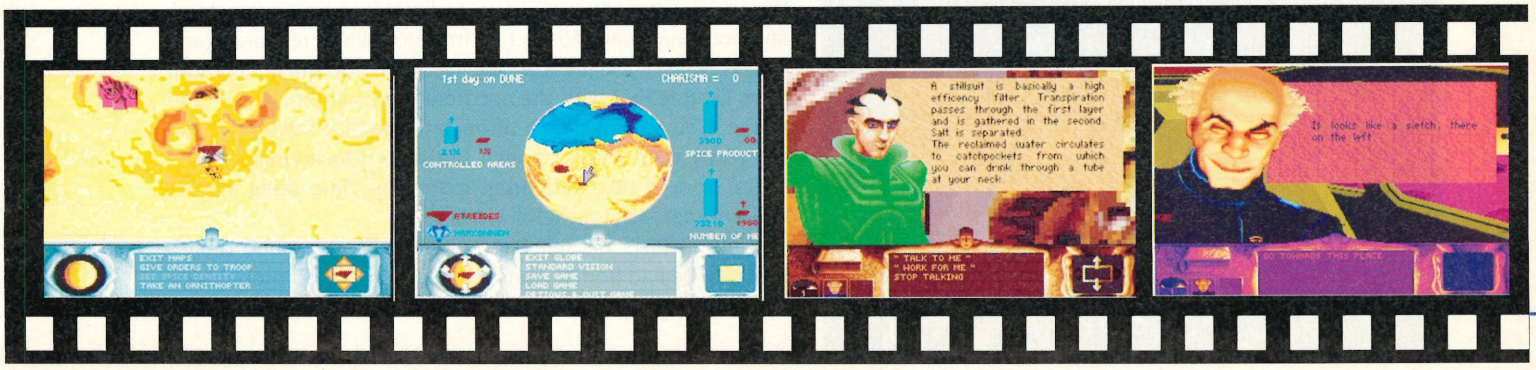
It is also a game of missed opportunities. A lot of the action aspects of the film have been either glossed over or missed out altogether and there's more than one occasion that was screaming for an animated interlude or some other such

Initially you manufacture spice to keep the Emperor happy, but Fremen can later be recruited for military, espionage or ecological work.

After visiting the other two sietchs, you convince one more Fremen tribe to work for you. With production going well, you tell the Duke how you're doing.

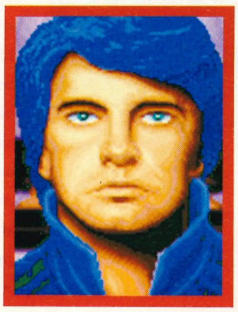
He says stillsuits will be needed for any extensive desert travel as they recycle and purify the body's waste matter, allowing you to drink it again (yum!).

The sietch you visited first tells of a Fremen tribe that know the secrets of stillsuits. Flying into the desert you spot a new sietch. Could this be the place?



WHO'S WHO ON ARRAKIS

Being based on a film, Dune has some strong characters. Knowing who can do what is vital to winning the game.



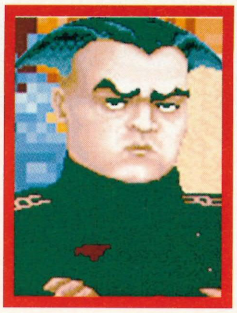
Paul Atreides – You. Son of Duke Leto and Jessica Atreides and next in line to the throne of House Atreides. In charge of recruiting Fremen.



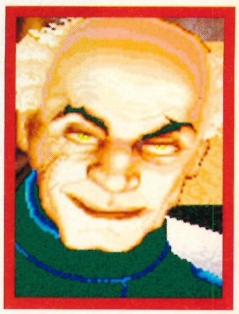
Duke Leto Atreides – Paul's father. Governing body of House Atreides and currently in charge of operation on Dune. Can offer helpful advice.



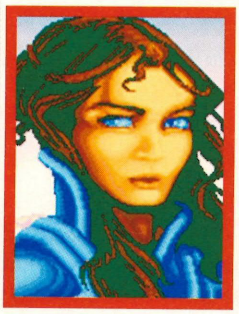
Jessica Atreides – Paul's mother. Has certain psychic abilities and can sense hidden rooms in the palace. Guides Paul as his power improves.



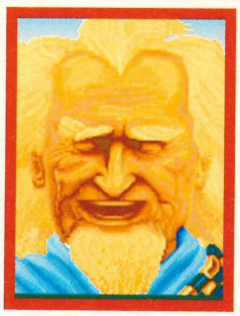
Duncan Idaho – In charge of controlling spice production and negotiations with the Emperor. Keeps a constant record of spice in stock.



Gurney Halleck – Paul's mentor and trainer in military matters. Can help with diplomatic situations between Paul and Fremen.



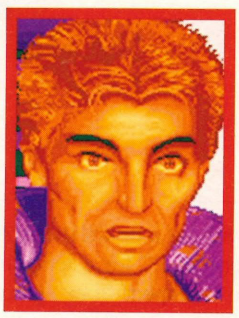
Chani – The love interest. Eases Paul's negotiations with Fremen and leads him to Liet Kynes. Seeing Chani also increases Fremen moral.



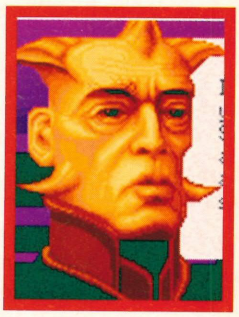
Liet Kynes – Ecology expert and founder of bulb experiments. Will help Paul produce water and fertilise areas of Dune. This ruins Harkonnen spice.



Baron Vladimir Harkonnen – Ruler of House Harkonnen. Paul's main enemy and leader of opposing forces on Dune. Thouroughly evil.



Feyd Rautha Harkonnen – Baron Vlad's hotheaded son. Despises Paul and his heritage.Attempts to kidnap Chani and make life hard for Paul.

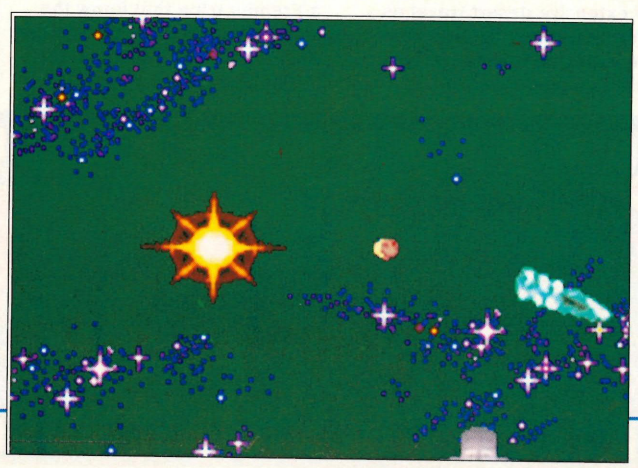


Emperor Shaddam IV – Emperor of the known universe. Demands regular spice payments but is not as straightforward as it seems.

reward. Riding the worms is a good example. To have enough power to control the giant sandworms and ride them across the sandy plains requires the player to have progressed through a fair old amount of the game. The taming of the huge beast was a huge affair and had the scope for something brilliant to watch and enjoy in the game. Instead you just walk out into the desert, select Call A Worm, choose a destination from the map and get a small 'worm arriving' scene which dulls after the first few showings.

Another aspect that, if handled correctly, could have added plenty of excitement would have been combat with the power shields seen in the film. Having Paul lead attacks on Harkonnen fortresses using some kind of wargame section would have added so much to the non-involving battles that eventually take place.

Every so often the Emperor will demand a shipment of spice. You don't have to send him everything (you don't have to send him anything) but the more you do, the longer he'll leave you alone.





Seen one worm, seen them all

Dune's problems lie more in what could have been as opposed to what is. Accept what you've got and you'll more than likely become completely absorbed in what's going on. However, I'd question the lasting appeal. As with all things, once you've seen them five or six times the novelty begins to wear off and this goes double for the stunning visuals on offer here. I can't see anyone sitting through the 3D travel scenes once they've seen one of them and even the worm animation doesn't last. Fortunately most of the graphics make up the actual gameplay, so your control of things isn't interrupted, and you don't have to wait in irritation while repeated (and unneccessary) sequences are reloaded for the umpteenth time. Couple that with the apparent impossibility to die and you're likely to only play it through to the bitter end once and not really want to go through the same procedures all over again, or even take a different route, this time using a more military approach toacheive victory.

While it lasts though Dune is very absorbing and there's plenty to be had from it. Fans of Miller's works will probably be



Thurfir Hawat – Strategic expert. Advises Paul on Harkonnen activity and how to react to it. Monitors all communications.



Harah – Fremen girl. Acts as Paul's guide on Dune. Was recently widowed by Harkonnen soldiers and has a foul temper. Prone to bouts of homesickness.



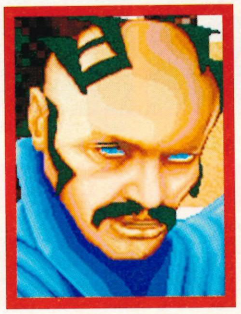
Stilgar – A legendary Fremen leader that helps Paul form an army to attack Harkonnens. Seeing Paul with Stilgar increases Fremen moral.



Fremen Chiefs – Each chief rules a separate tribe of Fremen. Most will work for Paul as spice producers, soldiers, spies or ecologists.



Smugglers – Neutral participants in the Dune wars. They reside in villages and will sell equipment and weapons to anyone with enough spice.



Prospectors – Fremen specialists used to determine spice levels in different areas of the planet. Provide a 'Spice Map' showing best areas to mine.

appalled at how little it has to do with the novels's broad plots, but for those who only know the film, it lives up to it well (to be honest, it's miles better than the film). It was an ambitious project for Cryo to undertake and it has managed to pull it off well. It's certainly not offensive and likely go down as one of the better film licences of the 90s. It's also a pretty good entry-level strategy game, being simple enough at the start to guide you along and opening out more towards the end. And let's face it, there aren't that many of them on the market these days, are there?

PAUL PRESLEY

REQUIREMENTS

Two disks that will take up 2.6Mb on your hard drive. Installation is painless and the whole thing will run with a minimum of 550K of RAM. Due to the graphical quality of the game, only VGA cards are supported (either colour or monochrome) and thanks to an option in the installation menu it's possible to set up the game to run on any speed of machine, from an 8088 upwards.

CGA ✗ EGA ✗ VGA ✓ Tandy ✗

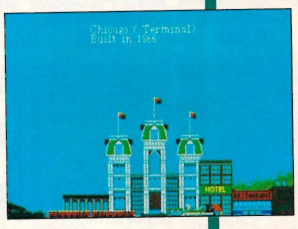
Hercules ✗ Roland ✓ Ad Lib ✓

HD ✗ ✗ ✓ ✓

ALTERNATIVELY...

Railroad Tycoon

MicroProse, £35.75



For strategic empire building with a difference you could do far worse than Sid Meier's footplate classic. Take control of a railroad company in the Midwest (or Britain or Europe) and ride it through years of sweat, turmoil and near-financial ruin, to come out on top as the modern-day equivalent of BR (sounds appealing, doesn't it?).

Don't worry, it's not as dull as it sounds and is in fact one of the most absorbing and playable games ever (and no, I don't wear an anorak). Railroad Tycoon contains something for everyone, from the sheer thrill of building a railway next to your home town to the challenge of keeping twelve trains from colliding into each other. Absolutely superb entertainment.

Indiana Jones and the Last Crusade

Lucasfilm, £30.99

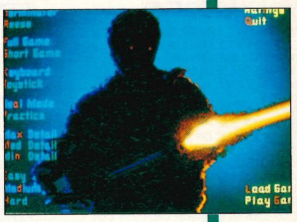


What Alternatively panel would be complete without a Lucasfilm game? This one's no different as it shows a prime example of how to do a good film licence. Indy 3 proved to be one of the most enjoyable games of 1990 and paved the way for Lucasfilm's successful future. Because the player gets to take part in almost every moment of the film (apart from the beginning) but still discovers something new around every corner, the game struck a chord in every adventurer's heart and has found its way into almost every software collection in the country.

Indiana's next outing (Indiana Jones and the Fate of Atlantis) looks like being every bit as successful, despite not being based on a film. Such is the strength on the character himself.

The Terminator/Terminator II

Bethesda Softworks/Ocean Software, £34.99/£29.99

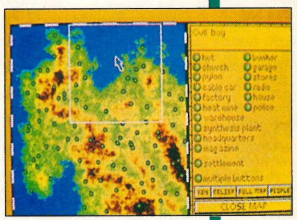


Two very good examples of how not to do film licences. Both films have bags of potential for exciting, challenging games and both conversions fail to live up to the challenge. Ocean's approach with the much-hyped sequel was to turn several of the film's most action-packed moments into a couple of uninteresting arcade games. Fight with the T-1000 using all three (*three!*) of your deadly killer moves! Drive an unrealistic looking motorbike along a sewer outlet with objects that can hit you but mysteriously vanish before the killer truck hits them! Stroll along the sidewalk shooting cops (no, I don't remember that bit either)!

At least Bethesda tried to make something different out of its version of the original thriller. Unfortunately the mix of two-dimensional 3D objects and boring gameplay doesn't make for an interesting gaming experience.

Midwinter

MicroProse, £35.75

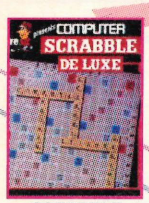


Midwinter's not a film licence, but it might as well be. Mike Singleton's strategic tale of icy wastes and freedom fighters could be Dune with snow instead of sand. There's no trading as such, but the core of the game is pretty similar, with Midwinter allowing you much more room to explore and travel. The main strategic element comes with recruiting soldiers willing to fight the bad guys, much the same as Dune does with the tribesmen.

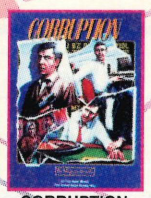
Midwinter scores in the freedom it allows you and the strong sense of atmosphere it generates. It would be easy to see this on film, thanks to the action, great landscapes and strong characters.

PC Compatible Software

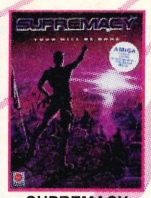
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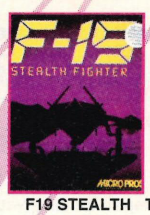
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CORRUPTION **4.99**



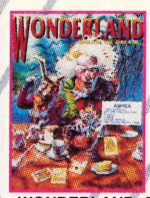
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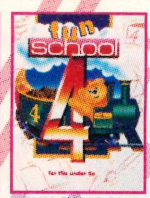
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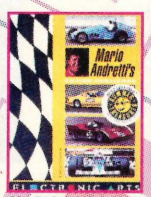
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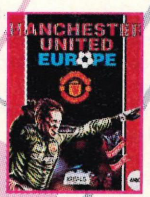
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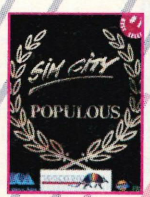
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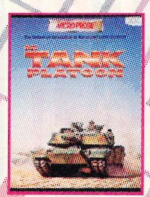
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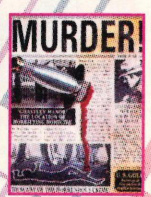
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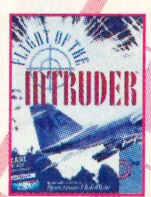
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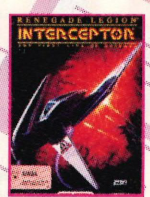
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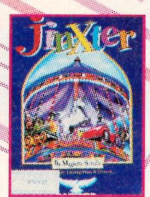
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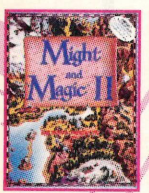
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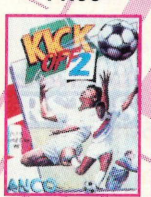
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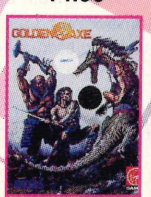
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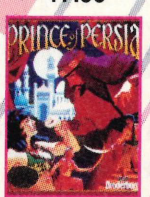
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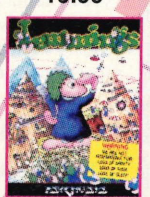
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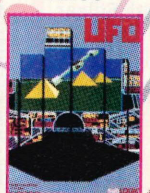
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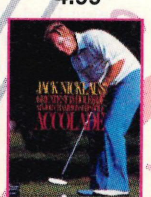
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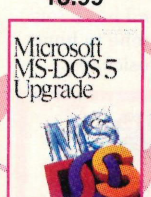
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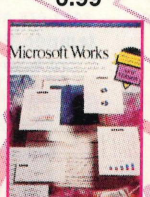
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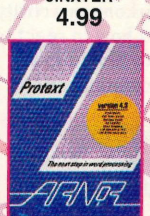
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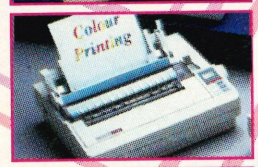
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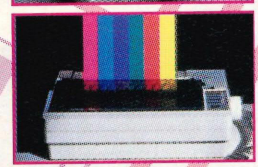
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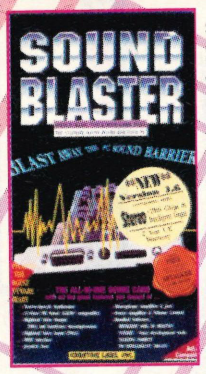


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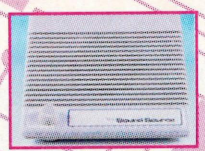
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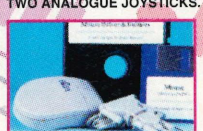


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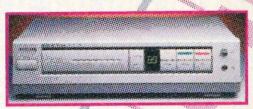
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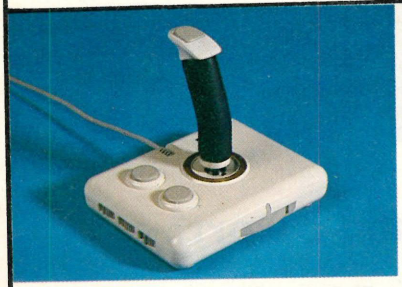
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SOFTWARE REVIEW

- Perfect General
- Ubi Soft
- (0252) 860299
- £34.99

Perfect

Has Ubi Soft found a worthy follow up to Blue Byte's Battle Isle on the other side of the Atlantic?

Dull, complex, poorly presented pursuit of train-spotting nerds. Undoubtedly that game has left many people who were new to strategy clamouring for more and Ubi Soft, keen not to disappoint, seems to have come up with the perfect follow on product.

This time it doesn't come from the German stable but from a small US development team, White Wolf. Superficially Perfect General is similar to Battle Isle; they both cast the player as the commander of a task force attempting to either attack or defend a small geographical area using a variety of combat equipment and forces. There, however, the similarity ends. While Battle Isle is set in the future using cybernetic troops and advanced equipment, Perfect General is set well and truly in the present time and the commander is given use of the sort of equipment and forces that a modern general would expect to command.

War games

Like most war games, Perfect General is played using a set of icons which represent the units under the commander's control. These are moved around a hexagonal grid representing the terrain over which the battle is fought. The first thing which sets Perfect General apart from many war games is that your objective is not simply to eliminate the enemy, although doing so will undoubtedly help, but to capture and hold cities.

Each game lasts for a set number of turns and each turn points are scored for every city which one side or the other occupies at the start of that turn. The upshot of this is that you might end a game with only one damaged unit left, but still have won because of the number of points you have accumulated during the game. The importance of having control of specific geographical locations makes Perfect General a lot more tactically interesting than some war games.

The player has the choice of playing each of the 13 scenarios as either an attacker or defender. The defender usually begins with an advantage in terms of territory occupied, but the attacker may have the superior force. Play can be made even more interesting by playing match games in which you play either the attacker or defender and then swap and play the scenario again. Points are then totalled for both games to create a final score.

Each turn is divided into eight phases. The first of these, purchase and placement of units, occurs only if the commander has any 'buy points' remaining and space on the landscape to actually allocate new units. Each commander starts the scenario with a set number of buy points, but more buy points are occasionally available in the form of reinforcements.

Next is the mobile artillery plot. Here all artillery can be used in one of two ways, a direct shot, or laying down a barrage. Unlike a direct shot the barrage does less damage over a wider area, but it is impassable for a complete turn, therefore it is useful for restricting the progress of your opponent in a particular direction.

The artillery plot, which is for stationary artillery, is something of a shot in the dark because this plot doesn't take effect until the following turn, so you have to try and guess where your opponent will move his forces. Perhaps more importantly, it is essential to second guess your opponent when it comes to moving your own forces so you don't get caught by his artillery plot. Where the artillery plot really comes in handy is in removing static objects like bridges and laying down a barrage of fire.

In between these two phases comes the indirect fire phase in which the mobile artillery plot and the artillery plot from the previous turn are made effective. With the artillery orders out of the way comes the first of two opportunities for direct fire. Each unit capable of direct fire can fire once only during each turn, but the moment at which a unit fires is variable. The first opportunity comes immediately after the artillery plots, and a second opportunity comes after the movement phase, at the end of the turn.In each case a unit being fired upon may return

PC review — TWO MINUTES OF ESTABLISHING A BEACHHEAD...

An Island at Peace gives the attacker a chance to establish a beachhead. Almost every unit will be required to succeed.

Once the units are in place the enemy defences can be softened up with an artillery bombardment before the troops make the push towards the vital cities.

Having fast transport for ground troops is essential to back up the mechanised attack. Infantry will hold any positions gained by the advance forces.

After a successful barrage it's time for the main force to push into enemy territory. There are many geographical obstacles to overcome.



General

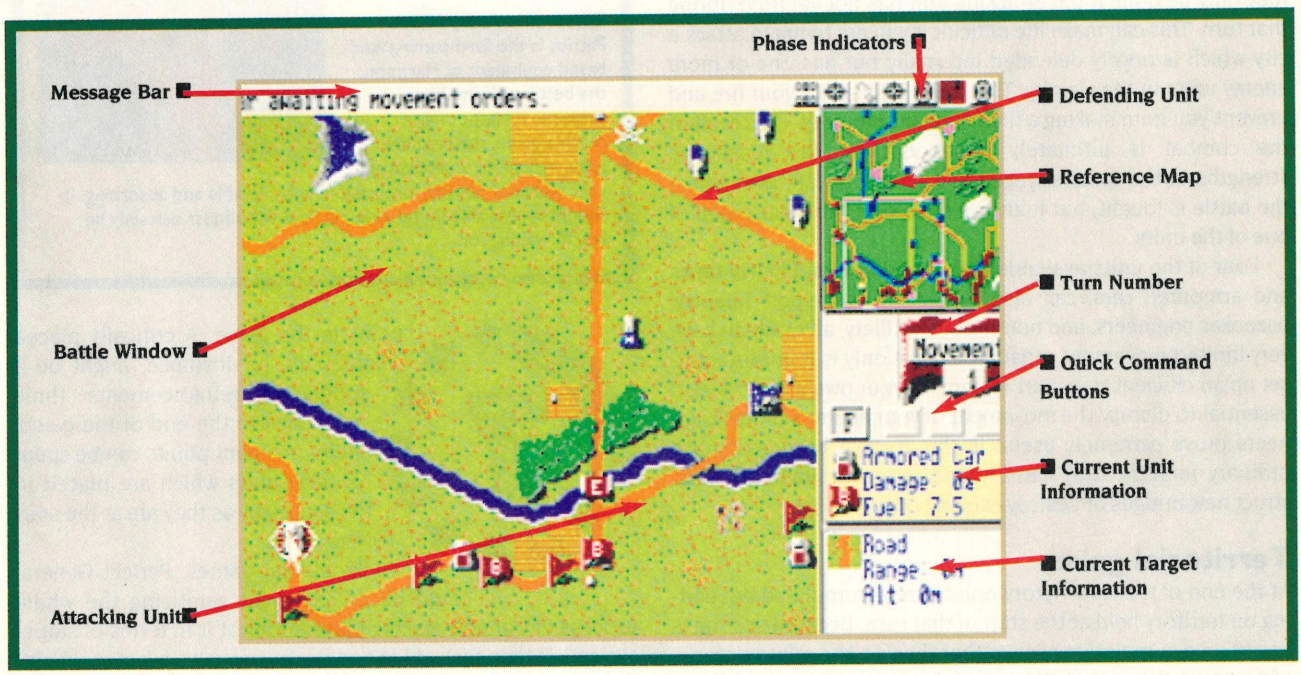
fire providing it hasn't already fired during that turn.

The ability to return fire depends on the attacked unit having a line of sight to at least one enemy unit, not necessarily the attacking unit. This is the only part of the game which requires fast reactions as well as intellect; an indicator appears for a short time whenever a unit may return fire, but a key must be pressed quickly to take up the opportunity before it passes. The return fire feature is a clever inclusion because it allows units to make a last stand when they are in danger of being destroyed by a shot.

Finally you get to move your units. Movement works in the traditional way, with each unit type being assigned a number of movement points, and each terrain type requiring a set number of points to cross or enter. Thankfully the program avoids putting the player through the laborious task of moving each unit hex by hex; just click on a destination and the program will trace the most 'intelligent path' towards that location. Select a destination that is on the opposite side of a mountain from the unit being moved, for instance, and it will carefully wheel its way round the base of the mountain rather than spending an eternity trundling over the top.

It pays to be careful in your use of this system, however. During one game I was at a critical stage in which the survival of my remaining units was of paramount importance. One light tank had been badly damaged so I didn't want to expose it to direct fire. Since it was separated from the enemy by a small wooded area, I decided to move it into the cover of the trees and then to use it to ambush the tail end of the progressing enemy force. To that end I clicked on a hex within the far side of the wood only to watch aghast as my tank, rather than creeping stealthily through the copse, trundled merrily around the outside of the wood to reach its destination, consequently being blown to smithereens and nearly losing me the game.

This brings me nicely on to another aspect of the direct fire system. Units that have still not fired may have the opportunity to take passing fire at enemy units on the move. This is quite handy because an enemy unit may start and end the movement phase under cover but be forced to move into the open to



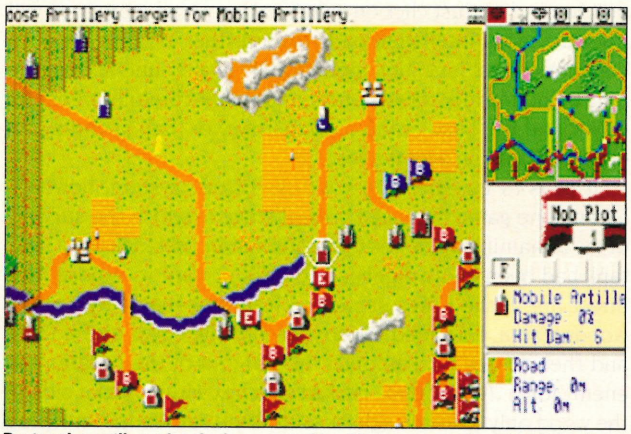


Nearer the city a close combat ensues. The outcome of this battle will almost certainly decide the fate and future occupation of the city.

Later rain creates mud, slowing the attackers and giving the defenders the advantage. Mud is important – it cost the French Agincourt, after all.

If the defenders hold the city they get vital reinforcements and greatly reduce the chances of the city defences being breached. On this occasion, they're unlucky.

As the game comes to a close, the attack has succeeded and the defenders must pick up the pieces while the attackers celebrate a successful action.



During the artillery plot the hexes capable of being targeted are highlighted. Shaded hexes are not in the firing unit's Line of Sight.

reach its destination. In such a case it is far better to try and destroy it on the move than to wait until it has reached a more defensive position. This can also be a way of stopping units which are heading for a poorly defended city or unit.

Close combat also takes place during this phase and is initiated by moving on to a hex occupied by an enemy unit. This may only be done if the attacking unit has not yet fired during that turn. This can make life difficult if you are trying to attack a city which is poorly defended internally but has one or more enemy units in the vicinity. These will often draw your fire and prevent you from making a final push into the city. The result of the combat is ultimately dependent on the respective strengths of the units engaged and on the terrain over which the battle is fought, but it always ends with the destruction of one of the units.

Four of the units available, light, medium, and heavy tanks and armoured cars, can also be used to transport infantry, bazookas engineers, and non-mobile artillery, all of which have very limited movement capabilities. Not only is it important to set up an efficient transport system for your own side, it is also essential to disrupt the movement of your enemy's units. Engineers prove extremely useful in this respect because, unlike ordinary infantry, they can lay and remove minefields, construct new bridges or destroy existing ones.

Territorial gains

At the end of the turn victory points are accumulated depending on territory held at the start of that turn. Because scoring is based on a cumulative basis rather than on the relative status of forces at the end of the game, the emphasis is on gaining territory quickly.

Reinforcements play a large part in some scenarios and can radically change the lie of the battle. Reinforcement points are usually earned for holding a particular location at a certain point in the game. A critically placed large city, for instance, might be a source of reinforcements three turns before the end of the game. Reinforcement points can be spent on new units which are placed in the same way as they are at the start of the game.

Like all war games, Perfect General could be criticised for sanitising the whole process of war and making players look at it in terms of statistics rather than loss of life and destruction. It's a fair comment, but most games involve or imply some form of violence.

Perfect General is not the sort of game which will give anybody instant gratification, it needs some work. Taking time to read the manual and learning how to play the game properly will eventually yield rewards however. A quick start guide does ease the burden somewhat, but it only introduces the player to the mechanics of the game, tactics is something you will have to learn for yourself.

Neither will the any of the game's presentation provide any instant thrills. Graphics and sound are both purely functional rather than decorative.

If Perfect General can be criticised it is only in respect of the longevity of the game. The 13 scenarios may be enough to keep the casual gamer happy, but they are unlikely to keep the dedicated wargame aficionado occupied for too long.

There is a, however, a very strong possibility of additional scenarios being available in the not too distant future.

LAURENCE SCOTFORD

PC review 7

REQUIREMENTS

HARDWARE

Perfect General must be installed to either floppy disks or a hard drive and takes up just over 1 megabytes of space. Machine speed is not really a critical factor.

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ALTERNATIVELY...

PC review

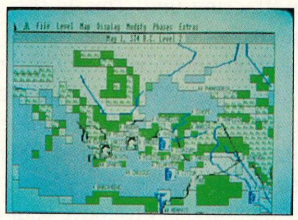
Battle Isle

Ubi Soft, £34.99



Its first foray into war games was a great success for Ubi Soft. If you've never played a wargame before, this is a great way of starting. The presentation is a bit more spicy than that of Perfect General and it is more generally accessible, but it doesn't have the tactical depth of the former. Nevertheless the 30 plus scenarios should keep even hardened war gamers happy for a while.

UMS II



MicroProse, £40.87

This is the second version of the classic war simulator. Because UMS is 100% data driven, it can be used to set up battles in any time period using any technology, even futuristic wars. Unfortunately the program is very dry and technical and likely to interest only the genuine student of battle tactics.

Patriot



Electronic Arts, £TBA

Patriot is the forthcoming land-based equivalent of Harpoon, the best naval simulator available. If Harpoon is a reliable guide, the resulting game will be very detailed and very technical but ultimately extremely playable and absorbing. It should be available in the Autumn, and will almost certainly be worth waiting for.

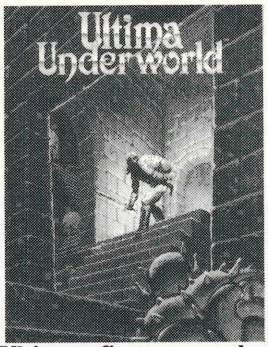
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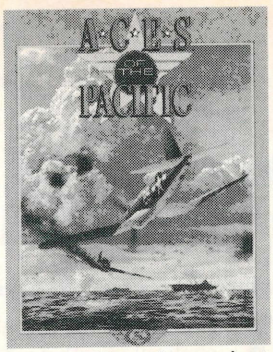
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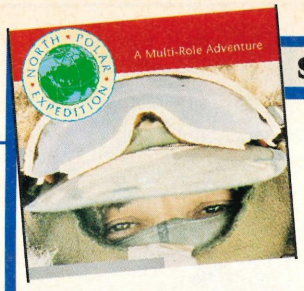
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SOFTWARE REVIEW

- North Polar Expedition
- Virgin
- (081) 960 2255
- £99.99

North Po

Trek to the top of the world with Britain's top explorer, in Virgin's long-awaited educational CD-ROM game

There is always a slight feeling of intrepidation when confronted with a piece of software which is promoted as combining "the best features of role-playing games and educational programs". The mere mention of education conjures visions of a worthy but dreary offering packaged with condescension and marketed at teachers with a tenuous idea of what children really want to play.

North Polar Expedition promises excitement, action and adventure in one of the most hostile environments on earth and that should be enough to stir and capture the hearts and minds of adults, let alone children.

Sadly, the reality – or a least the computerised reality – is a little different.

If you are a lone gamer then I think you will find this CD-ROM product a disappointment. If you are a teacher looking for something your class to get their collective teeth into, then there may just be something here to interest you. But the excitement won't be on-screen but rather from the interaction between a group of pupils as they discuss and argue about problems and incidents raised in the game. That is where North Polar Expedition's potential lies – and even then I suspect the teacher will have to act as catalyst to the discussions and maintain close supervision to keep 'off-screen' conversations bubbling along.

Holiday snaps

Visually, North Polar Expedition relies for its impact on photographic footage taken during the North Polar section of explorer Sir Ranulph Fiennes' famous Transglobe expedition.

Looking at these images is distressingly similar to having a neighbour's holiday snaps inflicted on you. You can imagine the commentary: "This is Ranulph in a blizzard and this is where Ranulph and I stayed. Here's one of me and my frostbitten toes. Look at all that ice hanging from Ranulph's beard. Here's me falling down a crevasse. How we all laughed. And this is a picture of snow. And another picture of snow. And another. And another..."

The quality of these images is frankly poor and that may or may not be due to the original source material. The effect is like looking through – well – I suppose the appropriate term would be a blizzard. Everything appears slightly blurred and grainy – even the pictures of base control in London!

There is a little attempt at animation. What does exist is largely confined to a sequence of five or so pictures showing, say, an explorer falling off a skidoo (a mechanical snow bike), a polar bear peeking over a tent, or – amazingly boringly – a man sleeping in his tent. The effect is somewhat reminiscent of an early pop video where the band is shown in a quick succession of crazy poses in a desperate attempt to create some semblance of excitement.

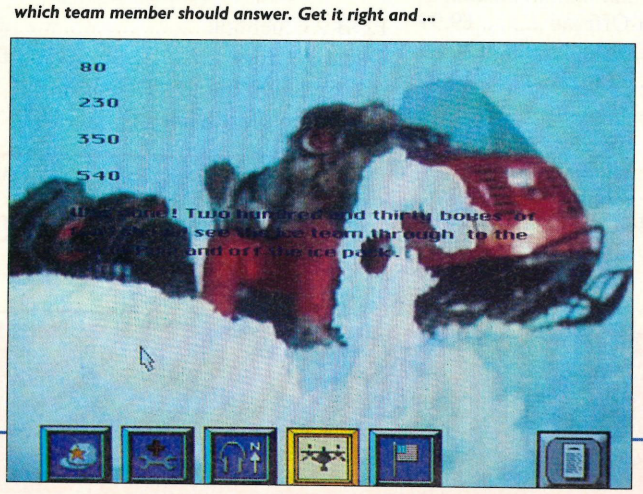
Team morale

It is over these images that the game takes place. Ideally a group of you sit round the computer and each will take on the role of, say, expedition leader, radio operator, mechanic, navigator, base controller, etc. At the beginning each member of the team must answer a series of 12 questions designed to increase individual scores and contribute to team morale for the actual Polar trip. If you do not do very well with the questions you can carry on answering more to boost the score.

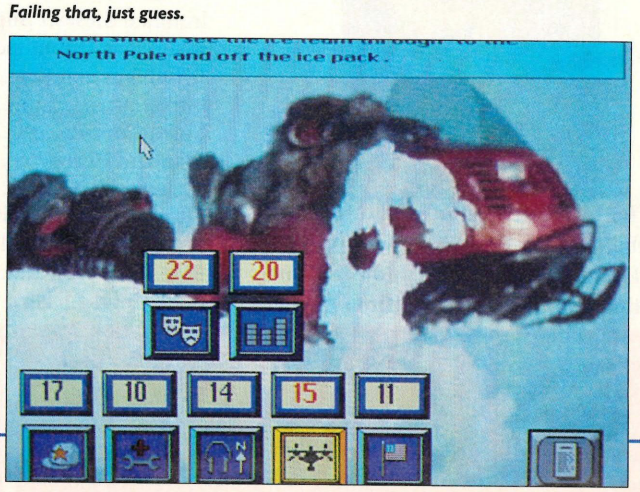
A question, for example, would be: How do you treat burns? Potential answers are: 1) Apply snow 2) Cover with a dressing 3) Cover in butter? The answer which will gain you the most points is to use a dressing after treating with snow. Obviously this question is aimed at the person nominated medic but everybody playing could join in the discussion as to the best-type of treatment.

After these questions the team then moves on to the expedition itself. Essentially this is to travel the 450 miles from the north of Canada to the North Pole and you have between 40

A question of food. Here you are asked to decided how much food will be needed on for the expedition. The icons at the bottom of the screen indicated which team member should answer. Get it right and ...



... points are awarded to individual scores which in turn boosts team morale. Most of the questions require just a modicum good sense to get them right. Failing that, just guess.



lar Expedition



Extra supplies are flown in for the team from base camp. The air support also allows injured explorers to be taken to safety.



The route you are trying to take to the North Pole. As you progress on the journey, your position is shown along the red line.

and 90 days to complete the journey. Obviously there are varying difficulty levels and the expedition can be undertaken many times without too much repetition. Problems are generated randomly.

Frostbite and gangrene

Progress very much depends on how well you answer the various questions and cope with the numerous problems which confront you. These can range from equipment failure, fuel and food shortages, bad weather, illness – there's a particularly nasty picture of some poor unfortunate's toes which had become frostbitten and gangrenous – radio problems, moving ice floes, sponsors withdrawing backing, etc.

None of the questions seemed particularly difficult, especially when you are supplied with the potential answers. How you answer will have an effect on the progress of the expedition. It is mainly a matter of being sensible. For example, if one of the explorers has gangrene of the feet, you don't have to be brain of Britain to work out he needs to be airlifted to hospital as soon as possible. Whereas if someone has a fever, it makes sense to wait 24 hours or so to see if it subsides. Calling in an aircraft to take him to hospital straightaway would be very expensive and, ultimately, may be totally unnecessary. There was even an encounter with a polar bear which was showing too much interest in a tent. The options given are to kill it, wound it or scare the bear away. The best choice is make a loud noise to frighten it. Apparently most polar bears will not look at humans as a potential snack unless they – bears, that is – are too old or sick to catch their natural prey.

Howling wind

Without boasting, I made it to the North Pole on my first attempt. It took me 67 days and less than one hour at the computer. So you can see the gameplay is not that difficult, at least in its easy options.

The sound effects – our machine was fitted with Sound Blaster – are also a little disappointing, being mainly confined beeps when commands are executed and snatches of a howling icy wind or the engine noise from the skidoos. There was no music at all.

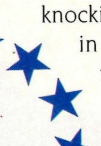
Sir Ranulph's expedition took place between 1979-82, a fair time ago now. And indeed North Polar Expedition has been knocking about for some time as well. I first saw it back in 1990 when it was on 12" laser disc and required the BBC 'Doomsday' System to run it. Now it has made on to CD-ROM.

If you are buying North Polar Expedition for yourself then I think you will find it a little lacking, unless you are a huge fan of polar explorations. If you are a teacher considering it for your class, then it may be worth your while looking at it. But, as always, insist on seeing it running before parting with your – or the school's – money. Don't buy blind.

Overall, North Polar Expedition is not the product which will make you decide it is time to invest in a CD-ROM drive. But, there's not much around in the entertainment/education field that would inspire you to part with your money.

Included in the package is To the Ends of the Earth, Sir Ranulph's book of the expedition. Personally I would prefer to buy just the book. At least the pictures should be a little clearer.

PAUL BOUGHTON

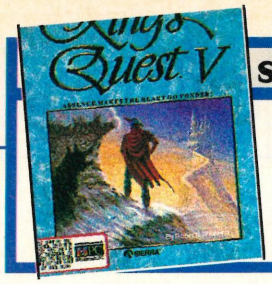


HARDWARE

REQUIREMENTS

In addition to a CD-ROM drive, you will need 640K RAM and a Microsoft compatible mouse.

CGA ✗	EGA ✗	VGA ✓	Tandy ✗
Hercules ✗	Roland ✓	Ad Lib ✓	
HD ✗	✗	✓	✗



SOFTWARE REVIEW

- Kings Quest V
- Sierra
- (0734) 303322
- £44.99



Mordack's castle. Home to the evil wizard responsible for hijacking your home and family. You'll need all your wits about you in here.

King's Quest V

How's this for a paradox? To play Sierra's CD-ROM version of King's Quest V you need at least 570K of available RAM (as opposed to the usual 640K of base RAM). However, when you install a CD-ROM and a mouse driver to play the thing with, your (or at least my) available RAM goes down to 558K. Without a mouse driver you can scrape together enough RAM to load the game, but one of King's Quest V's main selling points is that it employs a 'brand-new' point 'n' click interface, eliminating the need for a keyboard.

It doesn't stop there. You could select a sound board that doesn't need as much memory as a Sound Blaster does (or maybe one that your machine doesn't support in order to remove the sounds entirely) but this would then remove all the speech from the game and blows a nice little hole in the other 'main selling point' for the CD-ROM version. You could free up enough memory by not installing the CD-ROM driver I suppose, but that's just silly. Basically, to play King's Quest V on a standard CD-ROM setup requires a 'bare bones' machine, as somebody here described it.

On the other hand, installing it on a Windows-based CD-ROM setup proves to be no problem, working first time, giving full speech AND letting you use a mouse to boot. If I didn't know better, I'd say that Sierra was trying to dictate what technology to buy once again, forcing everyone to upgrade to Windows PCs before allowing us to play its games. But we know better than that, don't we?

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"Links from Access sets new standards for golf simulation software"- **PC Magazine**

"It's graphics are the best yet...far superior to any other computer golf game."— **Golf World**

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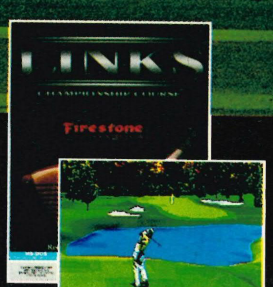
ACCESS U.S. GOLD

U.S. Gold Ltd., Units 2/3, Holford Way, Holford, Birmingham B6 7AX. England.



CHAMPIONSHIP COURSES

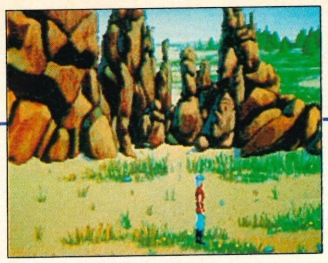
The LINKS Design Team has taken special care in producing some of the most outstanding golf courses in the world. Each course has its own unique challenge and personality. LINKS delivers graphics so realistic, you'll think you're there. ***Experience the challenge!***



Firestone Country Club Akron, OH



A playful dog terrorises the local ant population. Can you help King Anthony out by removing the unwanted visitor? Perhaps a nearby stick would help?



Hail, hail Serenia, land of the brave and free. The local town is famous for its cloth merchants, shoe repairers and toy shops and everyone, I mean everyone, is friendly. Enough to make your stomach turn ...



The local forest borders on a vast desert (?), inhabited by brigands, nomads and more than its fair share of ancient temples.

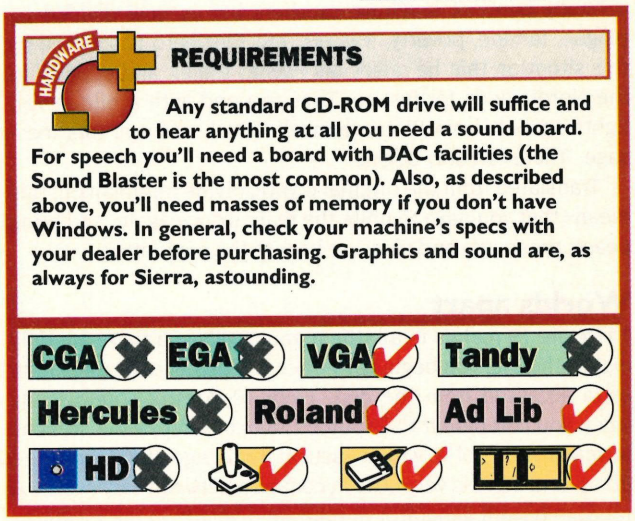


Having got the thing up and running (eventually) the game turns out to be quite enjoyable. The one thing that is evident right from the start is that Sierra has aimed this game towards a family audience, the family in question including several young children because the whole story has a 'fairy tale' air about it – the comical owl that offers advice, the harmless grizzly bear that annoys the bees, the leader of the ants King Anthony. Even the digitised speech is like something straight out of a Disney movie.

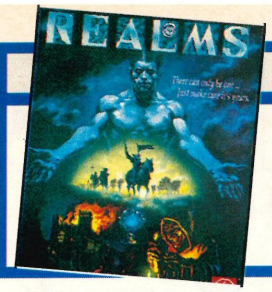
It's in the trimmings that this version scores over the original. It's good to see Sierra making an effort to utilise the extra facilities offered by CD-ROM and the inclusion of full speech and updated music and graphics at least gives the impression that it wants to offer us more for our hardware. I'm a little disappointed that they didn't use CD-generated speech or music, but the quality of the digitised noises is more than adequate.

Hopefully Sierra's future CD products will also get serious overhauls and not just in the cosmetic departments. Space Quest IV deserves some added gameplay and Larry V could do with some serious thought to playability. In this respect, King's Quest V plays well and is enjoyable enough for a modern family to spend time with. Providing one of the elder sons is a DOS wizard and can get the thing running in the first place.

PAUL PRESLEY







SOFTWARE REVIEW

- Realms
- Graftgold/ Virgin
- (081) 950 2255
- £35.99

Isometric 3D world simulators aren't exactly ten-a-penny these days, but there are enough of them around on various formats for the novelty to have worn off. Bullfrog began the trend with the all-conquering Populous (see Alternatively ...) and Graftgold's contribution expands the genre with a greater variety of graphical displays and a heavier reliance on tactical skills.

The story is a simple one. The king is dead, his longship is burning and drifting out to sea, and his heir contemplates the sad events of recent history. The world was once populated by a happy band of laughing cavaliers but is now divided by plague, famine, poverty, war, etc, etc. Our hero is so irked by this situation that he raises his fists to the air and appeals to the Nordic gods for justice. They respond with a billion-volt lightning bolt from Wotan himself, which conveys this message: 'There can only be one.'

Translated from the original cryptic divine minimalism, this means that you have to unite the realms once again, and bring peace, prosperity and pleasure back to the population.

Worlds apart

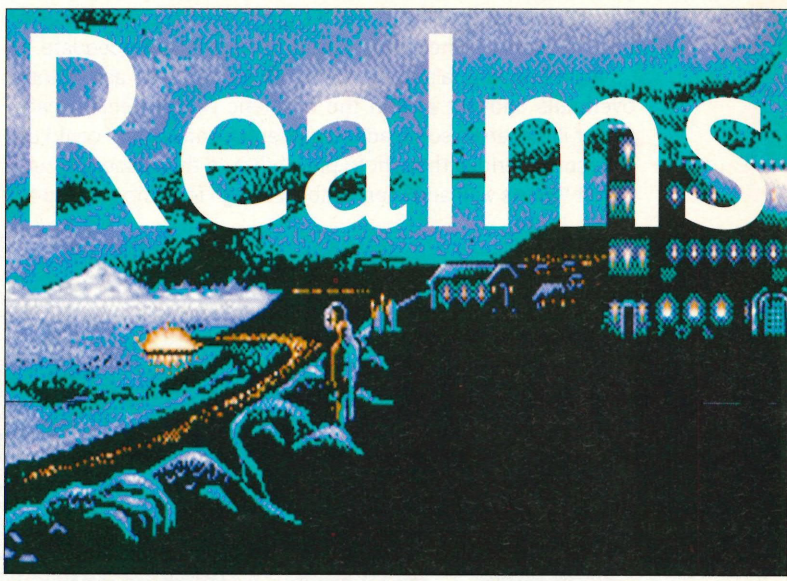
There are 10 realms in all (the manual tells you there are only eight), the one you begin with when the game loads, plus nine extra accessed from the disk. Even 10 doesn't sound many when you compare it to Populous' 500, but in practice Realms is much more of a varied tactical challenge than Bullfrog's effort, and there is very little in common between each world. A random terrain generator or random diversity in the locations of enemy and friendly settlements would have spiced up the variety; but you can't have everything, even if you think you're entitled to it because of the price.

As you might expect, the difficulty level increases as you progress, and an innocuous-looking green and pleasant land often harbours sinister hordes of marauding barbarians. There are two factors to watch out for when you're selecting a level: terrain and enemy strength. A territory with plenty of water might look pretty at first sight but can be a struggle to march your troops over in practice; and you can find yourself in a land where you're just one of six different leaders, all vying for power.



A magnificent city rises from the plain! Unfortunately it belongs to the enemy.

Total domination is Graftgold's goal, as it aims to prove that all world simulators are not the same



TWO MINUTES OF RULING THE WORLD

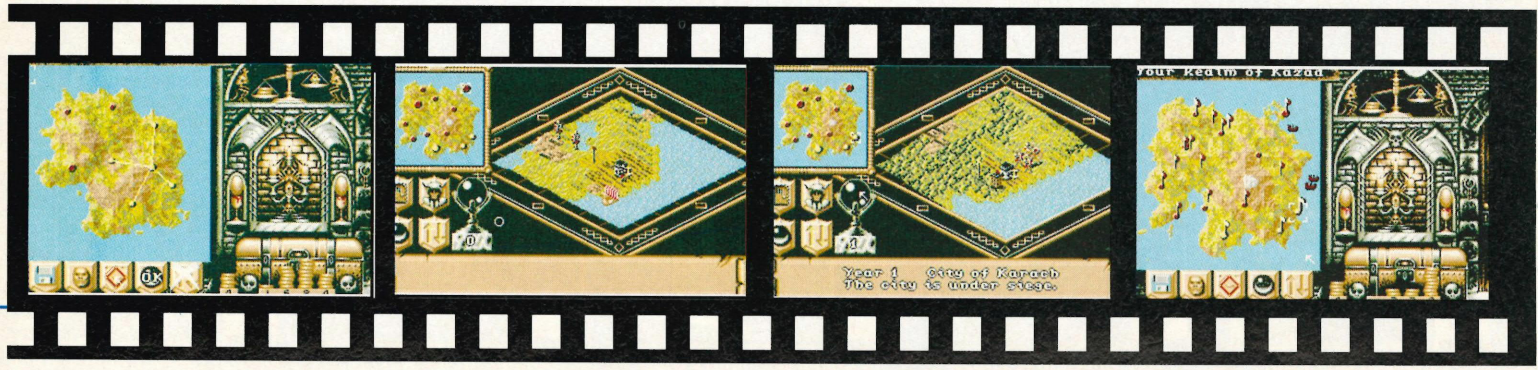
PC review

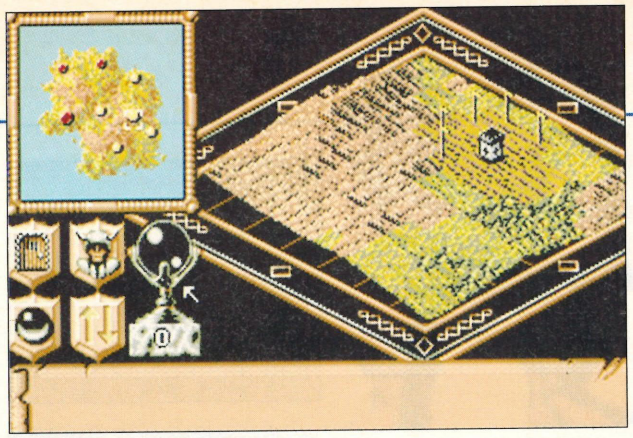
Starting on the first and easiest realm, it's a good idea to check out the tax routes. If your cash flow starts to suffer, your health, defences, building plans and morale will, too. Art imitating real life, eh?

After twiddling your thumbs and looking at the scenery for a couple of minutes, you check out the enemy's cities. Aaargh! He's already built an army and is now launching a couple of longships against you.

Within minutes he has landed and holds one of your own cities under siege. The cheek! You have two options: let the baddies have their way, or arm your defence forces and send the invaders packing.

The bad news doesn't end there. By using your all-seeing armies icon, you discover that the bad guys have been training troops and stocking up on weapons and ships. It's time to get a move on.



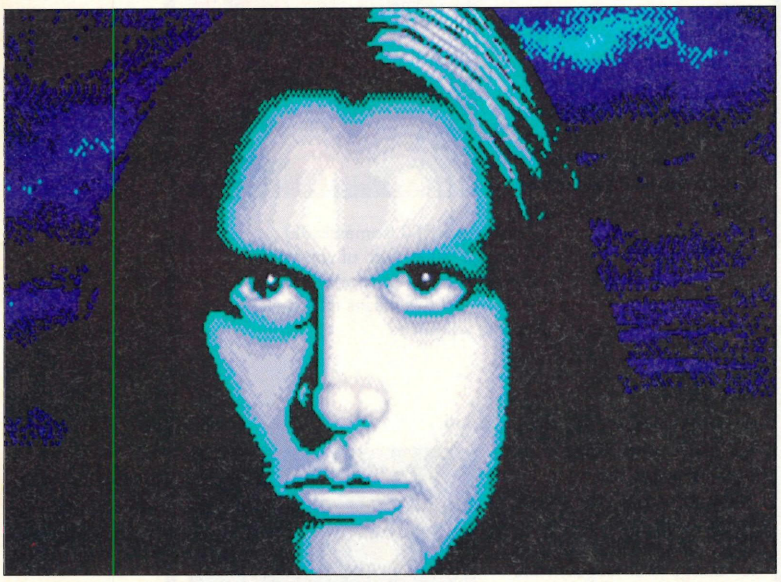


The Populous-style isometric 3D display reveals terrain in greater detail: here you can see a town guarded by friendly forces.

You can play any world at any time, but you're well advised to begin at the beginning, get the hang of the controls and take it from there. This isn't as daunting as it sounds: there are only six different displays in the game, and you can access any one within a couple of mouse clicks at most.

The whole icon system is well designed: you have a maximum of half a dozen controls on each screen, and they are all easy to understand, which will be comforting to anyone who had nightmares about Populous. Incidentally, you can control the action with mouse (preferable), joystick (not recommended) or keyboard (can be awkward during the heat of battle).

A brief animated intro sequence sets the scene for the action to come.



The action begins inside your fortress, from which you can direct strategy and monitor your progress. Each terrain is a mythical land in which rulers of cities strive for dominance at any cost. Your first job is to survive, but the ultimate objective is to rule over a multi-racial population and conquer the world.

The fortress screen is divided into two: an overhead relief map and the inside of a castle showing tax information. The map displays rival settlements ruled over by capital cities — you are shown in yellow, friends in blue and enemies in red. By using the icons at the foot of the screen you can examine the terrain in more detail, save a near unlimited number of games to disk, or load in any of the other scenarios. You are also able to discover information about troop movements and strengths, and about tax routes.

Taxes are vital for your survival. Taxes from cities not connected to the capital cannot be spent: if a route is severed the cities will attempt to divert the revenue, but might not take the best course. You can alter these routes to streamline your empire and also help prevent the spread of diseases. The amount of revenue and tax flow is altered using the castle display: you can increase/decrease the tax rate and see at a glance the amount of money in your treasury.

A pair of scales also tells you whether or not your revenue is capable of supporting your armies. These degrees of financial control are a subtle and enjoyably demanding aspect of the game, and can affect the quality of life and morale of your entire civilian and military population. You have to strike a balance between growing too quickly and defending yourself — and it's not always easy to get it right.

Examining the map in greater detail takes you to the isometric 3D display. At first this is a little disappointing: cities are (under-)represented by single towers, and armies by flags, men, tents or ships; but you soon get used to it, and it's compensated for by the detail in the rest of the game. You can move around a landscape in two ways: fine scrolling is achieved with directional arrows, whereas greater distances can be travelled using a mini-map. There are six different kinds of terrain which affect your movements: grassland, forest, desert, rock, cultivated land and snow.

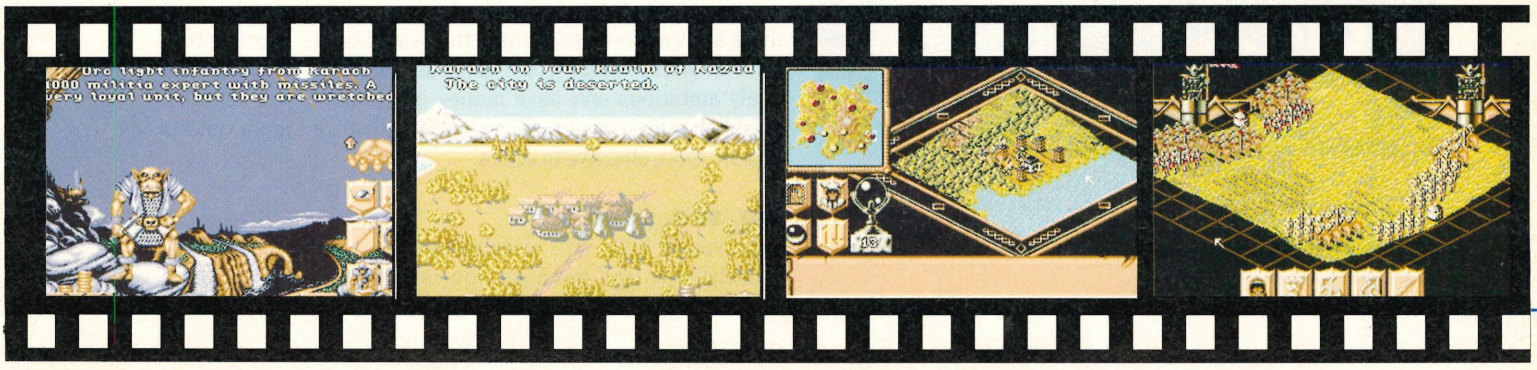
The 3D display offers greater control over troop movements and allows you to examine cities and armies even more closely (see below), and to take direct control over a battle. It also brings messages from your kingdom via a crystal ball: the game automatically switches to the source of trouble when you

Your raw recruits are a pretty sorry looking bunch, but you can soon turn them into a lean, mean fighting machine by kitting them out with the latest weapons and paying them a salary.

Too late! However conscientious you are, you're bound to lose a city sooner or later. Sacking and plundering is one of the vilest ways to go, though — so get ready to wreak revenge and reclaim your land.

Camping outside the ruined city, you amass a huge force of arms and men from surrounding settlements. Sheer weight of numbers doesn't always guarantee victory, but it helps boost your confidence.

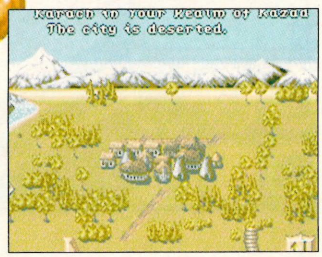
Stiffening the sinews, your crack squad of cavalrymen, foot soldiers and missile throwers lines up for battle. Making use of the formation and movement options could save your civilisation ...



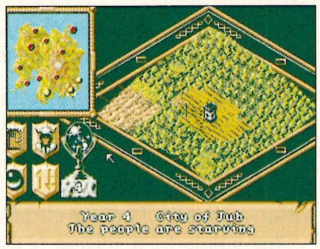


If one of your cities is surrounded, the enemy can exact a tribute. Paying up is more attractive than the alternatives.





As you progress, terrain and enemy numbers become harder to deal with. Meet Norda ...



Armies aren't the only problem your population faces: if you don't keep them stocked up with grain, they starve.

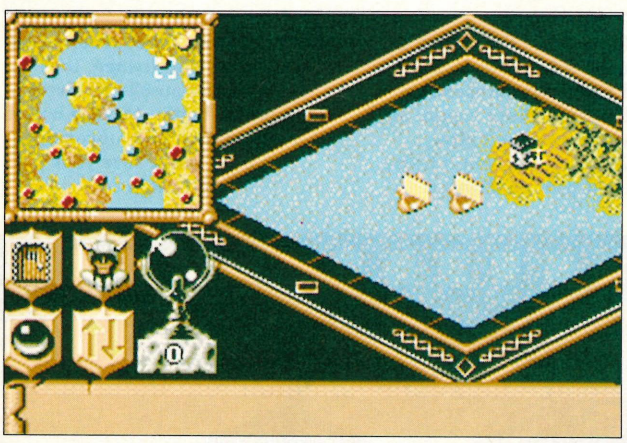
receive a message. This can be annoying if you're busy doing something else, and would rather let your population starve for another couple of days.

Towns and cities

By clicking on a settlement in the isometric display you access the city screen, which offers a wide range of options concerning the strength, health and welfare of the local population. You can tap the citizens for a few coppers and spend the cash on armies, cavalry, stronger walls, clearing land, buying grain, caring for the sick or paying tributes to a besieging army. The cost of each of these actions, and your current funds, is clearly displayed. Problems arise when you run out of money and your people's health or morale starts to ebb: citizens will change allegiance or simply die out if you don't look after them.

And, of course, the fewer people you control, the less money you earn ... It's a good idea to protect your cities from the very beginning, even before you think about attacking the enemy. Your opponent is often uncannily well informed about undefended settlements, and will lay siege to them quicker than you can say, 'I wish I hadn't left that settlement undefended.' A firm, aggressive response is often enough to repel him, and the best way to do this is to raise an army.

This leads you to yet another new screen. You can customise the army to suit your needs — though quality costs, so you can't afford to kit them all out with high technology. A picture of your basic warrior and description of the unit is enhanced by raising pay and spending cash on armour, weapons, missiles and shields. The variety and usefulness of these arms really does count in the heat of battle, which in turn dictates your strategy in the game as a whole. If you're feeling really ambitious and have money in the bank, you can also establish a few cavalry units: they usually travel more quickly and are more effective in attack.



With tears in their eyes, the yellow people wave good-bye to their longships. Most of them won't be coming back.

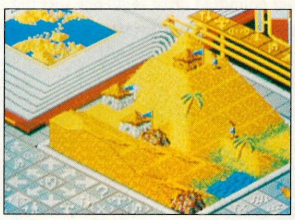
Go, see, conquer

Once you've built up a sizeable army and you're happy with your defences and revenues, you can dispatch units to begin

ALTERNATIVELY...

Populous

Bullfrog/Star Performers, £10.99. Also in double pack with Sim City, £29.99



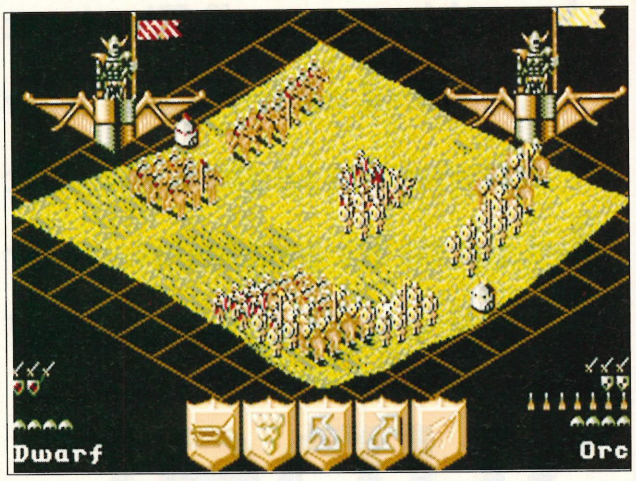
This was the original isometric 3D world simulator, first released two years ago, and now converted to just about every machine you can think of. So what's so special about it? In a word, power. You take the role of a deity attempting to defeat the forces of evil on any one of 500 isometric 3D landscapes. You have to encourage the growth of your own population by levelling land, and thwart the opposition by unleashing your divine powers — and this means effects like earthquakes, swamps, floods, and volcanoes.

Castles

Interplay/Electronic Arts, £34.99



Set in mediaeval Wales, Castles is a smaller and more militaristic stab at the world simulator genre. You play a king or queen whose aim it is to manage your kingdom and construct a group of fortresses strong enough to repel invaders. As well as the main task of finding a site, hiring labour, building the castle and defending it, there are various subplots taking you through disciplining an only son, aiding the crusades, sorting out outlaws and treating the church with respect. It's not a rapid-action game but it does provide a thoughtful, long-term challenge.





When armies clash there can only be one winner. Victory, retreat or annihilation are the options — and this time it was annihilation.

assaults on enemy territory. Leave this decision too late and you'll discover that the computer opponents already have the upper hand — there has to be an element of risk in your movements, otherwise you'll simply fail.

Troop movements are controlled from the isometric display. You can join units together to create formidable armies or send them off individually to attack a number of locations. This process is typical of the game's simplicity: all you have to do is click on a unit, then click on your destination and watch the soldiers go. If they have to travel across water you can help them by finding a friendly port, where they will commandeer a ship and sail along the coastline to their goal (this can be a slow process, though). The troops' actions differ according to the target. If it is a city they will lay siege until it surrenders, in which case you can loot, ravage, raze or annex the settlement; if it is another army, you have the option of leaving the computer to calculate the odds or moving to the battlefield and fighting the war for yourself.

The battlefield

The battlefield is a mini-strategy game in its own right. Engaging in a fight against a superior force with poorly armed, weak and demoralised troops is silly; and, thoughtfully, Realms allows you to examine both sides' strengths and weaknesses before you make that mistake. However, if you think you have a fair chance of winning, or your numbers are vastly superior to your enemy's, it's well worth entering into combat.

The battle takes place on an isometric backdrop similar to the 3D display. Armies on higher ground have a natural advantage, particularly when it comes to launching missiles. The battle begins on your command, which means that you can check out the enemy forces beforehand: all you need do is point to a unit's leader and a quartet of icons reveals its defence and attack capabilities, missile quantity and number of troops. New units can join the fray after it has started.

As the battle progresses you have a limited amount of control over movements: you can order a retreat, fire missiles (it's possible to kill your own troops if you're not careful), rotate your troops for a better offensive position, or change the formation. There are four formations, including wedge (best for attacks), phalanx (good all-round performance), line (plugs gaps and holds the enemy) and square (the best defence). You soon learn if you don't want to be wiped out it's a good idea to avoid full frontal assaults. The thorough manual offers plenty of hints and tips like this, so tactical virgins needn't worry.

Realms has a few of the raw elements to make it a world-beater, but doesn't achieve anything like the addictive qualities which made Populous so enjoyable. The basic gameplay is the same throughout, though you need a much greater awareness of positional, financial and military strategy the further you go. The later levels are where the real challenge lie, when you face more than one enemy and have to decide when to get involved and when to just watch the fighting.

The sound effects are adequate enough (though a few more would have been appreciated), and the music is very good: it's not overpowering and manages to create just the right kind of background atmosphere for individual sections of the game. EGA and VGA are equally well used, both managing to generate a unique feel to the 3D, still and map graphics.



On the whole the presentation is excellent: you don't have to keep consulting banks of icons, and switching between various displays couldn't be simpler. Furthermore it's technically impressive, too: no similar game makes as much use of still-graphics screens, which means that you do get directly involved with what otherwise would be a cute, but distant, world.

Even though it's the most interesting, visually varied world simulator currently available, the scope and depth of the gameplay doesn't justify the price tag: under £30 would have been nearer the mark for a neat and playable, but ultimately limited, strategy game. And if Populous II (due for release in September) achieves anything like its potential, Realms will have some serious competition.

GORDON HOUGHTON

REQUIREMENTS

Our review copy came on one 3.5" floppy disk, but a two disk 5.25" version is also available. The game can be played from floppy or installed to a hard drive, where it occupies 0.66Mb of disk space. 640K RAM is recommended. EGA is surprisingly good, and a decent, unobtrusive music track adds to the atmosphere.





SOFTWARE REVIEW

- Super Tetris
- MicroProse
- (0666) 504326
- £34.99

Is nothing sacred? The best game of all time has now spawned a sequel. Does it live up to its predecessor or is it a load of bolsheviks?

Super Tetris

According to the manual, the premise for Super Tetris is that when Tetris was originally invented, the powers that be in the Soviet Union were so concerned with suppressing information they had strict powers of control over all computer systems in the USSR.

Now, if the manual is to be believed, Tetris was responsible for bringing about the collapse of the Union, the freeing of independent states, the end of the cold war, the collapse of the Berlin Wall and the coming of peace in our time.

Anyway, now that communism is in its death throes and Russia is a funky place to be, Alexey Pajitnov has been able to embrace the one aspect of capitalism that shouldn't be forced upon anyone – sequels. Super Tetris never really attempts to justify its release, but when it's based on the best game ever it doesn't need to. The whole package has the air of several executives meeting round a table, looking at a bunch of sales figures and exclaiming loudly, "Let's cash in on a good thing", before promptly disappearing for a power lunch and leaving the whole caboodle in a young employee's lap.

At the time of the original's release, Tetris had everyone realising that there was a vast untapped resource of game designing talent behind the Iron Curtain and if they could create something as addictive as that, there must be plenty more to come. Unfortunately this promise didn't materialise and at the time of writing it's only Tetris-style games which have come from 'over there' and seeing as how this is practically the same game for the 90s, it appears that with the fall of the empire came the fall of originality. Let's hope I'm proved wrong in the near future.



As you clear each well, a picture of the next level's background slowly forms at the bottom. Clear a screen and you get the whole thing. Nice enough but of no practical use whatsoever.

Amongst the rubble

Super Tetris has three elements to distinguish it from the original (not counting the updated graphics and sound), rubble, bombs and bonuses. Instead of just trying to keep an empty well as clear as possible, your task on each level is to clear a half-full pit before you run out of room (or time). Every time you complete a line you are awarded with a number of bombs (two for a single line, four for two lines, eight for three and 12 for four), which can be used to blow away anything they touch. Finally, the bonuses are all contained within the rubble and when they're exploded with bombs will give you things like

PC review

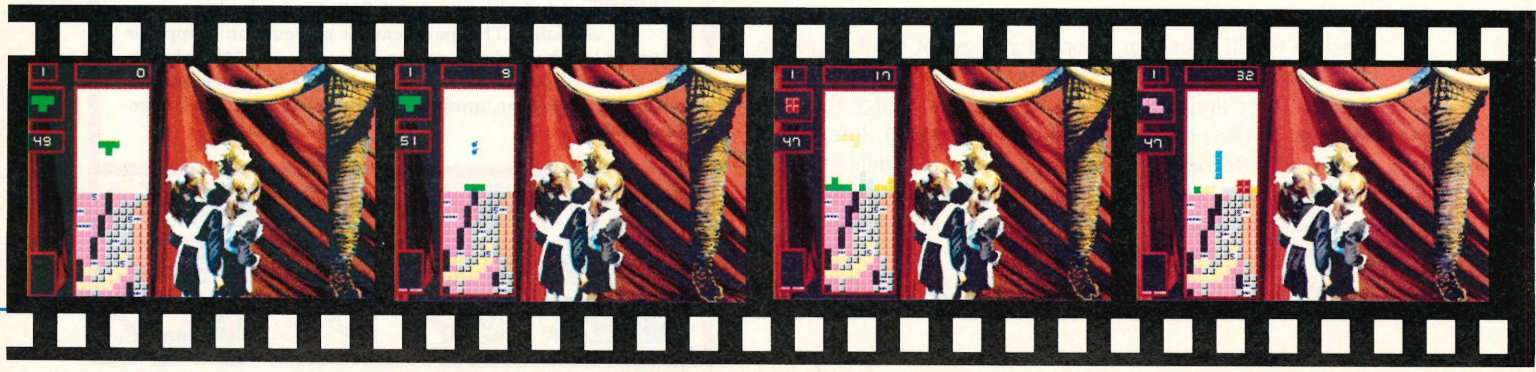
TWO MINUTES OF IRRITATING, INFURIATING, AGGRAVATING, ANNOYIN

We start with a random selection of blocks at the bottom and our first piece slowly making its way down the screen.

Dropping it into the only available hole we remove a line from the puzzle and are rewarded with a couple of bombs. Just the job for unblocking that hole.

A couple of blocks later and we're not doing too well, managing to stockpile a number of blocks above the waterline. Let's start clearing those away.

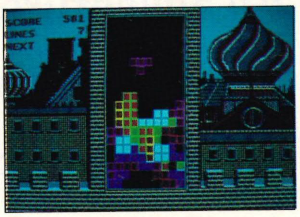
Clearing the debris we open a nice long hole for this straight block to slip into. That will clear a few of those lines and give us a bomb or



ALTERNATIVELY...

Tetris

Spectrum Holobyte/Infogrames, £24.99



Look, comparing Tetris with Super Tetris is like comparing Coca-Cola with Pepsi. Both have their merits, but in general they're far too alike to make any notable comments. Suffice to say, the bombs of Super Tetris push the original to the front of the 'Please buy me' queue, but if you're after some enjoyable two-player action, Super Tetris will do just fine.

Tetris

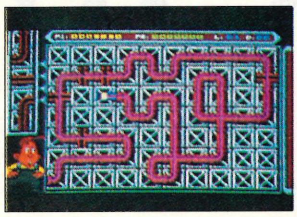
Various Shareware outlets, £ varies



You could always turn to the shareware market for your versions of Tetris, where there are many of various quality. For the most detailed information on which ones to consider, you could do far worse than check out our shareware section starting on page 123 where there is a complete run-down on everything from personal organisers to arcade games.

Pipemania

Empire, £25.53



If falling blocks are getting on your nerves, why not let some water-logged pipes do the same instead? Pipemania sees you attempting to build a continuous pipe with randomly selected sections (U-bends, T-junctions, crosses etc.) before a stream of water is unleashed to travel their length. It's completely different to Tetris but no less addictive, having been transferred across virtually every home computer, handheld and console going.

extra pieces to play with, bubbles that fill all available spaces or automatic straight pieces.

On paper this probably sounds like a good idea and it would have been – if you didn't receive bombs every time you clear a line. This just makes the game too easy and eliminates the frustrating tensions caused in the original whenever you put a piece in the wrong place. There you had to play skillfully around it: here you just get a line and blow it away. The challenge is gone and so, therefore, is the playability.

Super Tetris does have a few redeeming features, not least of which are the two player games. Although neither are as good as the traditional two-screen battles experienced on handheld consoles and the like (where lines are added to the bottom of your opponents screen whenever you clear some), they are quite novel in that you get to play on the same screen, in the same well, as your opponent/partner. Cooperative play involves the two of you working together to clear the rubble with points awarded for good teamwork.

Double destruction

Competition play involves the two players fighting out for the big scores, using their bombs to blow the other player's pieces up and generally making life as difficult for each other as possible. It's very rare that you manage to get off level one is this mode but it is quite good fun for a while. You can still play the two-screen version but only with two PCs linked together (through modems or cables).

PC review 4

Both are enjoyable but don't really lend enough weight to the rest of the package to make the whole thing worthwhile. Super Tetris is flawed from the start, because of the bombs and all the padding and polish in the world aren't enough to plug the gap.

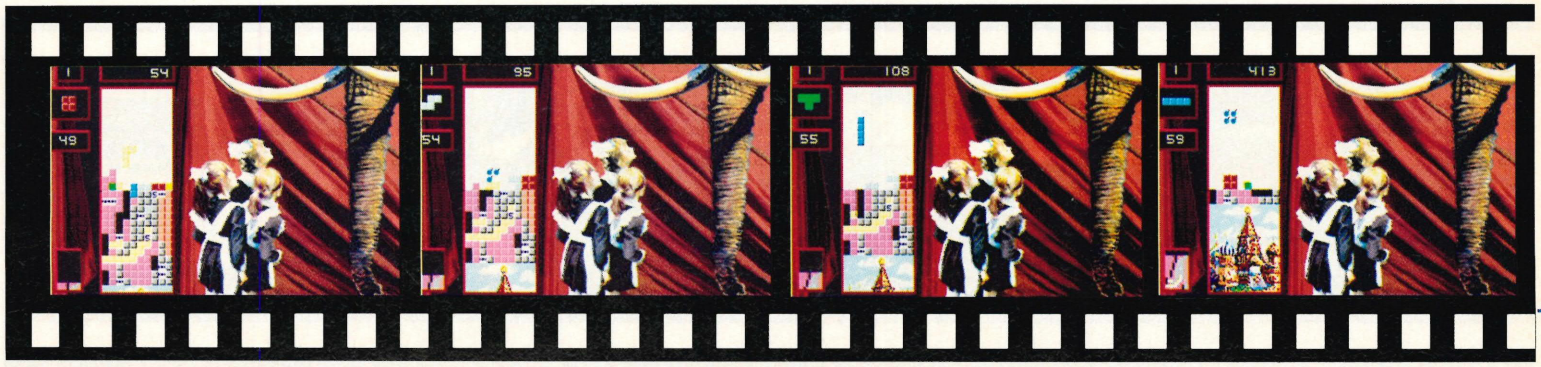
PAUL PRESLEY

REQUIREMENTS

Roll up, roll up! Come one, come all! No matter what your machine, chances are strong that it'll support Super Tetris. You need 640K of RAM and 844,032 bytes on your hard drive (not asking too much I'm sure you'll agree, ladies and gentlemen). Whatever version you play, the game is still the same.

CGA ✓ EGA ✓ VGA ✓ Tandy ✓
Hercules ✓ Roland ✗ Ad Lib ✗
HD ✗ ✓ ✓ ✓

G, FRUSTRATING, STRESSFUL FUN...



two.
Well, we've managed to get a line if the picture at the bottom so where getting there. This L-shape should clear

another couple of lines.
With more of the picture at the bottom and a couple of bombs ready to clear some more of the debris that's piled up, we're not

doing too bad.
Although the next block was an S-shape, exploding the 'straight line' bonus gave us just the thing to clear a few more lines. We're

almost there now ...
A few more lines and we've almost cleared the whole level. The bombs can now be used to clear the debris that would be

SOFTWARE REVIEW

■ Eco Quest ■ Sierra On Line
■ (0734) 302233 ■ £39.99

An adventure game with an environmental theme for children which is promoted as being both exciting and educational

Eco Quest

Eco Quest has many different elements including puzzles, riddles and navigating a maze but its general format is one of exploration, investigation, and interaction. The main actors are Adam, a 12-year-old boy, and Delphineus, a dolphin, and the game follows their underwater adventures to rescue Cetus, a whale whose disappearance has threatened the very existence of the undersea kingdom of Eluria.

When the story opens, Adam and his father, an ecologist who gets called in to sort out emergency situations, have recently arrived in the Caribbean. The scene is set in a homely cross between a laboratory and a living room. The centrepiece is a seagull who has been covered with oil and the first task is to clean its feathers. As with many of the operations, you do this by picking up objects. Once the items are available in Adam's 'bag of tricks' you can use them individually or in combination. You can also inspect items that are in this bag and find out what properties they have.

Litter patrol

At all stages of the game you gain extra points for disposing of rubbish and for using the special recycling tool to recover items as appropriate. In certain situations you cannot proceed to the next stage until you have cleared up sufficient mess.

Like all of Sierra's educational products, the most striking thing about Eco Quest is the quality of the artwork. A superb animated intro gives you an idea of what to expect and, throughout, the backgrounds are stunning with great attention to detail. The game also has an accompanying sound track with music that reflects the atmosphere at each stage.

Eco Quest is marketed as a family game and after playing it I would endorse this as fun for a small group to play together. According to the box, it is supposed to be for ages 10 and up and again this is about right. My group of testers ranged from age eight to adult and the youngest of the group could not have coped alone with reading either the dialogue or the story's narrative which also contains playing instructions. Even a 10 or 11-year-old might require help at some points in understanding the text.

All the players found Eco Quest quite compulsive and were happy to play it time and again in order to complete it. Even if you are willing to sit at the computer for hours at a time there is no way you can play the entire game in one sitting. You do have to be prepared to save the game and quit. (Our testers did it in times ranging from five to nine hours.)

Although the ecological message about the dangers of chemical pollution and the threat it poses to animal and plant

The kids' view – by Sam, aged eight

"Eco Quest is very exciting, especially once we were under the sea. In the lab at the start I could not believe Adam was supposed to be older than me – his walk was that of a little kid – but once he started to swim he moved much more easily and the adventure really began. After that I just wanted to carry on playing. I liked the sound effects – especially when they meant things were about to happen and they helped make the scary bit exciting. It's really good when you know how, but when you don't you can get stuck. I've played bits of it lots of times and would like to play it again with someone who hasn't seen it before."

PC review

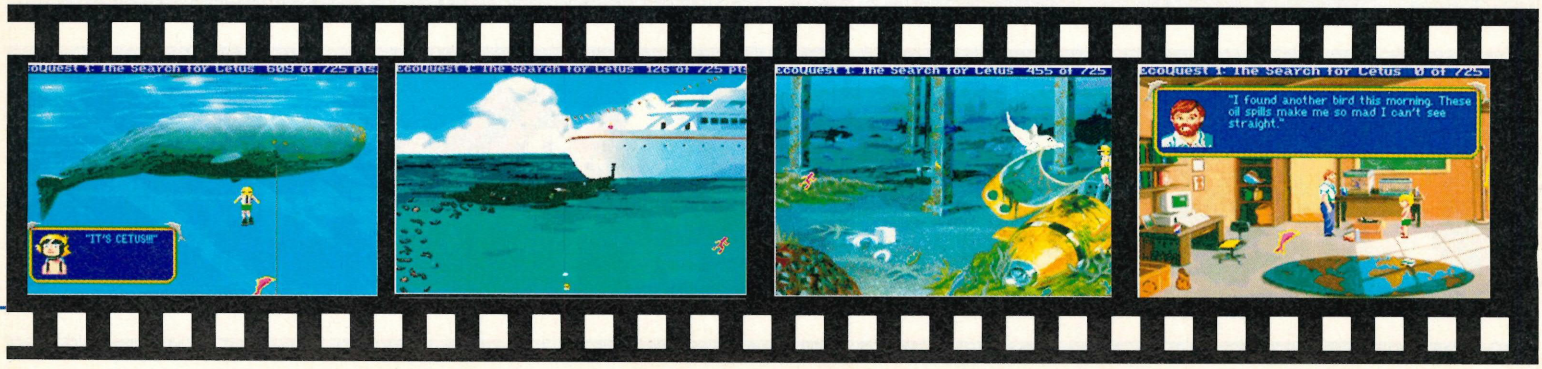
TWO MINUTES OF SAVING THE PLANET

The object of the quest is Cetus, the mighty whale brought down by the deadly harpoons of evil men!

Indiscriminate waste on the part of thoughtless humans; no progress can be made until Adam has cleared enough of it up.

The Oracle's prophecy is that Adam will visit dire and dreadful places in his heroic bid to save the kingdom.

Adam and his dad in the first scene where an oil spill has harmed a seagull – the damage must be put right.





A topical game for the 90s – Adam and his ecologist father get to grips with a series of environmental calamities in Eluria, a beautiful and intriguing underwater kingdom somewhere in the Caribbean.

life was drummed home continuously I felt that 'educational' was not a particularly appropriate label, partly because, even with its very evident message, it has to be considered first and foremost as a challenging and enjoyable game. I was not particularly convinced by the supplementary booklet entitled I Helped Save The Earth as so much of its contents were inapplicable (even inexplicable) to a UK audience.

Extra sound effects

I installed Eco Quest on a 20MHz 386 with 2MB of RAM and a VGA monitor. It ran reasonably quickly and the graphics (in 256 colours) were very good. The software supports a comprehensive range of sound boards (and Sierra recommends Thunderboard) but while there are extra sound effects (such as bubbles rising through the deep ocean) which are only audible with a sound board, you do get a reasonable rendering of the musical effects without one. There are controls for both the sound effects and for the level of detail in the graphics and switching these aspects off makes the game run faster.

Like many adventure games, Eco Quest is a once-only program; when you have finished it you are unlikely to want to start over. The only reason you might have for replaying is that you can get to the end without scoring all the possible points (we finished with scores ranging from 659 to 704 of a possible 725 points) so you may want to improve your score.

So while £34.99 does not seem expensive for the variety and the quality of the graphics it contains, it does seem a lot for a game which you'll only want to play a limited number of times (although Sam, left, is happy to play more than once).

SUE JAMES

ALTERNATIVELY...

The Castle of Dr Brain

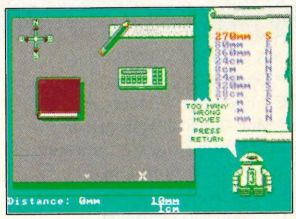
Sierra On-Line, £39.99



An earlier 'educational' adventure from Sierra which concentrates on maths and logic problems. It is characterised by Sierra's superb artwork and game design, but once again suffers from American jargon. It is a shame the UK market is not big enough to warrant Sierra producing UK versions which are geared specifically towards British children.

Fun School series

Europress, £24.99

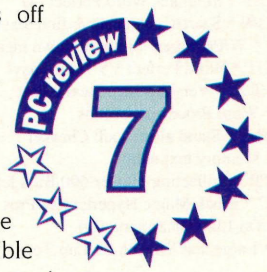


The best series of home grown educational software packages. These lack the razzmatazz of Sierra's wares, but they cater for a wide range of age groups and you won't have to worry about your kids picking up unwanted Americanisms.

REQUIREMENTS

You will require an 80286 based machine or better with 640K of base memory and a hard disk. EGA is available in a separate version.

CGA ✗	EGA ✓	VGA ✓	Tandy ✗
Hercules ✗	Roland ✓	Ad Lib ✓	
HD ✗	✓	✓	✓



Once you get through the door (look up the code on the newsletter) you meet Delphineus, the dolphin.

The beautiful but ruined city of Eluria is the enchanting destination of this underwater adventure.

The fish apartments, home of creatures with weird and wonderful names, are striking to look at.

Adam and Delphineus set out to face the perils of the deep and tussle with an octopus who is unwittingly helpful.



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WYNFIELD * Mouse control Function key help
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PPSI * People, picture and sound Database
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KS21* Kwikstat Statisical Data Analysis (3)
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(ATM compatible also available in Truetype format
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GIF"ICON * Convert GIF's to ICONS
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FONTGHY * View and print Windows 3 fonts
SMARTACC * Accounts package for windows
METZ UTIL * Phone dialer, memory status, phone book ,desktop manager, task manager
WIN-INI * Win.ini file editor
ICONMAG * Supposedly the best icon manager
LENORD * Drawing program with many features
ORGANISE * Sort of Filo Fax for windows
PARWIN * Genealogy/Family tree charting
PIFHLP * Pif Helper
SMITH * Home/Business accounts program
ZMANGER * Archive manager for windows
SCRPEACE * Screen Peace screen saver, nice
WSCAN * MacFee's virus scan for windows
YOURWAY * Excellent personal info manager

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BLCE12 * Block breaker game
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CHOPTER * Helicopter game
JEWEL * Jewel thief, steal jewels, avoid guards
LUNAR * Lunar lander simulation
KLOTZ * Tetris style game
LIFE * The game of life
MAHJONG * Tile game
MINES * Avoid the minefield, pretty good
MRMIND * Mastermind game
PEGGED * Fun peg game
PUZZLE * Slide puzzle, uses BMP pictures
SPACEW * Spacewalls shoot-em-up game
WINCHK * Checkers game
WINCHS * Windows chess
WILNHNG * Hangman game
WINSLOT * Slot machine game
WINJACK * Fast paced Blackjack card game
W/WAR * Wormwars centipede style game
ZONEONE * Risk style game
YACHT * Yatzee type dice game

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SOFTWARE REVIEW

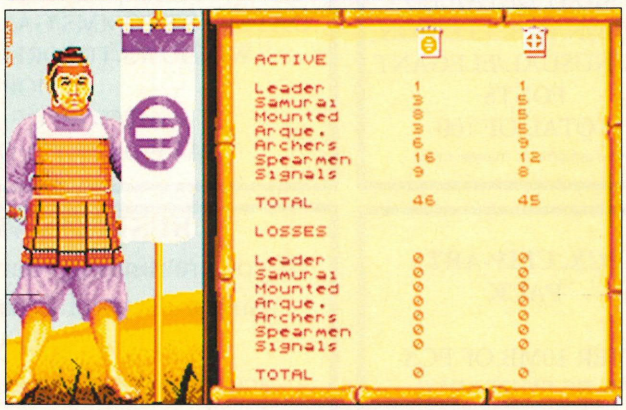
- Samurai – The Way of the Warrior
- Impressions
- (071) 351 2133
- £34.99

Samurai – The Way of the Warrior

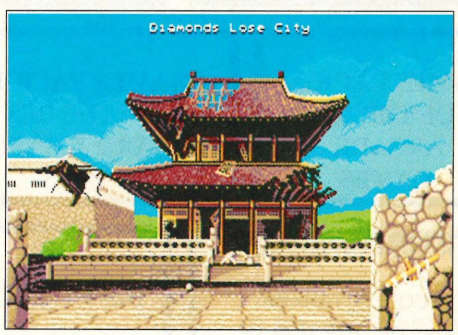
Impressions' record to date is not overwhelmingly. A string of moderately interesting releases, most of them concentrating on specific battles in Western history, has failed to match the depth and quality of rival strategy war games such as those from SSG. Samurai is its first stab at the history of the Orient, and shows some improvement.

The historical period in question, 16th century feudal Japan, has already been tackled by a variety of companies on a number of machines. Impressions' plot puts you in the role of Usaka San, the daimyo (lord) of a small state consisting of five cities on Japan's main island, Honshu. Your neighbouring rival, Obinaka, also controls five cities which he stole from your father. It's time to reclaim your heritage.

You can either play against the computer or another human opponent. If you play against the computer, a difficulty options screen allows beginners to sway the odds in their favour. The action is divided into two phases: strategic and battlefield. The strategic part of the game takes place on a high level map, showing your cities to the north of the island and your enemy's to the south. Your initial task is to raise a defence force for each city, from which a sizeable mobile army can be drawn. At the end of each year every city in your possession is able to raise more funds, which you can use to create more troops.



Each army is made up of a combination of different skills. On the battlefield you can compare the strengths of your own troops with those of the enemy.



Should you fail to defend your city, your opponent gains all future revenue and loyalty from its population.

The second phase takes place only when opposing armies meet, either in defence of a city or surrounding lands. The battlefield is displayed in classic Impressions style, from a bird's eye view. You have a choice of seven attack/defence formations, from the aggressive hoshi (arrow head) to the defensive koyaku (yoke). Once on the field of battle decisions and movements are controlled via icons, which show your statistics, allow you to retreat or move anywhere on the terrain, set three kinds of formation (single, group or general control), show a map, or access information about your warriors. Combat can be a slow process, particularly in two-player mode where you have to agree to alternate giving out orders to your troops.

Once all the cities have been lost the game is over, though this is not as straightforward as it sounds. Some cities not only have strong military defences but are also protected by formidable terrain such as rivers and hills. Each level of difficulty demands new tactics to succeed.



Your cities have fallen and the game is over. Perhaps you could try again at an easier level ...

The result is a reasonably competent wargame with limited 'lastability'. Technically it's below average: only Ad Lib sound support and poor EGA or adequate VGA graphics. On the other hand the manual is good, with some useful tips and a history of Japan included, and there's enough variety in the partly random effects created by the difficulty settings to ensure that if you do get hooked the different challenges will keep you interested. In the end though, there are many better war games around, with more complex strategic elements, greater lastability, and more accomplished visual and aural presentation.



GORDON HOUGHTON

HARDWARE

REQUIREMENTS

Samurai comes on two 3.5" or 5.25" disks, so check the box before buying. It can be installed on to a hard disk, where it uses 0.96 Mb of disk space.

CGA ✗	EGA ✗	VGA ✓	Tandy ✗
Hercules ✗	Roland ✗	Ad Lib ✓	
HD ✗	✗	✓	✓

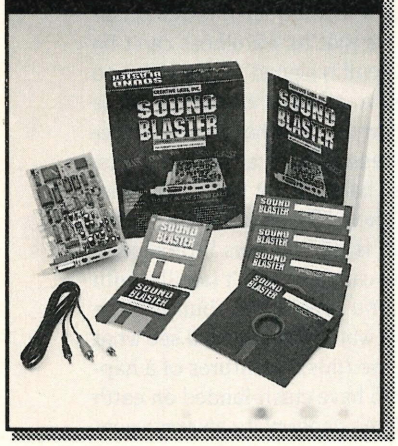
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West Point Creative have now released a complete Multimedia upgrade kit for the PC. Comprising of the stunning SoundBlaster Pro card, a high performance internal CD ROM drive, MS Windows + Multimedia extensions and a host of bundled software. The CD ROM has a 64K cache buffer and 150K per second data transfer rate. Also available is a further upgrade witch includes a MIDI Kit, SB Pro sequencer and the disks - Creative Sounds, Microsoft Bookshelf, Select Ware Systems demos, and 'Jones in the Fast Lane' game. Complies with the Multimedia PC standards, giving full multimedia compatability.

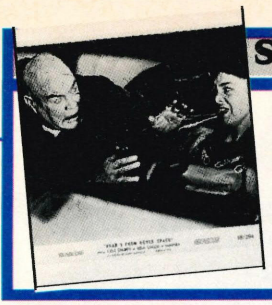
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SOFTWARE REVIEW

- Plan 9 from Outer Space
- Gremlin Graphics
- (0742) 753423
- £35.99

Plan 9 from Outer Space

Lights, camera, action. Steve Merrett rolls 'em as he steps up to star in Gremlin's conversion of one of moviedom's all-time clangers

If there's one thing that I can't stand it's a wasted opportunity. Unfortunately, though, the PC's gaming history is littered with them. Remember Kick Off II, where the ultimate soccer game was reduced to a shambolic mess in its PC incarnation? Or how about such classic licences as Die Hard and The Hunt For Red October which appeared dated and simply didn't warrant a full-price release? What's worse about this particular example from Gremlin, though, is that its awfulness can't be blamed on the subject matter. Gremlin signed up the rights to Plan 9 knowing that the film was a stinker and that the game was going to be great for novelty value. So what wondrous tie-in do we get with the wacky, plotless film? An adventure game.

Ordinarily, this wouldn't be so bad, I've got nothing against the genre, it's just that I couldn't help but feel cheated. Another major detraction from the fun is that it bears little resemblance to the film's goings-on. In case you aren't familiar with what passes for the film's plot (and Gremlin has bundled the film with the game to solve this – watch it, and you'll see what all the fuss is about), it follows the (mis)adventures of a hapless band of extra-terrestrials who have crash-landed on earth when their flying saucer (well, flying paper plate anyway) went awry. Landing in redneck territory, they soon run into the local hillbillies who attack them using stock footage of tanks trundling across war-torn landscapes. To combat this, they create a zombie who is then sent out to kidnap and scare people whilst they effect repairs.

Horror upon horrors

Critics aren't quite sure which is worse regarding Plan 9 From Outer Space – its effects or its plot. As the film trundles along at a snail's pace, the action scenes are instantly recognisable from old Movietome News reels. For instance, as the hillbilly folk call in the army to attack the vampiric aliens, the scene cuts to one of a US army tank trundling over some distant battleground. The in-house effects were equally abysmal. The film's set was a minute affair, which was roughly the size of a small living room. Within this, everything was shot, from the graveyard scenes to the interior saucer shots – the director simply dropped a new backdrop behind his 'stars'. For the film's gripping finale, though, the team had long exhausted their budget and when it came to filming the saucer's eventual demise, they were at a loss what to do. Initially, they had planned to detonate a model, but the resulting effect was quoted as resembling 'two metal plates coated in petrol and subsequently ignited.' In reality, the plates were paper, as the metal ones originally meant for use failed to light.

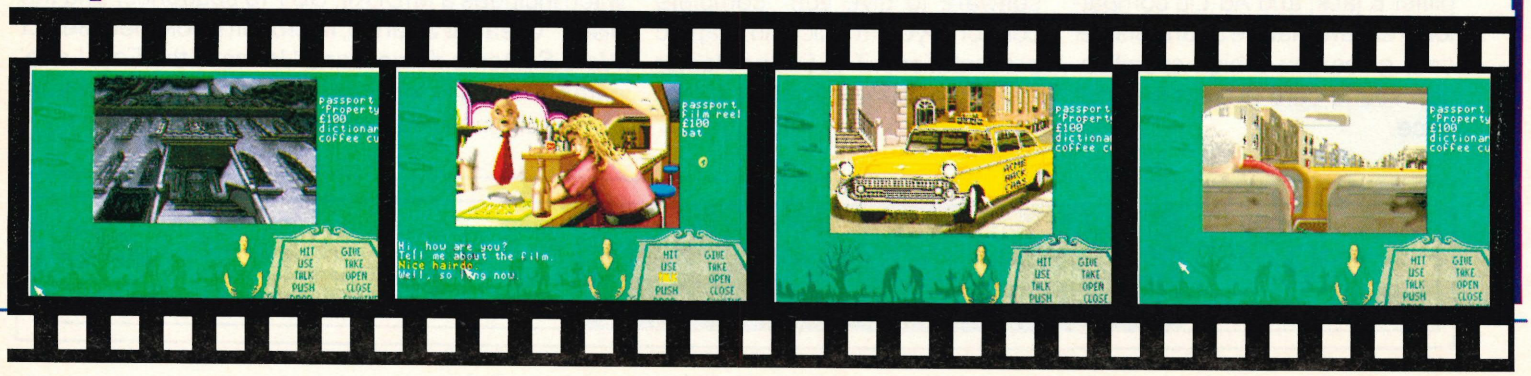
TWO MINUTES OF JOYRIDING WITH A PRIVATE EYE

A private eye's life isn't complete without the odd visit to a sleazy bar. And Plan 9's hero has a real weird place as his local.

This seedy bar is frequented by a rather butch transvestite. However, 'she's' friendly and, for a drink, will reveal useful information on a reel of the film.

Bela Lugosi held a reel when he died, so a trip to Impaler Street is needed. Heading back to the hotel it's time to get the doorman to order you a cab.

Typically, the cabbie is a fast driver. You reach Lugosi's house in no time at all – however, mess him about and you'll soon be on the wrong side of him.





And you thought that construction workers were only good for showing the tops of their oversized rumps or the bottom of their protruding beer bellies and wolf-whisting at female passers-by. But no, it seems that one of them is capable of coherent thought and has managed to construct a whole sentence...

Catastrophe!

The stories of the catastrophes surrounding the film's production are legendary, with a drug-ravaged Bela Lugosi dying two weeks into filming, only to be replaced by a stand-in who was a foot shorter and a studio which was the same size as Kevin Costner's tee-pee in Dances With Wolves. However, compared with the game, these problems are minuscule. Cast as a private eye, your mission is to locate and splice together the six missing reels that make up the film. Your exploits as you attempt to locate the missing sections take you all over the world – from Highgate in North London to sunnier climes, for instance – and involve limited interaction with a succession of characters – who, in a neat little touch, all resemble the film's stars, Tor Johnson and Vampira, in different costumes and guises.

All such interaction and exploring is effected by means of a series of icons which surround the main screen area. The main bulk of the screen displays your current location, along with any people currently hanging around. Additionally, all your actions are executed via the many icons which surround the area, and these are accessed via a series of mouse clicks. Take movement, for instance. Any available exits can be reached simply by moving the mouse pointer over the game screen and clicking on the area when a message indicates an exit is available. In addition, other actions, such as giving, taking or pushing, are all accessed by selecting the movement and clicking on this main screen. On the plus side, this is a very simple and uncluttered system, and makes exploration easy. Conversely, though, it also makes the game task more prominent which is by no means a good thing. Searching for clues and exploring the game area is a tedious process, which I suppose reflects the life of a private dick. As you question the many characters, a series of possible questions and answers are given, and it is up to the player to select which one they wish to use. Unfortunately, though, this potentially good system is ruined by the inclusion of extremely turgid alternatives which only serve to highlight the genuine answers needed to complete the game. Thus, as clues are collated, there are no real alternatives to the main adventure and the lack of red herrings makes Plan 9 rather too linear.

Roll 'em

Although I may appear rather harsh on Plan 9, it's not without its moments of genius. The characterisations of the film's characters are excellent – the adventure scenario lends itself perfectly for this – but the digitised sections are the real icing on the cake. Whenever a section of the film is recovered, your private eye becomes film editor extraordinaire and takes his scissors to the film to link it altogether into a coherent film – which even the original producers failed to do! By taking the freshly-recovered film can to a local movie theatre, the section can be viewed and the player is rewarded with a fairly lengthy clip digitised from the film. This is an excellent idea, and even offsets the unrewarding gameplay slightly – but it's still not enough.

There was so much potential for a decent game within Plan 9's dire plot and general naffness that the game seems a real cop-out. I'm a real fan of all those awful B-movies, and the likes of The Creature From The Black Lagoon and King Kong are just gagging for decent games based on them. Perhaps the mistake was in making the game an adventure, which snowballed as the coders at Gremlin Ireland realised there wasn't a plot to follow. However, whatever the reason, Plan 9 is another great missed opportunity. OK, people would have whined if the game had turned into another multi-stage driving and jumping mishmash as favoured by Ocean at one point, but in its quest to offer something different, Gremlin has lost its way a little. It's a pity and not necessarily its fault, given the subject matter, but I couldn't help but come away from Plan 9 From Outer Space extremely disappointed.

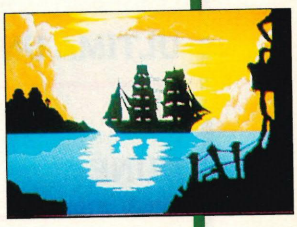


STEVE MERRETT

ALTERNATIVELY...

Cruise For A Corpse

Delphine/US Gold, £30.99



If clue solving is your bag, than Delphine's excellent Poirot-alike is an excellent alternative. It has far better graphics that Plan 9, and the task is more involving. Graphically, it's head and shoulders above the rest, with large sprites wandering against detailed and attractive backdrops. Cruise is a stunning game with very few faults, and is the perfect entry to the whodunnit sub-genre.

Might And Magic III

New World/US Gold, £40.99



OK, so this is more RPG-orientated than Plan 9, but it uses a similar control system. In addition, these also offer loads of wandering with the occasional puzzle element thrown in for good measure. Thankfully, these are the only similarities, and Might and Magic is considerably more detailed and involving. Easily the best alternative ...

REQUIREMENTS

Plan 9 From Outer Space is spread over four 3.5" disks, and is quickly and easily installed. It's simple enough to pick up and play, there's just not enough in Plan 9 to keep you playing.



The Games Th

REVIEWED THIS ISSUE

ULTIMA UNDERWORLD	PC Review RECOMMENDED	9 RATED
DUNE	PC Review RECOMMENDED	7 RATED
PERFECT GENERAL		7 RATED
REALMS		7 RATED
ECO QUEST		5 RATED
PLAN 9 FROM OUTER SPACE		5 RATED
SAMURAI		5 RATED
KING'S QUEST V (CD)		5 RATED
NORTH POLAR EXPEDITION		4 RATED
SUPER TETRIS		4 RATED

PC review THE GAMES THAT GOT AWAY

We would love to be able to review every game that ends up in our postbag, but if we did that PC Review would soon turn into an expensive doorstop. So we

NCAA BASKETBALL ROAD TO THE FINAL FOUR

Bethesda Softworks, £30.99

The overlong title actually disguises a rather mediocre basketball simulation. The prorgam features accurate player and team statistics for the 1991-1992 National Collegiate Athletic Association Basketball Season. This will please Basketball fans, but they are likely to be disappointed by the rather humdrum presentation and a second rate control interface.

MANCHESTER UNITED FOOTBALL CLUB

GBH Gold, £11.99

Infinitely better than Anco's Kick Off (which was a load of horse dung on the PC). As well as boasting a superbly playable side-on simulation of the game, it also features a strong management section. Elite's new footie game (see this month's cover disk) may well give it a run for its money, but since Man U is now available at a budget price it's worth having anyway.

3D CONSTRUCTION SET / CASTLE MASTER – CD DOUBLE BILL

Domark, £TBA

CD owners can now grab not only Incentive's superb game creation utility, but also a copy of the latest Freescape game to boot.Freescape may look a bit dated now but Castle Master is still eminently playable, and the 3D Construction Kit alone is worth the price of the whole package.

'NAM 1965-1975 / PRINCE OF PERSIA CD DOUBLE BILL

Domark, £TBA

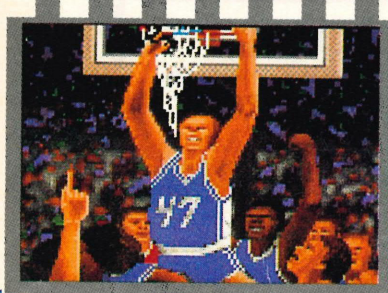
A scholarly, but not particularly playable war game from Matthew Stibbe and Jordan Mechner's superbly animated action adventure (This moth's classic game).

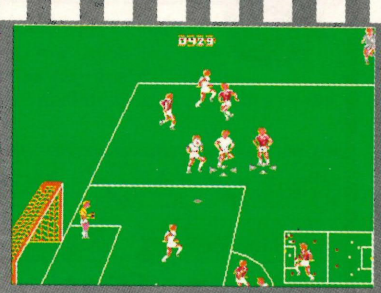
MiG-29 / MiG-29M CD DOUBLE PACK

Domark, £TBA

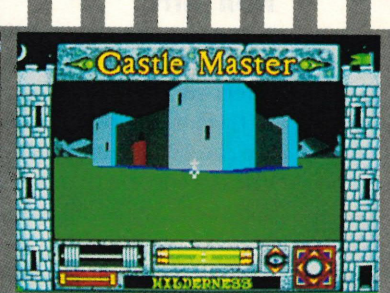
If you've got the newer, improved game you don't want to play the poor first one – come on Domark, give us a break!

NCAA Basketball | Manchester United | 3D Construction Kit | Castle Master









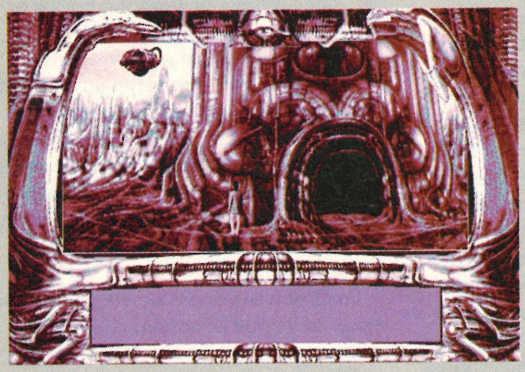
compromise by reviewing an interesting selection from the software available, not necessarily the best! But to keep everyone happy here's a quick round-down of everything else that should be in the shops soon.

WHATEVER HAPPENED TO...?

If you've eagerly turned to the review pages to check out a game that has been previewed and advertised recently only to be dismayed by its absence, you'll probably find it in our lame excuses' Hall of Fame.

DARKSEED

Yes, we were all set to review Darkseed this month, and we actually had a copy up and running in the office. Now, developer



Cyberdreams has decided some last minute changes and improvements are in order, and so we're all being held in suspense for the final, final version. We're pretty confident that will arrive in time for our July issue, so Giger fans should look out for an in-depth four page review next time. Issue 9 should also see the long awaited arrival of Infogrames' Aeternum.

PC REVIEW'S BEST BUYS

This month's PC Review Recommended games are Ultima Underworld and Dune. You'll find these titles on specially dedicated racks in 100 of the leading software stores around the country. Set up in conjunction with Centresoft, the PC Review Recommended scheme helps you to make the right choice when it comes to buying your games.

Some games that have recently received the PC Review Recommended accolade are:

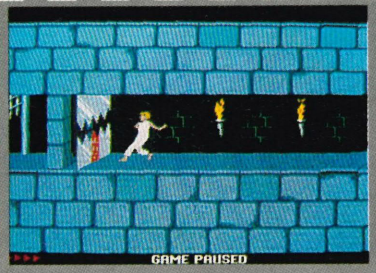
THUNDERHAWK
STAR TREK: 25TH ANNIVERSARY
HEIMDALL
ANOTHER WORLD

SHAREWARE

For those of you on a tighter budget than our recommended list allows, you could always check out the PC Review Shareware section starting on page 139. Covering everything from games to personal organisers, the Shareware section is your indispensable guide.

'NAM 1965-1975 Prince of Persia MiG-29 MiG-29M









QED

Intensive research and hours of gameplay have gone into this month's in-depth look at the Bitmaps' Gods, Electronic Arts' Star Trek and Sid Meier's Civilization from MicroProse. Plus a whole host of help for the top games around.



General advice

Gods is split into four levels with each level containing three 'worlds'.

There is more than one way to complete each and no world needs to be fully completed to finish the game. There are many hidden puzzles and sections which do not need to be solved but which can provide rewards.

The difficulty level should gradually increase from level one to level four. If you come across a section in the game which seems particularly difficult to complete, this may be an indication that there is no need to complete the section to finish the game. Such difficult areas are generally 'bonus' sections which if completed will reward you with treasure.

Some worlds have 'short cuts' which enable the level to be completed quickly but you may lose out on treasure and other bonuses by taking them. It is up to you to experiment with the game to find out what is best to do.

Monsters

In Gods, all monsters have attributes that define their strengths, weakness and behaviour. The attribute which sets how many times a monster must be hit before it dies is called the aliens 'hit point' attribute. A weak (low hit point) monster would have perhaps 10 hit points where a stronger monster could have 250 or more.

As you progress through the game you will notice that the monsters become more intelligent. This means that they will be more effective at carrying out their objectives, to either kill you, avoid you or steal treasure. In general it is not wise to attack thieves as they are usually helpful.

Weapons

Weapons also have attributes which define their behaviour and effectiveness.

The weapons 'hit point' score determines how powerful it is. For example, to kill a monster with 20 hit points would require 20 throws of a one hit point weapon (such as a knife) or four throws of a five hit point weapon (such as a fireball). Obviously, with weapons, the higher the 'hit point' rating the better.

A weapon can either stop when it hits a monster or travel through it. Weapons which can travel through monsters are clearly more effective as the weapon might do even more damage to another monster behind the first. Also weapons which go through monsters cause more damage to each monster. This ability of weapons should be taken into account when choosing the right weapon. For example, in a situation where you are firing at three monsters in a line, a throwing star (two hit points) will be much more effective than a mace (three hit points). This is because the throwing star will do at least two hit points damage to each alien (a total of six plus) where the mace will only achieve three hit points damage in total.

The third characteristic which should be taken into account when selecting weapons is whether or not the weapon collides with walls when it is thrown. Weapons which go past walls are generally more effective. Generally, the value of the weapon reflects its usefulness.

Treasure	Value
Pile of coin	00002
Crystal	00075
Jewel	00150
Small bag of gold	00200
Large bag of gold	00400
Gold plate	00400
Necklace	00500
Diamond	00500
Gold mask	00800
Water crystal	01000
Fire crystal	01500
Iron treasure chest	01000
Steel treasure chest	02000
Gold treasure chest	03000

Potions

Correct use of potions can be helpful in completing many sections of the game.

Because you can usually only carry three items in the inventory it is not always wise to buy too many potions in the shop as there will then be no room for carrying other objects that may be necessary for solving the puzzles.

If you are familiar with the section of the game after the shop, try and think ahead and plan which potions would be most useful and where you would be most likely to use them. Then you can decide how many potions it is safe to buy without risking having to drop a potion when you don't want to.

Power Potions

Power potions are used to increase the effectiveness of weapons. Buying or picking up a power potion increases the damage done by *all* of your weapons.

A weapon that is powered up once will have one extra hit point and fire in two directions. A weapon that is powered up twice will have two extra hit points and fire in three directions. After being powered up twice, weapons continue increasing in hit points each time you get another power potion.

Small power potions power up weapons once. Large power potions power up weapons twice.

The same effect can be achieved by picking up or buying multiples of the same weapon. For example, buying an axe and a large power potion is the equivalent of buying three axes.

Considering that power potions effect all the weapons, they are obviously a far more economical way of increasing weapon hit points than buying multiples of the same weapon.

In levels 2, 3 and 4 the power-ups increase in value to 17500 for a small and 32000 a large.

Extra lives

Extra lives are plentiful in Gods. They can be found in treasure rooms but they can also be awarded for clever play and for scoring points. Extra lives can also be given to help to a player that is doing badly.

Extra lives are awarded for points at the following milestones.

50,000 points
160,000 points
300,000 points
500,000 points
and then every 200,000 points.

Fire crystals are also awarded for scoring points. These are given at the following scores.

100,000 points

Weapons

Type	Cost	HP	Stop on Walls	Stop on Aliens
Knife	02500	1	YES	YES
Throwing star	05000	2	YES	NO
Mace	07500	3	YES	YES
Axe	10000	4	NO	NO
Fireball	12500	5	YES	YES
Hunter	15000	5	NO	YES
Magic axe	15000	3	YES	YES
Spear	17500	6	NO	NO
Time bomb	20000	20	NO	NO
Lightning bolt	30000	25	NO	NO

In level 4 the power of the axe increases to 12 HP and it's value to 17500

Potions

Type	Description	Value
Chicken	restores energy	00650
Apple	restores energy	01000
Weapon arc	standard	01000
Weapon arc	intense	01000
Weapon arc	wide	01000
Bread	restores energy	01300
Small health	restores energy	04000
Magic potion	freezes aliens	04000
Shield	invulnerability	05000
Magic wings	effects familiar	05000
Power potion	increases weapon power	06000
Large health	restores energy	08000
Starburst		10000
Power claws	effects familiar	10000
Power potion	increases weapon power	12000
Shield	reduces damage	20000
Extra life		20000
Familiar		30000

250,000 points
400,000 points
600,000 points
and then every 200,000 points.

These bonuses only apply when playing from the start of the game (level one).

If you use a password to start from another level then bonuses will be missed equivalent to the number of levels skipped. For instance, starting at level three, your first extra life will be at 300,000 points and your first fire chrystal will be awarded at 400,000 points.

About the guide to the levels

The guide for finishing each level is not complete. Defining the multiple ways of solving each world and the numerous hidden rooms in the game would be far too complex. What you have here is, in general, the simplest and quickest way through each world plus one or two hidden areas and how to find them.

Gods is a game which is not just about completing each level and moving to the next. It is a game which will constantly reward the player who continues to experiment. To tell the player the perfect way to complete the game would not only be impossible but also ruin that experimentation anyway. There is no perfect way to complete the game, players are still finding solutions to puzzles which were never designed to be solved in that particular way.

Level 1
World 1

The first world of the game is used to enable the player to get used to the control method and to solve some simple puzzles. The first key the player will need is the treasure key to open the treasure room. The world key is in the the treasure room and opens the door to the end of the world.

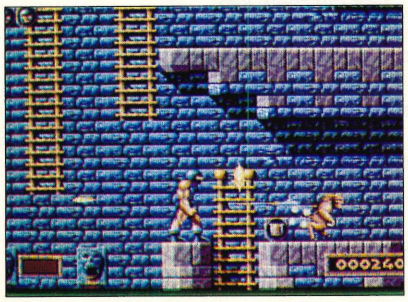
Hidden puzzles

1. Shortcut.

Reset the levers 1 and 2 to move block 1. This will reveal a water crystal and power-up and teleport the player to A.

2. Special bonus.

The second puzzle is progressive, in the sense that by finding one hidden puzzle the player will then be able to find the next. There are four parts to the puzzle.





1. Blow up the trap with lever 4 and then pull lever 3 to reveal an iron treasure chest.

2. Reset lever 4 and pull lever 5 to get a fire crystal.

3. Pull lever 7 within two minutes. from game start to make platform 2 move.

4. Press hidden switch 1 to get fire chrystal.

5. Finding these four puzzles will mean that you can find the final part of the puzzle in W2.

World 2

Get the trap door key on the left of the screen to open the trap door on the right.

Make sure that you go over the top platforms as the bottom route is more difficult but will give you bonus crystals.

Collect the vase and take it to the stores at the bottom of the map, making sure that you collect the room key on the way. Get the world key from stores to exit on the right.

Hidden puzzles

To get to the treasure room.

1. Kill the monsters on the ledge to the right of lever 3 to receive a trap door key. This will let you close the trap door above lever 9 by pulling lever 4. You will then be able to jump down and open the treasure room door.

2. Push all four hidden switches to open the four trap doors which form the base of the treasure room. All treasure will then fall through on to the floor beneath the room.

The Shop

Buy shurikans and normal arc.

World 3

Pull switch two to close the trap doors and blow up the spike in the pit.

Get the giant to jump up the trap doors. Alternatively you can wait for two minutes and a teleport crystal will appear to move you up, although you will not get the special bonus.

Get the trapdoor key on the top left platform to open the trap door to the right.

Go up the ladder which lead to the towers.

Go up the ladders to the bridge and jump across the platforms to the left to collect the trap door key.

Go right and collect the teleport key.

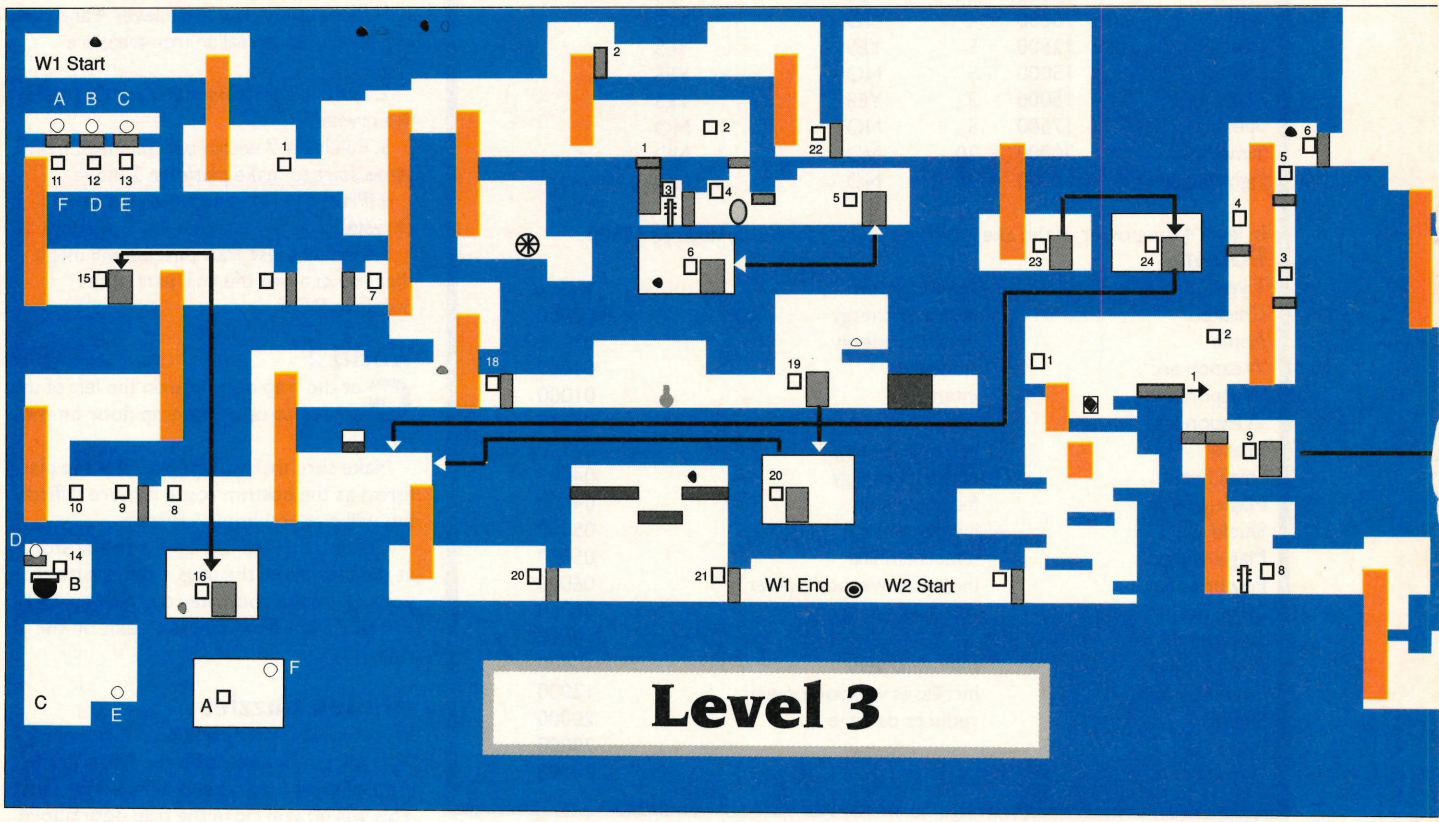
Open the door by pulling lever 11 and this will teleport you to the platform on the far left of the map.

Collect the door key.

Go right and pull lever 7 and drop down through the trap door.

Pull lever 8 to teleport you to the top door on the right.

Pull lever 9 to enter the treasure room



and collect the lightening bolt.

Pulling lever 10 will open the door and take you back.

Collect the world key and go down the ladder and when you reach the bottom platform you will receive a trap door key.

Pull lever 12 and go down to defeat the centurion protecting the temple.

Go up the ladder to the temple and enter the door to exit the level.

Hidden puzzles

1. To enter the treasure room.

Kill the wave of monsters which appear to the left of lever 3. They will give you a trap key. Reset lever 3 which will then give you a shield when you pull lever 4 to protect you when you drop through the trap door to the treasure room.

2. To move block 1.

You have to get to this point with more than two lives, and more than 80,000 points and within 140 seconds from the start of this world.

3. Special bonus.

Kill the centurion without collecting the lightning bolt to get a gold treasure chest.

Boss guy

The centurion is the easiest of the bosses. Watch him as he throws out fireballs and note the point where they bounce the highest. This is the place to stand to kill the boss without getting hit.

Move backwards and forwards at the same time as the centurion, keeping the same relative position in order to avoid being hit.

Shop

In the shop you should buy the magic axe and spend the rest of your money on power potions.

Level 2
World 1

The world key to exit world one is located in the gem room. It is situated on top of a platform, some distance above ground level. The key is much too high to reach by normal means.

The block that the key rests on may be lowered by bringing three gems to this room. You must bring the gems in the correct order, ice, fire then water.

When lowered, collect key and exit world 1 through the door by lever 4.

Hidden puzzles

1. To get to the treasure room.

When you first start level 2, walk to the right and press hidden switch 1. This will open a trap door below.

Walk left and kill the two centurions. If you have more than one life they will reveal a gold treasure chest key. Collecting this key will also trigger traps throughout this world.

Climb down into the chamber below the one you started in and walk right until a thief appears.

Leave the thief to jump up and steal the shield potion sitting behind the traps on the platform above. Now use the gold key to lure him back down and kill him to get the shield.

Climb up past the traps. Pull lever 1 to reveal a treasure key and a thief to collect it for you. Make sure your shield has run out before pulling the lever or it will kill the thief.

The treasure room is entered through the door to the right of lever 5.

2. To enter the bonus room

Experiment with lever 3. Make sure you have enough energy before entering.

World 2

The most direct route through the pits is as follows.

Climb down the ladder to the platform where the narrow arc rests. It is usually better to ignore the narrow arc token if you already have a standard arc.

Walk to the right hand edge of the platform and jump on to the ladder to your right.

Jump on to the platform by lever 1.

Press lever 1 to blow up the trap below.

Climb back down and land on the platform below.

Go down the ladder to the right. Get off at the first opening on your left. This is pit 1.

Blow up the traps by pulling lever 2.

Get the room key.

Return to the ladder and climb back up to the top, exiting to your right.

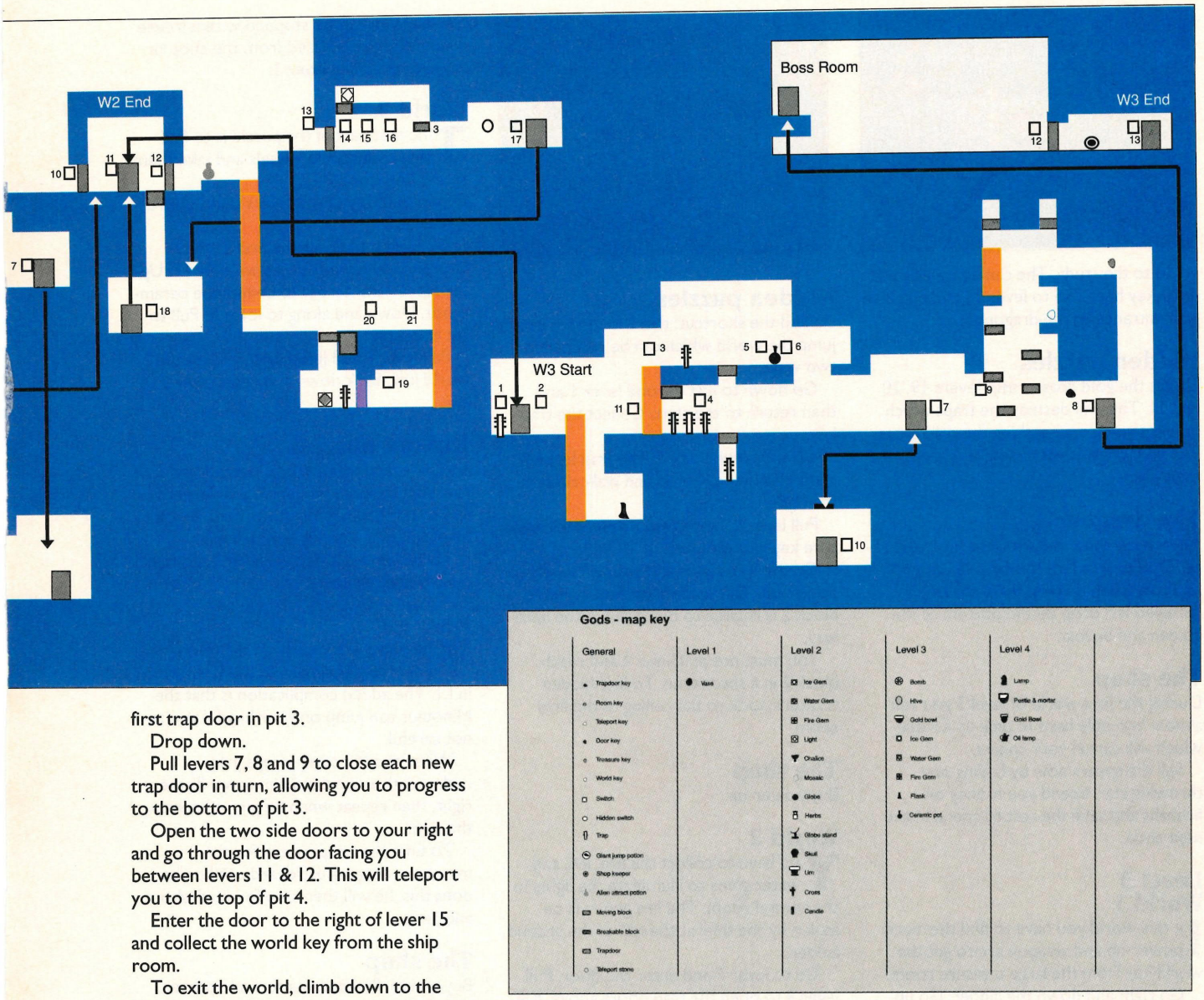
Keep walking along this platform to the right and drop off the edge.

You are now in pit 2. Walk right and up the ladder.

Walk right and jump over the gap.

Go right and down the next ladder and collect the teleport key.

Go to lever 6 and pull it. This closes the



first trap door in pit 3.

Drop down.

Pull levers 7, 8 and 9 to close each new trap door in turn, allowing you to progress to the bottom of pit 3.

Open the two side doors to your right and go through the door facing you between levers 11 & 12. This will teleport you to the top of pit 4.

Enter the door to the right of lever 15 and collect the world key from the ship room.

To exit the world, climb down to the bottom of pit three and open the left hand door. The World exit door is along the corridor to your left.

Hidden puzzles

To get to the treasure room. There are three chalices lying around the pits. Take them to the ship room to receive a treasure room key. The treasure room is entered through the door to the left of lever 3.

The shop

Buy spears and power potions.

World 3

World 3 is split into two halves: the mosaic puzzle and the candle puzzle.

The mosaic puzzle.

You start in the mosaic room. There are four pieces of mosaic which you must find and bring here.

Pick up the first piece from the right hand side of the room and walk left to replace the first piece of mosaic. Pull lever 1. Kill the two centurions revealed and collect the trap key.

Reset lever 1 to reveal a moving block. Jump on to the moving block and pick up the door key.

Pull lever 2 to reveal the hidden door. Pull lever 3 to move block 1. Reset lever 2 to open the door.

Along this corridor are four rooms. These are the crypt, the apothecary, the wizards' study and the armoury. In these rooms are several objects, the globe, the skull, and the jar of herbs.

To find the missing three pieces of the mosaic, take the skull to the crypt, take the globe to the wizards' study and take the jar of herbs to the apothecary.

Return all three pieces of mosaic to the mosaic room and a teleport stone will appear. The teleport stone will take you to the second part of world 3.

The candle puzzle.

Walk left killing all monsters until a trap key is revealed. Return to lever 15. Pull lever 15 and moving block 2 will rise from the floor.

Jump on to the moving block and go up the ladder. Climb up the ladder and kill the wall monster to reveal a spear token. Pick up the trap key and climb back down the ladder.

Walk left to lever 17 and pull it.

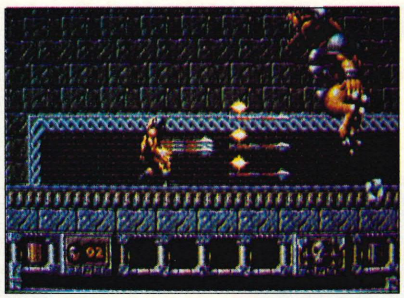
Climb down the ladder. Walk right. Jump over the trap and pull lever 18. This closes the trap door underneath lever 19.

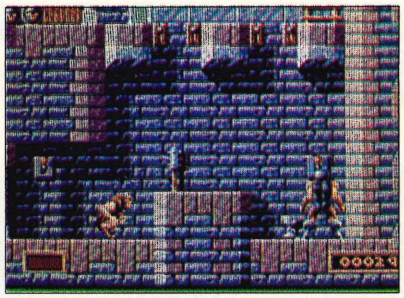
Climb back up and jump on to the trapdoor underneath lever 19.

Use levers 19 and 20 to close trap doors and make your way up. Collect the key on the left.

Jump on to moving block 3 and ride it towards the right. Jump up on to the ledge and retrieve the candle.

Go to lever 22 and pull it to move block 4 and climb down through the opening revealed.





Go to the study. The candle reveals the door key here. Go to lever 26 and pull it to gain entrance to the dragons lair.

Hidden puzzles

To get the gold cross: reset levers 19, 20 and 21. This will destroy the traps which prevent you from reaching the gold cross. The gold cross is very useful if taken to the right place.

The dragon

Alternately duck and shoot to kill the dragon. Don't force him too far over to the right or, when he dies, the treasure revealed will drop off the bottom of the screen and be lost.

The shop

During the first world of level 3 you will almost certainly have to pick up a mace which will cancel your spears.

Sell the spears now by buying one throwing star. Spend you money on fireballs and save the rest to spend in the next shop.

Level 3
World 1

In this world you have to find the mace, power-up and weapon arc to get the world key from the large treasure room.

Go right and down the ladder. Go up the next ladder and down into the pit to the right.

Kill the monster to get the time-bomb. Go up and right and pull lever 2 to move block 1.

Go down and pull lever 3 to open the trap door above. Throw the bomb down twice to kill the bee hive. Drop down and pull lever 4.

Go right and pull lever 5 to get the maces and door key. Go to lever 8 pulling lever 7 on the way, through door and up to the three trap doors.

Pull lever 12 to teleport to get the gold bowl.

Go to lever 15 collect the teleport key and pull lever 15.

Go through the door and collect the power-up and treasure key. Go to lever 20, pull to open the door and reveal the wide arc.

Stay near the door so that your weapons will break the blocks in the ceiling to make the the zap, energy and gold key drop.

Hidden puzzles

To find the shortcut: there is a short cut to jump the world which can be reached in two ways.

Go down to just beyond lever 1 and then return to the start. Collect the trap key.

Go to below block 2. The trap key will make this move. Go up and walk along to the right.

Pull lever 23 and collect the maces, treasure key and wide arc.

Go the final room and you will receive a power-up. The second method to move block 2 is related to doing things the hard way.

You must not pull lever 1 and reach block 2 in a short time. To find hidden treasure: look to the ceiling of the final room.

The shop

Buy power-up.

World 2

You have to collect the fire, ice, and water gems to illuminate the lights in the central room. The fire gem will be stolen by the thief at the top of the second ladder.

Go to lever 7 and enter the door. Pull lever 8 to open the trap doors above. Kill the thief and take the gem. Exit through the door by lever 9.

Go back to the light room and up to lever 13.

Enter the room and pull lever 14 to open the door. Pull lever 16 and walk left to collect the shield. Pull lever 15 to move block 3. (This will allow you to go to the treasure room.)

Reset lever 14 to open the trap door on the left and collect the ice gem. Go left and down the first ladder.

Pull lever 20 to move block 4 up and 21 to open the trap door. Down the ladder on the right.

Pull lever 19 and reset to blow up the trap. Collect water gem. Return to the light room to exit.

Hidden puzzles

To find the massive treasure chest: by lever 17 there is a hidden switch, press this and find the other two in W3 for massive bonus.

To stop the thief.: the thief which steals the fire gem can be stopped with a freeze alien potion purchased from the shop or zapped by pulling lever 1.

World 3

The first part of the puzzle is to find and collect two vessels and take them to the final door.

Do not pull any of the levers that you are not told to.

Go right and down the first ladder. Collect the flask and go up to lever 11. Up the ladder and across to collect the ceramic pot. Down and along to lever 8. Pull to get trap key.

Pull lever 9 and jump up to collect the world key. Back down and reset lever 8 to exit.

Hidden puzzles

To find extra potions: pull levers 1 and 2 to see what happens when you pull levers 5 and 6 and then try resetting them. Be careful of spikes appearing beneath you.

To get an extra life: pull lever 1, go right quickly and pull lever 4.

Boss guy

The Minotaur is fairly straightforward being rather similar to the Centurion in L1. The added complication is that the Minotaur can jump on your head if you're not careful.

When the Minotaur jumps, run underneath and behind him towards the right, then repeat when he jumps back to the right.

To time the jump, watch for the minotaur stepping backwards. When he does this, he will then step forward, shoot and jump.

The shop

Buy maces, fireballs, hunters and power potions.



Next month we complete our guide toGods with the map plus instructions to level four.

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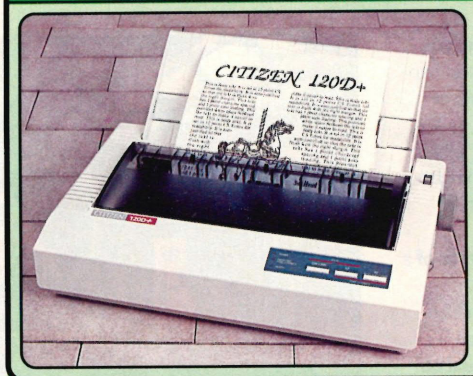
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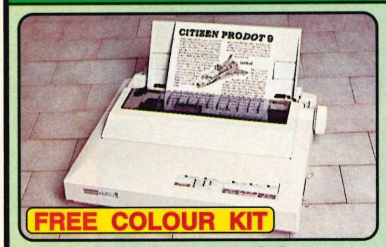
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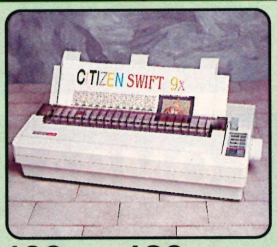


192 CPS **80** COLUMN

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192 CPS **136** COLUMN

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24 PIN PRINTERS

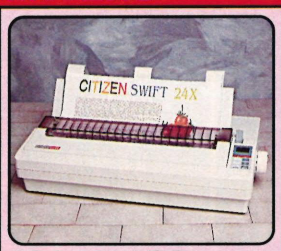


192 CPS **80** COLUMN

- *Citizen 224 - 24 pin - 80 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360 x 360dpi*
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192 CPS **136** COLUMN

- *Citizen Swift 24x - 24 pin - 136 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360 x 360dpi*
- *Epson, IBM and NEC P6 Emulation*
- *Colour Option Available*
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INKJET PRINTER



360 CPS **80** COLUMN

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64 CPS **80** COLUMN

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Star Trek

In Interplay's most recent release, you take on the role of James T Kirk as captain of the most televised starship of them all – the USS Enterprise. The interface is a little unwieldy and the graphics are a bit blocky, but this is without doubt the best Star Trek conversion to date.

The game, as per the series, consists of a number of self-contained episodes. Gameplay is a cross between Origin's Wing Commander and Sierra's Space Quest series, and will no doubt appeal to an audience beyond the normal adventurer or sim player. Some of the 'quests' will probably cause some head scratching so here is a general strategy guide and solution to the first half of this very reasonable product.



SHIP-TO-SHIP COMBAT

Do not use 'head-on' tactics – your shields will not take a great deal. Also all opponents can only fire either directly ahead, or directly behind. The basic tactic that must be perfected is to manoeuvre so that you are either above or below your opponent and at an angle. From this position you can fire at will and without reply. This position can be achieved (and then maintained) by varying the speed of the Enterprise and moving away from your opponent if he starts to straighten up.

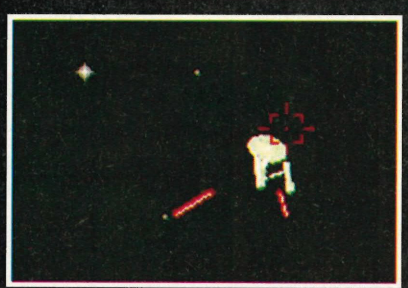
As far as weapons are concerned, these do get beefed up later, but phasers will be the main armament. The photon torpedoes are much slower and the angle of deflection much more difficult to calculate. Torpedoes are only really efficient at closer ranges, but are then very destructive.

In combat don't forget the "A" key – this was a late addition and was omitted from the manual! It enables the target analysis system, handy to see how much damage you're inflicting upon your opponent and where you're doing it. It also seems to be of some use against the Romulan cloaking device. If you do sustain damage then use damage control – Scotty on his own moves about as fast as James Doohan does nowadays.

Finally, despite being a bit daft, you can save your game in combat. So if you knock one of those three birds of prey out – *save*! It may give you a little breathing space before you deal with the other two that are "coming about, keptin".



You've got a Klingon ship centred in your sights, so loose a couple of photon torpedos before he slips away...



Opposing ships normally move very quickly, so even with faster phaser fire you should lead your shots in the anticipated direction of travel



Bullseye! The target takes collosal damage from carefully aimed phaser fire. One more shot like that should cripple it.

GENERAL GUIDELINES

In some of the episodes you may lose the security guard in the landing party. This is not fatal, but will reduce your overall score and in particular your commendation points. These points improve the crew's performance and their skill levels are very important in the later missions. So, if the guard is killed, restore an earlier saved game and find another way round the problem.

Upon entering planet orbit always:

1. Talk to Spock
2. Use Spock's computer to research all revealed topics.
3. Use Lt. Uhura to hail the planet first.

Planetside continually use both the EYE icon and Spock's Tricorder to examine objects and the location. Also regularly speak to all members of the landing party. Also remember – *you are James T. Kirk!* In your dealings with others think of starfleet, think of the prime directive and think of the Enterprise. How you react to situations and people will affect your performance and subsequent score. It is in this aspect that Star Trek: 25th Anniversary scores where no Star Trek has scored before.



Next month we'll bring you a run down on the missions and hopefully give you enough advice to get that admiral rank you've always been after. Live long and

A special Help! column this month, specially dedicated to people with problems. Next month we'll try to bring you a mammoth Help Supplied! page, but for now, if you know the answers to any of the following, please write in and tells us. There's now a prize offered for everyone who helps out (see bottom of page for details).

EYE OF THE BEHOLDER

Ashley Brady of Pinner in Middlesex is having more than his fair share of trouble with SSI's classic. He's stuck on level 8 or 9 (he isn't sure himself), having saved the prince and got the ring, but not knowing what to do next. Do you know (more importantly, do you know a good wig manufacturer to replace all the hair he's pulled out)?

EYE OF THE BEHOLDER 2

Just to let you know, if you send us a map or diagram of a certain area of a game, your chances of help are greatly improved. A. Ranade of St. Albans leads the way with this section of level four. He can't find any useful keys, couldn't rest his party and doesn't know what the button on the wall does. If the map looks familiar, drop us a line.

THE HITCHHIKER'S GUIDE TO THE GALAXY

Young Mr. Billy Buchanan of Edinburgh is finding life as an intergalactic thumb-lifter a bit strenuous. He's got past the Vogon Constructor Fleet section, but is stuck on the next bit. He can't hear, see, move or anything. What's more, Ford seems to have disappeared too. What's the answer, guys?

PRINCE OF PERSIA

Broderbund's fantastic platform adventure is proving a mite tricky for both John White of Berwickshire and Nicholas Shelton of London. Nicholas is almost at the end, but can't work out where to go after he joins with his shadow on level 12. John, on the other hand, is still trying to make the connection with this ghostly double. Any help on either problem would be much appreciated.

KING'S QUEST V

A much requested game this one, Sierra's heart-warming tale of fairies, pixies and sugar-plum bunny-wunnys is now getting to Alexander Noble of Newcastle-Upon-Tyne. He's killed the witch, ransacked her house, got the heart and squeezed the honey, but can't find a way out of the woods. He also wants to know how to get the tambourine from the gypsy and what the little leather pouch is for? Doesn't ask for much, does he?

Also stuck in KQV is Carl Johnson of Triny in Hertfordshire. A self-confessed adventure master, he's embarrassed to be stuck by what he considers a simple problem! How to find the gold coin is the quandary facing Carl, so if you know ... don't tell him (ha ha ha). Just kidding, please write in.

BARD'S TALE 2

A very humble Stephen Naysmith (also of Edinburgh) is almost apologetic in his letter, asking for help in the legendary fantasy RPG. It doesn't matter what the game is or how old it is, if it's causing you a problem, that's what we're here for. Anyway, he's given up on the starter dungeon after being unable to get past the large area of darkness on level four. He'd also like to know what to say to the man in gold doing a fireball trick.

THE ADVENTURES OF WILLY BEAMISH

Apart from being the 453rd person to send us the answer Matthew Lynd's query, Claire Davis of Birmingham wanted to know how to get into the sludge-works to save Willy's dad and what Roy Rogers' dog was called. Answers on a postcard please ...

SORCERERS GET ALL THE GIRLS

Chris Lawton of Lytham St. Annes has been in these pages before with much the same problem. Although the help Robin Matthews provided was certainly ... helpful, he didn't explain how to get the 'Kabbul' spell. If you know, please put poor Chris out of his misery.

MIGHT AND MAGIC III

New World's much-flawed RPG is causing to be more of a gameplaying nightmare rather than a technical one for Paul Cooper of Kidderminster.

His main problem is not being able to find Hologram Sequencing Card No.1. He would also like to know the name of the wizard Greywind's clerical daughter and what you are supposed to do with the databases in the pyramid on the Isle of Fire (what is the passcode)?

LOOM

It's hard to imagine Lucasfilm's easiest game causing any problems, but L. Furnival(?) of Cheshire is stuck! He's at the Blacksmith's but doesn't know where to go from there. Anyone?

ULTIMA V

What's a nice girl like Kate Streatfield of York doing in a dungeon like Doom? Getting stuck apparently! She's discovered a room on level two which appears to have another dungeon entrance inside, but she can't enter it.

She knows Lord British is in there somewhere but wants to know where? Please help as the game is currently taking up valuable hard disk space and she'd like to finish the game before she wipes it off.

SPACE QUEST I

Chris Pettifer and his sister Hanna of Epsom Downs in Surrey are stuck in sector H H. They've left the desert planet and have wound up in a room inside a starship that contains a strange box. Whenever they go through the door they get vaporised. What's the answer?

SPACE QUEST II

Another regular to the Help! Wanted section is Tiny Sandhu of Bedfont in Middlesex. This time he's stuck in Roger Wilco's second epic outing, not knowing what to do once he's killed the ogre and escaped from the cage.

SPACE QUEST III

Meanwhile in the third RW adventure, Nick Roach and Ben Hall of Buckinghamshire are stuck on the planet Phleebhut. Buying things from the shop is no problem, but whenever they try to leave, they get twisted by an evil Arnie-style robot.

SPACE QUEST IV

Although he's made a fair bit of progress in Sierra's time-travelling tale, Philip Trevett can't get any further than the shopping mall.

He's changed into women's clothing, got access to the bank account and bought a PocketPal and a hint book, but he can't get out of the mall. Perhaps it's the high heels
?

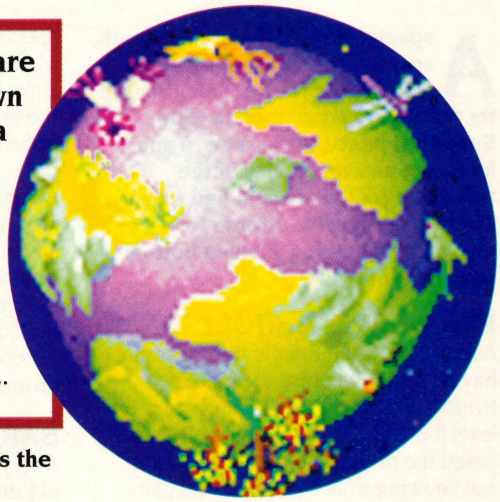
CONQUESTS OF CAMELOT

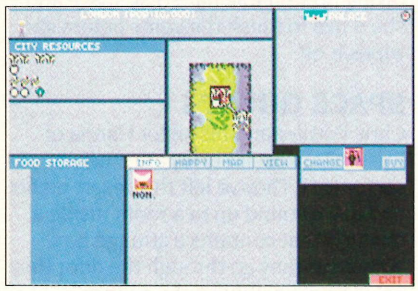
Two questions from Brian Larsen of Denmark concerning Sierra's mediaeval adventure. The first is how to find the water in the desert of Jerusalem. The second is how t get through the desert from Gaza to Jerusalem.

Are you up a certain creek without a certain paddle? Have you had it up to here with a particular game's problem? On the other hand, can you help out with one of the problems printed here (or in one of the previous issues)? If so, drop us a line at: QED, PC Review, EMAP Images, Priory Court, 30-32 Farringdon Lane, London, EC1R 3AU. Don't forget to mark your envelope either Help Supplied! or Help Wanted! and anyone that helps someone out will get themselves a free game, so don't forget to tell us what kind of games you like (flight sims, sports games, etc.), what kind of machine you have and what size disk drives it contains (including CD-ROM).

CIVILIZATION –

Sid Meier's wonderful Civilization is one of those rare events in the PC world – a product that creates its own genre. It has elements of a 'god' game, a simulation, a strategy game, an arcade game and of a spreadsheet. It deserves that over-used accolade of being a 'classic' and every PC user should give it a try. Robin Matthews has run a PC helpline for many years and has received regular calls and letters about this MicroProse biggie. Here are some of the most repeated queries..





Q When I look at the City Screen why are some of the squares highlighted in red?
Mao Tse Tung, Peking

A. Dear Mr. Mao, the red highlights mean that these squares are within the limits of another city. Your city dwellers cannot work these squares, the two cities concerned are sited too close together to gain the maximum potential of each.

Q. I have finished the game, have a Civilization score of 800+, but receive only a rating of 10%. Why?
A. Einstein, Newport

A. Dear Bert, you're probably playing at chieftain level. Each level of difficulty multiplies your score by a percentage – e.g. chieftain 800 points x 20% = 160. This score is the one that is then rated as a percentage of 1000 – ie, 16%.

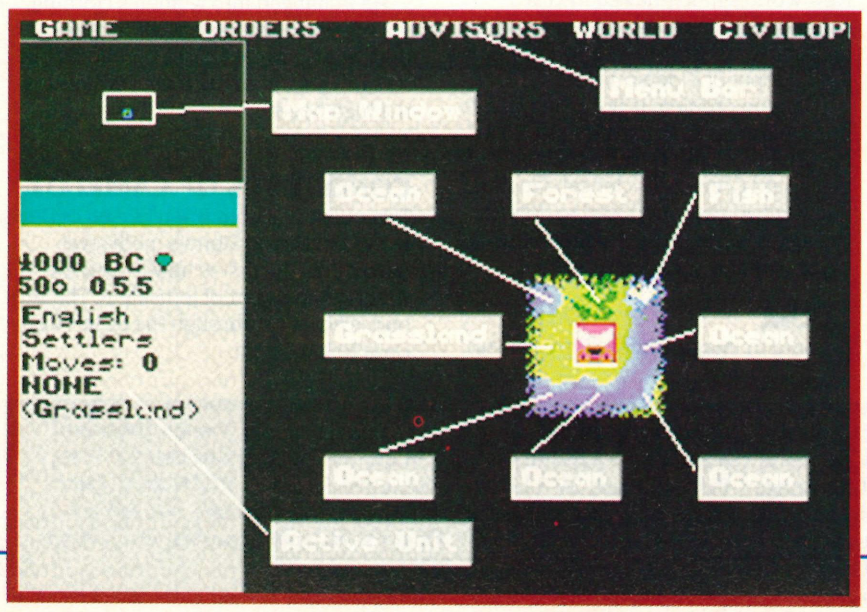
Q. Why can't I just eliminate every civilisation in the world?
A. Hitler, Berlin

A. Because it'll be the end of the game! It is far better to leave one or two cities, and build a 'garrison' city nearby to keep them in check – you could even trade with them!

Q. When should I launch my space ship, and how big should it be?
J.Tiberias Kirk, New York

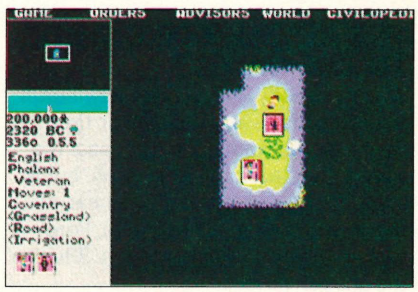
A. Well Jim, assuming you're ahead of your opponents, as late as you can. Don't forget about the length of the trip and also your retirement date. Your spaceship must arrive by 2100 (Chieftain), 2080 (Warlord), 2060 (Prince), 2040 (King), 2020 (Emperor). Size is important. The more settlers you get planet-side, the higher your score bonus. Keep an eye on the right balance and the statistics shown. Live long and prosper.

.This handy guide at the start of the game (reproduced here so that you don't have to keep going back to the start of the game) acts as a quick guide to what's what in Civilization. Refer to this whenever you're unfamiliar with anything on the screen.



Q. Which are the best units to build first?
C Wren, London

A. Dear Christopher, it does depend on how good a start you manage. The game world is randomly created and in fact if you restore a game you will note that certain things will happen differently. So allowing for mercenaries and advanced tribes, it is essential that you have a fortified military unit in your first city. A good balance is Militia/Settlers/Phalanx.



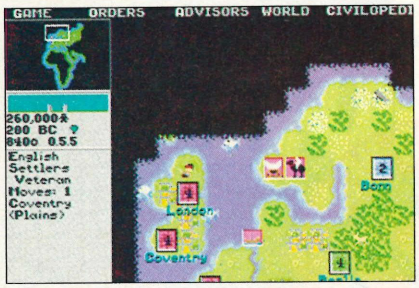
Q. I keep on being told that I need tax inspectors – but how?
D. Trotter, Peckham

A. Derek, this is a common question, but the answer is in the manual. Select a relevant city screen and click on one of your workers 'in the fields'. This group will be removed from the central square and converted into an entertainer. You will notice that in the queue of people in the top left of the screen, the far right icon will have changed to an Elvis lookalike. Click on this icon and you can change it to a taxman or a scientist. This is essential to the game and allows you to tweak either tax revenues, scientific research, or the level of happiness in each city. You can 'promote' several citizens in this way, and in all cities beyond a certain size. Check with your trade advisor to see the effect on outgoings/incomings.

A MAIL BAG

Q. I've launched my space ship, what do I do now for the next 10 years or so?
B. Rogers, New Chicago

A. Well done, Buck, but don't sit back and relax – you now need to try and build the best score you can. Make as many people happy as you can, in the last year or so put luxuries up and taxes down, try to have lots of 'We Love The Ruler' days and keep that pollution down.



Q. I'm broke; what can I do?
A Daley, S London

A. Sell any surplus improvements – they raise cash and reduce your maintenance costs. Explore any 'dark' areas to try and find minerals. You may also be able to extract money from your neighbours for your friendship. It may also be necessary to forget research for a while and put taxes through the roof – this should be backed up by 'demoting' citizens to become taxmen, especially in your bigger cities. Also don't ignore trade – develop routes using caravans, the best being between large cities of another race. Make sure you check your advisors regularly and try to keep a healthy bank balance.

Q. Is it worth exploring early, and what about these native huts?
D. Livingstone (Dr), Edinburgh

A. Dear Dr, yes! This will reduce the number of barbarian attacks, which early on can be very disruptive. The huts are variable with either 'mineral deposits' (money), 'mercenaries' (troops), 'advanced tribes' (new city), barbarians (lager louts), or scrolls. The scrolls are almost worth finding later on – you then are given more developed technological advances.

Q. My lot are revolting – all the time. What can I do?
W Tyler, Tolpuddle, Dorset

A. Wat, you are in trouble. Keeping people happy is a fundamental of Civilization. Once your cities grow past a certain size, additional people are automatically unhappy. Use the 'happy meter' regularly to monitor this and try and avoid civil unrest. You must have at least as many happy souls as unhappy to maintain order (no unhappy and at least as many happy as content for 'We Love The Ruler' days) and this is done in several ways:

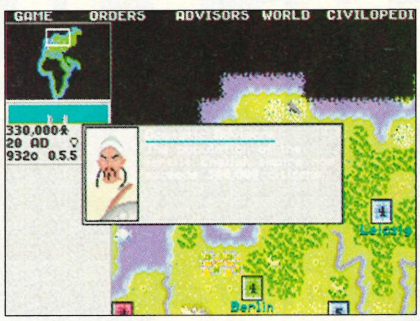
1. Give them more luxury goods by altering the luxury rate

2. Create 'entertainers' (as per taxman earlier)

3. Build improvements and certain wonders.

4. Build more 'home troops' to keep civil order.

It is also worth checking how many military units are 'away' from home. These make an added number of unhappy citizens 'at home'. It can be worthwhile 're-homing' these units if they now reside in another city. Make sure that the new home city has resources to maintain them.



Q. I don't understand about monarchy and democracy – can you help?
V I Lenin, Moscow

A. I think you've been eating too many 'roo steaks on the barbie – these are simply to speed up the growth of your civilisation. Monarchy will increase trade and speed up your economy. Democracy is the way towards huge population increases but places heavy requirements re keeping people happy. As a rule I install a king (although you probably wouldn't) about 1500 BC and a democracy by 1500 AD.

Q. Is it OK to 'nuke' the opposition?
Gen. McArthur, Manila

A. Dear Doug, you really are a worry. It is really only to be used in desperation. It will cause an awful lot of fall-out and pollution and is a little anti-social. If you are in deep trouble on the battlefield, or if you are about to lose the space-race it can be used. If you nuke the other's capital its rocket will become lost in space and will lose the race.

Q. I never seem able to increase the size of my cities beyond eight or nine – also cities just seem to disappear leaving only the original settlers.
N Bonaparte, Elba

A. This is probably the most common query. It is caused by not applying food production properly. All excess food produced is placed in storage. Without a granary when the food bin is FULL, an extra unit of population is created and the bin EMPTIED, ie, your population increases from four to five. With a granary when the bin is full, an extra unit of population is created and the bin HALF-EMPTIES. This makes population 'production' much quicker.

By moving your cities' workers around the city screen you can change the balance of food/ resources to channel total production. To increase your cities to 20+ just keep that granary overflowing every five or six turns. Note to grow cities to this extent you must provide certain improvements, eg, an aqueduct and you will also have to work hard to keep them happy. Your disappearing cities are a result of poor management – by neglecting food or resources the city literally cannot support itself. Check your city often and stay out of the black!

QED

NEXT MONTH

If the tribbles are getting out of hand and the diluthium crystals cannae take it, don't fear. We bring you a complete guide to all of the missions in Electronic Arts' Star Trek: 25th Anniversary. So, if it's life Jim, but not as you know it, then look here for all the answers.

Plus, to complement our Help Wanted! special this month, we're hoping to bring you a Help Supplied! special (this, obviously is dependent on how much help we get from you guys, so write in now).

Also, coming soon to these pages is a brand new style of player's guide. Not your usual maps or complete solutions to games. Not your usual cheats, tips and hints. The Simulation School is designed to give you help with all manner of simulations, be they flight, tank, submarine or driving. Each month we'll cover a specific topic, giving advice not just for a single game, but for a whole genre in one go! Clear instructions coupled with detailed illustrations will enable you to perform Immelmans with ease and evade torpedoes as if it was second nature. Only in QED!

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"What's the secret? Has Bullfrog simply been lucky with games beginning with the letter 'P', or is there something more dynamic lurking here?"



"Soaring peacefully in civilian skies may be politically correct, but most of us would rather annihilate something with six feet of high explosive tipped steel"



"Do not even think of buying a machine below a 286, and, if possible, buy a 386SX or 386. Pc games are increasingly being written to run optimally on a 386"



"A virus isn't anything special. The first version of Jerusalem had a bug in it; the Stupid virus often doesn't infect PCs properly because it's so badly written"



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"You can, of course, make up your own multimedia system by adding to your own equipment or specifying it when you buy your computer"



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ISSUE 1

Amstrad 5286 Games Pack reviewed; Civilization; Kid Pix; Tecnoplus CD-ROM drive; Tips for Eye of the Beholder, Heart of China; Top 100 Classic Games supplement (pt 1).

On disk: *Faces, Blues Brothers, Music Maestro, Jokeware.*

ISSUE 2

Bullfrog profile; PC gadgets; First Steps in MS-DOS; Readers Top 50; Ultima VII, Patton Strikes Back, Pro Tennis Tour 2, Police Quest 3; Readers' Top 50 games; More tips for Eye of the Beholder, Heart of China.

On disk: *Powermonger, Pit-fighter, Sleuth, Typing Tutor.*

ISSUE 3

No-nonsense guide to buying a PC; First Steps – fitting a hard disk; Electronic Arts On the Spot; Secret of Monkey Island 2, Powermonger, Cadaver; Tips for Savage Empire, Immortal.

On disk: *Lemmings, Gods, Gallery.*

ISSUE 4

Protect yourself from viruses; First Steps – MS-DOS; Miracle keyboard; EOTB 2, Chessmaster 3000, Gods; Tips for Conquests of the Longbow and Might & Magic III; Top 100 Classic Games Supplement (pt 2)

On disk: *Fingerpaint, Moraff's Superblast, Gallery.*

ISSUE 5

CD-ROM – the future for games?; First Steps – fitting a soundboard; Darkseed; Midwinter II: Flames of Freedom; Shuttle; Twilight 2000; Thunderhawk; Tips for Eye of the Beholder II.

On disk: *Supaplex, Hugo's House of Horrors, Gallery*

ISSUE 6

Windows: freedom from the DOS prompt; First Steps – upgrading to VGA and beyond; chess machines and PC chess programs; On the Spot: US Gold; Cruise for a Corpse; Star Trek; WC2 on CD-ROM; Tips for Longbow and Gods.

On disk: *Darkseed, Blox, Gallery*

ISSUE 7

Essential guide to PC flight sims; First Steps: upgrading your processor; Ad Lib Gold 1000 soundboard; Disney Animation Studio, Another World; Sherlock Holmes on CD-ROM; Tips for Monkey Island 2, EOTB 2, more Gods

On disk: *Another World, Timelord*

PC REVIEW BACK ISSUES

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This month we've a real treat for soccer fans – the chance to play European Championship 1992, Elite's conversion of Tecmo's superb World Cup '90. The colourfully named Treacles Utilities make it easy to soup up your machine's performance and we've two more puzzle games from Richard Wright, the author of Blox.

European Championship Soccer 1992

You've played it in the arcades, now you can play it at home. Elite is about to release its conversion of Tecmo's superb football arcade game and we've bagged this exclusive demo. The demo allows you to play a short game against either the computer or another player. The demo shows the main features of the game, but the full game also allows you to select countries, turn sounds on and off, save goals to disk automatically, switch pre-game and half-time sequences on and off, save games, and review saved goals.

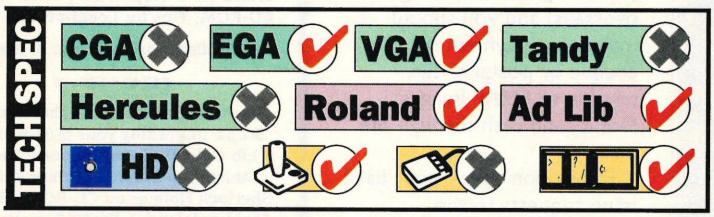
How to play the game

Once the game has loaded, four icons allow you to select a one player game, a two player game, the options screen, or exit to DOS. Go to the options screen first to select the appropriate sound, graphics and control modes for your machine.

You control the highlighted player. This is always the player who is in control of the ball or nearest to the ball. To gain control of the ball just make contact with it. You will keep control of the ball until you kick it or you are successfully tackled by an opposing player.

Unless you are near to your opponent's goal you can kick the ball in the direction you are facing in one of two ways, a ground pass or an aerial pass. If your player is standing in the path of the ball during an aerial pass (except when you are near to your opponent's goal) you can attempt to head the ball.





How to load the programs

Those who are experienced PC users should check the quick installation guide below. If you're unsure how to proceed, read through the step by step instructions in this panel.

Quick installation guide

Put the PC Review cover disk into your floppy disk drive and log on to it. Type

```
FRONT [Enter]
```

to start the menu and follow the on-screen prompts.
When the program(s) have installed, log on to the relevant directory, and type the following to start the programs.

European Championship Soccer:
`FOOTBALL [Enter]`

Treacles Utilities:
See the panel on page 91 for loading each individual program.

Rimtrix:
`RIMTRIX [Enter]`

X-Ball
`XBALL [Enter]`

Hunt 'n' Destroy
See the panel on page 91

Gallery:
`SHOW [Enter]`

Step by step instructions

1. Put your PC Review cover disk into your floppy disk drive.
2. Log on to that drive by typing

   `A: [Enter]`

if your floppy drive is drive b:, substitute `b:` for `a:` in the

contact with the player in possession of the ball. Alternatively you can execute a sliding tackle on a player in possession of the ball.

If a foul occurs, a free kick will be given. If this is within the 18 yard box then the defending team may form a defensive wall and the player making the free kick may make a direct kick.

When you have possession of the ball in the proximity of your opponent's goal a number of extra moves are available. These are the scissor kick and the power header which can both be attempted on a ball that is in the air, and the power shot, which can only be applied to a ball on the ground. These shots will occur automatically if your players are positioned appropriately and you time the kick/header correctly.

When the ball comes close to your own goal you will gain control of the goalkeeper. If the keeper is in the path of the ball he will parry or catch the ball automatically. If the keeper is close to the ball he may automatically make a diving save. Alternatively the player may attempt to parry, catch or make a diving save manually. Use the kick controls to do this.

Action	Player 1	Player 2
Forward	cursor up	W
Back	cursor down	X
Left	cursor left	A
Right	cursor right	D
Low Kick	? (short press)	V
High Kick	? (long press)	B

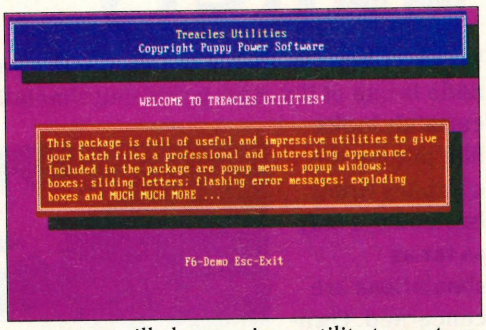


Quit to main menu

Pause on/off



Treacles Utilities



This set of commands has been created by Puppy Power Software to enhance batch files. Amongst other things the utilities include: pop-up windows, pop-up menus, single row menus, function keypress detector, password protection, time/date display, coloured screen writing, lines, boxes, exploding boxes, and dump screen to printer. If you register your copy you will also receive a utility to capture a screen to a file.

Before you can use the utilities you must run the self-extracting archived files. To do this just type:

```
TUFILES [Enter]
TUSCREEN [Enter]
```

You may then delete TUFILES.EXE and TUSCREEN.EXE if you wish. For complete instructions on using the utilities you should read the text file README.NOW using a word processor or text editor, or the DOS command TYPE. If you key in

```
TYPE README.NOW |MORE [Enter]
```

the file will display one screen at a time.

For an example of how to use the utilities type:

```
DEMO [return]
```

and then

```
HELP [return]
```

Examining the two files DEMO.BAT and HELP.BAT (you can use TYPE again) will provide an example of how the new commands can be



example above, eg, `B: [Enter]` to log on to drive B:.

3 Type the following:

`FRONT [Enter]`

to start the cover disk menu program.

4 Use either a mouse or the cursor keys to select the program you wish to install. With a mouse, click on the bullet next to the appropriate program. With cursor keys, move the pointer to the bullet and press `Enter`.

5 Taking European Championship Soccer as an example, you should now see an on-screen message saying

`The program will be decompacted to C:\EUROCHMP. Is this OK? (Y/N)`

6 If this is OK, ie, you want to install European Championship Soccer to your hard disk C:, and you have no other directories called EUROCHMP, press `Y` and then `Enter`.

7 If you are installing to another disk, or you wish to give the directory a different name, simply press `N [Enter]`, backspace over C:\EUROCHMP and retype your preferred destination, eg,

`B:\SOCCER [Enter]`

8 The program should automatically install, finishing with the words `All done!`

9 To play the cover programs, log on to the correct drive and directory (if you did change the drive and directory names, don't forget where you put them!):

```
C: [Enter]
CD EUROCHMP [Enter]
```

will take you to the EUROCHMP directory on drive C:

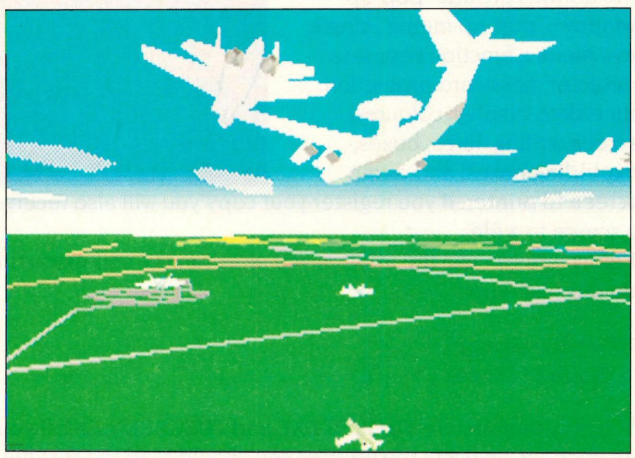
10 Type the following commands to start the programs:

`FOOTBALL [Enter]` to play European Championship Soccer
`RIMTRIX [Enter]` to play Rimtrix.
`XBALL [Enter]` to play X-Ball
`SHOW [Enter]` to view the Gallery.

See the panels on page 91 for details on Treacles Utilities and Hunt 'n' Destroy.

Gallery

We've a flight sim theme to this month's gallery. Digital Integration's Tornado is one of the most promising simulations we've seen this year and certainly looks like putting the company firmly back on the map as far as simulations are concerned. Owners of 3.5" disks can also sample an example of the stunning artwork in MicroProse's forthcoming Harrier. Look out for a full preview in next month's issue.



TECH SPEC

CGA ✗	EGA ✗	VGA ✗	Tandy ✗
Hercules ✗	Roland ✗	Ad Lib ✗	
HD ✗			

TROUBLE-

I get the message 'Cannot run in Mono'.

● The menu program will not run on mono machines. If there are mono compatible programs on the disk, you will have to install them manually by copying the disk files to your hard disk and using Pkunzip to decompress the .ZIP files. The syntax is `Pkunzip [filename] [Enter]`.

When I try to start the menu program I get no response or the message 'Bad Command'.

● Have you made the drive containing the cover disk the current one?
● Is the disk properly inserted with the drive door closed?

I have correctly installed the program, but it won't work.

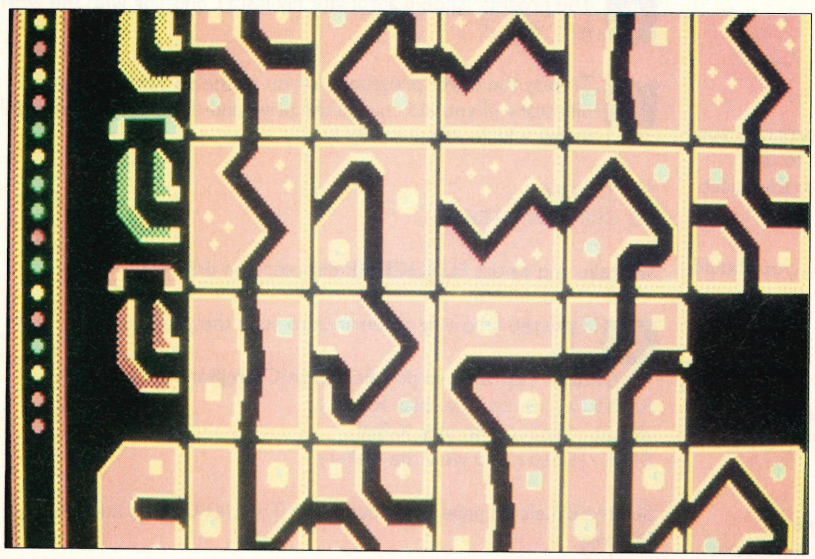
● Have you followed the correct loading procedure?
● Have you made the correct directory and drive the current one?
● If the game was installed to floppy, is the correct disk properly inserted and the drive door closed?

The program I have selected won't install

Rimtrix

TECH SPEC

CGA ✓	EGA ✓	VGA ✓	Tandy ✗
Hercules ✓	Roland ✗	Ad Lib ✗	
HD ✗			



The first of two games on this month's cover disk from Richard Wright, author of Blox, Rimtrix is another puzzle game requiring quick wits and fast reactions.

The object of Rimtrix is to guide a ball through a series of moving tiles and into coloured dishes on the right of the screen. Each ball starts on the left of the screen and you control its path by moving and rotating the tiles. There are three coloured dishes and to complete a screen you need to fill each dish with three balls of the right colour.

Each new ball travels faster than the previous one. Note that you can move a tile even if the ball is travelling through it but you can't rotate a tile with the ball inside it. You'll find more complete instructions in the text file RIMTRIX.DOC.

CONTROLS

Cursor Keys	**Move tile**
Spacebar or Enter	**Rotate tile**
Esc	**Exit to DOS**

PC Review's cover disks are checked at each stage of production for all known viruses and duplicated under strict quality control. However, PC Review cannot accept responsibility for any consequences that may arise from using the disk or the programs on it. PC Review, its distributors and retailers, cannot be held responsible for any unnotified changes to the contents of the disk, although we will always endeavour to supply suitable alternative software if circumstances dictate that we are unable to supply advertised programs.

SHOOTING

properly.

- Is there a blank, formatted disk in the drive you have selected, and is the drive door closed?
- Is there enough room on the disk you have selected. You should only install programs to blank disks (one for each program you install). If installing to a hard drive, as a general rule, you should have at least two megabytes of free space for each month's cover disk. Sometimes the programs will not fit on to a 360K disk, even if it is completely blank.

HELPLINE

If you still have problems then please phone our helpline number below:

DISK HELPLINE: (0443) 693233

The helpline operates between 10.30 am and 12.30 pm weekdays. If possible, please have your computer operating and your cover disk ready when you phone the helpline. If your phone is not near the computer then please note down as much information about the fault as you can and have pen and paper handy before you call.

FAULTY DISK?

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

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Pentrebach
Merthyr Tydfil
Mid Glamorgan
CF48 4DR

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

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

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X-Ball

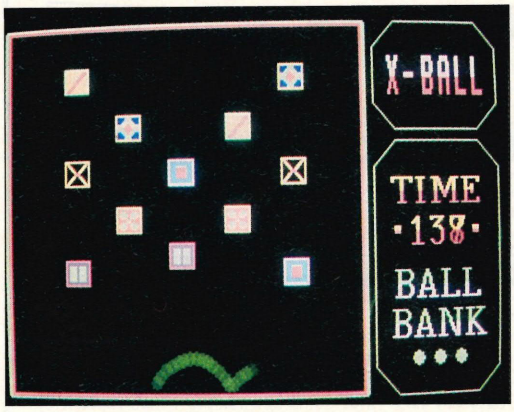
The second game from Richard Wright, X-Ball, also requires very quick reactions but is a bit easier on the grey matter.

To complete each screen in X-Ball, the ball must be guided so that it hits each pair of matching tiles. Once a tile is hit it will be highlighted and when the tile that matches it is hit, both tiles will disappear. However, if the wrong tile is hit first then all of the tiles will reappear.

The ball can be guided left and right and also boosted (each press of the Spacebar boosts the ball further up the screen).

You can set the game speed to suit the speed of your machine. Speed 1 should be selected for machines of 20Mhz and above, and Speed 9 should be used for machines of 8Mhz or below. Speeds 2 to 8 can be used for other machines and to change the difficulty of the game. More complete instructions are in the text file Xball.doc.

CONTROLS	
Guide ball left	Left Shift
Guide ball right	Right Shift
Boost ball	Spacebar
Leave game	Esc





Hunt 'n' Destroy

As a bonus, and to relieve all those poor souls who are struggling to remove the Supaplex demo from their hard disks, we've included this small but useful program which identifies system and hidden files. You should place the program Hunt.com in your DOS directory. Now change to a directory that contains problem hidden or system files, for example:

```
CD SUPAPLEX [Enter]
```

and type

```
HUNT [Enter]
```

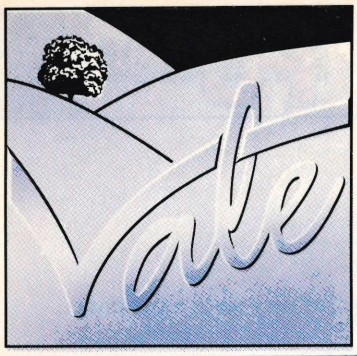
to start the program searching.

If the program finds any hidden or system files it will alert you and ask if you want to Delete them, Remove the hidden or system attribute, or Ignore them.

IMPORTANT WARNING: Your DOS directory and possibly other directories contain hidden and system files which are essential for your machine to run properly. This program is capable of erasing them and should be used with utmost care. If you are at all unsure about a file, leave it alone. Please read the text file Hunt.doc for full instructions.



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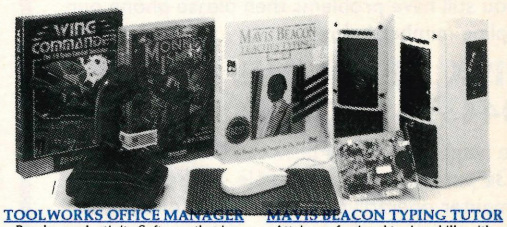
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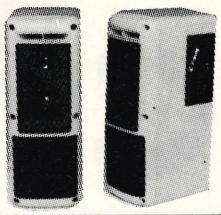
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NEW! FLIGHT YOKE

by WINNER

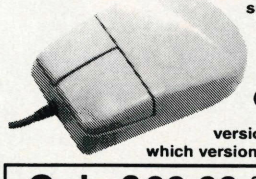
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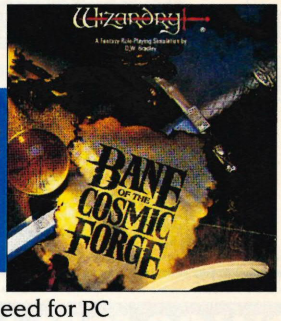
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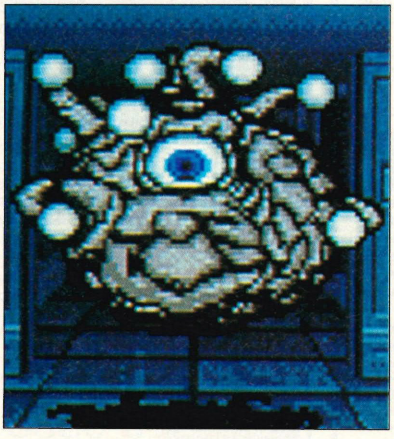
We have a fabulous first prize in store for you this month — to complement this month's cover story, we are giving away a fully-configured PC with all the goodies required to make it a complete entertainment package. This Orion Microsystems Gamepro-SX PC package comprises a 386SX-based PC running at 25MHz, with 1Mb RAM, a 45MB hard disk, SVGA graphics card and colour monitor, and it's the big, big first prize in this month's competition. You'll also get a mouse, Ad Lib compatible soundboard and DR-DOS 6.0 running on the machine. This system normally costs over £1,000 (£869 plus VAT), but it could be yours for free!

If you're not already convinced, read this month's cover story to see how this package can give you everything you need for PC entertainment — and check the features list in the panel below.

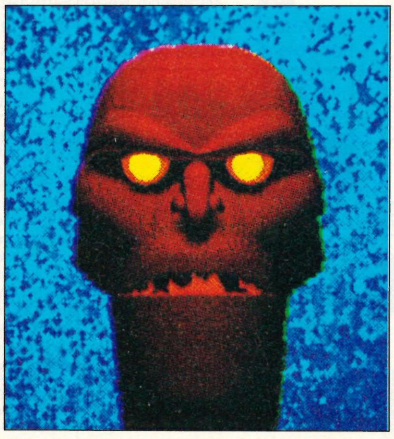
Wizardry VI

If that hasn't got you rushing to fill out the entry form already, have a look at the runners-up prizes. You can be one of the first to pick up a copy of Wizardry VI: Bane of the Cosmic Forge, previously available only on

NAME THESE CHARACTERS FROM CLASSIC ROLE PLA



A



B



C



Orion's Gamepro-SX

25MHz 80386SX processor
1Mb RAM
45Mb hard disk
1.44Mb 3.5" disk drive
256K SVGA card
14" SVGA colour monitor
Megasound soundboard
(Ad Lib compatible)
Stereo headphones
Serial mouse
Five free expansion slots
Analogue joystick
DR-DOS 6.0

import, but which is being released through US Gold this summer. This was described by Robin Matthews in our Wizardry feature in Issue 7 as a "classic RPG in terms of plot, character and interface". We've got six copies of Cosmic Forge to give away to the next six out of the hat.

How to enter

Since we're offering an RPG as second prizes, we thought we'd continue with the role-playing theme. Below you'll find pictured four well-known characters from equally well-known PC role-playing games.

This is a competition in two parts. Firstly, match the number of the picture to the names on the coupon.

Rules

The winner of the Orion Microsystems Gamepro-SX will be the first correct entry drawn at random after the closing date.
The next six correct entries will each win a copy of Bane of the Cosmic Forge.
No entries received after the closing date will be considered.
Only ONE entry per person, please.
No employees, or their relatives, or associates of Orion Microsystems, Sir-Tech, US Gold, or EMAP Images are eligible to enter the competition.
The editor's decision in all these matters is unquestionably final.

YING GAMES



D

For example, if you think picture A shows the Guardian, put A next to the Guardian on the form. To give you some further clues, we've also noted which games the pictures on this page were taken from.

Secondly, three of the characters in the pictures have something in common. The final part of this competition is to tell us which character is the odd one out, and why.

Sending your entry

Stick the completed entry form on a postcard or the back of a sealed envelope (you can use a photocopy if you don't want to cut up the magazine), and send it to:

RPG Hall of Fame
PC Review
EMAP Images
Priory Court
30-32 Farringdon Lane
London EC1R 3AU

and make sure it reaches us by June 17, 1992. We'll announce the results in our August 1992 issue.

RPG Hall of Fame
The pictures show the following characters:

1. Beholder .....
(from Eye of the Beholder 2)

2. Guardian .....
(from Ultima VII)

3. Avatar .....
(from Savage Empire)

4. Gothmenes .....
(from Pools of Darkness)

5. The odd one out is .....

because.....
.....
.....

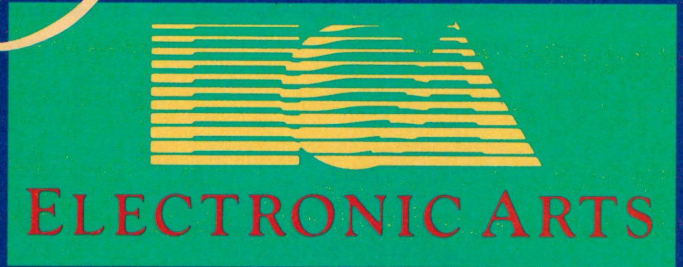
Name.....
Address.....
.....
.....
.....

Closing date: June 17, 1992

[box] Tick this box if you do NOT wish to receive any further information from companies associated with this competition.

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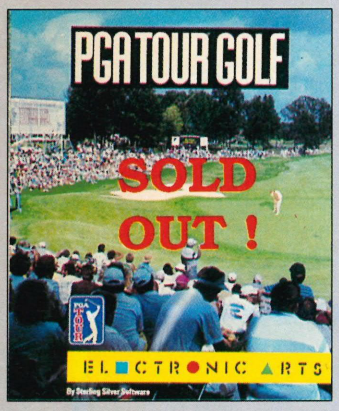
Battle Chess *3.5"/5.25" - CGA, EGA, VGA, Windows*

The Bard's Tale *3.5"/5.25" - CGA, EGA, VGA*



POPULOUS

Out of the darkness were born two nations, fanatical followers of their own beliefs, warriors by nature. Ultimately there can only be one survivor to claim victory over all! Design your own worlds and conquer them! Control the awesome power of nature and experience this classic, biggest selling 16 bit title ever!

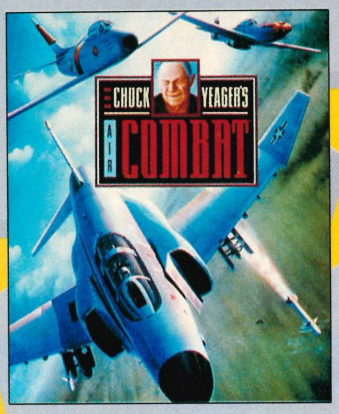


PGA TOUR GOLF

PGA Tour Golf is the only computer game ever licensed by the US PGA. Panoramic fly-by shots and look-back view let you play real tournaments on real courses. Instant replay lets you relive great shots as you compete against 60 PGA pros!

CHUCK YEAGER'S AIR COMBAT

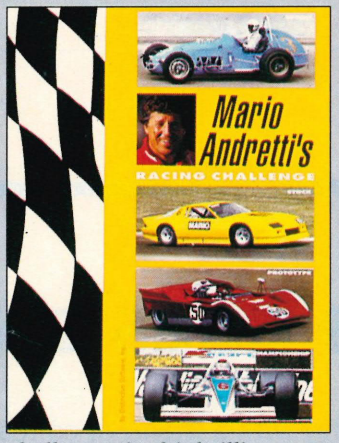
Choose from over 50 missions from World War II, Korea and Vietnam as you fly with the leading pioneer of modern air combat, General Chuck Yeager. Learn from the experience and guidance



from the man who has flown with them all. Will you have the right stuff?

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challenges in this brilliant professional racing simulation.

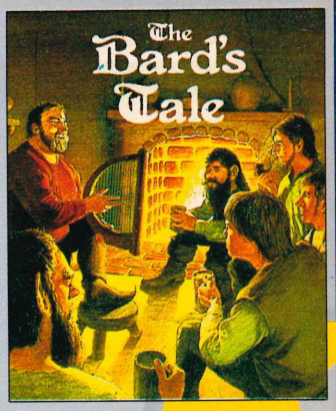
BATTLE CHESS

Battle Chess brings chess to life by combining a magnificent chess logic system with colourful and dramatic 3D animations and digitised sounds. Winner of the Software Publishers Association award for best graphics.



THE BARD'S TALE

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monsters, 3D full colour mazes and outstanding special effects.

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Sun	Mon	Tues	Wed	Thurs	Fri	Sat
17	18	19	20	21 St George's Day	22	23
24	25 Spring Bank Holiday	26	27	28	29	30
31						

JUNE 1992

Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JUNE 15TH

PC REVIEW ISSUE 9 GOES ON SALE

Link up with a friend

A number of PC games include the option to play with a friend or colleague on their PC, linked by serial cable. Find out how easy this link is to set up, which games support this, and how it enhances your game-playing.



Taming MS-DOS

Fed up with struggling with DOS? Huw Collingbourne suggests a selection of file management programs and desktop organisers designed to make easier, while our First Steps series continues with some more tips and advice on making DOS work for you.

Plus

Indiana Jones is back: Fate of Atlantis, the action game, reviewed, and we report on the progress so far of MicroProse's Harrier (another ground-breaking flight sim?) and Interplay's epic space simulation centred around Buzz Alldrin.

Place an order with your newsagent now

Contents subject to change.

CLASSIC GAME GUIDE

Classic action, classic thrills, classic games – brought to you exclusively in PC Review's new Classic Games Guide! Over the past few years there has been a massive increase in the number of software houses developing games for the PC in this country *and* the amount of products coming from the United States. The choice facing the lucky buyer is truly impressive!

Each month we will feature top quality PC games, covering all aspects of computer entertainment, from action to brain teasers, fantasy to sport, and flight simulations to strategy. Quite simply the very best your money can buy. And each month we will also take an in-depth look at a particular classic game.

This section of the magazine is not just a nostalgia trip, however. Classic games are being created all the time and they too will find a place here. So if you are a keen gamer or newcomer to the excitement of computer entertainment, there will always be something new for you to read each month. We are sure our Classic Games Guide will become an essential companion.

This guide is about buying games as well. If you see a game you like the look of, you will probably want to buy it. But where? How can you be sure it will be in stock? Don't worry. Take special note of PC Review's up-dated Dealer Directory.

The Dealer Directory lists nearly 40 of the country's top independent computer shops and, in conjunction with Centresoft, one of the UK's leading distributors of software, they have agreed to feature the games listed in this guide.

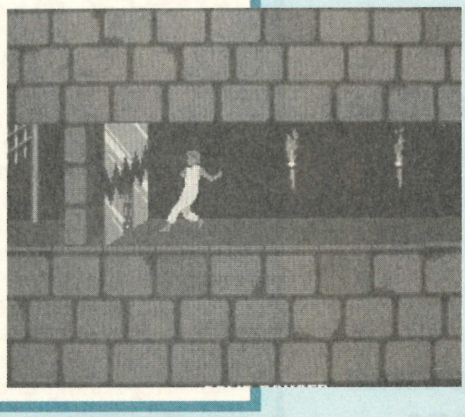
When you visit, look out for the PC Review Recommended logo – the guarantee of quality games and quality service.

The action starts now ...

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CLASSIC GAME OF THE MONTH
PRINCE OF PERSIA
from Domark



We have done everything humanly possible to check the information in this guide. But prices do change, distribution switches from one company to another, even brand names can alter. While we will update the information regularly to take account of this, we cannot be held responsible for errors.

Anyone – suppliers, publishers or readers – who knows of any products suitable for inclusion, but which have been mysteriously omitted, can write in with details – please do not telephone – to PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

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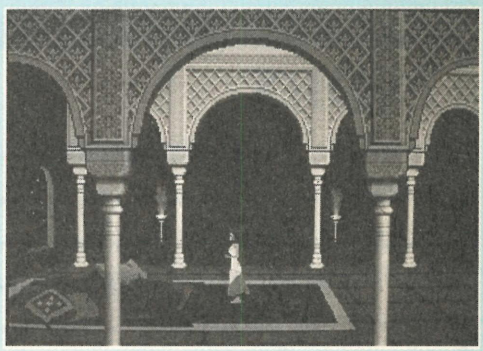
CLASSIC GAME OF THE MONTH

Prince of Persia

"It is a time of darkness. While the Sultan is off fighting a foreign war, his Grand Vizier Jaffar has seized the reins of power. Throughout the land, the people groan under the yoke of tyranny and dream of better days. You are the only obstacle between Jaffar and the throne. An adventurer from a foreign land, and innocent of palace intrigues, you have won the heart of the Sultan's lovely daughter – and in so doing, you have unwittingly made a powerful enemy. On Jaffar's orders you are arrested, stripped of your sword and possessions and thrown into the Sultan's dungeons. As for the Princess, Jaffar gives her a choice, and an hour to decide: marry him – or die."

Okay, so it's a plot more suited to a silent movie melodrama than to a computer game, but if you've got any idea at all about PC games by now, you'll know that you should never judge an adventure by its cover story.

First released in 1990, American game designer Jordan Mechner's highly-acclaimed arcade adventure didn't do anything very new in terms of gameplay but it *did* redefine the way arcade adventures should be put together in both looks and structure.



Everything you'd expect from a graphic adventure is in here: yawning chasms to be leaped, secret potions to be found and drunk for extra energy (careful though, there are a few poisonous phials scattered about the landscape) and numerous brain-scrambling puzzles to be cracked and left in your wake. The difference between this and every other arcade adventure that came before it though is that there are more puzzles – and for the most part they're of a higher quality. And it looks better than anything you've ever seen before too.

Prince Of Persia is one game that will never be adequately represented by static pictures. It's not until you actually take control of the main character and watch him come to life under your instructions that you can truly understand its mesmerising effect. Much has been said about Sierra On-Line's 'rotoscoping' and other systems which use digitised actors or models in an attempt to create realistic movement, but this game not only predates these, the results which it produces are also far above anything else that's been seen.

PC review CLASSIC GAME

Mechner achieved this degree of realism by the unfeasibly simple wheeze of taking his younger brother to the playground and videoing his every movement. He then digitised the footage and used the results as a basis for the animation of game's main characters – to such a successful degree that you eventually believe that you can make the tiny pixellated hero do just about anything that you ask of him. One of POP's greatest achievements is that you're never quite sure if you can actually pull something off until you've given it a try – which results in quite a few moments which can literally be described as cliffhangers.

Better still, just when you think you have things sussed, the gameplay throws up a puzzle so devious or a dramatic moment so startling that you immediately fall in love with it all over again. Prince Of Persia is easy to get into, long-lasting and mentally inspiring from beginning to end. Not only that, but because it's been around for a few years it will run perfectly well on any configuration of machine (even in Hercules!). In fact, the only criticism I can think of is that it's never spawned a sequel – come on guys!

Prince of Persia ■ Domark
■ (081) 780 2222 ■ £9.99

ACTION

GOLDEN AXE
Virgin, £29.99
An unusually successful conversion (in PC terms) of a traditional hack and slash coin-op – Golden Axe offers a choice of male and female heroes, but it's still all just straightforward macho bloodletting really.

PRINCE OF PERSIA
Mirror Image, £9.99
The amazing animated characters are only eclipsed by the depth of the play. An extremely durable game, number four in our Readers' Top 50, and a genuine contender for the greatest action game ever.

IVAN IRON MAN STEWART'S SUPER OFF-ROAD RACER
Virgin, £29.99
It's high-speed, four-wheel-driven action all the way in yet another successful Virgin coin-op conversion. More multi-player fun than you can shake a gearstick at.

SPEEDBALL
Mirror Image, £9.99
Hectic and brutal futuristic sporting action from the Bitmap Brothers, with pinball, basketball and martial arts rolled into one great sucker punch. Only surpassed by ...

MUDS
Rainbow Arts, £24.99
A peculiar 'future sport', where two teams of astonishingly ugly monsters try to throw an SFA (Small Furry Animal) into a basket. A strong blend of sick humour, action and strategy. Highly entertaining in a strange sort of way.

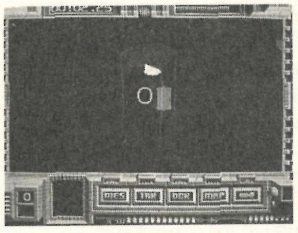
VIRUS
Mirror Image, £9.99
A still-stunning 3D shoot 'em up (despite its advancing years), which rewards the time spent in mastering the controls with exhilarating and satisfying action.

RICK DANGEROUS 2
Mirror Image, £9.99
...As is this laugh-a-minute sequel, where the pint-sized hero once again has to negotiate his way through level after level of less than serious opposition. Pure platform-based arcade adventure over four levels packed with complex and testing puzzles. A hilarious masterpiece.

SPEEDBALL 2
Image Works, £30.99
You guessed it! A worthy sequel to the impressive original, featuring a larger play area, new rules, harder and faster action and a whole new management structure. The updated pitch allows for more violent plays plays. It appeals to sports fans as well as play tacticians.

XENON 2
Mirror Image, £9.99
Still the ultimate in straightforward shoot 'em ups, (above) featuring almost unlimited ship upgrades and a real difficulty curve. The Bitmaps' signature metallic graphics are used to particularly good effect.

INTERPHASE
Mirror Image, £9.99
A graphically impressive 'cyberpunk' 3D action adventure set inside a 'Big Brother' computer. Unusual and playable in equal parts.



SIMULATION (FLIGHT)

CHUCK YEAGER'S AIR COMBAT
Electronic Arts, £34.99
Electronic Arts makes a real bid for MicroProse's 'king of the sim' title with this multi-plane flight and fight extravaganza, played out above three wars and scenarios and named after the first man to fly faster than the speed of sound.

F-29 RETALIATOR
Ocean, £34.99
An impressive, if slightly simplistic, simulation debut from the movie tie-in specialist. Good speed, multiple missions and a choice of two experimental craft make this a good choice for those who value instant action over accuracy.
It also includes an option to play head-to-head with another human player via a modem. With the possible exception of Jetfighter, this has the easiest controls on any flight simulator. It's pure fun from the moment you take off.

F117A STEALTH FIGHTER
MicroProse, £39.99
Nothing less than the state of the art in both subject matter and programming technology, F117A features multiple radar-invisible missions over five theatres of war. Seeing is believing – an absolute must for serious flight fans.
Apparently this simulation caused quite a stir in military circ when it came out because of its accuracy. There are plenty of theatres of war in which to fly the craft, including Central Europe, the Middle East, Libya, Korea and Northern Cape, which vary in complexity and difficulty.

FALCON 3.0
Spectrum HoloByte, £49.99
Reviewed in PC Review Issue 4, Falcon 3.0 offers a strong action-based complement to MicroProse's F117A (see above). Beautifully presented, this simulation features head-to-head combat at the controls of the USAF's pride and joy, the F-16 Fighting Falcon. As good as they come.
Rated 9

GUNSHIP 2000
MicroProse, £39.99
A nice break from the usual fixed-wing action, Gunship 2000 is a strong progression from MicroProse's original (and highly popular) chopper simulation, with a strong

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SIMULATION (FLIGHT)

storyline built in. Highly recommended.

FLIGHT SIMULATOR v4.0
Microsoft, £44.95
An all-out 'simulator' as opposed to a 'simulation', version four offers precious little combat, but does offer the most realistic recreation of real flight that's possible to get from any home computer. The big Daddy of PC flight sims and a real learning experience.

KNIGHTS OF THE SKY
MicroProse, £40.86
Chocks away for a historical joyride over the trenches of World War I in France. What it inevitably lacks in speed, Knights of the Sky makes up for with tense and gripping dogfight action. A nice break from the usual array of F-birds.

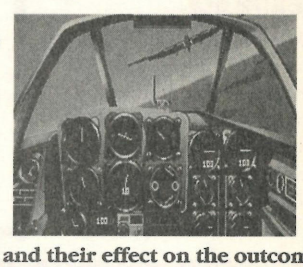
LHX ATTACK CHOPPER
Electronic Arts, £39.99
Although it's now been superseded by MicroProse's Gunship 2000, LHX Attack Chopper still offers a mix of strong action, unusual gameplay (with unusual experimental aircraft) and a structure which works well enough for experts and amateurs alike. Control is simple yet comprehensive. It contains a wealth of gameplay options and three scenarios – set in Libya, Vietnam and Europe.

MiG-29 SUPER FULCRUM
Domark, £40.85
The sudden and unexpected end to the cold war allowed Western developers, game designers and programmers to check out and recreate a number of Soviet aircraft, the best result of which was this game, reviewed in Issue 2. In keeping with these changes, the aim of this game is to maintain the new world order. As a member of a UN peace-keeping force you are sent to free an unnamed area of South America which has come under rebel domination. Your goal is to knock out their headquarters. No easy task as the rebels themselves possess an impressive array of weaponry. Aircraft buffs will undoubtedly enjoy flying this less technology-heavy plane.
Rated 7

RED BARON
Dynamix, £39.99
It really needs a powerful PC to operate to its optimum ability, but once this is taken care of this is one of the most accurate and option-heavy simulations available. The most highly rated flight sim in our Readers' Top 50.

JETFIGHTER II
Velocity, £39.99
Concentrating on easily-accessible 'arcade-style' action rather than 'true'; simulation, Jetfighter II offers four aircraft, multiple enemies and 100 missions. Neat, polished, accessible and lavishly presented.

SECRET WEAPONS OF THE LUFTWAFFE
Lucasfilm, £40.99
Lucasfilm is a company which specialises in producing top-notch games in two distinct areas: animated graphic adventures (The Secret Of Monkey Island etc.) and historical flight sims, the best of which is this beauty, first reviewed in Issue 1. The premise of the game is what if the jet and rocket-powered weapons the Germans were working on in the dying days of the war came into general use and their effect on the outcome of the war. Extra missions disks are now available.
Rated 6



SIMULATION (DRIVING)

4D SPORTS DRIVING
Mindscape, £30.99
A hybrid of Domark's Hard Drivin' and Accolade's Test Drive games (more later), DSI's 3D racer is a one-on-one against an equally well equipped opponent. Comes complete with a course designer.

BILL ELLIOT'S NASCAR CHALLENGE
Mirrorsoft, £35.99
The trouble with North American Sports Car racing is that it all takes place on a circular course, which limits the game's variety. That aside, this is a good rendition of one of the fastest four-wheel activities there is. The game includes a host of options. You can choose cars, tracks, type of race – qualifying, apprentice or main event.

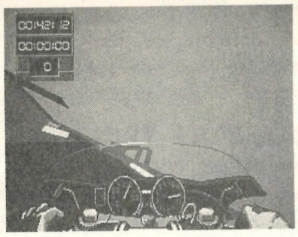
CRASH COURSE
Mirrorsoft, £30.64
One of many 'clones' of Tengen's superb Hard Drivin' coin-op (the arcade world's most realistic driving simulator), this one features five courses plus your own track editor.

INDIANAPOLIS 500
Electronic Arts, £24.99
Among the greatest simulations of any type available for the PC. You race against 32 other drivers in your bid for glory as the simulation takes you from initial practice, warm-up laps, qualifying heats and the big race itself. Gasp in amazement at the realism ... then do it all again using one of the spectacular replay options. Unsurpassed.

HARD DRIVIN' 2 – DRIVE HARDER
Domark, £30.64
Not so much a sequel, as a second attempt at converting a difficult coin-op – and good thing too as this is far better than the original. A real challenge.

MARIO ANDRETTI'S RACING CHALLENGE
Electronic Arts, £24.99
Putting you at the wheel of everything from an F1

TEAM SUZUKI
Gremlin, £29.99



Reviewed in Issue 1, Team Suzuki is almost like a flight simulator on the ground – and just as difficult to get to grips with! You get the chance to ride three classes of mototbikes, a 125cc with six speed automatic gearbox, and 250cc and 500 cc bikes both with six speed manual gearboxes. The game features a TV camera option so you can see yourself race. Team Suzuki is difficult to master but well worth the trouble – especially for bike fans.
Rated 7

thunderbolt to a dirt-track buggy, MARC is as much fun as it is well executed. Only for users with faster processors though.

TEST DRIVE III – THE PASSION
Accolade, £30.64
The 'passion' in the title presumably refers to the way that owners feel about the luxury cars featured here including a top of the range Lambourghini. Apart from that, it's a standard 3D driving sim with a few nice bells and whistles thrown in for good measure.

SIMULATION (OTHER)

SILENT SERVICE 2
MicroProse, £35.75
Historically and technically accurate (right down to the profusion of unreliable torpedoes), SS2 takes quite a bit of mastering but it's worth every minute. Some of the combat may seem over simple but they do provide an engrossing tactical experience of being an American World War Two commander in the Pacific Ocean. It's got atmosphere in depth.

DAS BOOT
Three-Sixty, £35.99
An unusually coherent and playable mix of action and strategy, this U-boat sim may not be as comprehensive as Silent Service 2, but it's a sight more accessible. The set-up screen consists of choosing the difficulty levels, type of submarine and how realistic you want the simulation to be. There are no huge manuals to read and you can get straight down to the action with training missions. These allow you to quickly get to grips with your submarine and get some quick battle experience. Most combat elements are included such as torpedo runs and anti-aircraft gunnery

TEAM YANKEE
Empire, £35.75
Based on Harold Coyles's novel, this is a similar game to MicroProse's M1 Tank Platoon, and a little more complex strategically. This is mainly down to having to control four platoons simultaneously. Team Yankee is also distinguished by the use of bitmapped graphics for the 3D rather than filled polygons. This helps to give the game a more absorbing atmosphere than many other simulations. Watch out for its sequel, Pacific Islands, which is coming soon.

M1 TANK PLATOON
MicroProse, £40.86
A good tank simulation, made better by the fact that (as the name suggests), you take charge of a whole group of the metal beasts. There is a choice of engagements ranging between easy and hard, with optional enemy capabilities, from second line troops to the very best. Well structured and engrossing.

RAILROAD TYCOON
MicroProse, £35.75
A completely unique game – and not just for trainspotters or overgrown kids either. Take control of a fledgling railway in the heyday of steam and use your best business acumen to take it across an entire continent – wiping out, or buying up, the opposition on the way. This forerunner of the superb strategy game Civilization is definitely not to be missed.

STRATEGY WAR

COMMAND HQ
Microplay, £34.99
Similar in some ways to the popular board game Diplomacy, Command HQ puts the player in charge of everything the West's got in any one of three historical situations and one futuristic scenario set in 2023. The scenarios increase in complexity as the date progresses. For instance, you can start out with infantry, cruisers and subs in the early scenarios and end up with nuclear weapons, satellites and other high tech equipment in the later ones. Economics also plays a key role in the success of your war campaigns.

SUPREMACY
Virgin, £34.99
Two huge civilisations battle it out for a single star system. Attack planets and then exploit them for resources vital to the war effort.
Slick graphics and a more than user-friendly interface turn what's essentially a political power struggle into a hugely enjoyable mental workout – a most rewarding evening's entertainment.

HARPOON CHALLENGER PACK
Three-Sixty, £49.99
A good value package which comprises the highly-acclaimed naval simulator, plus its North Atlantic Convoy BattleSet – a must for serious naval strategists.

UMS II
Rainbird, £40.86
Make your own wargames with this extraordinarily complex but powerful wargame generator. A program for anyone who feels serious about strategy gaming.

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FANTASY RPG

BUCK ROGERS
SSI, £34.99
An unusual, highly successful, computer appearance for one of the cinema's early heroes. A conversion of a TSR board game, this has all the usual SSI hallmarks: strong presentation, atmosphere and depth. It uses a variant of the AD&D computer games control system.

BARD'S TALE 2
Star Performers, £9.99
The second – and arguably the most enjoyable – of the Bard's Tale series is one of the best of the 'old-style' (non-arcade) RPGs. Soon to be bundled with the other two in the series.

CORPORATION
Core Design, £34.99
Very much in the '3D arcade' vein, Corporation achieves something which most computer games can only dream of – it creates and maintains a wholly realistic environment. It's a futuristic space opera in the confines of an overrun conglomerate. You must lead an elite team, equipped with stunning high-tech gear, enter the building and find out what is going on.

ELVIRA, MISTRESS OF THE DARK
Accolade, £40.86
Although it's not exactly the type of game that you might expect from America's up-front queen of the B-movie (in other words, it's a tenuous licence tie-in), Elvira remains an impressive (if slightly shallow) adventure, nonetheless.

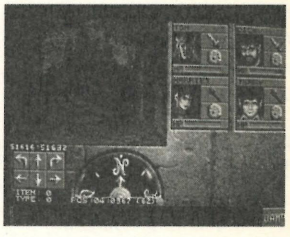
TUNNELS & TROLLS
New World, £30.99
Once again based on a popular board-based RPG, T&T doesn't have a lot to offer in the presentation department, but makes up ground with a well structured plot. Combat can be automatic or manual and can even be humorous – such as pushing enemies away. Perhaps a little dated.

WASTELAND
Electronic Arts, £24.99
Not notable for its up-to-date interface, Wasteland is however worth checking out for its unusual scenario – a post-holocaust nightmare replaces the usual dungeon-based stuff.

MARTIAN DREAMS
Origin, £36.99
Origin's second adventure outside of the acclaimed Ultima stable is an historic sci-fi jaunt in the style of H.G. Wells. Flawed, but enjoyable.

THE SAVAGE EMPIRE
Origin, £35.99
The one that came before Martian Dreams, Savage Empire borrows from the plot of The Land That Time Forgot. It might not satisfy Ultima veterans, but who cares?

EYE OF THE BEHOLDER
SSI, £30.99
Conceived and executed in the style of the classic Dungeon Master, Eye of The Beholder is exciting and challenging in equal measure. It's one of the highly-successful Advanced Dungeons and Dragons games based on the TSR role-playing tabletop game. First you must choose your party of adventurers, their race (human, dwarf, elf etc) attributes (strength, intelligence) and a whole host of other details. The adventurer's view is of a 3D dungeon and all the controls are mouse-driven. SSI has managed to maintain the feel and atmosphere of the original game while making the AD&D experience available to a lot more people.



BRAIN TEASERS

LOGICAL
Rainbow Arts, £19.99
Nicely paced and colourful arcade-based teaser which may just fail to provide any long-term interest.

E.MOTION
US Gold, £25.99
An infuriatingly compulsive arcade teaser that's as hard to describe as it is to put down. It involves matching coloured balls together causing them to disintegrate. When they have all gone you move to another level – of which there are 50. Only approach it if you've got a lot of time on your hands. It was – and still is – an wholly original game.

SARAKON
Virgin, £19.99
Similar to Shanghai, and also based on Mah Jongg, Sarakon stands head and shoulders above most of its contemporaries – in terms of difficulty at least. A 16x16 squared grid forms the basis, Square tablets each with a variety of symbols are placed randomly on the grid.
The idea – as with many card games – is to combine and discard pairs of tablets until the grid is cleared. However, tactical play adds complexity. The first level of play is called 'Stupid' and that's how you'll feel when you fail to complete it. Not for the faint of heart.

THE SENTINEL
Firebird
No Longer Available
Worth scouring the bargain bins for, Geoff Crammond's masterpiece is a rare breed – a strategy game comparable to chess which can only exist inside a computer. Easily the most atmospheric game of all time.

SPOT
Virgin, £24.99
Easily confused with the board game Othello, this is actually an original game of its own – and a rather good one too. The original game is now quite old, but was recently revamped and relaunched.

NEW *** DIVISION ONE 92 REVISION ONE *** NEW



DIVISION ONE 92 REV 1

"(The Midnight Oil) treat soccer in the sophisticated way Americans treat their national games." -The Guardian

THE GAME Everyone has their own ideas on what makes a soccer team "tick". Here is the opportunity to put into practice your own ideas. Operating from the English 1st division you must build a squad to challenge for the league title, the FA and League Cups and the 3 European trophies. And as players age, rebuild the team while holding off relegation.

SQUADS/TRANSFER MARKET In a 3 squad system (1st team squad, reserve squad and youth squad), use the continuous intake of youth players and training program to create a squad whose skills reflect your ideas. Supplement these skills with carefully selected transfer market acquisitions. As they age, veterans fade and youngsters develop, keep an eye on the changing skills of your team

SKILLS All players have a balance of 5 skills (no "skill levels") which you must develop by experimenting with your team. Even more important will be your judgement about the effect of the particular team balance or skill combination on the outcome of the match, and subsequently a season of football. Suitable training can develop/enhance skills.

MATCH/STATS Your judgement will be put to the test in this unique 4 minute match/stats simulation against accurately simulated opposition. This is the measure of your team and your most reliable source of information. There are displays of: match flow, two teams, player-with-the-ball, injuries, discipline, substitutions, in-match tactics, goal scorers, possession breakdown and performance assessment.

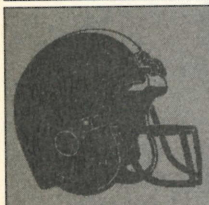
REVISION ONE
The best just got better! All updates that have been made to Division One 92 over the last six months. In addition the match screen has improved, opposition team info expanded, a European transfer market added and a few more minor changes. An edit program and a customisation program have also been added. The manual has been expanded and the packaging improved.

EDIT PROGRAM. Edit the team and players that make up Division One. Produce **your own** Division One, or Scottish League, British League, European League, German/Spanish/French/Italian...etc...etc. Or even make up a league of all the best teams you've ever seen.

CUSTOMISATION PROGRAM Customise the 45 man starting squad. Use your own favourite players, or your local side. How about as squad with Pele, Beckenbauer, Best, Cruyff, Maradonna ....?

WHAT IS DIFFERENT ABOUT THIS GAME?

Division One 92 transforms the soccer management game. You can concentrate on the football. Experiment with players, formations, team styles. Build your dream squad and check it out in accurately simulated league/cup football. Match results are from a unique soccer match. Every pass, tackle, shot etc. is determined by the players involved. Your choice of skills thus influences match results. Mental arithmetic has been dumped. Football knowledge is the name of the game.



HEAD COACH V3

"When it comes to the 4th down Headcoach has it"."Headcoach", "TV Sports Football" head to head. (Pop Comp.)

Headcoach V3 has been described as "the best game ever put onto a computer". It is the complete American Football game, a multi season epic with the very best strategic elements of the real thing. You will call the plays, devise the gameplans and develop the team.

Use the first season (2 pre-season games, 16 regular season games, and the play-offs) to discover your 45 man squad of players. Then exploit the college draft to improve the team and expand your game play to beat the very best the NFL can throw at you.

Players will age and teams will fade (a player will last about 6 seasons), but you will stay and rebuild ....

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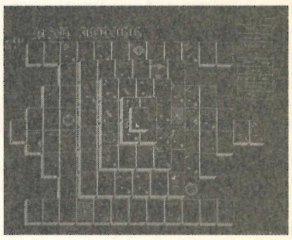
BRAIN TEASERS

CHESSMASTER 3000
Software Toolworks, £35.99
Computer chess is computer chess – right? Well, yes ... but this one (reviewed in Issue 4) takes the pride of place through its presentation and user friendliness.
Rated 9

VAXINE
US Gold, £25.99
A sort of follow-up to E.Motion, this adds an extra dimension – well, in graphic terms at least. You roam as an abstract representation of the body shooting rogue virus cells. The action ranges over 99 levels with faster and meaner germs being introduced all the time. A new age pastime for the modern puzzle addict.

WELLTRIS
Infogrames, £39.94
From the same fomer Soviet scientists who brought you Tetris comes this 3D variation on the original theme. The object is to manipulate falling shapes. The 3D aspects means the pieces appear to fall from above. It's good enough but how can you improve on perfection?

SHANGHAI II
Activision, £30.99
A test of memory and skill using the Mah Jongg card set, this is now available in numerous PD incarnations, although none as polished as this 'official' version (reviewed in Issue 1). Rated 7



PIPEMANIA
Empire, £25.53
Second only to the great Tetris as an invisible hour eater, this tale of twisting pipes and water will provide a challenge to even the hardest gamer.

KLAX
Respray, £7.99
An unusual block-based game which uses colour coding rather than shapes to generate its puzzles. Not as addictive as Tetris, but a nice short-term diversion.

LOOPZ
Audiogenic, £25.99
Unusually compulsive puzzler which adds a new twist to the art of shape manipulation. Hard to find, but worth keeping an eye out for.

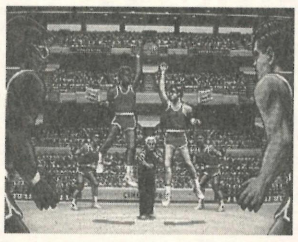
NIGHT SHIFT
Lucasfilm, £30.99
More of an arcade game than a pure puzzler, this does however have enough teasers incorporated to keep most gamers happy. Nicely humorous too.

TETRIS
Infogrames, £24.99
The greatest puzzle/dexterity game of all time. This Soviet sensation involves moving different shaped blocks to fit them together. Everytime a horizontal line is completed it disappears. The more lines completed, the more points you collect. Watch out for the original Mirrorsoft version, which is still the best around. A classic timeless game.

SPORT

4D SPORTS BOXING
Mindscape, £30.99
They don't look very much like boxers, but the strange polygon-based pugilists featured here certainly move like them. The game features multi-views of the fights and also allows you to train and develop your fighters. Control of the fighters is also comprehensive, allowing you to walk towards an opponent, back off, circle left and right and punch. The game is most fun if played in company.

TV SPORTS BASKETBALL
Cinemaware, £30.64
Unlike most previous attempts at producing a realistic computer basketball simulation, this game doesn't try to fit in the whole court at once – and is greatly enhanced because of this. Essentially you control one on-screen player at a time, the rest of the players behave according to chosen tactics. Action ranges from pure arcade friendly game to hard-fought league matches. Competitive and playable.



BUDOKAN
Star Performers, £10.99
Pretentious in tone it may be, but Electronic Arts' multiple event martial arts challenge is still the best game of its type available. Players train in four forms of combat: karate, kendo, nunchaku and the bo staff. During fights you must keep an eye on stamina and ki levels as these determine your state of health and the power of your blows. Excellent sound and graphics and an unusual level of depth and excitment for this type of game.

HARDBALL 2
Accolade, £25.53
The definitive rendition of America's favourite sport available for your computer.

LINKS
Access, £40.99
A graphically impressive and

option-filled variation on the age-old theme of computer golf. Be warned though, it's only for those of you with powerful machines.

PGA TOUR GOLF
Electronic Arts, £25.99
Overall, this has to be the best golf game currently available on any computer. It may not have Links' looks or options, but it makes up for this in terms of sheer playability.

POWERBOAT USA
Accolade, £30.99
A deceptively playable simulation of a sport which most of us would never even think about taking part in. Ignore the poor presentation – this could become a favourite.

PRO TENNIS TOUR 2
Ubi Soft, £29.99
Multiple options are available, it looks good, it plays well – what more could you want? Choices include singles and doubles matches and type of court surface. There's even an option to play two on one. Reviewed in Issue 2, this is a definite ace.
Rated 8

SKI OR DIE
Electronic Arts, £25.99
A multi-event affair which takes a lighthearted view of Fergie's favourite winter pastime. There are five sub-games: snowball blast, downhill blitz, acro aerials, snowboard halfpipe and the intertube thrash. Points are scored for being the fastest or being able to leap the furthest. The presentation and execution are impeccable. Easy to get into and most enjoyable to boot – check it out.

TV SPORTS FOOTBALL
Mirror Image, £9.99
This is, of course, American football rather than soccer. It combines strategy plays with fast arcade action.
No longer the state of the art in terms of programming, but still a comprehensive and enjoyable rendition of the sport. Made more accessible than most by the usual cinemaware TV presentation.

ADVENTURE

HEART OF CHINA
Dynamix, £39.99
Another attempt at producing an interactive movie, Heart of China is notable for its arcade subsections and – more importantly – its beautiful digitised graphics.
Set in the 1920s in Hong Kong, the basic plot involves the rescue of a nurse who has been kidnapped by a ruthless tyrant. The point and click game control interface works smooth, removing the need for any typing. This evocative action adventure is a must for VGA users.

LEISURE SUIT LARRY V
Sierra, £39.99
The other side of Sierra (contrasting nicely with the 'family' style of King's Quest, etc,) is best depicted by Al Lowe's luckless lover boy, who this time around goes in search of the missing disks of Leisure Suit Larry IV.
Here Larry must interview women to find a hostess for a sleazy TV show. But to Larry's cost, the Mafia becomes involved. More cheeky chuckles for fans of the series.

SORCERERS GET ALL THE GIRLS
Legend, £30.64
Not as saucy as the title suggests, this is nevertheless an engrossing and perplexing adventure from the old school. It's really just a text adventure, but a complex, entertaining and satisfying one nonetheless.

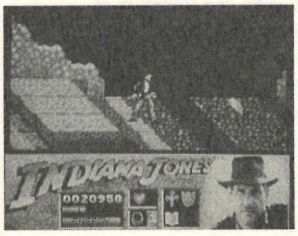
MAGNETIC SCROLLS COLLECTION 1
Virgin, £34.99
Reviewed in Issue 1, this three game package updates some of the adventure specialist's best-loved works using the all-new 'Windows' system (as seen in Wonderland).The games included are Corruption, Fish! and Guild of Thieves. Good value.
Rated 7

THE SECRET OF MONKEY ISLAND
Lucasfilm, £30.99
A real joy to play, Lucasfilm's first tale of dark doings on the high seas used the wealth of experience gained over five years of development, Indiana Jones, etc, to produce one of the best adventures yet.
The game is divided into three parts: the first deals with hero Guybrush Threepwood's attempts to become a pirate; the second his journey to Monkey Island; and the third all about the island itself. Good music, neat animation and detailed graphics and a superb control system all combine to produce an enjoyable experience.

THE SECRET OF MONKEY ISLAND 2
Lucasfilm, £39.99
More buccaneering brilliance with a smile on its face, as the original's hero, Guybrush Threepwood, once again takes on the evil ghost pirate LeChuck. this game demonstrates just how many brain-teasers can be constructed within the limitations of an icon-based control system.
Outstanding VGA graphics with impressive lighting and shading add to the piratical atmosphere. It's also packed with jokes. Reviewed in issue 3, this is a perfect progression from the original.
Rated 9

SPACE QUEST IV
Sierra, £34.99
In yet another ongoing saga, Sierra's comical space hero,

INDIANA JONES AND THE LAST CRUSADE
Lucasfilm, £30.99
One of the great animated graphic adventures, with plenty of atmosphere, and humour, which has only really been surpassed by Lucasfilm's subsequent efforts (now available in a double pack with Zak McKracken And The Alien Mindbenders).



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ADVENTURE

Roger Wilco, once again boldly goes on a mission that's about as much to do with time travel as space exploration and never takes itself too seriously. Sierra fans will know exactly what to expect – the unexpected! And that means he has somehow landed slap bang in the scenario for Space Quest XII: Vohaul's Revenge and becomes involved with the Sequel Police who believe Roger's adventures have gone on far too long. Easy point and click interface control, odd-ball puzzles and digitised artwork.

SPELLCASTING
Legend, £39.99

Like Sorcerers Get All The Girls, this one was developed by the master of the tongue in cheek adventure game, Steve Meretzky. Reviewed in Issue 1, Spellcasting will appeal to any adventurer who doesn't take things too seriously.
Rated 7

WONDERLAND
Virgin, £34.99

An adventure built and played through an all-new 'Windows-style' user interface, Magnetic Scrolls' Wonderland turns Lewis Carroll's masterpiece into an absorbing beautiful game.

KING'S QUEST V
Sierra, £44.99

Roberta Williams' King's Quest was the original animated adventure game – and over the years the series has gone from strength to strength. Highly entertaining and user-friendly, this is well worth clearing out your hard disk for.

OPERATION STEALTH
US Gold, £30.99

A Bond-style adventure featuring the impressive Cinematique user-interface as developed by the ground-breaking French development team, Delphine.

ARCADE STRATEGY

BATTLETECH 2
Infocom, £39.99

Based on a highly popular futuristic combat board game, Infocom's Battletech showed in no uncertain terms that there was potentially more to that late, great company than text adventures.
Here huge mechanised monsters – Mechs – stride the land battling out with huge and powerful weapons. But this isn't just a shoot 'em up. There is a large degree of strategy involved. Reviewed in issue 3.
Rated 5

3D CONSTRUCTION KIT
Domark, £44.99

Build your own 3D worlds with this unusually powerful game creator from the team that brought you Total Eclipse and Driller. As well as constructing the geometric scenery, you can also add your own borders and music, and set up animated effects.

CASTLES
Electronic Arts, £34.99

Probably the only computer game ever to be set in Wales, Castles sees the player design, build and then defend a castle. One for the long-term strategist.

BATTLE CHESS II
Electronic Arts, £24.99

A follow-on from EA's original animated chess game, this brings the pieces to life in the same humorous way as its predecessor, while introducing the more unusual rules of Chinese Chess to a Western audience.

DRAGON'S BREATH
Palace, £31.64

Almost a board game in its style (although this is definitely a computer original), Dragon's Breath sees three human or computer-controlled players do battle through growing and nurturing battle dragons. Curiously underrated.

ELITE PLUS
MicroProse, £39.99

Not so much a sequel as an upgrading of the classic space trading game. The aim is to achieve elite status in the areas of combat, trading and piloting your ship. The space battles are immense fun, providing a clean contrast to the trading sections.

GODS
Renegade, £34.99

Reviewed in Issue 4, this was the first attempt at an arcade adventure by the Bitmap Brothers. "The best platform game to appear on the PC to date."
Rated 8

LIFE & DEATH II
Software Toolworks, £35.99

Your chance to work in the theatre – the operating theatre that is. Hilarious, messy and harmless, exactly what computer games should be.

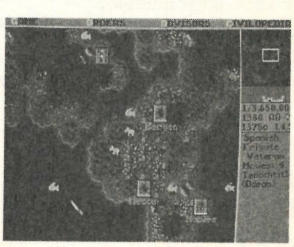
MIDWINTER
Rainbird, £35.75

An instant classic, Maelstrom Games' 3D extravaganza looks so good that you might just forget it's an all-action game too. It covers 'green' issues including global warming and the threat of a premature ice age. Essential purchase and a landmark in computer entertainment.

POPULOUS
Electronic Arts, £29.99

This is one of the rare breed that's so mould-breaking that it's almost become a generic term. Now available in a double-pack with Sim City, this is unusual, indescribable and a true work of genius – buy it.

CIVILIZATION
MicroProse, £39.99



From the pen of Sid 'Railroad Tycoon' Meier, Civilization (reviewed in Issue 1) takes the player on a power trip through history. As the leader of a pre-historic wandering tribe you start out by finding a place to settle, expanding your population and the lands they inhabit. Slowly you lay the foundations of a society, building roads, towns, cities etc, and prepare for attacks from barbarian tribes. An immensely satisfying strategy game of planning, conquest, negotiation and exploration. Thoroughly addictive.
Rated 7

POWERMONGER
Electronic Arts, £29.99
Bullfrog's next one on from Populous didn't have quite the same impact as its predecessor, but it remains a classic wargame and graphically impressive to boot.
There is an option to connect computers together via a modem or direct cable so two human players can compete head-to-head. The game also supports a network option allowing four-player competition.
The amount of detail in the game is incredible – birds rustling feathers, voices of blacksmiths in their workshops and cheering. An epic entertainment. Check out the review in Issue 3.
Rated 8

SIM CITY
Infogrames, £30.64
Another game to have spawned a thousand clones, Maxis' mix of town planning, crisis management and downright megalomania has achieved the impossible – to make urban politics fun!
Build up your town from a green field site, populate it with people, give them a transport network and services, and then try to maintain law and order as they take on a life of their own. Defintiely not to be missed.

SIM EARTH
Ocean, £40.86
Not so much a world manager as a world builder, Maxis followed Sim City with an educational tool based on the Gaia hypothesis and puts the player in charge of every single aspect of a living planet, from the raising and lowering of land masses to the creation and population of the seas. The program is enormously flexible. You need a 286 or above to really appreciate the game. Complex in the extreme, and detailed enough to keep your interest for many months.

STELLAR 7
Dynamix, £44.99
Remember the original arcade game Battlezone? Dynamix' interpretation is a bit more colourful, but thankfully the old-fashioned game play has not been thrown out with the old-fashioned presentation. It's just as addictive now as then.

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ATTENTION: READERS
We hope that you've found the buyer's guide useful and entertaining, but we also want to keep improving it to meet your needs. Tell us what you like or dislike, what sections you'd like to see added or changed, and we'll do our best to accommodate the most popular suggestions. Please write to us at:

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EGA/VGA Games Pack
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Win 3 Graphics Pack
Paintshop, 2,000 Icons (2D), IconDraw, BMP Mono Clip Art (4D), Screen Capture, Calendar for Corel Draw, GCP, Icon Manager, Gif2Icon, WinFern.

Art & Graphics Pack
City Desk, Letterhead, PC Illustrator Mapmaker, DanCad, Draft Choice, Free Press, Painters Apprentice, Optics, Graphics Work Station.

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PC review

Buyers' guide

Because all of us here at *PC Review* are PC users as well as reviewers we're perfectly placed to know that shopping for your PC can be a veritable nightmare, even if you're looking for something as simple as a joystick. The PC's open architecture has meant that expanding the machine is a fairly simple operation, but it's also meant that, during its 10 years of existence, the machine has attracted an enormous number of manufacturers of both hardware and software. The choice facing the potential buyer is vast and continually growing.

That's why we've set aside more than 10 pages in each issue to guide you through the quagmire of hardware and software. Within this section you'll find up to date information on the very best hardware and software available. Not only will we tell you what you can buy, but where you can buy it from and how much it will dent your pocket.

We don't claim that the guide in a single issue is exhaustive, but over the course of a few months you'll find it builds up into an invaluable reference work for PC buyers.

Happy browsing!

HOW TO USE THIS GUIDE

We've divided the guide into four easy to use sections: Hardware lists add-ons and upgrades that will improve your PC's performance or add features not available on the basic model; Software gives you a run-down of a wide-range of productivity software and utility programs; Ancillary is for those of you who want to invest in a new machine or simply keep your existing machine in tip-top condition.

Within each section you'll find that we've listed the basic capabilities of each product as well as any major plus or minus points. If you're a little confused by Technospeak (and aren't we all from time to time) just turn to our *Technical Terms* panels for a simple explanation.

All of the prices given are inclusive of VAT at 17.5%, although where there is no recommended retail price for a particular product we've listed the average price, thus: c£550. Please bear in mind that these prices do not include postage and packaging, courier charges, etc.

If you require further details on a product then simply look up the supplier in our directory where you'll find an appropriate telephone number and address.

What could be simpler?

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We have done everything humanly possible to check the information in this guide. But prices do change, distribution switches from one company to another, even brand names can be updated. While we will update the information regularly to take account of this, we can't be held responsible for any errors contained herein.

Anyone – suppliers, publishers, readers – who knows of products suitable for inclusion but which have mysteriously been omitted can write in with details (write, please, don't phone) to the address at the front of the magazine.

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PC hardware

MEMORY UPGRADES

Most PCs will take extra memory chips, either on a slot-in card, or directly onto the motherboard – and just as well, given the latest crop of memory hungry games. The minimum RAM acceptable these days is 640K; some older PCs (such as the Amstrad PC1512) were sold with 512K. However, an increasing number of games make use of extended or expanded memory above 640K, and you'll need a good 2Mb should you ever want to run Windows. The prices quoted here are for a selection of IBM and Amstrad machines. Prices for other clones may vary.

Size/Type	Price	Comments	Supplier
1Mb/Card	£94	For IBM XT	Memory Direct
2Mb/Card	£146.88	For IBM XT	Memory Direct
2Mb/Card	£164.50	For IBM AT	Memory Direct
2Mb/Card	£246.75	For IBM AT (LIM 4)	Memory Direct
4Mb/Card	£339.57	For IBM AT (LIM 4)	Memory Direct
640K/Chip Set	£29.95	For Amstrad PC1512	Evesham Micros
4Mb/Chip Set	£160	For Amstrad PC2286	Evesham Micros
16Mb/Chip Set	£815.45	For Amstrad PC2386	Memory Direct

TECHNICAL TERMS

The original XTs and ATs could only directly address a maximum of 640K of RAM, but there are two methods of extending the available RAM on these machines. The first is known as **Extended Memory** (memory located above the first megabyte which can be directly addressed by the 80286 and its successors), while the alternative is **Lotus Intel Microsoft Expanded memory Specification (LIM EMS)**, named after the three companies that developed it. **LIM 4** is the latest version of this, designed to work with DOS version 4.0 and beyond. Most software that uses extended or expanded memory is configured to work with only one of these systems, so you should check which of them your applications support before you make a buying decision.

HARD CARDS

No room for a hard disk drive? Want a simple plug in, cheaper solution? Hard cards fit into a free expansion slot and can be used as a conventional hard drive.

• The XL versions of Time's Smartcards are supplied without driving software. If you wish to buy the version with the software please add £47 to the listed price.

Model	Type	Capacity	Speed	Width	Price	Supplier
Smartcard 30XL	XT/AT	32Mb	24ms	1 Slot	£205.62	Time
32MbXT	XT	32Mb	40ms	1.5 Slots	£186.83	RSC
Smartcard 40XL	XT/AT	40Mb	24ms	1 Slot	£229.13	Time
45MbXT	XT	45Mb	19ms	1 Slot	£233.83	RSC
45MbAT	AT	45Mb	19ms	1 Slot	£233.83	RSC
Smartcard 100XL	XT	100Mb	19ms	1 Slot	£417.13	Time
Smartcard 100XL	AT	100Mb	19ms	1 Slot	£534.63	Time

TECHNICAL TERMS

Cards which occupy **1.5 slots** will prevent you from plugging a full length card into the adjacent expansion slot, so check the arrangements of existing cards in your PC and plan carefully if you intend to utilise any unoccupied slots in the future. The **speed** of a card is an indication of its average **seek time** (the time it takes for the read/write heads to reach the appropriate location on the disk).

• RSC's cards are supplied with a free copy of Norton Utilities v.5 (RRP £139)

HARD DISKS

Model	Interface	Capacity	Speed	Size	Price	Supplier
Seagate ST325N	SCSI	32Mb	28ms	3.5" 1" high	£205.63	Dataplex
Seagate ST351A/X	AT/XT	42Mb	28ms	3.5" 1" high	£193.88	Dataplex
Seagate ST125A	IDE	21Mb	28ms	3.5" half height	£170.38	Corporate Upgrades Ltd
Seagate ST157A	IDE	44Mb	28ms	3.5" half height	£163.33	Corporate Upgrades Ltd
Seagate ST225	MFM	21Mb	65ms	5.25" half height	135.13	Dataplex
Conner CP3024	IDE	21Mb	27ms	3.5" 1" high	£176.25	Unimart Computers Ltd
Conner CP3044	IDE	42Mb	25ms	3.5" 1" high	£217.38	Unimart Computers Ltd

TECHNICAL TERMS

You can only fit an internal hard drive if you have a suitably sized spare drive port in your machine. If you are at all unsure you should first check with the supplier of your machine which size of hard drive you will be able to fit. There are a number of different hard drive interfaces in use so make sure that you buy the appropriate drive.

If you're using a PC which has only floppy disk drives, then a hard drive could change your life. With capacities ranging from 20Mb to well over 100Mb (more in business heavyweight machines), you can store all your programs, all your data, on the one drive, and still access it far more quickly than on floppy. No more disk-swapping every five minutes, no more booting DOS from floppy every time you switch on. Also, more and more games these days actually require you to install them on a hard disk.

GRAPHICS CARDS

The PC has had a long and chequered history of different graphics standards, thanks to IBM's decision not to include graphics at all in the original machine. The current best standard now for games is VGA (Video Graphics Array): with a maximum of 256 colours on-screen, this really shows off the potential of PC games.

Type	RAM	Size	Resolution	Colours	Price	Supplier
Hercules	64 Kb	8-Bit	640x350	2	£28.20	Watford Electronics
CGA	64Kb	8 bit	320x200	4	£37.60	Watford Electronics
EGA	256Kb	8-Bit	640x350	16	£76.38	Watford Electronics
VGA	512K	16 bit	1024x768	256	£92.83	Dataplex
SVGA	1Mb	16 bit	1024x768	256	£92.83	DS Computers

• Watford Electronics graphics cards are all supplied with a built-in parallel printer port.

SOUNDBOARDS

Until recently, the best the PC could produce in the way of sound was 'beep'. But the advent of soundboards has changed things dramatically. A soundboard will take up a single expansion slot and produce genuine music and background sound effects in the games which support it – which is an ever-increasing number these days. Below are the 'standard' soundboards catered for by most titles.

Name	Supplier	Price
AdLib	Mindscape	£89.99
Comment Currently the most popular system, and a good trade-off between price and performance.		
LAPC-1	Roland	£379.00
Comment Superb sound quality probably priced out of the reach of many games players. Non AdLib-compatible.		
SoundBlaster v2.0	WestPoint Creative	£139.95
Comment AdLib-compatible and capable of producing sampled sounds. Try it with Wing Commander 2 to hear what we mean!		
SoundBlaster Pro	WestPoint Creative	£249.95
Comment Has all the features of soundblaster, but is compatible with many CD ROM games.		

PC add ons

JOYSTICKS

No provision is made in the design of the standard PC to plug a joystick in directly. You'll need a joystick card in one of your expansion slots which allows an analogue joystick to be plugged in. A number of manufacturers sell both cards and joysticks together. For flight sims and racing games, yoke and pedal style controllers are also available.

• The Tecniche stick is available without games card for £17.61

• The Analog sticks are both available without games cards for £12 and £15 lower than the marked prices respectively.

Product	Price	Supplier	Comments
Anko AK-GC27A	£19.95	ABS Computer Supplies	Auto-fire option
IBM Joystick	£19.95	Computer Mates Ltd	Includes games card
Powerport 2	£63.45	Power Mark	Self-adjusting PS/2 Twin Port
The Yoke	£57.58	Power Mark	Self-centring Yoke
Gravis Analogue Stick	£48.18	Power Mark	8 Tension adjusters!
Tecniche PC Power Stick	£23.49	RSC Ltd	Includes games card
Analog Edge	£29.99	Evesham Micros	Includes games card
Analog Xtra	£39.99	Evesham Micros	Includes games card
Gravis PC Mousestick	£89.95	RC Simulations	Includes games card

MICE AND TRACKBALLS

Many games are tailored to be easily controllable with a mouse, which is much more of a standard PC add-on than a joystick. Then again, there is the trackball, which in effect is an upside-down mouse, with you moving the ball directly to control on-screen movement – useful if your desk space is limited or you're using it with a portable machine.

Product	Price	Supplier	Comments
Genius GM6000	£28.95	ABS Computer Supplies	Includes pocket, pad and software
Genius GMF302	£37.95	ABS Computer Supplies	As above, higher resolution

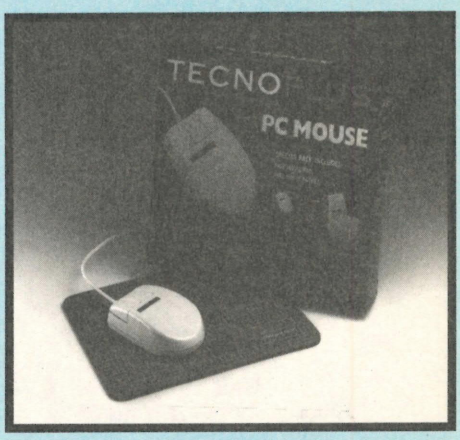
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Tel : 0923 213494

3 Chevy Chase
Eldon Square Centre\
Newcastle-upon- Tyne
NE1 7UG
Tel : 091 230 0239

GAME LIMITED

Product	Price	Supplier	Comments
Anko AKTB500	£49.95	ABS Computer Supplies	Trackball with 'drag button'
Logitech Mouseman	£62.28	Acolyte Services	
Cordless Mouseman	£116.33	Acolyte Services	Uses radio technology
Logitech Pilot	£45.83	Dataplex	
Tec-Mouse	£34.08	Dimension Computers Ltd	Includes paint software
Microsoft Ballpoint	£104.58	Dimension Computers Ltd	Trackball for portables
Amstrad Mouse	£22.33	Dimension Computers Ltd	Works with Amstrad PCs
Axelen Mouse	£21.15	DS Computers	
Truemouse	£22.99	Evesham Micros	Serial/ PS/2 /Amstrad versions
Cordless Truemouse	£49.95	Evesham Micros	As above but with infra-red link
Golden Image Mouse	£34.95	Evesham Micros	Optical Mouse
Trackball	£39.99	Evesham Micros	Features lock drag
Mousepen	£116.33	KSI	Mouse shaped like a pen
Unmouse	£159.80	Picture Perfect UK Ltd	Tablet – use finger as
mouse!Nakasha Mouse	£41.13	RSC Ltd	Includes DPaint II
Squik Mouse	£19.98	RSC Ltd	Low cost serial mouse

TECHNICAL TERMS
A Mouse or Trackball requires a suitable **driver** to be installed before it will operate. Most devices are supplied with suitable software, but you should check first with the manufacturer. You should also note that there are different types of mice and trackballs designed to work with different systems (eg **Serial** and **Microsoft Compatible**), so make sure that you are buying the device that is correct for your model of PC.

MODEMS

Get your PC to be more sociable. A modem will connect you to other PCs via the telephone lines, giving you access to bulletin boards, public database networks and multi-user games – or you can simply use it to send messages to friends.

Product	Price	Manufacturer
Biscom (internal)	£258.50	Dataflex
Biscom (external)	£323.13	Dataflex
Comfax (internal)	£387.75	Dataflex
Comfax (external)	£517.00	Dataflex
Courier 2400e Quad (internal)	£464.13	Miracom
Courier 2400e Quad (external)	£522.88	Miracom
Keycard 3000 V22	£346.63	Miracom
Keycard 3000 V22 BIS	£464.13	Miracom
PC Professional	£517.00	Dataflex
Quadcom (internal)	£387.75	Dataflex
Quadcom (external)	£517.00	Dataflex
Rapier (internal)	£646.25	Dataflex
Stradcom (internal)	£193.88	Dataflex
Stradcom (external)	£229.13	Dataflex
WS4000 (SB2422)	£186.83	Miracom
Quattro 2400	c£500.00	Dowty
Smartmodem 2400 Quad	£339.57	Hayes
SM2400	£222.08	Amstrad
Milgo Maxam IV	£468.83	Racal
2400 MNP Class 5	£468.83	Worldport

TECHNICAL TERMS
PC Modems come in two types: **internal** and **external**. Internal versions require a spare expansion slot, but they are usually £50 to £100 cheaper than their external counterparts. External versions plug into a **serial port** instead. If you are going to use your modem mainly to communicate with one other party (e.g. a particular bulletin board) then you should first check which **protocol** is in use by them and buy the appropriate modem.

DOT-MATRIX PRINTERS UNDER £300

Dot matrix printers are coming down in price, but at the same time the quality is improving: letter quality modes are no longer dotty or lacking true descenders on letters such as 'g' or 'y'. This is particularly true of models with a 24-pin printhead. This is probably a good time to buy.

Company/model	Price	Speed	Buffer	Type
Amstrad DMP3160	£233.83	160/40	16K	9-Pin
Brother M-1209	£264.38	168/35	2K	9-Pin
Citizen 124D	£292.58	120/40	8-32K	24-Pin

Company/model	Price	Speed	Buffer	Type
Epson LX850	£269.08	200/30	4-32K	9-Pin
Mannesmann Tally MT81	£186.83	155/26	8K	9-Pin
Olivetti DM109	£257.33	240/36	21K	9-Pin
Panasonic KX-P1180	£252.63	192/38	2-K	9-Pin
Samsung SP 0930N	£222.08	300/50	3-11K	9-Pin
Seikosha SP1900AI	£116.33	192/40	1K	9-Pin
Seikosha SP2000	£233.83	160/40	6K	9-Pin
Victor VP10D	£210.33	175/30	None	9-Pin

TECHNICAL TERMS
A printer's **speed** is a measurement of the number of characters it can print per second. The first figure is for **draft mode** and the second figure is for **Near Letter Quality (NLQ) mode**. The **Buffer Size** is an indication of the amount of internal memory the printer has. The higher this figure is, the quicker your PC will be released to perform other tasks.

INK JET PRINTERS

Ink jets are the newly fashionable item for style-conscious PC owners: with distinctly better print quality than dot matrixes , the advantage of being virtually silent.

Company	Model	Price	Speed (Pages per minute)	Resident fonts
Mannesmann	Tally	£1,0994	pp	14 bitmap
Seikosha	OP-104	£940	4	14 bitmap
Hewlett-Packard	LaserJet III	£1,749	8	8 Scalable
Samsung	SL-1081A	£891	8	24 bitmap
Oki	OL830	£1,499	8	7 scalable Adobe
Oki	OL400	£899	4	25 bitmap
Olivetti	PG308	£1,399	4	24 bitmap
AEG	Laserstar 6	£999	6	9 Fonts

LASER PRINTERS

Laser printers have the same advantage of being quiet as ink jets and while they are not much more expensive, the resolution is markedly better. Laser printers are rapidly replacing dot matrix models as the standard office 'workhorse'.

Company	Price	Speed	Buffer
Brother HJ100	£405.38	142/83	37K
Canon BJ300	£699.13	300/150	30-128K
Epson SQ850	£903.58	600/198	8K
Hewlett-Packard DeskJet 500	£586.33	240/120	16K
IBM 4072 ExecJet	£868.33	600/300	30K
Mannesmann Tally MT9	£938.83	220/110	32K
Olivetti JP350	£586.33	360/120	8K

EXTERNAL DRIVES

If you don't have space for any more floppy disk drives – a problem with newer slimline models, you can always add an external model.

Model	Size	Capacity	Price	Supplier
IBM compatibles	3.5"	720Kb	£109.95	ABS Computer Supplies
IBM Compatibles	3.5"	1.44Mb	£119.95	ABS Computer Supplies
IBM Compatibles	5.25"	360Kb	£119.95	ABS Computer Supplies
IBM Compatibles	5.25"	1.2Mb	£129.95	ABS Computer Supplies
Amstrad 2000 range	5.25"	360K	£57.58	RSC Ltd
Amstrad 2000 range	5.25"	1.2Mb	£76.38	RSC Ltd
Olivetti/Amstrad 3000s	5.25"	1.2Mb	£175.08	RSC Ltd

CD ROM DRIVES

Are you looking to make your PC the ultimate games machine? Then a CD ROM drive is the perfect addition. CD ROMS offer a huge storage capacity, typically the equivalent of about 700 720Kb floppy disks! The only disadvantage is the slow access speed. There are not too many games or other CD ROM applications available at the moment, but the list is growing larger every month.

Model	Price	Supplier	Comments
Chinon CDS431	£351.33	SMC Computers	Internal
Goldstar GT2000	£398.33	SMC Computers	External
Philips CM50	£316.08	Diamond Computers	Portable

• The Philips drive comes with a free copy of World Atlas and Audio Player

DEALER DIRECTORY

CUSTOM GAMES
Incorporating
Just Micro

22 Carver Street
Sheffield
S1 4SF

TEL : 0742 752732

STARGAZER
Amiga and PC
Specialists
37 Upper Ththing Street
Worcester
WR1 1JZ

Tel : 0905 726259

GALLERY SOFTWARE

140 ARNDALE CENTRE
WANDSWORTH
LONDON
SW18 4TQ

Tel : 081-877-1017
Fax : 081-870-4941

PC Software and hardware retailers - Contact us for all your PC requirements.



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FAX : 0455 615164
TEL : 0455 613232

A-Z LEISURE

23A LOWER MALL
WESTON FAVELL CENTRE
NORTHAMPTON
NN3 4JZ

TEL : 0604 414528

COMPUTER RUN

21 STATION WAY
COXETERS YARD
ABINGDON
OXON
OX14 3RJ

TEL: 0235 528393

BYTES AND PCS

4 STOCKWELL HEAD
HINCKLEY
LEICESTERSHIRE
LE10 1RE

TEL : 0455 613232

HAND SCANNERS

If you use any sort of Desktop Publishing package, then a hand scanner is an invaluable addition to your PC. While most hand scanners can only read small images and at a relatively low resolution, they are considerably cheaper than flatbed scanners.

- *The PC Hand Scanner comes with a free copy of Microsoft Windows.*
- *The Marstek M105 Plus and M800 Plus are also available in versions for Windows. Add the suffix W to the model number and read the price as £139.83 and £186.83 respectively.*

Model	Price	Colours	Supplier
AG-256	£164.50	256 grey shades	Watford Electronics
Genius GS-B105G	£176.25	256 grey shades	Reeves
PC Hand Scanner	£82.19	16 grey shades	UK Home Computers
Marstek M105	£81.08	64 grey shades	RSC Ltd
Marstek M105 Plus	£110.45	64 grey shades	RSC Ltd
Marstek M800 Plus	£169.20	64 grey shades	RSC Ltd
Marstek M-6000 CG Color Artist	£327.83	262,144 colours	RSC Ltd

DIGITISERS

While not being quite so high up on the essential DTP buy list as a scanner, a rudimentary digitiser can transform the appearance of your documents. Digitisers will allow you to import line-based artwork by tracing it with a stylus or puck. They're also ideal for Computer Aided Design applications.



GRAPHICS SOFTWARE

So you're the artistic type? If so then in the PC you have a potentially limitless canvas, not to mention a huge choice of software with which to realise your potential. Here's a selection of the best for budding Renoirs.

Product	Price	Supplier	Comments
VBase	£175.08	Highland Grafix	Full colour picture database
Clip Art	£5.88	Cybernetic Imagination	Range of disks containing 30 images each in PCX or IMG format
Deluxe Paint II Enhanced	£99.99	Electronic Arts	The standard cheap paint program for PCs
Deluxe Paint Animator	£99.99	Electronic Arts	One of a range of DPaint add-ons
Disney Animation Studio	£99.99	Empire	Cel animation package
Corel Draw v2	£270.25	Corel	Very popular and versatile
Designworks	£149.00	GST Software	New drawing package, comprehensive and great value

DTP SOFTWARE

The PC has always been a superb machine for DTP applications, and now that Windows 3 is firmly established this is even more the case. There are already a host of excellent DTP packages available for the PC at prices to suit every pocket. Here is just a small selection.

Product	Price	Supplier	Comments
Page Plus	£160.98	Serif	Budget priced page layout for Windows
Timeworks Lite	£41.13	GST	Simple DTP
Deskpress	£235.00	GST	Timeworks and more!
Pagemaker	£457.08	Aldus	Professional DTP package
Ventura Publisher	£587.50	Ventura	Professional DTP Package
Timeworks DTP 2	£116.33	GST	Improved version of the budget system

COMMUNICATIONS SOFTWARE

If you're one of those sociable types that likes to to link-up, go on-line, and download from time to time then you're going to need some suitable software to get in touch with your fellow PC owners.

Product	Price	Supplier	Comments
Sage Chit-Chat	£66.98	Computers By Post	
Crosstalk	£71.68	Computers By Post	For Windows 3
Eazlink	Shareware	Various	Try before you buy!
Mirror 3	£121.03	Computers By Post	With teletext emulation
PC Anywhere IV	£101.05	Computers By Post	
Procomm Plus	Shareware	Various	Very Powerful System
Odyssey	£104.57	Shareware Marketing	Cost effective advanced comms

There are plenty of packages to choose from, especially in the Public Domain libraries. Here are a few we recommend you consider.

COMPOSING SOFTWARE

Gone are the days when you had to sit huddled over a second-hand Bontempi scratching notes onto a piece of torn manuscript. Most modern PC music packages make life a lot easier, some will even construct the score for you!

Product	Price	Supplier	Comments
Music Studio 3	£70.50	Datel	Sequencer, composer, score printing.
SPJunior	£163.325	Computer Music Systems	Music package
Sequencer plus Junior	£64.63	Computer Music Systems	64 track sequencer
Sequencer Plus Classic	£193.88	Computer Music Systems	500 track sequencer
Cadenza	£198.58	Digital Music	Sequencer with graphic editing
The Musicator	£368.95	Digital Music	Notation based sequencer
The Composer's Pen	£146.88	Composit Software	
Pianola	£29.38	Clockwork Software	
SongWright	£99	PC Services Scorewriting system	

ANTI VIRAL

It's a sad state of affairs that Anti-Viral software is needed at all, but unfortunately there are still lots of people out there in computerland who haven't grown up and think it's funny to wreck other people's work and enjoyment of their machine. Naturally the same people don't think it's very funny when it happens to them. If you are one of these people then may we express complete contempt for your activities on behalf of the computing community. If you're one of the remaining 99.9% of decent, honest computer users, here are a few useful pieces of software to protect you from the aforementioned nerds.

Product — **Price** — **Supplier**

Dr Solomon's Anti-Virus Toolkit — *£69.33* — *S&S International*
Comments: £99 for 4 quarterly upgrades; £275 for upgrades, monthly newsletter and fax alerts. Complete kit of tools for identification, removal of and immunisation against the dreaded virus, with other disk goodies too.

The Computer Virus Protection Handbook (Colin Haynes) — *£27.00* — *Sybex*
ISBN 0-89588-696-0
Comments: Includes 5.25" disk: The what, how and why of viruses including simulated ones on disk for quick recognition. Also covers disaster plans and industrial sabotage.

The Computer Virus Handbook (Richard B. Levin) — *£22.95* — *Osborne McGraw-Hill*
ISBN 0-07-881647-5
Comments: Lots of advice and short programs to avoid virus attacks. Covers hard disks too.

PC Immunise II — *£39.95* — *SA Software*
Comments: Protects hard and floppy disks and files with three levels of detection and help screens.

Virus Buster — *#95* — *VB Software*
Comments: Comprehensive and easy to install software. Checks for more than 550 viruses; first update free then #50 per year for maintenance.

Norton Anti Virus Version 1.5 — *#149* — *Symantec*
Comments: Comprehensive, provides protection against 700 viruses, price includes opportunity to attend Virus Clinic and access to Virus InfoLine for latest information.

MISCELLANEOUS UTILITIES AND PRODUCTIVITY SOFTWARE

Can't find what you're looking for in our other software sections? Then you'll probably find it here. Below we present a pot pourii of the very best of the rest.

Product	Price	Supplier	Comment
Autoroute Express	£61.10	NextBase	First rate route planning software
Coursemaster	£29.38	IntraSet	Betting aid for flat & hunt racing
Eight In One Gold	£115.15	Logman Logotron	Integrated WP, spellchecker, outliner, spreadsheet, database etc.
Flexibak Plus	£35.25	Nildram	Hard disk back-up utility
Framework IV	£458.25	Ashton-Tate	One of the better integrated systems
LogoLink	£34.08	Locomotive	Transfer files PCW-PC
Microtext Adaptor	£198.58	Microtext	Half card adding teletext to your PC
Mini Office Personal	£29.38	Europress	Database, WP, spreadsheet, label printer and comms.
Money Manager	£58.75	Connect Software	Household Finance
PC2 Teletext	£176.25	Microboss	External teletext adaptor and software
Printing Press	£45.83	Power Up	Make letterheads, posters etc
ProBook	£52.88	BBHW	Database and address book
Scoredraw	£72.00	RDN	Comparative analysis system for football result prediction

DEALER DIRECTORY

SOFTSPOT LTD
OXFORD COMPUTER CENTRE
4 LINCOLN HOUSE
TURI STREET
OXFORD
OX1 2DS
TEL : 0865 794202

ERA VIRTUAL REALITY
Unit 6
The Capital Exchange Centre
Queen Street
Cardiff
CF1 41IQ
Tel : 0222 641089

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UNIT 8
THE SHIRES
LEICESTER
LE1 4FR
TEL : 0533 512697

THINK PLAN LTD
3 RIVERSIDE WALK
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SURREY
TEL : 0483 506939

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THORNBY
STOCKOE-ON-TEES
CLEVELAND
TS17 9EP
TEL : 0642 764199

THE CARTRIDGE FAMILY

151 HIGH STREET
TEWKSBURY
GLOS GL20 5JP

TEL : 0684 290097

Product	Price	Supplier	Comment
Trackmaster	£20.00	Intraset	Greyhound racing tipster
Xtree Easy	£58.75	Softsel	DOS File manager
386^MAX	£79	International Data Systems	Memory Manager
Hijaak	£95	Software Paradise	Easy to use screen capture programme
Fast Lynx	£124.95	Ctrl-Alt-Deli	File transfer between PCs
Mace Utilities	#59.00	Software Construction Co	Intelligen full function disk recovery and optimiser.
Magellan	£115	Lotus Development	File viewer that finds a file in seconds.
Microsoft Works	#145		Capable and comprehensive integrated package
Microsoft Works for Windows	#145	Windows 3	integrated package - excellent value
Microtext Adaptor	£198.58	Microtext	Half card adding teletext to your PC
Mini Office Personal	£29.38	Europress	Database, WP, spreadsheet, label printer and comms.
Norton Utilities Version 5	£100	Symantec	Classic disk recovery & optimiser
Pinch and Punch 5	#30	Iolo Davidson	Simple to use screen grabber
PC Tools V 7	#139	Central Point Software	Good range of easy to use utilities
ProBook	£52.88	BBHW	Database and address book
Professional Master Key	$25	Shareware	Shareware counterpart of Norton utilities
QEMM	£65	Quarterdeck	Memory Manager
Spinrite II	#89	Software Paradise	A disk optimiser specially designed to detect and correct disk problems before they occur
System Sleuth	#99.95	Megatech	Tells you what's inside your PC

PORTABLES

Whether for games or more serious use, a portable enables you to take your programs with you. Most are best used when you are able to plug into the mains on-site: battery power normally lasts between 1.5 to 3 hours. Portables are now becoming genuinely slim and light enough to carry around in comfort.

Company/Model Screen	Price (ex. VAT) Slots	Speed Weight	Disk Size Size (mm)	RAM
Amstrad ACL-386SX	£3,999	20 Mhz	120 Mb	4 Mb
VGA LCD	Yes	8.0 Kg	320x400x113	
Compaq SLT 386S/20	£4,195	20 Mhz	60 Mb	2 Mb
VGA LCD	Yes	6.4 Kg	106x343x216	
Dell System 320LT	£1,999	20 Mhz	20 Mb	1 Mb
VGA LCD	Optional	6.8 Kg	318x89x360	
Epson AX 3/33	£5,999	33 Mhz	80 Mb	4 Mb
VGA LCD	Optional	7.8 Kg	360x325x110	
NEC Prospeed 286	£3,145	16 Mb	40 Mb	1 Mb
VGA LCD	No	6.8 Kg	330x376x89	
Olivetti A12	£1,199	12 Mhz	20 Mb	1 Mb
CGA LCD	No	2.95 Kg	297x210x52	
Panasonic CF-270	£2,195	16 Mhz	20 Mb	1 Mb
VGA LCD	No	3.1 Kg	310x245x44	
Philips PCL101	£799	10 Mhz	No	1 Mb
CGA LCD	No	1.6 Kg	220x280x28	
Samsung 386S/16	£2,220	16 Mhz	60 Mb	1 Mb
VGA LCD	No	3.2 Kg	297x213x51	
Sanyo MBC-17NB	£1,495	12.5 Mhz	20 Mb	1 Mb
VGA LCD	No	3.2 Kg	310x255x52	
Sharp PC-8501	£7,995	20 Mhz	100 Mb	2 Mb
VGA LCD	No	6.9 Kg	318x399x94	
Tandy 1500HD	£1,300	10 Mhz	20 Mb	1 Mb
CGA LCD	No	2.7 Kg	309x245x94	
Toshiba T3100SX	£3,850	16 Mhz	40 Mb	1 Mb
VGA Plasma	Optional	6.8 Kg	360x310x80	
Zenith Supersport SX	£2,795	16 Mhz	40 Mb	1 Mb
VGA LCD	No	7.7 Kg	380x310x85	

MAINTENANCE AND REPAIR

A variant of Parkinson's Law states that your computer probably won't go wrong while you still have that 12 month, on-site warranty intact. Once it expires, that's when the machine will start playing up. Below we list some of the companies which will provide you with a service contract and then come to your rescue.

Company	Price	Duration	Call Out
Data Recovery Service			
AEM	10-12% value	5 years	24-48 hours
FMG	Up to £470 PA	5 years	Next day
Kalamazoo	9-12% of value	5 years	8 hours
Newbury Data	6-12% of value	Flexible	8 hours
Response	8-11% of value	Flexible	8 hours

PC directory

Below you'll find contact numbers and addresses for all the suppliers we've mentioned in the sections covering hardware and serious software.

ABS Computer Supplies 071 224 8320
4 Shouldham Street, London, W1H 5FG.
Acolyte Services 041 848 0055/0066
Victoria Buildings Business Centre, Violet Street, Paisley, PA1 1PA.
AEG Olympia 0753 630111
The Ridgeway, Iver, Bucks SL0 9HX
AEM 0684 850505
Unit 4, Tewkesbury Ind Est., Green Lane, Tewkesbury, Glos., GL20 8HD
AKORE Limited Shareware 0800 252221
7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD
Freepost, Akore, Nottingham, NG1 1BR
Amstrad (Centresoft) 021 625 3302
Amstrad plc 0277 262326
PO Box 462, Brentwood, Essex, CM14 4EF
Brother 061 330 6531
Shepley Street, Audenshaw, Manchester M34 5JD
Canon UK 081 773 3173
Manor Road, Wallington, Surrey SM6 0AJ
Citizen Europe 0895 272621
Wellington House, 4/10 Cowley Road, Uxbridge UB8 2XW
Compaq 081 332 3000
Hotham House, 1 Heron Square, Richmond TW9 1EJ
Composit Software 0952 595436
10 Leasowe Green, Lightmoor, Telford, Shropshire, TF4 3BR
Compuadd 0272 637488
7 Great Western Way, Bristol BS1 6HA
Computer Manuals 021 706 6000
50 James Road, Tyseley, Birmingham B11 2BA
Computer Mates 0753 631101
Pinewood Studios, Iver Heath, Bucks, SL0 0NH.
Computer Music Systems Ltd 071 482 5224
5-7 Buck Street, London, NW1 8NJ
Computers By Post 081 760 0014
12 Sutton Lane, Banstead, Surrey, SM7 3QP.
Connect Software Ltd 081 743 9792
3 Flanchford Road, London, W12 9ND
Corel 0703 899321
Xitan, 1-4 Chevron Business Park, Lime Kiln Lane, Holbury, Southampton SO4 1QL
Corporate Upgrades Ltd 081 861 2370
Premier House, 2 Daton Road, Harrow, Middx HA1 2XU
Ctrl-Alt Deli 0908 662759
26 North 12 Street, Central Milton Keynes, Bucks MK9 3BT
Cybernetic Imagination Systems Ltd 0923 252196
21A Church Road, Watford, Herts, WD1 3PY
Datacom 0256 763911
Landata House, Station Road, Hook, Hampshire RG27 9JF
Dataflex 081 543 6417
10/12 Lombard Rd., South Wimbledon, London SW19 3TZ
Dataplex 0753 535557
129 Bath Road, Slough, Berks, SL1 3VW
19 High Street, Old Town, Swindon, Wilts SN14 4EG 0793 488448
Datel Electronics Ltd 0782 744707
Govan Road, Fenton Industrial Estate, Fenton, Stoke-on-Trent, ST4 2RS

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ACCRINGTON
LANCS
TEL : 0254 35345

CHIPS GAMES CENTRE
CLARK YARD
DARLINGTON
CO DURHAM
TEL : 0325 381048

CHIPS
7 Dundas Street
Redcar
TS10 3AD
Tel : 0642 488522

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LOGIC SALES

50 LYNTON PARADE
CHESHUNT
HERTS
EN8 8L8

TEL : 0992 25323

Pudsey Computers Shop

161 Richardshaw Lane
Pudsey
Leeds
LS28 6AA

Tel: 0532 360650

INVICTA SOFTWARE

49 QUEENSROAD
HASTINGS
SUSSEX
TN34 1RE

Tel : 0424 444515

Data Day

51A Farringdon Road
Swindon
Wilts
SW1 5AR
Tel : 0793 512073

Datel London Shop 222 Tottenham Court Rd, London W1	071 580 6460
Dell Computer Corporation Millbank House, Western Road, Bracknell, Berks RG12 1RW	0800 414535
Diamond Computers 232 Tottenham Court Road, London, W1.	071 580 4355
Digital Music 27 Leven Close, Chandlers Ford, Hants, SO5 3SH	0703 252131
Dimension Computers Ltd Dimension House, High Street, Leicester, LE1 4FP.	0533 517479/621874
Dowty Information Systems Newbury Business Par, London Rd., Newbury, Berkshire RG13 2PZ	0635 33009
DS Computers Unit 206, Belgravia Workshops, 157 Marlborough Road, London, N19 4NF.	071 281 5096
Elonex 2 apsley Way, London NW2 7LF	081 452 4444
Epson Campus 100, Maylands Avenue, Hemel Ehmpstead, Herts, HP2 7EZ	0442 61144
Evesham Micros Unit 9, St. Richards Road, Evesham, Worcs, WR11 6XJ	0386 765500
FMG Ltd Newcombe Way, Orton Southgate, Peterborough PE2 6SF	0733 371304
GST Meadow Lane, St Ives, Cambridgeshire PE17 4LG	0480 496789/496666
Hayes Microcomputer Products Inc 1 Roundwood Avenue, Stockley Park, Uxbridge, Middx UB11 1AE	081 848 1858
Hewlett Packard Cain Road, Bracknell, Berks, RG12 1HN	0344 369369
Highland Graphix Ltd 18 Albion Way, East Kilbride G75 0YN	0355 264888
IBM Freepost, London W4 5BR	081 747 0747/995 7700
International Data Systems 37-41 Gower Street, London WC1E 6HH	071 436 2244
Intraset Ltd 10 Woodside Ave, Clayton-le-Woods, Chorley, Lancs, PR6 7BR	0257 276800
Iolo Davidson Scrubbetts, Bagpath, Tetbury, Glos GL8 8YG	0453 860872
Kalamazoo Mill Lane, Northfield, Birmingham B31 2RW	021 411 2266
Kodak PO Box 66, Station Road, Hemel Hempsted, Hertfordshire HP1 1JU	0442 61122
KSI Unit 1, Braxton Courtyard, Lymore Lane, Milford-On-Sea, Lymingtyon, Hants SO41 0TX	0590 644255
Logitech Hawes Hill Court, Drift Road, Windsor, Berks SL4 4QQ	0344 891313
Longman Logotron Dales Brewery, Gwydir Street, Cambridge CB1 2LJ	0223 323656
Lotus Development (UK) Limited The Causeway, Staines, Middlesex TW18 3AG	0784 455445
Mannesman Tally Molly Millars Lane, Wokingham, Berks RG11 2QT	0734 788711
Maplin Electronics PO Box 3, Rayleigh, Essex SS6 8LR	0702 552911
Megatech 111/113 Wandworth High Street, London SW18 4HY	081 874 6511
Memory Direct 33 Grosvenor Road, Aldershot, Hants., GU11 3DP	0252 316060
Microsoft Technology Limited Excel House, 49 De Montford, Reading, Berks RG1 8LP	0734 270000
Microtext Birdlip Close, Horndean, Hants, PO8 9PW	0705 5956947
Mindscape International Limited The Coach House, Hooklands Estate, Scaynes Hill, W Sussex RH17 7NG	0444 831761
Miracom Premier House, Telford Way, Colchester Business Park, C, Ess CO4 4QP	0206 844834
Mitsubishi Electric UK Limited Travellers Lane, Hatfield, Herts AL10 8XB	0707 276100
Naksha 29 The Wharf, Warrington, Cheshire WA1 2HT	0925 56398
NEC 1 Victoria Road, London, W3 6UL	0800 181368
Newbury Data Hawthorne Road, Staines, Middx TW18 3BJ	0784 461500
Newstar International The Widford Old Rectory, London Road, Chelmsford, Essex CM2 8TE	0245 265017
NextBase Ltd Unit 18, Central Trading Estate, Staines, Middx, TW18 4XE	0784 460007

Olivetti 1 Deltic Avenue, Rooksley, Milton Keynes MK13 8LD	0908 690790
PC Services 40 Rowden Road, Beckenham, Kent BR3 4NA	081 658 7251
Pace Micro Technology Victoria, Saltaire, Shipley BD18 3LF	0274 532000
Panasonic Panasonic House, Willoughby Road, Bracknell, Berks RG12 8FP	0344 853915
Philips & Pye City House, 420/430 London Road, Croydon CR9 3QR	081 689 4444
Picture Perfect UK Ltd Honeysuckle Cottage, Green Meadow Lane, Goodworth, Clatford, Andover SP11 &HQ	0264 333643
Power Mark Premier House, 112 Station Road, Edgware, Middx, HA8 7AQ.	081 951 3355
Precision Software 6 Park Terrace, Worcester Park, Surrey KT4 7JZ	081 330 7166
Prestige Network Ltd Reynolds Green, Camberley, Surrey, GU15 4FL	0276 60073510
PC-Sig Uk 111/113 Wandworth High Street, London SW18 4HY	081 877 1103
Psion 85 Frampton Street, London NW8 8NQ	071 262 5580
Quarterdeck The Widford Hall, Widford Hall Lane, Chelmsford, Essex CM2 8TD	0245 496699
RDN Datasystems Ltd PO Box 44, Hastings, East Sussex, TN34 2SY	0424 752288
Reeves PLC Technology House, 75 Tenter Road, Hanson Business Park, Moulton Park, Northampton NN3 1PZ	0604 671277
Response Computer Maintenance Limited Rays House, North Circular Road, London NW10 7XB	081 965 3225
Roland UK Limited Rye Close, Ancells Business Park, Fleet, Hampshire GU13 8UY	0252 816181
RSC Corporate Computing 75-77 Queens Road, Watford, Herts, WD1 2QN.	0923 243301
Samsung Samsung House, 225 Hook Rise South, Surbiton, Surrey KT6 7LD	081 391 0168
Sanyo Otterspool Way, Watford TD2 8JX	0923 246363
SA Software 28 Denbigh Road, London W13 8NH	081 998 2351
Seikosha Unit 14, Poyle 14, Newlands Drive, Colnbrook, Berks SL3 0DX	0753 685873
Serif (Europe) Ltd PO Box 15, West PDO Nottingham NG7 2DA	0602 421502
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PCR 04 / 92

PC review

Introducing shareware

Although shareware has been in existence for several years, many PC users are unclear as to exactly what it is.

There is such a wide choice of software these days that it can be very difficult and costly to choose the right program for an application. The only realistic way to know whether a program is suitable is to try it out first. With shareware you can do just that.

The basic principle is that users can obtain shareware programs for just a few pounds from an authorised shareware vendor. If they find them useful, they are asked to make a payment, directly to the author and register themselves as a user. By registering, they can expect printed manuals, updates and technical support from the author.

The amount and level of support required and documentation depends upon the complexity of the program.

The registered version of a game, may , for example, be just £5 but a full Business Finance package could be £125 or so.

However in most cases, the registered version is likely to be considerably cheaper than the equivalent commercial program.

Of course, if a program is not found suitable, the user just re-formats the disk and uses it for something else.

Shareware software is NOT public domain. It is copyright software in the same way as any regular commercial program is – it's the method of promotion and distribution that differs.

Public domain software is where the author has relinquished his or her copyright permitting others to distribute the software. There is no request for payment from the author.

ABOUT THIS REVIEW SECTION

The purpose of this section of PC Review is to offer concise but informative reviews of what we believe to be the best programs in each respective category.

We offer a points out of ten score based on three criteria:-

1. How well does it perform the task?
2. How easy is it to use, particularly in terms of getting started?
3. Understandable documentation and help files.

Each review identifies the name of the program, author and the registration fee, where known.

In popular fields there are often many different programs available to cover a particular function. In these cases the standards are very high and consequently the rating is higher. There would be no point in offering you a sub-standard program in a well-served category.

However, in more specialised fields, there will be relatively few programs available so there may be cases when a lower rating will have to be tolerated as there is no better alternative.

Shareware programs may be obtained from a variety of sources. However, for your convenience, we have arranged that all programs featured in this review may be obtained from one source – Advantage which is a well-established, authorised shareware mail order company, based in Cheltenham.

PC Review readers can order their disks directly from Advantage either by phone, fax or post and can expect fast delivery.Advantage will also provide getting started support and advice.

As a special offer to PC Review readers, Advantage is offering a 25% discount on its regular price of £3 a disk – quote PC Review when calling or use the special priority order form at the end of this section and get your disks for just £2.25 each (both 5.25" and 3.5") including VAT.

WHICH COMPUTER?

There are so many varieties of computer and operating system (DOS) around today we cannot guarantee that all programs will work on all computers. However most programs run on a 512K RAM PC compatible running MS-DOS version 2.0 or above. A single floppy drive is usually acceptable but a dual drive or hard disk is more beneficial not just for these programs but for most of your other work as well.

A code is placed by each program if the minimum requirement is more than a basic PC compatible with a Hercules mono monitor:

CGA: Colour Graphics Adapter required with Colour Monitor.
EGA: Enhanced Graphics Adapter required with high resolution monitor.
VGA: Video Graphics Array required with high resolution monitor.
HD: Hard Disk Drive required.

Mono and CGA programs will run on an EGA or VGA monitor. Also, many CGA programs will run on a mono monitor if you load a CGA emulator program (also available as shareware).

Programs are written by a USA author unless otherwise stated.

Programs which make use of a printer expect to find an IBM or Epson-compatible. Most modern printers are.

If you have any questions about shareware or wish to discuss your requirements please call Advantage (not PC Review) on (0242) 224340.

SHAREWARE REVIEWS

PERSONAL ORGANISERS

Calendar Mate (one disk)

Author: Hawk Software
Registration: $22.
Performance: 8/10
Ease of Use: 7/10

Calendar Mate is designed to create personalised calendars. The user defines events to the program and it will display them on the calendars when printed.

There are three types of calendars that can be printed – a monthly block calendar, a one page yearly calendar and a daily appointment calendar/scheduler. The monthly calendar can display up to three events per day.

In addition to the attractive printed calendars, Calendar Mate's can handle different types of repeating events - simple intervals such as 'yearly' or 'weekly' or 'third Monday of the month' or 'Wed-Fri' for example. It can even delete or reschedule single occurrences of a repeating event.

Defining events to the system is a simple task. Much effort has been invested in making the program intuitive and user friendly. There is context sensitive help available anywhere in the program.

As well as the simplicity and ease of use built into the program there are several powerful features including automatic computation of Easter and lunar cycles, mouse support, optional Julian dates, automatic event repetition. calendars can be printed in English, French, German or Spanish.

STOCKS AND SHARES

Noyes Investment Ledger (one disk)

Author: James Noyes
Registration: £18 UK
Performance: 7/10
Ease of Use: 7/10

The author has produced an investment program which is fairly easy to use. It is assumed that you have been using manual records so far and know a little about book keeping.

Data is entered on to a main input form on the screen. Once you have mastered this part of the program, the various reports will keep a good control over your investment portfolio.

The author is an accountant who has spent many years sorting out manual and computerised accounting problems and is therefore well suited to creating a program which is appropriate to the task without confusing the user with jargon and complex setting up procedures.The Investment Ledger features analyses of purchase and sales of investments, calculates the profit and losses and analyses cash payments and receipts.

There is also a bank reconciliation facility, memorandum database, and several reporting functions. It can handle up to 99 cash/bank accounts, 999 nominal ledger headings and a maximum value of posting currency of £100 million which should prove more than enough for most investors!

DESK TOP PUBLISHING

Rubicon (two disks)

Author: Rubicon Computer Labs Inc
Registration: $89
Performance: 9/10
Ease of Use: 7/10

The Rubicon Publisher is a professional standard system which can be used to publish high quality documents from text files which have been previously prepared in plain ASCII format using any suitable word processor or text editor.

It is a serious desk-top publishing program, not really designed for beginners; but if you can use a word processor, you can install and use the Publisher successfully, provided that you read and follow the instructions, and pay reasonable attention to detail when preparing text files for publication. It will enable you to produce a wide variety of documents, forms, notices, advertisements, newsletters, reports, financial statements, leaflets, brochures, book-length projects, etc, with typesetting of professional quality and standards.

In short, it's a very useful program: and it's also more fun than most video games, because its creative possibilities are limited only by your imagination. Rubicon does not offer any graphic image importing or editing functions. These are best undertaken as a separate activity using, for example, Desktop Paint and incorporated into your documents by manual methods if required.

SignSmith (one disk)

Author: Brian Smith
Registration: None Required
Performance: 6/10
Ease of Use: 7/10

SignSmith is not particularly sophisticated but on the other hand it is not difficult to get it working and, if you want to just produce a simple A4 poster or a letterhead for your business then it is eminently suitable. There is plenty of on-disk documentation and technical details for those who need it.

Signsmith works on any piece of text which has been created on a Word Processor – as long as it is in regular ASCII text format- (ie no control codes). You then add text and numerical codes in your document each time you require a change of font or size of lettering.

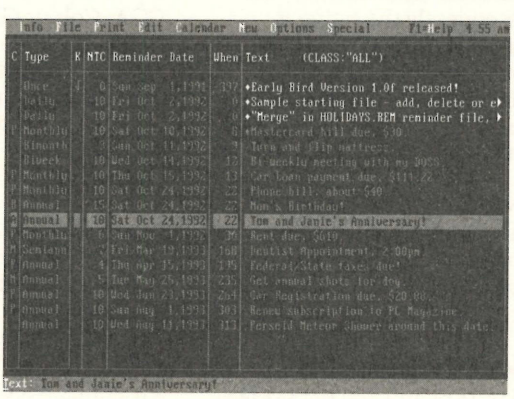
Then you just run the SignSmith program and it will print out the final document on your dot matrix printer. It uses graphics mode as do all other DTP programs, so will take longer than ordinary text.

The program has four fonts available, font 1, 2, 3, and 4 which are progressively more fully-formed. Normally you will prefer fonts 3 or 4.

Font 4 is the best, but the basic height of font 3is only half that of font 4, so that you have more choice in the size of font 3 (and font 2). Font 1 is really of use only if you are deliberately after a chunky 'computer-like' effect.

Early Bird

Author: Allan Computer Products
Registration: $30
Performance: 8/10
Ease of Use 8/10



There are several programs available which offer desktop diary and appointments functions. Most of them are 'memory-resident' ie they are available at the touch of a key, while you are in the middle of another application eg your WP or Accounts.

Early Bird is probably one of the best user-friendly, full-featured reminder and calendar program available.

It features simple or complex reminder types (e.g., third from the last Thursday of every 9th month), desktop calendar and scan (AUTOEXEC.BAT) modes, colour pull-down and pop-up menus, context sensitive on-line help, alarm, DOS shell, mouse support, file manipulation commands, and selectable group printing.

In addition, Early Bird offers user definable classes, notice, print, colour and display options, special sound and visual effects and reminder creation defaults. Once you try it, you'll never stop

Print Partner (one disk)

Author: Robert Bequette
Registration: $20
Performance: 9/10
Ease of Use: 9/10

Print Partner is three programs in one, each fully menu-controlled and very easy to operate. It will produce printed banners, signs, and calendars for any year/month. You can also save and reload any of your compositions for later use.

First,Banner prints text of your choice on a roll of paper with letters about six inches high. You can have a graphic on either end and use any font you require. Print Partner attempts to smooth the text and graphics to make them look better.

Next, Sign, usually the most popular function, produces an A4 sheet containing lines of text each of which can be printed again with your choice of font. Signs may have any number of two different graphics you select and may be placed anywhere on the page.

Third, Calendar, prints an A4 size desk top or wall-mounted monthly calendar with a box for each day to fill in manually as required, for any month from 1980 to 2098, with the month name in any font you select. Print Partner can be configured for most printers and comes with a varied interesting set of fonts.

Typesetter (two disks)

Author: XLent Software
Registration: $30
Performance: 8/10
Ease Of Use: 7/10

Typesetter PC is a page layout program that gives you "What You See Is What You Get" capability in designing a single page and prints it out in the highest resolution achievable on a 9-pin dot matrix printer. Fonts can be italicized, inverted, made bold and more and, along with graphics, can be mixed anywhere on the page.

Typesetter is a fully featured graphics program including such tools as pencil, k-line, circle, rectangle and spline. There are many on-screen help menus that list these functions.

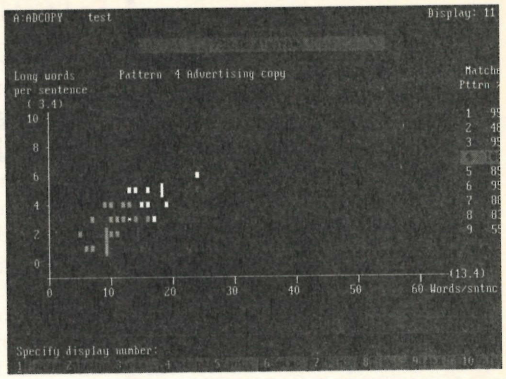
A CGA and Hercules version of Typesetter PC are released as shareware which allow you to use proportionally spaced fonts as well as flip and inverse sections of the page. Typesetter is able to produce output which in many cases can be substituted for pages created with an expensive DTP system.You can create custom sized printouts for labels, business,index and Rolodex cards.

One of the best features is the ability to generate Near Laser Output. With this option, Typesetter can produce a page with 1920 x1392 pixels. That's 2,672,640 pixels – the absolute limit of the Epson FX 80 and compatible printers!

So is it a DTP? Well the answer depends on what you are trying to do. For a commercial quality magazine with scanned images and wrap around text you still need a 200+ program and all the hardware to go with it but for letterheads, posters, labels, flyers, club Newsletters or infosheets printed on a dot-matrix, Typesetter is great.

Readability Plus (one disk)

Author: Scandinavian PC Systems
Registration: $25
Performance: 8/10
Ease of Use: 9/10



Don't confuse Readability Plus with grammar and style checkers. It starts where those programs leave off. In fact, most users have a fine command of the English language and don't need grammar checkers.

Grammar checkers correct many grammar and word usage errors. And they'll let you stipulate how strict you want those grammar rules applied through the selection of what they call business, technical and personal 'styles'.But their definition of style applies to word usage, not writing rhythm and word and sentence cadence.

In contrast, Readability Plus assumes that what you've written is mechanically correct. Rather than look for errors, it looks for sentences and words that aren't appropriate for your intended audience and purpose - those things that make writing boring and unintelligible to the reader. Compare your text with any of the nine writing style models provided with the program. 'Align' the style of your draft with the model's so that they're indistinguishable.

Whether you want to want to write love letters that read like advertising copy (not such a daft idea!), or technical papers that read like well-crafted magazine articles, Readability Plus gives you the writing edge that only other Readability Plus users enjoy!

Readability Plus really works!

It produces graphical and statistical analysis of any passage which can be tested under a wide variety of categories – newspaper, technical, magazine article, novel etc.

HOME FINANCE

Home Accounts (one disk)

Author: Blackwood Software UK
Registration: £10
Performance: 8/10
Ease of Use: 8/10

How many times have you received your monthly statement from the bank, showing a final balance of lots of money, only to find that the last half dozen cheques you wrote out have not been cashed yet? Here's a solution to end this confusion for once and for all.

With Home Accounts you can keep an up to date record of your account(s). You can enter all your Standing Orders and Transfer them to your monthly account when due.

At the end of each month, the final balance can be carried forward as the starting balance for the next month. A full breakdown of your monthly expenditure is available at the press of a key.

The program also includes Loan Calculator which works out the total interest on a given amount, and will display the monthly and weekly payments required to pay the loan in the given time.

The third feature in this program is Mailing List. All you have to do is enter the Names and Addresses into the database.

When you want to print out a Name and Address, just select the Name you wish to print, enter the size of envelope you are using and the program will do the rest. Your Name and Address will be centred on the envelope.

Checkmate Plus (two disks)

Author: Custom Technologies
Registration: $15.00
Performance: 8/10
Ease of Use: 7/10

One of the most popular uses of a home computer is in the control and monitoring of domestic finances. These can range from a straightforward 12 month breakdown of incoming and out going monies through to a mini-accounts package offering detailed analyses and reports.

Checkmate Plus falls more in the latter category, however. It is sufficiently well-presented and well-documented to be used in any simpler application. You don't have to make use of the more advanced features initially or at all. The strength is that the more powerful features are there to be used as you gain confidence and explore the potential of the program.

CheckMate Plus is a full-featured, easy to use,cheque book-based accounting package. It is a real accounting package, with real double-entry transactions. You can produce true balance sheets and income statements as well as numerous budgeting and graphical reports.

CheckMate Plus is intuitive,

easy to use, and has extensive on-line help. To use the more sophisticated features you will need the user's guide to fully exploit its power. It comes with a disk-based introductory user's guide to aid you in evaluation. This is quite large.

Household Register (one disk)

Performance: 7/10
Ease of Use: 8/10

Most people have no real idea of the value of their possessions.Whilst this may not be important most of the time, should a disaster strike and they need to fill in a wad of forms for their insurance claim, it can often be difficult to persuade the insurance company of the full value of your things.

So, before a problem occurs it is wise to take an inventory,- itemising all your goods and chattels and attaching their value. What better way to do this than on your PC?

Household Register is a fully equipped database system specifically tailored to log all your household possessions with their corresponding values, analyse the data and produce valuation reports and statistics.

You can use the reports to initiate your insurance assessment and present it to the insurance company along with any claims you may need to make.

HOME MANAGEMENT

The Librarian System

Author: Peter Richards
UK Registration: £19.95
Performance:8/10
Ease of Use: 8/10

The Librarian is a suite of tailor-made database systems developed for a variety of household applications. Each application is available on its own disk: Librarian: club membership; Librarian: home insurance; Librarian: record collecting; Librarian: audio cassette; Librarian: address book; Librarian: video collecting;Librarian: gourmet cookbook;Librarian: military aircraft

Librarian: book collecting; Librarian: hit singles.

The programs have common features throughout the range of titles.These include fast file access search and edit customised database managers. Each has report and print facilities and additional features are available on the registered versions.

Menu selection is minimised and data entry is a simple case of filling in a form on the screen. Once the data is entered it may be sorted, searched and edited. The shareware version offers a report printout of the records entered. The registered version offers a wider range of reporting functions.

The Librarian System is professionally written using the latest programming tools. Presentation is neat and tidy and very easy to understand.

Home Video Library

Author: Turbo Systems
Registration: $34.95
Performance: 8/10
Ease Of Use: 8/10

Home video recording has been popular for many years now and most of us have accumulated an assortment of anonymous looking tapes containing anything from unrepeatable family movies, through a seriesof old films taped off the TV, to old and totally expendable early episodes of Home And Away.

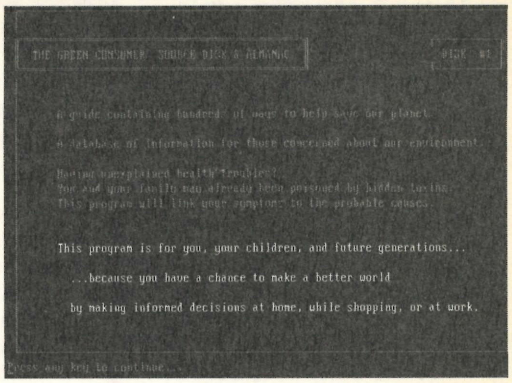
In most cases the labels, if we wrote any at all, have faded or peeled off and not only can you not find anything but also you run the riskof wiping out those precious recordings.

With your PC and the Home Video Library program you can get things organised properly.

Working the program and entering data is intuitively easy. Once you have entered in the basic details, you can quickly search your video library files and print reports to the screen, printer or a disk text file. You can also print labels to place on tapes for easy identification.

Green Consumers Sourcebook (two disks)

Performance: 7/10
Ease of Use: 9/10



The concept of "paperless books" is becoming more and more popular and with the advent of nice clear graphic screens and fast disk access reading and learning from your PC becomes an attractive proposition. Also, books on a disk often work out cheaper than the printed and bound variety.
This book is presented using a system called IRIS which is database orientated, thus providing a variety of fast search and retrieve functions. Any part of the book can be printed out. The book covers a wide range of subjects on topical Green issues and makes very interesting reading as well as being a useful reference.

LIFESTYLE

Elvis Presley's Guide to the Universe (one disk)

Performance: 6/10
Ease of Use: 9/10

Another of the new books-on-a-disk. This one is rather more off the wall, though.
Apparently Elvis is still communicating his views to the world via the person who has put this book-on-a-disk together. Makes fascinating reading but can you believe any of it?

MUSIC

Music Maestro (one disk)

Author: Peter Richards
UK Registration: £19.95
Performance: 7/10
Ease of Use: 8/10

Whilst there are many database 'shells' on the market which allow you to design and build your own database manager, many users, particularly newcomers to the PC would prefer it if someone else had done the work for them.

The UK author had the new user in mind when he designed Music Maestro. Most people have a collection of music records – whether they be on vinyl LP, compact disc or tape.

As the collection grows it can be a great help to catalogue them all in a methodical way, entering information such as title, artist,duration, date issued, date purchased, location etc.

Taking the typical requirements the author has designed Music Maestro, ensuring at all times that the program is simple and easy to use.

Menu selection is minimised and data entry is a simple case of filling in a form on the screen. Once the data is entered it maybe sorted, searched and edited. The shareware version offers a report printout of the records entered. The registered version offers a wider range of reporting functions.

Musician's Toolbox (one disk)

Author: D T Richards
Registration: £10
Requires EGA or VGA

The Musician's Toolbox combines these functions:-

The Chord Analyser provides the musical spelling of the chord symbol sprinted on most sheet music. The relevant notes are sounded and displayed graphically on a simulated keyboard. Accepts a variety ofstyles of chord symbols and no difficulty should be experienced on this account.

Guitar Chord Dictionary. By pressing the space bar after using the keyboard Chord Analyser, a graphical display of the equivalent chord shape for guitar may be obtained. Three alternative possibilities are given which may vary in suitability depending on the current

playing position on the guitar neck, the degree of proficiency of the player,etc.

Ear Training. Most musicians are aware of the importance of ear training (particularly in improvised music). This is also a requirement in the examinations of the Associated Board of the Royal Schools of Music and similar bodies. This module plays random intervals and requires the student to select the appropriate description.

Metronome provides a usable metronome, supporting all practical tempos and any time signature in either simple or compound time. The audio output is accompanied by a matching visual display.

Transposer provides an instant reference for transposition of notes between any two keys. As the transposition is shown for the entire chromatic scale (so allowing for the inclusion of accidentals) it is irrelevant whether the key is major or minor. For this reason, only the tonic note of the key should be entered (e.g. "G" rather than "Gminor" or "Gm").

Instrument Information provides details of the range and usability of all the most common instruments of the orchestra This information is indispensable to musicians who wish to arrange for ensembles of instruments with which they may not be wholly familiar.

GENEALOGY

Gene Genie
(two disks)
Author:Mike Allen
Registration: $39.95 (UK)
Rating: 8/10
Performance: 8/10
Ease of Use: 7/10

Interest in one's personal family history has always been a fascination and it continues to be a popular hobby. Before the advent of computers collating research was a very time-consuming and repetitive task, particularly when alterations and amendments had to be made.

Computers are ideal tools for the entry and re-organisation of information and so several programs have been specially written on genealogy and family history.

Gene Genie is a good example and it is written and supported by a UK author. It is more of a family history program, ie, it offers more space for text descriptions of each subject but it does not produce graphic family tree pictures.

It includes facilities to enter in all the standard genealogical details of the family: a unique record number,surname, forenames, maiden name (if applicable), sex, identity of father, identity of mother, date and place of birth, date and place of baptism, date and place of marriage(s), date of divorce (if applicable), date and place of death, whether buried or cremated, date and place of burial/cremation.

Other features include addresses, occupations, sources,-navigation tree, personal notepad. On the registered version you get hard copy printouts for either an individual or the complete database.

A detailed tutorial is supplied on disk to help newcomers to this popular hobby. The shareware version limits the number of entries.

Trees II
(one disk)
Author: Tomorrow's Designs
Registration: £49.95
Performance: 8/10
Ease of Use: 8/10

In some families, there already exists a wealth of information, stored in various forms, just waiting to be ordered and examined. In others, records are patchy. Tracing further into the past involves careful investigation, following clues, hunting through public records for new leads.

The science and art of investigations, (and it has all the attributes of both), is genealogy. Investigating your heritage produces vast amounts of data, and the genealogist must find ways of recording it, then correlating it to discover the stories that lies behind it.

Trees has been designed to aid the genealogist so as to make his or her job as simple and as fun as possible. While requiring no great specialist knowledge about either computing or genealogy, it nevertheless has all the power and scope of other fully professional genealogical software.

We are all proud possessors of a heritage that goes back to the dawn of recorded time and beyond.

Our ancestors have many tales to tell, can we but find them. And having found them, what better way to manage the information than with your PC?

Brother's Keeper
(three disks)
Author: John Steed
Registration: $40
Performance: 9/10
Ease of Use: 8/10

Brother's Keeper is a set of programs which will help you organise your family tree information, and which will print the information in several ways.

You will be able to print descendant charts which show how anyone named in your file is related to everyone else. You may also print ancestor charts, family group sheets, alphabetically-ordered name lists, descendant trees, lists of birthdays, and customised reports.

For each person entered in the file you may include a date of birth, a date of death, and three other significant dates and you may store a place of birth, a place of death, and a place for three other noteworthy events. You also may enter two additional fields for any other events or information you feel is relevant, the subject matter for which you may define.

Each person can have up to seven message lines of additional data, or a text file of unlimited size containing notes and addenda. Each person may have up to eight marriages stored (enough, even, for Elizabeth Taylor). Each marriage record can hold a marriage date, a place of marriage and one additional date and place,and can store up to 24 children.

Brothers Keeper is a very comprehensive system which offers all the features required by the average genealogist. It therefore comes highly recommended.

PUZZLE CORNER

Cipher
Author: Nels Anderson
Registration: $15
Performance: 7/10
Ease of Use: 8/10
Monitor Type: VGA/EGA/text mode (colour or mono); best on VGA/EGA
Mouse: Yes (optional; VGA/EGA modes only)

Cipher is a crypto-quotes type game, updated to support hi-res EGA and VGA graphics and mouse play. It includes many puzzles to solve plus options such as help, hints, save/restore, etc. You can also create your own puzzle files. All game play can be done with a mouse or with the keyboard according to the players preferences.

The objective of Cipher is to solve a word puzzle. You must try to discover the real meaning of a quotation or other phrase that has been encrypted.

Also available from the same author – Cipher for Windows. Just like regular Cipher, only this runs under the Microsoft Windows 3 environment. It includes standard Windows help with complete game instructions.

Crossword Creator
(two disks)
Author PC HelpLine
Registration $20
Performance 8/10
Ease Of Use 8/10

This is just the program for anyone who has to design crosswords in a hurry – whether it be for your own family entertainment or for your village Newsletter, magazines etc.

There are two approaches to adopt. First you can design your own grid, enter the words and create the clues. Helpful features include a Word Finder which makes use of a list of words on the disc that you can supplement or replace with a bigger list.

Second you can cut the development time by getting the Automatic function of Crossword Creator to design and build up the crossword for you.

Crosswords can be as big or small as you like, within the constraints of your printer and are printed out neatly.

The disc includes a useful selection of ready-to-run crossword puzzles and the program has extensive on-line help. It can also be controlled by a mouse. Great fun!

HOBBIES & PASTIMES

The Gardener's Assistant (one disk)

Author: Shannon Software
Registration: $25
Performance: 6/10
Ease of Use: 9/10

Most hobbies and pastimes are enhanced by sourcing information on the subject and getting things better organised. As with most things,the PC can come in handy.

Not much software has been written on the subject of gardening, Landscape Plants (reviewed earlier) and this one, Gardener's Assistant, are about the only two we know of. They are American and therefore some of the plants and weather conditions are not applicable to the UK but most of the information is still relevant.

Gardener's Assistant was designed to help gardeners plan and plant their vegetable patch and obtain optimum performance from the soil they use, the seeds they plant and the seasons.

It works on both mono and graphic display adapters but not on Hercules. The graphic adapter displays are more flexible.

Registration entitles you to a copy of the 60 page manual,notification of up-dates, and reduced price upgrades.

AMUSEMENTS AND DIVERSIONS

Speech Synthesiser (one disk)

Author: Andy McGuire
Registration: None
Performance: 5/10
Ease of Use: 9/10

The sound chip and loudspeaker on the average PC is fairly basic only offering a single note at a time of variable pitch and duration. It was never intended to be more than a beep. This of course invoked a major challenge to software writers and they have managed to produce polyphonic music, sampled sound and, in the case of this program – speech!

Whilst the reproduction is still crude you can just about discern the words and, although the program has little practical value, it makes for both an interesting exercise in programming and a fairly light-hearted piece of entertainment.

The versions of speech to be found on this disk have been modified to produce versions for computers at various speeds. For example SPEECH8.COM sounds right on an 8MHz PC clone (w/ V20chip).

Shakespearian Plays

Author: T Fanning
Registration: £5 per play.
Performance: 8/10
Ease of Use: 9/10

Now you can have the complete works of the bard himself on your PC. Suitable for straightforward reading, printing out or, used for reference in conjunction with essays and tutorials.

Each play is supplied on its own disk with an attractive Playread program which lets you select the act and scene of your choice. The text is neatly presented and easy to read. Search and find is rapid.

Choose from: Anthony and Cleopatra, Merchant of Venice, As You Like It, Midsummer Night's Dream, Hamlet, Julius Caesar, Othello, King Lear, Macbeth and Taming of the Shrew.

Suitable for teachers, students, theatre directors or anyone interested in these great literary works.William himself would have been pleased with the idea..

FOOD AND DRINK

Vino: File (one disk)

Author Mark Christian
Registration $25
Performance 7/10
Ease Of Use 8/10

Now that the price of wine is relatively low and we are able to obtain an ever increasing range of products, even at the local supermarket, many people are building up their own "wine cellar" and experimenting with the many varieties available. As with anything it becomes increasingly difficult to remember what different wines were like and whether you liked them or not.

VINO: FILE is a good PC-based method of getting the information organised. It will manage your wine cellar and log your tasting notes.You can analyse your cellar by variety, year, origin, peak drinking period and location. You can also identify future purchases.

VINO: FILE helps you maintain inventory of your collection, locate wines, enter tasting notes using windows and pull down menus. It includes a neat Cross Reference facility, help screens, on-disk manual and sample files.

VINO: FILE features a flexible database manager for report printing functions, Import/Export, Un-delete and fast search and sort.

Edna's Cook Book (one disk)

Author: Specialty Microware
Registration: $29
Performance: 7/10
Ease of Use: 8/10

Edna's Cook Book is for recording, filing, listing, and printing recipes. Essentially, it is the equivalent of the cookbook in which you now keep all your recipes, except that it is electronic.

The program may also be used in the preparation of cook books for publication, since it facilitates organisation and printing.

If you can type, you no longer have to deal with disorganised slips of paper and clippings thrown together in a drawer or box,only to be frustrated when you can't find that particular recipe that you remember you had, except you can't remember where it is,or what the precise name of it is.

Edna's Cook Book will take care of the tedious part, so you can get on with the real work. Good cooking.

The only thing we are not told is who Edna is!

Kim's Kitchen (two disks)

Author: N/A
Registration: N/A
Performance: 8/10
Ease of Use: 8/10

Kim's Kitchen is more than a recipe management system. It features a fully operational database system of items and recipes from which the user can create menus, shopping lists and stock control management.

It is a useful tool for both the home cook and professional restaurateur and eliminates much of the drudgery in maintaining stock levels and creating shopping lists (or purchase orders).

The program contains an alarm, a note pad, a calculator, a conversion table and context sensitive help, all accessible by function keys.

Recipes are a set of quantities of items with instructions.Menu plans are a set of recipes and items, while your shopping lists can be created from either items, recipes, menu plans,stock levels or any mixture of the above.

There is a very comprehensive set of report handling features to complement the functionality of Kim's Kitchen.Supplied with the software are example databases and indexes.

HUMANITIES

Geoclock (one disk)

Author: Joseph R. Ahlgren
Performance: 7/10
Ease of Use: 8/10

Geoclock is a useful tool for geography students, astronomers or anyone interested in world time zones.

It shows the current time (based on the system clock) with a map of the earth. The current sun position is displayed with a crossed circle, and the part of the earth in sunlight is highlighted.

This display is automatically updated every second (for an 8 MHz AT with an 80287) to 20 seconds (for a 5 MHz PC without an 8087). Local sunrise, sunset, and the sun's azimuth and elevation are also displayed. A variety of map backgrounds and other options are available.

There are two versions of Geoclock. The first is designed to support computers with a 256K EGA or VGA board with a compatible colour monitor.

The second supports CGA, Hercules, MCGA, AT&T 400x640, and PC3270 graphics, all in the highest resolution monochrome mode available for that card.

MapMaker (one disk)

Performance: 8/10
Ease of Use: 6/10

This program is not really designed for the casual user and is sophisticated enough for professionals and educationalists. The shareware version includes data for the continental USA

MapMaker produces two common forms of quantitative maps;Choropleth (Area Colouring) and Graduated Circle, on an IBM PC colour monitor, and if desired, in black and white on a matrix printer.

Any set of statistical values may be displayed for corresponding geographical areas. Map areas must be comprised of bounded units such as states, counties, census tracts, or areas delineated by the user. On any given map, only one variable is shown for each map unit.

Choropleth maps display statistical variables by using a sequence of colours (maximum of three). Circle maps represent data with proportionately-sized circles. Proper usage of both map forms is discussed in detail later in the manual. MapMaker can also save and later recall screen images without going through the create process.

Directions and suggestions are provided on the screen throughout the program and it is possible for users who have little or no experience in mapping to produce maps. In order to produce statistically meaningful and visually effective displays,- however, users should read the manual thoroughly prior to creating maps.

Given the appropriate data sets, MapMaker has a great variety of applications, including scientific research, governmental planning, business and education.If hard copy is needed, maps can be printed in monochrome on matrix printers, or slides may be taken directly from the colourscreen.

The World About Us (one disk)

Author: Hinh Van Nguyen
Registration: $15.00
Performance: 9/10
Ease Of Use: 8/10
Requires CGA, EGA, or VGA board and a compatible monitor

World Info is not only a useful aid to geography students but also makes an interesting way of finding out more about the world and testing the family's knowledge of countries, capitals and rivers. Of course with recent events some changes are inevitable but this is true of any World atlas.

The program displays on the screen a map of the entire world or part selected from the menu – Africa, America, Asia, Australia, Europe. You then have the options of country names, capital names, information by country, information by capital or information by maps.

The first two of these will ask you the name of the Country or Capital highlight on screen according to the continent you preferred before. The second two will wait for you to type the Country or the capital . After you ENTER, the computer will try to Match your input of the Country or the Capital and display the country name, the capital, population, population/square mile, largest city, area (square miles), languages and religions.

Option 6 has a circle on the screen and waits for you to move. You can use arrow keys or Home, PgUp, End, and Pg Dn keys to move the circle. Press Enter will let you know the Country and Capital names.

Other options available include the 12 Longest Rivers in the World, the 12 highest Mountains, the 12 largest Lakes and Seas.

ASTRONOMY

The Night Sky (four disks)

Author: A C Stevely
Registration: £24.95
Performance: 8/10
Ease of Use: 8/10

The Night Sky is a computer planetarium capable of plotting depending on your disk system, either 24,000 stars to magnitude+7.49, or 45,000 stars to magnitude +8.49.

It is a very easy to use menu-driven program. This program was written by an amateur astronomer who, when he is not looking at the stars, drives a London Transport bus!

He has spent many hours working on The Night Sky, which was originally started as an exercise in programming. Only when it was almost finished did the author think of distributing it as a shareware program by which time it had expanded to four disks.

Users can select from 28 different locations worldwide. If your city is not on the list then you will have to look up the altitude and longitude of your city in an atlas.

For anyone interested in the subject and for serious astronomers this program is a must.Best used on a hard disk.

EXPLORING

Exploring Physics (one disk)

Author: Bruce N. Baker
Registration: $20
Performance: 8/10
Ease Of Use: 9/10

Exploring Physics comprises a suite of programs for secondary school students and covers:

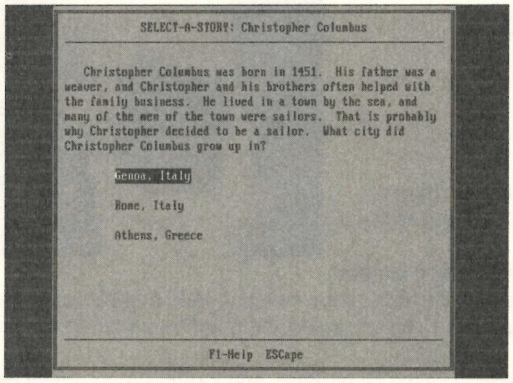
– Classical Physics Menu – Traditional physics formulas.– Relativity Physics Menu – Formulas for velocities approaching the speed of light.– Electrostatics/Dynamics Menu – Formulas involved electricity.– Optics Menu – Formulas dealing with the study of light.– Math Menu – Process vector and quadratic equations.– Conversion/Calculator Menu – Convert units and perform simple math.– Display Information Menu – Formulas and equations displayed.

Each subject is split into a series of sub-categories. For example, Electrostatics/Dynamics covers a) Coulombs Law. b) Electric Field and Voltage Potential by a single particle. c) Series Capacitors. d)Parallel Inductors. e) Parallel Resistors. f) Inductance Defined. g) Parallel Plate Capacitance.

The subjects are handled well and this disc comes highly recommended

Great Explorers (one disk)

Author: Solaris Systems
Registration: $10
Performance: 8/10
Ease Of use 9/10



With the price of books constantly rising and the cost of computer discs falling it is becoming increasingly cost effective for publishers to put out their work on a disc format instead.

Most systems contain the original text files and a piece of software to display it a screenful at a time. You can use the cursor keys to move up and down and usually there is a fast scan mode and facilities to search for words or phrases.

From a new range of software under the "Select-A-Story" comes "TheGreat Explorers Collection". Solaris have decided to offer two of the series as shareware.The shareware version features Christopher Columbus and Marco Polo.Registered users get another six explorers.

The program was designed for children aged 10 to 14 who are learning about history in school.

Exploring Chemistry

Author: David W. Ostler
Registration: $29.95
Performance: 7/10
Ease of Use: 7/10

This disk features two programs designed to aid secondary school chemistry students.

The first is Elements which presents the periodic table on the screen giving information about Atomic Numbers and Atomic Weights along with the standard symbol for each element.

The Periodic Table appears to be fairly up to date and it features elements that have not even been named yet. It can also be printed out.

The information and periodic table can be presented on any type of monitor screen and graphics card but, as with most programs, is clearer and better-presented on EGA or VGA.

The second is Molecule which is an an interesting introduction to molecular structure, illustrating the subject graphically.

Exploring Maths (one disk)

Authors: Various
Registration: Various
Performance: 8/10
Ease of Use: 8/10

This suite of programs, an upgraded version of a popular title, is ideally suited as a tutorial and revision aid for secondary school maths students. By using a PC-presentation they make the subject easier to understand and absorb.

Topics covered are Algebra, Fractions, Areas and Volumes.

Problem solving exercises are presented by the program and these may be amended by the parent or teacher. Answers are checked for accuracy and scored.

SCIENCES

Cell Biology (one disk)

Author: Leonard Ginsberg
Registration: $20
Performance: 8/10
Ease of Use: 8/10
Requires EGA or VGA card and a mouse.

The subject of Cell Biology, particularly DNA synthesis, lends itself well to being taught on a computer as a picture displayed at the right time can explain a point far more readily than dry text.

This program is intended to help students assess their level of knowledge and review the basic concepts in the subject area. It is not intended to replace lectures or the reading of the text.

The program was designed to allow students to move through this difficult material at their own pace.

Cell Biology uses a PC tutorial System called U-Tutor and this has been applied to a number of other tutorials.

The system makes learning more interesting by combining text and graphics plus a series of question and answer routines to get you on to the next topic.

The author is a college lecturer and so is well acquainted with the needs of students. The complete Cell biology Program is available to registered users (four tutorials in all).

MATHS

X-Y See EGA (one disk)
X-Y See VGA (one disk)

Author: Insight Advantage
Registration: $20
Performance: 9/10
Ease of Use: 7/10
Requires EGA, VGA respectively

A picture speaks a thousand words, as they say, and the subject of maths is no exception. Utilising a modern PC's high resolution graphics, the XYSee program supplements secondary school and college level studies in Algebra, Geometry, and Trigonometry.

XYSee is an interactive, computer-aided-instructional program which illustrates and calculates formulae and expressions using high resolution colour graphic displays. XYSee covers points, lines, conic sections, trigonometry, parametrics, composites, and artistic mathematics.

XY See's game module challenges the student to solve puzzles with complexities. The goal is to duplicate the form, position, and orientation of functions by selecting proper variable values

Special help is available for identifying boundaries and zeroing in on solutions. A performance reporting module continuously tracks solution attempts and the difficulty level attained.

FILE AND DISK MANAGEMENT

DOS Toolbox (two disks)

Author: Computer Tyme
Performance: 7/10
Ease of Use: 7/10

The Computer Tyme DOS ToolBox contains powerful and simple to use utilities. Some of the programs are written for beginners, others for intermediate and advanced users. The Computer Tyme DOS ToolBox programs come with help screens and on-line documentation which give quick proficiency with each program. The toolbox was originally written in 1985 to provide the same functions for MS-DOS as a program called Sweep did for CP/M. The main function of this program is to be able to select files from a list of files, then either copy them, move them, or delete them. Thus the design of this program is such to make these functions as easy as possible.

The files are displayed in a vertical list. The up and down arrows, page up, page down, home and end keys move you through the list. The 'G' (GOTO) command is provided to help you get to a desired place in the list quickly. Files are selected (marked)using the right arrow key, and unselected (unmarked) using the left arrow key. All files can be marked using Ctrl-Right Arrow and unmarked using the Ctrl-Left Arrow. A wild card mark is provided to mark all files that match a particular mask. When files are marked they are simultaneously highlighted for action.

For anyone with a lot of 'housekeeping' to do on the mass of anonymous files which have accrued on hard and floppy disks (and who hasn't?) this is a very useful tool which let's you get things sorted out efficiently.

Skull (two disks)

Author: Dr. Steven A. Reid
No registration fee
Performance: 7/10
Ease Of Use: 8/10
Requires EGA



Another novel program which may only have a small commercial potential but at PD prices is well worth having a look at.

Skull basically consists of a series of digitised images of the human skull taken in cross-section. The images are covered with invisible boxes that you can activate to learn more about skull anatomy. Users can select the point they wish to view and the corresponding section is displayed.

Skull is developed on a hypertext system called HyperBase, and it offers an excellent example of a hypertext system in practical use particularly as it cleverly combines graphics and text.

The package supports a mouse, although one is not required. You can scroll through the buttons on an image by pressing the right mouse button or the space bar. You activate a button by pressing the return key. You can see all of the labelled buttons on the image by pressing the F2 key.

The author states that if this package is successful, he will develop simulated patients, with access to x-rays, lab data, physical exam findings, etc. in the future.

Maxiform (one disk)

Author: Herne Data Systems Ltd
Registration: $10
Performance: 9/10
Ease of Use: 9/10

Are you tired of running out of space on your floppy disks? How would you like to fit

420k on a 360k disk, 800k on a 720k disk,1.4 meg on a 1.2 meg disk, or an incredible 1.6 meg on a 1.44 meg disk?

Sound impossible? Well not any more. If you are using DOS version 3.2x or later, then this innovative new shareware program from Herne Data Systems is just the thing for you. Using Maxi Form for all your floppy disk data storage needs is like getting an extra one and a half disks free with every box of floppies that you buy.

In most cases, no special software driver programs are required to access these disks from DOS. However, in cases where reliable standalone operation cannot be achieved (it is a complex function of ROM BIOS details, DOS version and disk controller characteristics), the simple device driver SMAX.COM can be used to patch the BIOS code and provide resident support.

To use Maxi Form you will need a 100% IBM compatible computer (PC, XT, AT, PS/2, Convertible, etc) with at least one 360K 5.25", 1.2 meg 5.25 ", 720K 3.5" or 1.44 meg 3.5 " floppy drive. The 1.44 meg drive can be used to format 800K 3.5" disks; and the 1.2 meg drive can also be used to format 420K disks or 800K 5.25" disks. Note that with many BIOSes, you will need to use the TSR driver program SMAX.COM supplied with Maxi Form to read and write MAXI-style disks (especially 800K, 5.25" disks).

Integrity Master
(two disks)
Author: Wolfgang Stiller
Registration: $35
Performance: 8/10
Ease Of Use: 8/10

Integrity Master combines several useful disk management and file recovery functions with powerful virus detection and elimination. It claims to recognize known viruses by name and will describe their characteristics and then guide you through their removal.

It can detect not only existing viruses, but will detect as yet unknown viruses. This means that, unlike other programs, which you must constantly update to keep ahead of the current crop of viruses,Integrity Master needs no updating.

Integrity Master will detect any form of file or program corruption, not just that caused by viruses. This makes Integrity Master a useful tool to provide PC security, change management and hardware error detection. Why spend your time merely checking for viruses when you give your PC a complete check out with Integrity Master?

Integrity Master can reload system sectors on disks which are so badly damaged that DOS can no longer recognize them. It is useful as an aid to PC security. If someone changes, adds or deletes any of your files you will know. You can run your normal test programs to check if your disk drive is working OK It will even detect if a disk error damaged some data yesterday.

Flexibak Plus
(one disk)
Author: Adrian Mardlin
Registration: £29.95
Performance: 8/10
Ease of Use: 8/10

Flexibak Plus is a flexible, easy to use hard disk back-up system that takes a logical, simple and unique approach to the back-up problem.

With a conventional back-up system, you are required to take a full back-up approximately once a week and do daily incremental back-ups which are placed on separate disks. Should you need to restore from the back-up, you must first restore the full back-up and then each of the incremental back-ups up to the last back-up taken.

With Flexibak Plus Plus, all this is different as the concept of full back-ups and incremental back-ups is removed. Instead, you only need to take a full back-up once and then all subsequent back-ups are placed on the same back-up disks, giving some long term speed increases, simpler file restoration and an improved back-up management capability.

USING THE COMPUTER

Getting Started on Computers
(One disk)
Author: Amir Pirouzan
Registration: $15
Performance: 9/10
Ease of Use: 9/10

There are quite a few programs on the market which are intended to teach the computer. Many of them suffer from over-complication and do not allow sufficient 'space' for the totally new user to get to grips with the subject matter. Often they do not deal with the basic practical necessities of getting started.

Now, the author of Professor 3T has come up with a really practical first-step tutorial for PC users which does not make any presumptions about the user's existing knowledge, nor does it drone on and on about DOS commands.

The Professor 3T First Tutor teaches novices from scratch and covers practical topics starting with How To Switch On The Machine! Subjects covered include Sources of Misunderstanding, Computers Simplified, Hardware, Memory, Software, Human and Computer Languages, Programming Languages, Number Crunching, Program Organisation. It tests and scores and even issues a printed certificate.

If you need it First Tutor offers a wealth of knowledge and a comprehensive computer literacy course. Recommended to anyone who wants to know more about the PC without wanting to be baffled by techo-speak.

PC-Tutor
(one disk)
Author: Computer Knowledge
Registration: $15
Performance: 9/10
Ease of Use: 8/10

The majority of PC users have little or no knowledge of the way in which the computer and user interact, ie, the operating system. It is true to say some knowledge certainly is needed even to undertake a few simple tasks, such as finding out what is on a disk, deleting files, copying files, taking back ups and formatting blank disks.

Most PC manuals are virtually incomprehensible to the newcomer. Reading them can often make matters worse. What better way to learn how to use your computer than on the computer itself?

The author of PC-Tutor has gone to great lengths to ensure that his program helps, not hinders, and he does not assume any previous knowledge. The course is interactive, presenting the user with information, then asking for a response on the keyboard.

The program covers computer history, introduction to DOS,-computer terminology, sub-directories, hardware, batch files, the keyboard and an introduction to programming.

Material is presented in a series of screens and the user has the ability to move forward or backward through the tutorials, or jump to selected locations using a menu. Short quizzes test you on your knowledge but you may bypass these when reviewing

Fasttype
(one disk)
Author: Trentech
Registration: $20
Performance: 8/10
Ease of Use: 8/10

Fastype is a typing instruction program specifically designed for PC styled keyboards. These quick-start instructions will get you going right away. You must have a Colour/Graphics Adapter Card-(CGA) or equivalent (EGA), (NOT Hercules)

For Drills: Place the fingers of each hand on the home keys (ASDF JKL:) and type each letter as you are prompted for it. The selection of letters to type is random: the number of characters you successfully type is displayed before you start. When the drill is finished your WPM and other data will be displayed in the text panel. For Lessons: type each character pointed to by the cursor and when you reach the symbol, press the enter key (Ÿ) (for carriage-return). When you finish the lesson your WPM and other data will be displayed in the text panel.

There are 5 drill, lesson, and feature selection menus and two sub-menus for selecting additional keys to learn. The primary menus can be displayed by pressing function keys F1 to F5 anytime while the screen keyboard is displayed. And, while any selection menu is displayed you can go to another menu either by selecting it from Menu #1 or by first holding down the ALT key and pressing F1, F2, F3, F4, or F5. All menus have the Help Facility available

DOS Summary
(one disk)
Author: Computer Tyme
Registration: Freeware
Performance: 7/10
Ease of Use: 8/10

A good companion to the PC-Tutor and from the same author. There is no registration fee – the program is yours for the price of the shareware copy.

For anyone who is likely to use more than one or two DOS commands this program is invaluable.

When starting DOS Summary you have the option of accessing either an alphabetical menu of DOS commands or a menu where commands are grouped by function.

A second way of accessing a command is by starting the program with a command name as a parameter. DOS Summary will find the closest match to the command you entered - so exact spelling is not necessary. Only DOS commands are in this version; batch commands and CONFIG.SYS commands are not. Support is given up through DOS version 4.01.

LANGUAGES

Animal Farm
(two disks)
Author: Steve Herbert
Registration: $15
Performance: 8/10
Ease of Use: 9/10

Animal Farm is one of George Orwell's most famous books, and possibly the most widely read. Because of the simple style in which it is written, it may be read by children as an entertaining story as well as by adults searching for a deeper meaning.

The program consists of a series of activities to assist high school students learning Orwell's novel 'Animal Farm'. The student can select the activity of his choice from a series of menus.

Activities include several quizzes or games, notes on a wide variety of topics, graphics of the Farm and even a competition with the chance to win worthwhile prizes.

The games are designed to be fun and at the same time to provide a fairly painless way to memorise quotations, learn important passages, and in general, to become familiar with the plot, characters and themes of the novel.

French Tutor and other Languages
(one disk each)
Author: Andrew Bartorillo
Registration: $10
Performance: 6/10
Ease of Use:8/10

The programs on this set of disks comprise a series of Language Tutors for learning French, Spanish, German, Italian and Hebrew.

Each disk is self-contained and offers a complete tutorial on one language. The following text refers to all the tutorials.

Language Teacher is a series of menu-driven language tutorial programs. Each program in the series contains hundreds of word combinations and verb conjugation forms. A printer can be used to take advantage of its versatility.

Also included is the capability to select language-to-English or English-to-language combinations, choose multiple choice answers,be tested again on missed answers, print a multiple choice test, and run a full quiz diagnostic routine with line printer output.

Of particular interest to non-English students is the capability to select the direction of the combinations.

All word, phrase, and verb conjugation selections are done randomly by the program, the user being unable to predict what the next selection will be. The program package is not designed to teach conversational language or pronunciation but, instead, to provide practice drills in order to increase your working vocabulary and to enhance your use of the conjugation forms.

The extent of the vocabulary of each program is around 800 word combinations and about 1800 verb conjugations. More than enough to keep the most ambitious language student occupied!

MENU SYSTEMS

Menu Direct Gold
(two disks)
Author: Applied Micro Systems Technology
Registration: $39.95
Performance: 9/10
Ease Of Use: 8/10

Menu Direct Gold is the new name for the Point & Shoot Hard Disk Manager originally released as a commercial package. It was nominated for one of BYTE's best product awards at Spring COMDEX 1991.

For anyone with a hard disk full of assorted programs and files located in a variety of sub-directories it makes excellent sense.

Menu Direct Gold is essentially a file/directory/program manager but offers a wide range of associated features that make it very powerful.Yet the author has ensured that all functions are easy to use and clearly explained.

The program offers unlimited user menu entries with single keystroke execution of programs. Split screen file list and directory tree.

The normal Copy, delete, edit, find, print, and view single or tagged files, Delete, make, rename, hide, and print directories are offered plus the very useful Undelete files and directories.

Instant DOS access, user-defined program colours, floppy disk formatting, and mouse support are all provided. Menu Direct Gold features Pull-down menus, hypertext help system, password protection, usage logging and a host of other features make this an excellent DOS Shell.

Power Menu
(one disk)
Publisher: Shareware Publishing
Registration: £49.95
Performance: 9/10
Ease of Use: 8/10

One of the biggest frustrations for a new user of a PC is the unfriendly operating system which comes with it (unless of course you are fortunate enough to have a high performance computer and Windows)

A newly unwrapped computer with a hard disk drive will probably just present you with the C> prompt when you switch it on. You then have to know about sub-director tree structures, DOS commands and the appropriate name to type in to get any programs running.

To overcome this problem several authors have written new 'front-ends' to MS-DOS which improve the interface between you and your programs.

These are usually in the form of an on-screen menu system which lists the options and programs available, tells you which keys do what.

Power Menu is one of the best examples of the genre. It is easy to install and menus are completely user-configurable. You just type in the title you require, the name of the program and where it can be located. Plenty of on-screen context sensitive help is provided and there are several useful additional utilities if you want them.

Disktree
(one disk)
Author: Richard Smith
Registration: $20
Performance: 9/10
Ease of Use:8/10

Making order out of the chaos of thousands of files contained on even the smallest of hard-disk drives is both important and incredibly tedious.

Without control and order, files get lost, space gets wasted and productivity drops as users spend more and more time just keeping track of what files are where.

Of course, in a perfect world, users would save their data according to a sensible and logical standard of what files should go where. Unfortunately, no one does this with any real conviction and when things get confused, there is no quick way of sorting the mess out.

DiskTree is an attempt at creating an affordable, powerful and above all, easy-to-use disk management tool. It offers full Microsoft mouse support, extended screen resolutions, i.e. 43 and50 line modes, up to 26 drives in memory at once and between10,000 and 13,000 files and directories held in memory.

Should be quite capable of keeping your files in order!

FIRST STEPS

Sarah and Katie's First Disk

Author: Meg Noah
Registration: $15
Performance: 8/10
Ease of Use: 9/10
Requires a colour monitor (VGA, EGA, or CGA)

There are many software packages for children ages three or four, but SarahWare is specifically aimed at infants and toddlers. It is not intended as educational but more as a stimulation by allowing them to interactively select colours and designs which fill the screen in an animated way.

Infants quickly become fascinated by the quickly changing bright pictures. Those as young as three months old will learn to press the keys to change the design. By five months, two fisted banging begins but can be controlled by parents encouragement. By nine months the baby will have learned that certain function keys play music and have favourite letter keys.

Katie's Clock is designed to help youngsters tell the time. It operates in five time modes: normal, random, sequential, input, and digital. All times are clearly displayed on a colourful, easy to read clock face.

Options are to type in the displayed time or, conversely, set the hands of the clock to match the time stated. Good use is made of the graphics display and colours to stimulate interest.

Animated Alphabet
(four disks)
Author: Tom Guthrey
Registration: $8
Performance: 8/10
Ease of Use: 9/10
Requires EGA/VGA and Hard Disk.

The authors have decided to make full use of graphic animation techniques to teach youngsters their alphabet. The correct answer is rewarded with a variety of clever little animated sequences.

Each letter of the alphabet is displayed on the screen and, when the child presses the corresponding key a picture of an everyday object is displayed whose name begins with the letter selected.

Each picture then undergoes a clever animated sequence lasting for about 15 to 30 seconds eg A for Acorn shows a falling acorn which then grows into an oak tree which then sheds an acorn which falls and grows into a tree and so on ...

The registration copy is personalised with you child's own name which is used during the program's operation. It also includes an extra program called ABC Song.

EARLY LEARNING

Wunderbook
(one disk)
Author: Hung Fam Li
Registration: $10
Performance: 8/10
Ease Of Use: 9/10

There is something for all youngsters in this selection for 3-10 year olds. Each game is fun but contains a strong educational element too.Each of the five topics uses simple symbol-type menus which are selected from the keyboard or using a mouse.

Whilst the disc contains six basic topics, additional ones can be added at a later date as the child progresses.

The topics covered are objects, numbers, alphabets, words, shapes and language of different cultures. the latter may also be of interest to adults.

Each program is designed to stimulate children's memory, perception pattern recognition and language manipulation whilst also encouraging the child to explore and play.

Parents can also track their child's progress using scoring tables built into the program.

Monkey Business
(one disk)
Author: Jenny Oldfield
Registration: £20
Performance: 8/10
Ease Of Use: 8/10
Requires Hercules or EGA and Mouse: CGA version available

This is a story about the escapades of the Terrible Twins written for 7-10 year olds. What makes it different from all the rest is that the storyline can be altered at various points to generate a different outcome. As the story unfolds, several exciting, crazy options take Marvyn and Marlene through an exhausting day at Tigerland Park. The story can be extended, contracted or diverted by simple mouse control, no typing to do!.

The Terrible Twins adventures are based on the sound, modern educational concept of the "real book" reading method with carefully researched vocabulary and interest levels. Their humour and lively illustrations and fast action will make them a firm favourite.

Monkey Business is illustrated with attractive line drawings designed to hold the child's interest. Whilst having a strong educational value the program forces down the barrier between Computer Studies and reading skills.

Jenny Oldfield is a successful writer of children's stories in both the educational and commercial fields, with more than a dozen books to her credit. This is her first successful venture into computer learning programs.

CHILDREN'S GAMES

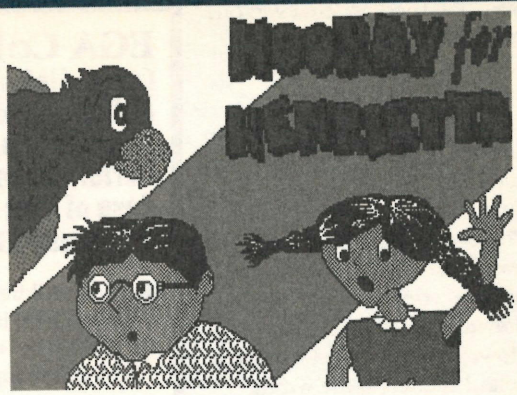
Pallanda
(one disk)
Author: ShareGames
Registration: $15
Performance: 7/10
Ease of Use:8/10
Requires EGA or VGA. Mouse recommended.

This is a fun game for youngsters age between five and 10 but it offers enough strategy and luck to make it challenging for Mum and Dad too.

Prince Pallanda can be included as one of the four players. The name, Pallanda, comes

Hoorah For Henrietta

Author: Scetlander
Registration: £24.95
Performance: 9/10
Ease of Use: 9/10



Henrietta and Hopeless Henry are getting married in the morning.But all is not well. That mischievous bird, John the Parrot, appears at the last moment and is determined to create havoc. He steals the groom's wedding clothes and kidnaps the groom himself.If Henry isn't rescued in time, John will cover him in cold custard! You must help Henrietta collect Henry's coat, hat, boots and trousers, otherwise the wedding will be cancelled! Can you get Henry to the church on time?

Hoorah For Henrietta links mathematical exercises to an absorbing storyline featuring Henrietta, Hopeless Henry and John the Parrot. An endless supply of randomly generated problems at all levels guarantees boredom-free practice. It improves everyone's mathematical ability and makes the process stimulating and entertaining. It also provides practice in addition, subtraction, multiplication and division over a wide range of ability levels.

A major feature of the program is the extensive Parent/Teacher's Control Section which enables easy adjustment to suit every user.We strongly advise careful study of this section to ensure a comfortable starting point for each student.

The registered version incorporates eight levels of difficulty -only one is available on the shareware version

from 'Pal Land' where everyone plays happily together and King Pallanda makes sure everyone plays fair.

The object of the game is to land on the gold circle in the centre by moving to the closest colour shown on the spinner. There are hidden surprises everywhere along the way with pictures you can watch being drawn. It sounds simple. However, the nearest matching colour is often in the wrong direction!

Pallanda is designed so even youngsters that aren't reading yet can learn to play well. Finding the closest colour enhances counting skills. Learning the easy way.

TUTORIALS

C and Turbo C Tutor
(two disks)
Author: Coronado Enterprises
Registration: $39.95
Performance: 7/10
Ease of Use: 8/10

Many owners of the PC like to try their hand at programming at some stage but are often put off by the price of commercial programs. Of course it's always the case that you don't know whether you're going to like it until you try it.

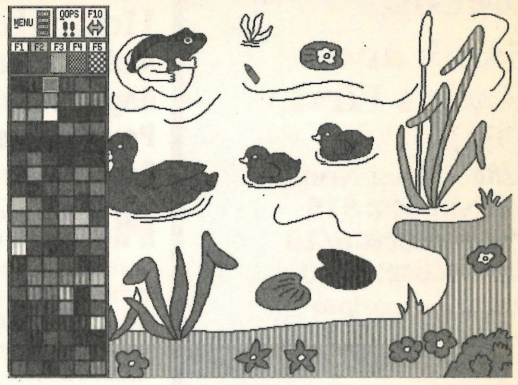
Fortunately there are plenty of compilers and tutorials in the shareware marketplace so for a few pounds you can try your hand at programming or just find out more with one of the many tutorials available.

One of the most popular high level languages is C. Whilst not the easiest to understand initially due to its fairly brief syntax, it produces fast, executable programs and is very versatile.

A good introduction to C and the more powerful C++ can be found in this tutorial package. It comprises two disks, the first is full of text files containing the tutorial which takes you from beginner through to intermediate level. The second disk contains a collection of source code examples to study and compile.

The author recommends the use of Turbo C, Power C or Microsoft C, if you want to try the examples out.

EGA Colouring Book
(two disks)
Author Kinderware
Registration: $20.00
Performance: 8/10
Ease of Use: 9/10
Requires EGA or VGA



Most children enjoy colouring in pictures and here is the clean, modern way for them to do it – on the computer.

EGA Colouring Book lets them use more than 500 colours and patterns to colour full screen pictures. Children, age three and up, will enjoy bringing the pictures to life with colour.

ECB teaches eye-hand co-ordination and encourages artistic expression. It is very easy to use and does not require the child to be able to read – most of the common commands have picture icons which can be easily identified. So, it is one of the few programs that three-year-old children can actually use alone.

It is a great program to use to introduce the computer to children. They will have so much fun, they won't even realise that they are learning basic computer skills.

ECB can be controlled by either a MicroSoft compatible Mouse or the keyboard and offers disk save and load functions and the ability to print out the drawings on a suitable printer.

DRAWING AND PAINTING

Graphics Workshop
(two disks)
Author Alchemy Mindworks
Registration: $40.00
Performance: 9/10
Ease of Use: 8/10

Graphic Workshop is a program for working with computer bitmapped graphic files. It will handle most of the popular formats. It offers a simple, menu driven environment which will let you perform the following operations on your graphics files:

View them.

Convert between any two formats (with a few restrictions).

Print them to any LaserJet Plus compatible or PostScript laser and many dot matrix printers. Graphic Workshop can print colour pictures to colour PostScript and inkjet printers.

Dither the colour ones to black and white.

Reverse them.

Rotate and flip them.

Scale them.

Reduce the number of colours in them and do colour dithering.

Sharpen, soften and otherwise wreak special effects on them.

Graphics Workshop operates on any of the following formats:- Macpaint, GEM/IMG, PC Paintbrush PCX, CompuServe GIF, TIFF, WordPerfect Graphics WPG, Deluxe Paint/Amiga IFF/LBM, PC Paint Pictor PIC, Truevision Targa, Windows 3 BMP, Microsoft Paint MSP, Encapsulated PostScript EPS, Self-displaying EXE pictures, Text files Using Graphic Workshop, you can have your image files in the formats that your software recognises, all without keeping track of numerous utilities.

In addition, using the half-toning and dithering facilities of Graphic Workshop, you can convert full colour digitised photographs for use as superb black and white clip art, suitable for inclusion in your documents.

Graphic Workshop will handle image files of any size. It will use extended or expanded memory if you have some, and disk space if you don't. It has a fast and easily understood user interface.

Once installed, you'll wonder how you ever managed without it.

PC Draft II
(two disks)
Author: Natural Software
Registration: $50
Performance: 9/10
Ease of Use 7/10

PC-Draft II is a high resolution pixel oriented drawing and graphing utility, which is designed to facilitate a variety of drawing and drafting requirements. You can produce drawings up to 1280 by 700 dots using the colourgraphic adaptor high resolution graphics mode (640 x 200 dots per screen). Such a drawing will more than fill an 8-1/2 x 11 inch printed output (at 150 dots per inch resolution).

Built-in functions allow you to draw circles, lines, boxes, arcs and curves; draw bar, line and pie graphs; create patterns with which to fill areas; cut and paste objects and save objects to files for later use.

PC-Draft is both menu driven and command driven – all drawing commands may be selected from the menus or may be entered by a single keystroke command such as [C] to draw a circle or [L] for line.

You can zoom in to precisely edit one pixel at a time, record graphic keyboard macros saved in files for later playback and for animation effects and load and edit fonts.

Drawings may be printed on a wide range of printers including those compatible with IBM and Epson Dot matrix, HP Laserjet+, and HP DeskJet printers. PC Draft II offers many more exciting features such as screen capture in all graphics modes, its own programming language called PIX.

Highly recommended, professional standard throughout – great value.

Desktop Paint II
(two disks)
Author:
Compass Systems
Registration: £20
Performance: 9/10
Ease of Use: 9/10
Requires: Hercules or EGA/VGA graphics

The use of pictures can make a big difference to the appearance and readability of a publication. Most Desk Top Publishing programs have the feature for importing pictures but not for actually creating and editing them in the first place.

There is a wealth of what are known as 'Clip-Art' images available in the public domain but many of these need to be altered or enhanced to suit individual requirements. This is where Desktop Paint steps in. You can use it to create a drawing from scratch or load in a suitable clip-art picture and edit it.

It offers all the standard drawing features plus a selection of graphics tools. Formats supported include IMG, TIF, PCX, MAC and WPG. A mouse is required.

Desktop Paint is an excellent drawing program. It is designed more for professional quality Desk Top Publishing applications rather than just as a children's doodler, hence it is not in colour.

SPORTS SIMULATIONS

Cunning Football
(one disk)
Author: Cass Cunningham
Registration: $18
Performance: 8/10
Ease Of Use: 8/10
Requires EGA/VGA

Cunning Football is probably the best interactive football game available, including any commercial games. It is a fun and exciting game oriented toward those of us football fans who have a relatively good understanding of the game of football, and enjoy it.

It tests both skill and strategy, requiring a user to guide players as well as call plays. The program requires an IBM compatible computer with an EGA or VGA adapter. Cunning Football allows the user to select either the keypad, a mouse, or a joystick as the controlling input device.

Cunning Football simulates a real football game as closely as possible. It includes interceptions, penalties, and other subtleties found in football. However, it was also designed to be easy to use, so some realism was sacrificed for the sake of user friendliness.

After registering your copy of Cunning Football, you will receive an extended user's manual along with an expanded playbook. The manual has detailed explanations of all of the plays.

Sticky Wicket
(one disk)
Author: Mark Carter
Registration: £10
Performance: 8/10
Ease of Use: 8/10
Requires EGA or VGA

Sticky Wicket claims to be the ultimate cricket game for the PC. It combines the art of captaincy with week to week action of playing.

Your objective is to win the league and 'Sticky' cup. Your predecessor has left, despondent with the teams poor run of recent results. By selecting the team, choosing field placings, who bowls the crucial overs, where everyone bats and even when a player must run you aim to return the team to its former glory. Your success at doing so will be compared to the greats e.g W.G Grace , M.Brearly in the hall of fame. Hence the term 'Sticky Wicket' hence the situation you face where winning is the difference between glory and failure! The shareware version is limited to 1 LEAGUE season only.

Features include: database of 128 players, 8 teams each with career figures (updated seasonally) / Ability / Form / Fitness ratings; seasonal and career averages; a season of 40-over Sunday League matches including league table, fixture list and full results service every week; edited highlights of the game including all the action shots, L.B.W and other dismissals; umpire decisions in response to appeals; team selection; five different field settings and your personal career page.

Seabattle UK
(one disk)
Author: S. Rooney
Registration: N/A
Performance: 8/10
Ease of Use: 8/10

In the period between the early 1900s and just after the Second World War, the battleship was considered to be the capital ship of the world's navies. Starting with the British Dreadnought and culminating in the United States Iowa class of battleships, which were in action in the Gulf albeit using weapons not heard or dreamed of initially.

Seabattle is an historically accurate simulation based on these famous warships. The objective is for the player of either side to achieve the minimum conditions for victory. Victory is not simply determined by the number and type of ships sunk on both sides. There are four different types of objective a player may be set: 1) Destroy Enemy Naval Forces 2) Move Ships To Objective 3) Deny Enemy Its Objectives 4) Perform Raiding.

Seabattle requires either CGA or EGA/VGA. In its registered form it enables a player to take on the computer or another player whilst in command of up to 20 ships and more than 50 squadrons of aircraft (both carrier and land based)

SKILL AND STRATEGY

Space Shades
(one disk)
Author: Rich Frank
Registration: $15
Performance: 8/10
Ease of use: 7/10

Space Shades places you in the cockpit of a space cruiser. You control your ship, a space station, and a spy remote while exploring planets in preparation for your encounter with a hostile enemy. Space Shades is designed to provide the feel of a flight simulator, while presenting bit-mapped images of the objects you see when operated in graphics mode. During play, you look directly out a window into 3D Space. Provided with a navigation computer, you have complete freedom to fly wherever you want. You can loop around your station, fly into the Sun, or crank up your ships speed to .9 SOL. Your mission will be to seek out your enemy and destroy him before he takes over the galaxy. That is his mission also.

Start with one allied planet and a space station before guiding your ship off into uncharted territory. You can expand the number of your planets by fighting for their alliance. Go ahead and enjoy yourself: Collect the spoils of easily earned victory over defending planetary Hornets. It won't be so easy to destroy your main opponent, Tin Head.

Once you locate your enemy, Space Shades practically becomes a different game. Your ship and the enemy ship have nearly the same capability so it should be an even match. He's fast, but probably a Tin Headed robot. With a little style, a lot of nerve, and a some items picked up at a few of your planets, you can send him home.

ARCADE GAMES

Pharaoh's Tomb
(one disk)
Author: Apogee
Registration: £29.95
Performance: 8/10
Ease of Use: 9/10

Pharaoh's Tomb is an arcade game set in a huge Egyptian pyramid. You will need to explore and survive 20 uniquely dangerous levels (screens) riddled with ingenious puzzles and traps.

This game uses a special animation system called FAST (Fluid Animation Software Technology) which allows for flicker free movement even on the older IBM PCs. You start with five lives and a few spears, which can be thrown at offending denizens that guard the pyramid. Moving walls, falling spikes, bats, mummys, and magic winds are just some of the hazards to overcome.

On each level you will need to collect one or more keys to advance to the next level. And hidden on the final level will be the prize of your journey. Notable features: No two levels will have the same animated creature patrolling it, which adds greatly to the variety of the game. Sound effects are also used, but can be toggled off. The keyboard control can be

configured to two alternate sets of keys. A five player permanent high core table keeps tracks of the all-time best explorers. Plus, you can save the game on any level and restore at any time.

This is the first of four volumes of Pharaoh's Tomb, subtitled Raiders of the Lost Tomb. The other three volumes are: Pharaoh's Curse, Temple of Terror, and Nevada's Revenge!. The volumes should be played in sequence, since they continue the story to the final encounter. Volumes II to IV are available to registered users.

Monuments of Mars
(one disk)
Author: Apogee
Registration: £29.95
Performance 8/10
Ease Of Use 8/10
Requires CGA, EGA or VGA

In the game, NASA has sent several manned missions to explore the mysterious monuments but every one has ended in disaster. Soon after the astronauts landed on Mars NASA lost contact with them and no one knows why.

You're the last hope. You have been chosen for a special mission to rescue the missing astronauts and to discover the secrets of the Martian monuments. The game begins just after your ship lands on Mars near the site of one of the many monuments.

This is an arcade/adventure game set in the near future in which you explore a secret underground city on Mars. In the first volume (First Contact) you need to survive 20 unique and challenging levels/screens filled with puzzles, traps, creatures and useful artefacts.

This game features great graphics and sound effects, plus a compelling and fascinating story. Features include save/restore, high score chart, sound on/off and keyboard configuration. This is the first game to give you unlimited lives! You never see a "Game Over" message in The Monuments of Mars!: you just restart the level whenever you die so you can focus on solving each level without the hassles of constantly saving and restoring your game.

Jumpjet
(one disk)
Author: Montsoft
Registration: $15
Performance: 7/10
Ease Of Use: 9/10
Runs on all screens

A popular mid-80s program called 'Striker' has been a part of many shareware libraries – it's main drawback being the use of the old-fashioned – 'IBM' CGA colours (blue, purple and white) and rather crude animation.

Jumpjet is a welcome improvement which retains the original compulsive gameplay but introduces modern smooth and colourful graphics.

To achieve authentic arcade speeds, the author has used a combination of Assembly Language and C in his programming. Even though there maybe 50 to 100 objects animating on the screen at one time, the game will have no problem processing the information quickly.

Running Jumpjet on a 386 33MHz machine will appear to run at the same speed as a 6MHz 286 machine. There are approximately 18 frames per second. You will notice, however, a reduction in speed on slower machines.

The first screen you will see is the main menu. This is where you can select from playing the game, introduction, saving the score, reviewing the score, registration and exiting the game. To select an item, use the up and down ARROW keys and press ENTER or press the capitalized letter of the desired item.

You can control your jet by pressing the ARROW keys in the cor-responding direction you want the jet to go. By pressing the same direction again, the jet will accelerate in that direction.

Moraff's Superblast
(one disk)
Author: Moraffware
Registration: £35 for complete set of games
Performance: 8/10
Ease of Use:9/10

There have been many games based on the original Breakout theme where your task is to bounce a ball at a wall using a simple paddle, chipping away at the bricks until you get to the other side – but none of them is in the same class as Moraff's Superblast.

This one has so many new features that it brings a whole new life to the theme. The action is fast but not so fast that the game is unplayable (and it can be adjusted) but interest is sustained by the fact that each time a screen is completed a totally new and very different one comes up.

The variety of objects is also quite wide, some break up, some explode into a myriad of more balls, some bounce off, some make your paddle bigger, others make it smaller, others are one-way only.

The program has been cleverly designed to work on all types of monitors and adjusts the resolution and graphics accordingly. This is the sort of game you shouldn't start late at night or you'll be going to bed in the small hours!

HI RESOLUTION GAMES

Commander Keen II
(Two disks)
Author: Apogee
Registration: £29.95
Performance: 10/10
Ease of Use: 9/10

This is the second Commander Keen trilogy and is sub-titled "Goodbye Galaxy" and it compares very favourably with most commercial games.
Although Commander Keen I was fun to play, this follow-up is a major improvement in terms of stretching the graphics to the peak of performance, offering slick, smooth scrolling and featuring excellent, compulsive game play.
In this all new adventure starring kid genius Billy Blaze, a new alien invasion threatens to wipe out our very galaxy, the Milky Way!
Amazing new features include: 3-D perspective, Star Wars-style text scrolling, sloped surfaces, multiple sound card support with brilliant music and digitised sound effects, and out-of-this-world graphics.
Three versions are available: 256-colour VGA, 16-colour EGA, and 4-colour CGA. and have to be specified when ordering

TEXT ADVENTURE GAMES

Aliens Laughed At My Cardigan
Author: A M Boyle
Registration: £30 for an adventure tailor-made with you in the leading role.
Performance: 7/10
Ease of Use: 9/10

With a title like that, you've got to try the program! And, if you enjoy a challenge along with a laugh you won't be disappointed either.

Aliens Laughed At My Cardigan is produced by a young UK author who clearly has a rather off-beat sense of humour. His style is of the Hitchhikers Guide to the Galaxy and Infocom type.

The scenario opens with you relaxing on a garden swing after celebrating your birthday. As you while away the hours an alien spaceship descends on to your lawn and two weird beings walk out of the lower bay door.

They stare and point at you then, when you ask them what they want, one says to the other, 'Is that a totally bogus cardigan or what?' Within seconds it pulls out a ray-gun, points it at your cardigan and shoots. Your cardigan fades away to nothing. Your mother bought it for you last Christmas so you know you're now in deep trouble. So what do you do next? Combines a sense of absolute nonsense with classic adventure gameplay.

CARD GAMES

Global Battle
(one disk)
Author: Phil Munnelly
Registration:£6
Performance: 8/10
Ease of Use: 8/10

Global Warfare Simulator is, as its name suggests, about a world at war. The game is played by up to ten players, any number of which can be a human players. All others are controlled by the computer. If no human players are set up then the game will play as a simulation.

Each world is divided up into a number of continents which are themselves divided up into

regions. Each region is occupied by one or more armies of a single player. The ultimate object of all players is to take over the number of regions required to win the game.

After the initial option setup, the game begins by allocating the initial armies to each player. Each game turn involves each player being allocated additional armies depending on the number of regions held, with bonus amounts being given for controlling complete continents.

The player can opt to attack a region of another player during their turn, but in doing so loses the armies generated by the regions (but not the continents).

GRAPHICS ADVENTURES

Kingdom of Kroz II
(one disk)
Author: Apogee Software Productions
Registration: £9.95
Performance: 8/10
Ease of Use: 9/10

Kingdom of Kroz II uses high-speed 16-colour text-based graphics and therefore works on all machines. It features a tremendous sound effects library. This shareware game is the first in a series totalling seven different games. The author has adopted an unusual and effective method of registration. instead of asking for payment for this, the first game in the series, he asks satisfied users to pay for the subsequent games in the series.

You must navigate through dangerous chambers, solving puzzles and avoiding pitfalls. Collect gems, whips, chests, nuggets, tablets,keys and scrolls to aid your progress. This game is as much strategic as it is pure arcade fun.

Hugo II WhoDunnit?
(one disk)
Author: David P. Gray
Registration: $20.00
Performance: 9/10
Ease Of Use: 9/10
Requires EGA and Hard Disk

It's adventure time again as Hugo and Penelope get swept up in another superbly animated 3D EGA extravaganza! This time a murder mystery is afoot with a couple of fiendish twists and a large helping of humour along the way.

Just look what's in store; a revolving bookcase, a saucy French maid, and a murderer!! Hugo II, Whodunnit? follows the same look and feel of Hugo's House Of Horrors but with many more screens and characters.

If you enjoyed the original Hugo adventure, Hugo II is a real treat in store for you!

Use simple English to instruct Hugo to perform an action. For example "look around" or "look at door" to look at things. To pick something up try "pick up the gun" or "get gun" or "take gun" etc. Many synonyms are allowed but if Hugo doesn't seem to understand, try re-phrasing your command.

CLASSIC ADVENTURES

Cliff Diver
(one disk)
Author: Patrick Farley
Registration: $10
Performance: 8/10
Ease of Use: 8/10

This is the author's first attempt at computerised interactive fiction; an adventure novel entitled, Crime to the Ninth Power. In this game, you'll be introduced to a character named Cliff Diver; a private investigator living and working in San Francisco.

Knowing your way around would certainly be an advantage in playing the game. Cliff may talk about something down by the waterfront, and you may remember driving along the waterfront. But as to going there and trying to find the building Cliff mentioned, I don't think you'll have a lot of luck.

The game is quite challenging but is interspersed with Infocom-style humour which makes it entertaining too.

For those of you who get stuck easily and hate wasting hours poring over a problem, the author has very sensibly produced a companion "Hints" disk which is also available as shareware.

Go
(two disks)
Author: S B Peirson
Registration: £14.95
Performance: 8/10
Ease of Use:9/10

Go is believed to have originated in central Asia whence it spread eastwards. There are ancient records of Go in both Nepal and Tibet and from there the game reached China. Now it's available for your PC!

Go is a game of strategy for two players. It is played on a roughly square board marked out with a 19x19 grid of lines. One player has a supply of black 'stones' (like counters) and the other has a supply of white stones. The players take it in turns to place their stones, one at a time, on a point of the grid (i.e. on an intersection of two lines).

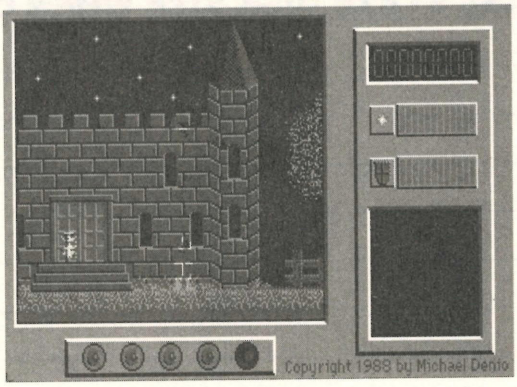
Once placed on the board the stones are not moved. The basic idea of the game is to use your stones to surround areas of the board which then become your territory. Another aim is to surround your opponent's stones which are then removed from the board and become your prisoners.

The end of the game is reached, by mutual agreement between the two players, when the board is covered by safe territories.

The winner is the player with the highest score, i.e. enclosed territory plus captured stones.

Don't worry if you are still not too clear what it's all about, there is a tutorial included with the program together with a number of example games.

Captain Comic
(one disk)
Author: Michael A. Denio
Performance: 9/10
Ease Of Use: 8/10
Requires EGA



You are Captain Comic, galactic hero. Your mission is to recover three treasures from the planet Omsoc, which have been stolen away and hidden somewhere on the remote planet of Tambi.

Your task will not be easy, you will need to gather tools to increase your fighting and defensive capability, navigate dangerous terrain,and avoid or destroy a hoard of deadly creatures. It will take all of the Captain's skill and wit to see the treasures returned to Omsoc.

The Captain Comic character displayed on the screen is controlled from the keyboard using the cursor control keys. The Space Bar makes him jump and, once he has collected his first can of BLASTOLA COLA the Insert key makes him fire.

When COMIC has possession of the DOOR KEY, this key is used to open doors. To open a door and pass through, position COMIC in front of the door and press Alt. The door will slide open and COMIC will disappear, finding himself elsewhere.

When COMIC has possession of the WAND, this key is used to teleport to another place on the screen. Press Caps Lock and COMIC disappears in a cloud of smoke, and re-appears in a new place on the screen. The teleportation is not random, and when used properly, can allow COMIC to reach places on the screen that are normally inaccessible.

COMIC starts the game with 5 lives, and no objects in his inventory.The game will end after COMIC retrieves all three treasures or when all spare lives are exhausted. The treasures include rare gems, a sack of rare coins and a jewelled crown.

THE ADVANTAGE TOP 50

1 (1). Classic Games
2 (2). Tutor Com
3 (19). Duke Nukem
4 (3). Print Partner
5 (6). Henrietta's Book Of Spells
6 (4). World Atlas
7 (15). Arcadia
8 (NE). Ford Simulator II
9 (11). Hoorah For Henrietta
10 (5). PC Key Draw
11 (NE). Commander Keen II
12 (8). French Tutor
13 (NE). Hugo's House Of Horrors
14 (38). Exploring Maths
15 (9). Galaxy Lite
16 (7). Amy's First Primer
17 (10). Printer Toolbox
18 (12). Exploring Words
19 (16). Educating Junior
20 (32). Mummy's Busy
21 (NE). Monuments Of Mars
22 (NE). Page Financial Controller
23 (27). Zephyr Database
24 (14). Andy's Word Games
25 (18). Fun With Maths
26 (21). Dark Ages
27 (22). PC File V
28 (NE). Signsmith
29 (NE). Brother's Keeper
30 (NE). The World About Us
31 (NE) Commander Keen I
32 (24). Essential Utilities
33 (13). Print Shop
34 (20). Dungeons And Dragons
35 (26). Crossword Solver
36 (17). Maths Tutor
37 (23). As-Easy-As
38 (39). PC Draft II
39 (44). Wacky Words
40 (31). Gene Genie
41 (33). Grand Prix
42 (45). Power Chess
43 (43). Desk Commando
44 (NE). Crossword Creator
45 (30). Fun And Games
46 (25). Nifty Numbers
47 (36). Fastype
48 (37). Keep Them Amused
49 (41). Soccer Star
50 (49). Power Menu

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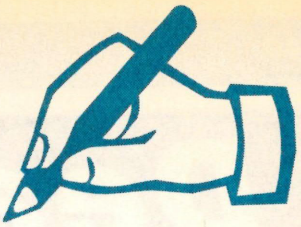
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GAMES FOR SALE : UMS II Silent Service II - £10 Supemacy - £8 Midwinter - £6 Waterloo - £3. Ring Peter 0954 61032

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Dear PC review

Can we evaluate a record collection? Can we recommend a beginners' RPG? Can we identify Mike Ditka? Just try us ...

Join the club

Please could you tell me the address of the F19 Club, because I have lost the advert in one of your issues.

Alexander Evans
London SE25

The F19 Stealth Fighter club can be contacted at Special Observation Group, 7-11 Kensington High Street, London W8 5NP (tel: 071-792 3651).

Mike who?

I noticed that in your March issue Buyers' Guide for games, you didn't know who Mike Ditka was. He is actually the head coach of San Francisco 49ers American Football team who has recently retired.

Robert Lewis
Wolverhampton

Thanks for that, Robert, but I notice in your letter that you don't know who Mike Ditka is either. He is actually the head coach of the Chicago Bears (unless there are two of them).

No sleaze, please

I feel I really must complain about the advert on page 45 of your April 1992 issue for soft-porn computer games marketed by the Daily Sport. While the computer games industry has never been notable for projecting positive images of women, the presence of this advert in your pages hits a new low. I particularly object because your magazine will be widely read by young children – including mine. If people want this kind of sleaze in their homes they can buy the Daily Sport; I don't see why unsuspecting readers of other publications should be subjected to it.

Clearly most of your readers are male, and most computer games are male-orientated. But there are a lot of female gamers too, and they are largely ignored by software companies and media alike. The fact that you can publish this trashy, insulting advert simply outlines how marginalised the female gamer is. It is difficult not to feel alienated. One of the most disturbing things about this is that girls first learn, largely through games and the image that most games software projects, that computers are "for boys". As a computer professional, I feel this is a tragedy. We should encourage more women into the computer industry, not less, if we are going to develop the hybrid professionals we need. The computer games industry, including yourselves, has responsibilities – why won't it own up to them?

Kate Streatfield
York

While the advertisement in question is hardly tasteful, it would be hard to argue that the ad itself (I'm not talking about the game here) is obscene or in breach of codes.

As to your comments on the status of women in the industry, we wholeheartedly agree. But we ought to point out that Daily Sport Cover Girl Poker is published by The Sales Curve, which is currently the only software publisher in the UK managed by a woman.

Mini flight sims

I come begging on my hands and knees to you for advice, but first of all, I have a question: why do manufacturers of games not put on the side of the box how much hard disk space the game takes up?

Is this a record?

Ssh! I've just pinched my great grandson's magazine for a while, so that I could drop you a line. As you are in the record business, I'm hoping you will be able to help me. Go on - help an old codger of 72 for a change!

In 1930, when I was 10 years old, an aunt gave me some records, which she no longer required. Being cheeky, I complained that they were of little use to me because I had nothing to play them on. On my birthday, two weeks later, she presented me with a second-hand gramophone. It had cost her one shilling (5p) - the price tag was on the box.

From that moment I had the craze to collect records, not just what you now call discs, but also cylinder records. Remember, it was only 33 years before I was born that Edison had produced - or rather, reproduced - sound by mechanical means and only 20 years before, Berliner had produced the first disc. Incidentally, I believe that the Edison Museum has only 17 cylinder records and the BBC only 27. I have over 12,000 disks and over 400 cylinder records. I also have the machines to play both types of records. I also restore old wirelesses made before 1940.

In my collection I have all the popular singers and all the dance bands and jazz bands of the 20s, 30s and 40s. I also have many of the music hall artistes of that period - Florie Ford, Vesta Tilley, etc. I have Sir Harry Lauder (who was knighted in the First World War) on cylinder and disc and quoted as "Mr Harry Lauder". In addition, I have many originals of Enrico Caruso, Dame Nelly Melba and their contemporaries, plus all the classical orchestras of the time.

My problem is that I cannot find a publication which deals with these records and which provide a valuation. Most magazines which comment on old records consider the 1950s and 60s to be very old. Blimey! What does that make me?

Can you help an old codger, please, and advise where I can gain the information I require?

M J Parkes
Southsea, Hants

I've printed your letter because I found it extremely interesting. I'm flattered that you think a computer entertainment magazine would be able to help you, but also a bit puzzled. I take it you've tried Record Collector, which appears on the newsstands – how about looking for an antiques publication? But if it's simply a valuation that you want, you should be able to arrange this through your house contents insurance company rather than using a magazine.

A few months ago I bought Gunship 2000 and I absolutely loved it. But now, reaching the rank of Brigadier General in only 46 missions out of the 99 allowed, I've completed it. I now live for flight sims and I can fly anything from a Longbow Apache Gunship to a Cessna Skylane without a joystick. And this is where I need your help.

I'm looking to buy another game but since it's my Dad's hard disk I'm limited to about 4Mb, so could you possibly recommend a game or two. I'd be particularly interested in a flight sim with a selection of aircraft and a fair bit of planning needed with a goal to work for, like a certain rank. I had my eye on Aces of the Pacific that you previewed, but I don't know how much disk space it will take up.

I've never tried an RPG game before, or an adventure, so maybe you could direct me to one.

I don't want a game where you can't save your position and I want it to have plenty of pulling power so I keep coming back to it. By the way, how much disk space does Wing Commander 1 take up and is it any good?

Andrew Knight
Co Down
N Ireland

A flight sim that takes up less than 4Mb of hard disk space? There aren't too many of these around these days. You could try Domark's MiG 29 (the original, not Super Fulcrum) which takes up just over half a megabyte, and is much more economical than most. Also, this and the F15 and F19 sims from MicroProse can be played from floppy disk, if you're prepared to put up with longer disk access times. Aces of the Pacific is still in development, so we can't give you an exact figure there yet.

For a starter RPG, why not look at SSI's Eye of the Beholder I and II, which have a nice balance of action and hard thinking, while its AD&D games (such as Gateway to the Savage Frontier or Champions of Krynn) tend to be reasonably straightforward as well.

Wing Commander will consume about 10Mb on a hard disk, and since it was voted as the number one PC game in our Readers' Top 50, and number two in our own Top 100 classics, I think you could say that it just about passes muster.

RPGs made simple

I have recently upgraded my old XT with mono monitor to a 286 with SVGA. It is used mainly for word processing and graphics but I would also like to use it for games. I would like to try out some RPG or fantasy type games so I have been buying your magazine to get some idea of what was available.

I once bought Legend of Fahirgil because the box said it would run on my old set-up, but it turned out to be a complete waste of nearly £30. Among other faults a single move could involve a wait of between 12 and 20 minutes. I don't want to be caught like that again.

I am writing to you to ask if you could recommend any RPGs for beginners. The games you review sound wonderful, but perhaps a bit difficult to start with. "Depth of gameplay" and "taxing puzzles" are all very well for the experienced but I would like a simpler introduction. I don't want to waste another £30-£40. Any suggestions would be welcome.

Gwen Kitching
Gilberdyke
Humberside

Looks like RPGs for beginners are in demand at the moment. Our reply to Andrew Knight's letter (above) applies equally well to your request Gwen.

PC warranties

In your Queries section, Issue 5, you reply to M Clement's letter about upgrading his 286, by telling him (her?) to open his Epson PC and check the speed of the processor. You also say that doing so will invalidate his warranty. Is this true? Does this apply to all PC manufacturers or just Epson? I took out three years on-site warranty when I purchased my Amstrad 3386SX. Since then I have opened it many times to put in various expansion cards. Have I invalidated my warranty and wasted my money? If so, what happened to the idea of the modular PC? Please clarify.

Paul Allen
Belfast

The warranty problem is something that is very much a hangover from the early eighties during which users were generally expected to take their machines to a dealer to have upgrades fitted. Nowadays the issue is a bit more cloudy and many manufacturers will not object to the machine being opened if you merely wish to add a coprocessor or fit an expansion board. Before you undertake any work on your machine however you should read the small print in your warranty agreement and if in any doubt whatsoever, ring the manufacturer first.

Incidentally, you cannot determine the exact speed of your machine merely by opening it up and looking at the processor, since each processor comes in several versions, each of which runs at a different speed.

Protect and survive

May I first congratulate Rob Beattie on his excellent article on viruses in Issue 4. I would like every reader to take his advice to prevent such problems occurring.

Recently I purchased an Amstrad 1386 together with DOS 4.1 and GW Basic. After loading my GW Basic on to my hard disk, my computer started to act very peculiar! Each time I tried to boot the system up it took twice as long to boot and on some occasions my PC appeared to crash.

For a long time I was wondering what the problem could be – maybe a bug in the program. After reading Rob Beattie's article I did suspect a virus (although at the time I still refused to believe it). I purchased the Norton Antivirus Toolkit and began the diagnosis.

Imagine my horror when I found that the hard disk was infected by Joshi, a virus which attaches itself to the boot sector of the hard and floppy disk. Apparently, this virus increases the system's running time and corrupts data files. Worst of all I traced the virus back to my GW Basic disk.

Curran M Padake
Middlesbrough
Cleveland

A quitter's guide

A short letter on the subject of quitting games. It is a well-known fact that many games have no means of quitting, but it can also just be that the way of quitting hasn't been mentioned. The previously elusive way of quitting the 3D Kit is simply Shift-Esc.

When you don't know how to quit a game, try one of the following:

Esc
Ctrl-Esc
Shift-Esc
Alt-Esc
Q
Ctrl-Q
Ctrl-Break

Use Ctrl-Alt-Del if your desperate, or turn the power off as a last resort. I hope this advice will help alleviate PC users' quitting pains.

Adam Moss
Stowmarket
Suffolk

Other key combinations that just might work are F10, Alt-X or Ctrl-X. Both Ctrl-Break and Ctrl-Alt-Del are hardware restarts and so won't give you a 'clean' quit from the game.

What's in a name?

Over the years people have moaned about the cost of computer software, but I have an even bigger moan. They charge £30-plus for a game and then release it under a different name. What do you mean, you may ask?

Well, over the past few months I have come across the following games which have been released under different titles:

Pro Tennis Tour from Ubi Soft; also called Great Courts II and Jimmy Connors' Tennis (only difference is the title screens).

E-Motion; also called Harmony (again the only difference is the title screen).

Titus the Fox; also called Les Aventures de Moktar. Difference being a fox instead of a man, screens are almost identical.

How many games on the market have been renamed just to increase sales?

Wayne Roberts
Gunnislake
Cornwall



I think the answer to your final question could be "none". The alternatives you give are the names the games were published under in France. If you found them in shops in Cornwall, they must have been imported versions.

Troops like lemmings

The quality of software these days can be very disappointing – my recent experience with Empire's Twilight 2000 was one of those '£40 for a piece of rubbish' events. It's been a while since I used a program with such unfriendly features – the almost clumsy interface makes it a big effort to gather necessary information and the relatively slow screen updates instantly put me off. As I finally made my way to start fighting the bad guys, I selected the "quick combat" mode and let the computer do the badly executed combat sequences and in one of the battles my troop died within five seconds. I thought I had made some wrong decisions so I selected the "descriptive combat" mode to try to figure out what went wrong, and I discovered that the computer-controlled characters of mine were blocking each other's movements so that they walked back and forth like some silly lemmings. If you have played the game you will know what I mean; the program designers simply missed out a lot of important considerations and therefore bugs were introduced, and there were other times when the music was still playing but the program ground to a halt during combat – in the year 1992 such performance is just unacceptable!

At the back of the menu, it says, "Twilight 2000 software and manual are sold "as is" without warranty as to their performance. The entire risk as to the quality and performance of the software is assumed by the user ...", so where does that leave us? It sounded as though I am responsible for being stupid enough to buy a piece of badly executed software which was written by them!

The ideas behind this game are excellent but the quality of the software is questionable. I think it is about time that some software publishers should ask themselves the meaning of quality and some means of protecting consumers.

Danny Hui
Lenton
Nottingham

Stress relief

I am writing to talk about the benefit of playing computer games at a time when work-related stress is on the increase.

It annoys me to hear people say that the playing of computer games is childish and we're all big kids playing war with our military simulations. By profession, I am a community psychiatric nurse and as such I'm under a lot of stress, as often my work involves preventing people from committing suicide by means of counselling, etc.

My main source for relief of tension is through my computer and the escapism it provides. I have flown thousands of missions including two World Wars, the Gulf, and present day against drug barons and will continue to fly as long as simulations and computers are manufactured.

Stress is on the increase as my colleagues and I know only too well. After all, we see people who don't get any relief from stress, so I would urge all who criticise to shut up, and those who only use computers for business to put on your flight suit and helmet, arm your missiles and take off to wherever your computer takes you!

Michael "Tricky" Hurt
Sutton
Surrey

WINNERS

Ad Lib Answers (Issue 5)

When we told Ad Lib how many thousands of entries we'd had for this competition to win a brand new Ad Lib Gold Card, they wondered if they'd been a bit stingy with the prizes, and offered to donate all manner of runners-up goodies. Accordingly, rather more names have been pulled out of the hat than you were expecting. That all-important Ad Lib Gold Card, however, goes to **Mr D L N Austin**, of London SE20 – congratulations. For the second prize, we've got not just one, but *five* Music Synthesizer cards to give away. So, MSCs to the following: **Steven L Matthew**, of Aberdeen; **Brian Monkton**, of Blackpool; **Christopher Heaton**, of Wolverhampton; **Edward Nixon**, of Newcastle upon Tyne, and **Gary Lyons**, of Dublin.

Not satisfied with this generous outburst, Ad Lib then hauled a large bundle of T-shirts out of a sack and said, why not give away 20 of these as well? So we will (one size fits all, we hope).

T-shirts go to S Hones, of Leigh-on-Sea; Ian Turner, of Old Basford, Notts; Stephen Wolfe, of Kilsyth, Glasgow; Cari Woolveridge, of Crawley; Robin Whittleton, of Farnham, Surrey, Martin Kingston, of Tonbridge; Steve Saxey, of Headley Down, Hants; David Wylie, of Motherwell; Ian White, of Grantham; Joseph Kilner, of Epsom; Sean Nugent (hey, didn't you go on an On the Spot visit recently?), of Peterborough; J Saunders, of London N1; Dr P J Barrett, of London NW9; P J Williams, of Wantage; Andrew Wilson, of London N15; Robert Bird, of Kenilworth, Warks; Mr D Pullan, at Leicester University; Andrew Weston, of Stirling; Mr R J Noakes, of Plymouth, and Gareth Hill, of Port Talbot.

And the answers we were looking for? The Von Trapp family featured in the **Sound of Music**; the stretch of water between Skye and the mainland is the **Sound of Sleat** (a few Scottish readers pointed out that Inner Sound does as well, and we bow to their local knowledge), and "Hello darkness, my old friend", etc, is the first line from **The Sound of Silence** by Simon and Garfunkel (as everybody knew).

Plane Sailing (Issue 4, and, er, Issue 5)

Our second attempt at this proved much more satisfactory than the first, with its interesting proliferation of Mig 29s, so thank you for your patience and we now have some worthy winners. Step forward, **Martin Rogers**, of Braintree, Essex, for you will shortly be the astonishingly lucky winner of a Commodore SL386sx PC, plus trimmings. A hearty well done from PC Review. Three runners-up will get a copy of the latest release of Falcon 3.0 and a maths co-processor for their PC to really make it fly: **Stephen Mawby**, of Rugby; **D A Hughes**, of Dollar, Clackmannanshire; and **Karen Connolly**, of London SE3.

The answers to the new, improved version (Issue 5), were as follows: the Mig 29 was picture 4; the F4 Phantom featured in picture

Falcon or dead duck?

I am a flight simulation fan. After reading your very enthusiastic review of Falcon 3.0 in the February edition of PC Review, I ordered the program from Software City a month ago, and bought a new computer to play the game as my old one was not up to scratch.

Imagine my disappointment, after waiting a month, to be told that it is no longer available. I understand that this is because Mirrorsoft is a Maxwell company.

I'm sorry to trouble you, but I wondered if you have any inside information as to whether Falcon 3.0 will be available again or is it now a dead duck?

J D Weale
Stafford

PC review REPLIES....

Falcon 3.0 was released in the tail end of Mirrorsoft's days, but it was in fact written by US-based company Spectrum Holobyte. Holobyte has now found a safe haven with flight sim specialist MicroProse, which would be happy to take your order on (0666) 504326. MicroProse is re-releasing the game after ironing out some of the bugs from the original version – we'll do an update on this in our reviews round-up as soon as the new edition is finished.

Old Fogey?

I am rapidly approaching my fiftieth birthday and, although I have been using computers in my business for a number of years, I have only recently been introduced to games. Much to my surprise I find that I actually quite enjoy playing them. The game that originally got me hooked was a free game called Commander Keen that was on a cover disk on one of the business magazines I subscribe to. Since then I have played several games including The Secret of Monkey Island II, which is currently occupying far too much space on my fixed disk on my PC at work.

What I would dearly like to know (more for reassurance than anything else) is are there many people of my age who play computer games, or is it unusual for an old fogey like me?

Andrew Crozier
Buckingham

Rest assured Andrew... you are not alone!

PC Review welcomes letters on any subject under the PC sun. The editor will chop them to fit the space if need be, and we'll assume letters are to be considered for publication unless you specifically state otherwise. Send all correspondence to Letters, PC Review, EMAP Images, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. If you have access to CIX (Compulink Information Exchange) you can send your letters to our mailbox – our ID is pcreview. Star Letters win software prizes!

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, why PC games are so expensive (you might as well, everyone else asks that). 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.

In this issue, you can read about the first trip to Sierra's UK headquarters, and we're now making arrangements for our trip to MicroProse later this summer. This is already over-subscribed, so for the time being, we've removed it from the list below. Don't worry if you've missed it this time – we'll do another MicroProse visit in a few months time. The same goes for Sierra: we'll arrange another visit soon.

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, EMAP Images, 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.

Name.....

Address.....

.....

.....

Daytime tel no:.....

Evening tel no: (leave this blank if you prefer) .....

Age: Under 16 ❑ 16-25 ❑ 25-40 ❑ Over 40 ❑

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?

Domark ❑ Virgin ❑ Mindscape ❑ Bitmap Brothers ❑

Psygnosis ❑ Other (if applicable)

.....

Any particular reason for your preference(s)?

.....

.....

.....

Send this completed form, or a photocopy, to On the Spot, PC Review, EMAP Images, 30-32 Farringdon Lane, London EC1R 3AU.

PC Review June 1992

PC review QUERIES Q&A

Bemused, bothered or bewildered about the mysterious workings of your PC? Confused by hardware options? Stricken with software seize-ups? Share your problems with Q&A's Mike James and he'll endeavour to help.

Faster, faster

Q My parents have recently purchased an Amstrad 1640 with an EGA monitor, hard disk and a 3.5" floppy drive. At the time of purchase, I was unaware of the capabilities of a PC, and thinking it could only be used for desk top publishing, word processing and the likes, didn't take much interest. Now that I have discovered what they can do I seem to be faced with a problem and I am wondering if you could help me. In the not so distant future, I would like to upgrade my PC (to have VGA graphics, soundcard, game card and a faster processor — 16MHz) but people have told me that Amstrads are put together in a manner which is different from most PC's and this tends to mean that either the cost is too much or is it just that it can't be done. Is this true? Which is the cheapest and best way to get my PC to run at a faster speed, and what is the highest possible number of MHz? Also I am about to purchase the "Games — Port 2" game card and would like to know whether it is possible — by use of a lead to connect a digital joystick such as Quickshot's Maverick to it. Finally if I buy a VGA card (but not a monitor) can I use my colour TV or the original EGA monitor ?

Paul Miller
Farnworth
Cheshire

A **It is true that the PC is now a match for any of the machines that are sold as nothing but games machines but the 1640 isn't an ideal machine for the latest generation of games — it's just not fast enough. However having said this there is a lot of life in it as long as you don't try to go too far. For example adding a joystick adapter is definitely a good idea but when it comes to more radical additions or modifications you need to look very carefully at the cost and what you get for the money. For example, I wouldn't upgrade the video to VGA but I would add a sound card because this, along with the joystick card could be moved on to a better machine if and when one arrives. It also doesn't make much economic sense to try to speed the machine up because although fitting a 286 or 386SX co-processor card would have some effect, you can't change either the processor chip or the mainboard in the Amstrad 1640 — although these alterations are viable propositions for machines other than Amstrads. There are fiddly ways of getting a 10-20% — change the crystal, swap the processor for a NEC V20 chip etc. — but for most games the effect would be negligible as you are looking for a 200% increase in speed!**

The final two parts of your question are relatively easy to answer: you wouldn't want to use a digital joystick with the analog joystick port you've just bought even if it was possible because this misses all of its advantages. A digital joystick just gives left, right, up and down whereas an analog joystick has directions in between! In fact the 1640 already has an interface for a digital joystick but it is a bit non-standard and doesn't work with all software. Finally you can't use a domestic TV for EGA or VGA graphics because it just isn't up to it.

Slowing with age

Q I own an Amstrad 2086 with a 30Mb hard drive and VGA colour monitor. I've had the system for about two years, and have been pleased with its performance. However, like many of your readers (judging by the number of let-

Sounds spectacular

Q After hearing the sound coming from my PC speaker, I decided I need a sound card. The Roland SCC-1 sounds very good but is it LAPC-1 compatible? Also could you tell me how much better the Ad Lib Gold is than the standard Ad Lib?

Andre Williams
Neath
West Glamorgan

Q After hearing my friend's Sound Blaster and looking around I decided to go for the Sound Blaster V2.0 and spent a long while saving up for it. I was ready to go out and buy it when I bought Issue 5 of PC review and within minutes of getting home, and beginning to read, was sent into a state of shock by a report on the new sound card from Gravis, also mentioned in Steve Cooke's article The Dream Machine.

The Ultrasound looks better than the Sound Blaster but there wasn't enough information given to compare the two. Please would it be possible to include some more details, maybe even do a short article on it?

My second problem is one concerning my monitor. Occasionally, at least once every two to three weeks, the screen blanks and goes completely red (it happened while I was writing this letter). This does not affect anything else as the program running at the time keeps going but the only way to bring the screen back to normal is to switch the computer off and leave it for about 15 minutes. Could you tell me if the problem is with the monitor or VGA card or even something else entirely? Also, would certain software aggravate the problem or is it purely random?

P Bell
East Sussex

A **One problem with giving recommendations about soundboards is that there are at least two types of soundboard buyers — some want one as an add on to other activities such as games, multimedia, etc, whilst others consider it as something to be used in its own right. If what you are looking for is a soundboard that works with a wide range of software then you need to be concerned that the card conforms to standards rather than with extra features. If you fall into this category then your best bet currently is to buy a card that is Ad Lib compatible. The Sound Blaster (2 and Pro) and the UltraSound are Ad Lib compatible, but the Roland LAPC-1 isn't. A fairly high proportion of games support do support the LAPC-1 but the Roland SCC-1 is not LAPC-1 compatible, and therefore is currently not of much use for games. The recent SCC-1, is in a different league to the other cards mentioned here. It produces 16-part sound which is crisp and clear and has 317 supplied sounds. However, its sounds are not programmable and so is not as versatile.**

As to which is the best sound card, as you rightly say, Mr Bell, this needs a full article, but Andre should refer to Issue 6 for an initial comparison of the Ad Lib and Ad Lib Gold boards. The only thing I would say is that my choice would be for an Ad Lib compatible card with stereo capabilities — ie, the Ad Lib Gold, Sound Blaster Pro or, as far as I can tell, the UltraSound. We hope to bring more details and a test of the UltraSound as soon as it's available.

Changing the subject to the problem you have with your display, Mr Bell — there seems to be a heat fault. To discover whether it is in the monitor or the PC, the next time it happens try turning off the monitor while leaving the main part of the machine on. If the fault clears when you switch the monitor back on then the heat fault is in the monitor, if not then it is likely to be in the video card inside the PC. Once you have isolated the faulty module you can send it off for repair. It is unlikely that a fault of this nature is anything to do with software. A final comment worth making is that I have seen the same behaviour caused by a loose video cable. Pushing the plug firmly into the socket cured it immediately.

ters you publish on the subject), I find it too slow for the latest games software.

I have been considering purchasing a 386 machine, so I would like to ask your advice as to whether it is possible to run a 386 base unit with my Amstrad PC12 HRCD monitor and keyboard. I have seen 386 base units at around the £350 mark. I know the sensible thing would be to sell my PC complete and a buy an entirely new set-up — but who wants to buy a 286 machine these days?

Paul Redman
Thornton Cleveleys
Lancashire

The short answer is that it is possible to run a third party base unit with the Amstrad monitor, but not, I'm afraid, the 2086's keyboard. While the HRCD monitor is an utterly standard VGA model, the electrical circuitry between that Amstrad keyboard and cpu is not. The better news is that a keyboard is distinctly cheaper to replace than a monitor.

At £350, that 386 base unit may well not have any disk drives in it, and there is also a potential problem should you wish to move your 2086's hard disk over. In theory, 8086 hard disk controllers don't work inside AT-compatibles (80286 and higher); in practice, some do. At any rate, you would need to make sure that your new motherboard would support the controller. Finally, you may find the performance of the hard disk, in tems of hard disk access time, would not be great.

Basic problems

Could you explain why BBC Basic will not run on my Amstrad 1640, and if there is anything that I can do to make it operate. My daughter is currently studying Computer Studies for A-Level and it is very frustrating for her not to be able to program at home.

C R Mardell
Chesham

To run Basic, or any computer language, you need special software — either an interpreter or compiler for that language. The BBC Micro had the interpreter built in as standard and so you might not even notice it was there, but in the case of the PC you will need to load a suitable interpreter program from disk.

BBC Basic is a dialect of Basic designed with the special features of the BBC Micro in mind. There are a large number of Basic dialects and one of the messages of computer studies, if it's being taught properly that is, is that concentrating on any one language, let alone any one dialect, is a bad idea. The 1640 comes with a very nice, but not much used, version of Basic called Basic 2.

If you want something more standard then I would recommend buying a copy of QBasic or Power Basic which are more or less the industry standard. If you want something closer to BBC Basic then you could try Basic 86 (available from Software Paradise) which, allowing for hardware differences between the two machines, gets very close indeed.

How many colours?

My friend and I have had an argument over which of our computers have the best graphics. My computer is a Tandon 386 with normal VGA and it beats his Amiga on memory size, speed and disk speed, but we are arguing over the graphics. I've heard that VGA can do 256 colours with 320x200, 640x350 and 640x480 resolution. Also 16 colours with 800x600 resolution, is this right? He says that his Amiga can do 4096 colours with 640x400 and higher resolution, is this right?

G Kent
Hucdecote
Gloucester

Ah, arguments about which computer is the best have been going on for as long as there have been computers. Your friend is correct about the Amiga's graphics resolution, but what does it prove? Having used the Amiga, Atari, Archimedes, Mac and the PC I can tell you that my first choice for performance, value and almost any other measure you care to name would be the PC. However this clear cut choice has only been clear cut since the 386 and 486 varieties of the PC came on the scene. Before this both the Amiga and the Atari had the edge when it came to processing power and graphics.

For the record, a Super VGA adapter pushes the graphics resolution of the PC up to 1024x768 with 256 colours. SVGA is rapidly becoming the standard for new PCs and can add SVGA to almost any existing machine. If you are prepared to pay more you can use over 16 million colours and 1024x1024 resolution on a PC.

SX appeal

I am considering buying a PC to which I shall use for both business and games. I would like to purchase a 386SX running at 33MHz. Before buying the machine I have several questions.

Will games designed for a 12 MHz machine run too quickly on a 386SX 33MHz machine?

There are many different processors for PCs, ranging from 286-486. Some of these processor types have SX or DX appended to their names. What do these codes represent and how much do they change the machine's performance ?

Are maths co-processors only supported by certain programs and will they increase the speed of any games which use graphics?

Jason Schupfer
Egham Hill
Surrey

I agree with you, Mr Schupfer, that the situation is very confusing and most of it is caused by the proliferation of serial numbers. However there is a system to it all. Processors become more powerful as you go up the numbers — the 286 isn't as powerful as the 386 which isn't as powerful as the 486 — which presumably one day will be less powerful than the 586, and so on ... This business of power is complicated by the fact that the speed that a program runs is also directly related to the clock speed used with the processor.

Take a 16MHz 386 and double its clock speed to 32MHz (well, 33MHz in practice) and any program really will run twice as fast. The fact the different types of processor are available at different speeds means that there is some overlap in performance. Finally most of the processors are available in two versions: DX, the full version and SX, a cut down, and hence, cheaper version. All of this adds up to a order of increasing power that goes – 386SX, 386DX, 486SX and 486DX – but you can always find machines that outperform the machine in the next band. For example, a 40MHz 386DX will outperform a 25MHz 486SX. However manufacturers usually arrange it so that their range suffers as little overlap in power as possible.

In general, programs do run faster on a faster machine – after all that's why you buy a faster processor! Recent games, however, make use of the fact that all modern machines have a clock to time the rate of animation, etc. This means that games programs will run faster on a faster machine when this makes sense, eg, eliminating tedious pauses, but not where it would result in an effect like running a video tape at fast forward.

The only case where this doesn't hold is for older programs, mostly in shareware collections, that were written before the full range of machine existed and when the idea that a program could run too fast was almost unthinkable!

Finally, a coprocessor only speeds up a program that has been specially written to make use of it and most games programs have not.

Don't forget if you have any answers or ideas to help other PC Review readers, drop us a line and we will publish them. Send your letters to Q&A, PC Review, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU. If you have access to CIX, the Compulink Information Exchange, you can send your query to us there – our ID is pcreview.



Golden Joysticks' celeb presenter Jonathan Ross (he's the one on the right) and a delighted Whirlwind Snooker designer Archer Maclean.

After the Oscars, the Joysticks

The computer industry's very own Oscar ceremony, the Golden Joystick Awards, took place last month in the hallowed halls of the Hyde Park Hotel in London. The Academy which votes for these awards, however, is made up of readers of EMAP Images' wide stable of magazines, of which PC Review is one. Winners included Core Design's Heimdall, Jimmy White's Whirlwind Snooker (sadly not yet out on the PC, but comng real soon now, we are assured), while Electronic Arts, no slouch in the PC market, took away the coveted Software House of the Year trophy.

We'd like to thank all the PC Review readers who filled in their Golden Joystick voting forms. As a sort of Quit 'mini-Joysticks', this is where your votes went:

Best graphics: Wing Commander 2
Best simulation: Gunship 2000
Best soundtrack: Wing Commander 2
Best coin-op conversion: Golden Axe
Programming team: Bitmap Brothers
Hardware manufacturer: Amstrad
Software house of the year: MicroProse
Worst game of the year: Terminator 2
PC game of the year: Wing Commander 2

All of which makes WC2 the nearest thing the PC market has to Silence of the Lambs, I suppose.

Here's how the total votes finally went:

Best graphics: Heimdall
Best simulation: Whirlwind Snooker
Best soundtrack: The Secret of Monkey Island
Best coin-op conversion: Toki
Programmer: Archer Maclean
Software house of the year: Electronic Arts
Game of the year: Heimdall

The No 7 from Origin

Ultima games are like buses – you hang around for ages waiting for one, and then two arrive at once. Underworlds made it in time for review this issue, while hot on its heels arrived Ultima VII, which has been a hair's breadth away from release for some months, as long-standing readers will know. We'll be running an update on Ultima VII in our next issue, by which time we'll be distinct difficulty distinguishing Britannia from reality.

Original sin

Speaking of Ultima games and Origin ... about a week before Easter a motley crew of distributors, retailers and journalists were summoned to Great Moreton Hall in Congleton for a mock mediaeval banquet to celebrate the launch of the two programs mentioned above. Everybody concerned made complete fools of themselves by dressing up in traditional mediaeval gear. Our Italian editor Riccardo Albini looked quite presentable, but deputy editor Laurence Scotford was rather concerned to find that he had been totally cast against type as, er, a monk! Behaving himself for a whole evening was almost too much for the poor chap to take and several monastic vows were undoubtedly broken!

This, believe it or not, is the ultimate accessory for your laptop – a mechanical lap. According to supplier Misco, it gives "instant accessibility" (that's if you like travelling around with a robot arm clamped to your thigh, we suppose) and it "leaves your desk free of clutter".

Personally, we think it belongs in the same category as navel fluff cleaners and special pens for writing disk labels – things which you never knew you had a use for and probably never will. And where did he get that shirt?



RICOH PCL5 LASER PRINTER

Ricoh UK Ltd is part of the worldwide Ricoh Group of companies, originally established in Japan, in 1936. With a turnover of over $5 billion and 37,000 plus employees, Ricoh has been producing computers and peripherals since 1971. They are renowned in the industry as pioneers in the field of Office Automation Equipment and have won many awards for outstanding industrial design. Ricoh have employed all their expertise to produce a 'first' in laser printers for the worldwide market, the LP1200 with FLASH ROM.

Fully HP LaserJet III™ compatible, the new LP1200 laser printer employs industry proven laser technology. Unlike LED page printers, which use light emitting diodes, the LP1200's laser lightsource, focussed by high quality lenses, is able to produce the most accurate and intense printed images. It has 2Mb of RAM built-in and requires no additional RAM to print a full A4 page of graphics. Its fast, efficient processor and engine, together with straight paper path design, allows printing at a full 6 pages per minute. Unlike its competitors, this advanced laser engine enables the LP1200 to address a range of print resolutions up to 400dpi. A printer driver is scheduled for release in late April, to enable the Ricoh LP1200 to print at 400dpi from Windows 3.

Again, unlike the competition, the LP1200 includes a powerful document description language as standard. This language, 'LAYOUT', offers unique opportunities to develop custom-made printing systems. In particular, forms and document templates can be designed and stored electronically in the LP1200's unique FLASH ROM, alleviating the need for pre-printed forms!



The Ricoh LP1200 is a genuine laser printer and not an LED printer. Make sure you check out the competition!

See how the Ricoh LP1200 compares to its Laser Printer Competitors

FEATURES	EPSON EPL4100	HP LASERJET IIIP	MANNESMAN TALLY MT904+	RICOH LP1200
Average Street Price (*expected)	£569	£699	£699*	£699
Official RRP	£945	£1,179	£1,099	£1,195
Maximum resolution in dots per inch	300x300	300x300	300x300	400x400
Windows 3 Driver @ 400 dpi (April)	-	-	-	YES
Print Speed	6ppm	4ppm	4ppm	6ppm
Straight Paper Path	YES	-	-	YES
PCL 5 Printer Command Language	-	YES	YES	YES
HP-GL/2 Vector Graphics included	-	YES	YES	YES
Resolution Improvement/Enhancement	YES	YES	YES	YES
Full A4/300 dpi graphics with standard RAM	-	-	-	YES
Warm Up Time	<45 secs	<60 secs	60 secs	45 secs
First Page of Text Output	<20 secs	<40 secs	34 secs	<15 secs
Document Description Language included	-	-	-	YES
Flash ROM	-	-	-	YES
Upgradable Firmware	-	-	-	YES
IC Card Slot	YES	-	-	YES
Scalable Resident Fonts - in HP LJ III Emulation	-	8	8	8
Resident Bit-Mapped Fonts	11	14	14	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	10	100	100
Protective cover on standard tray	YES	-	YES	YES
Cost per copy*	1.65p	2.00p	1.71p	1.65p
Min-Max Paper Weight in gsm	60-157	60-105	60-120	60-157
Able to print on OHP Film	YES	YES	YES	YES
Able to print on card (157gsm - Manual Feed)	YES	-	-	YES
Auto Sensing on Parallel and Serial ports	YES	-	-	YES
Standby -Noise Level	<40dB	31.7dB	<35dB	<38dB
Printing -Noise Level	<50dB	43.3dB	<46dB	<48dB

*As quoted by manufacturers - 2/4/92 E & OE

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FLASH ROM UPGRADABLE!

400dpi 2Mb RAM 6PPM

FULLY HP LASERJET III™ COMPATIBLE

Silica Systems are pleased to introduce the revolutionary, new Ricoh LP1200. It has all of the specifications that you would expect to see in today's most technically advanced laser printer, plus a unique additional feature which places it far ahead of the competition - FLASH ROM. This 'Future Proof' technology protects the investment you make when you buy a Ricoh LP1200, as it enables you to keep up to date with new laser firmware developments. FLASH ROM is an area of memory inside the LP1200 which holds the printer's controller instruction firmware. If new firmware is developed, updated printer command languages etc, can be downloaded into this memory. Other manufacturers would require you to buy a new printer! Fonts, macros, additional emulations and graphics can also be stored in FLASH ROM, or on removable FLASH ROM IC cards. The new Ricoh LP1200 is the only laser printer to offer this FLASH ROM facility.

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  Using a straight paper path design
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  Latest PCL version, includes HP-GL/2
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  Ricoh FIAL (Fine Image ALgorithm) enhances resolution
- ***400dpi RESOLUTION***
  Default resolution - 300dpi. Will address 200, 240 and 400dpi.
- ***2Mb RAM AS STANDARD***
  Allows printing of a full A4 page of graphics at 300dpi
- ***UNIQUE FLASH ROM***
  For controller software upgrade and storage
- ***IC CARD SLOT***
  For programmable FLASH ROM cards
- ***EXPANSION BOARD SLOT***
  For improved connectivity to additional systems eg. PC-LAN, FAX etc
- ***LAYOUT***
  Document Description Language
- ***SERIAL + PARALLEL PORTS***
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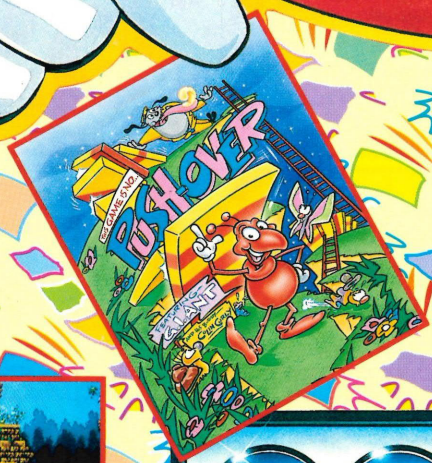
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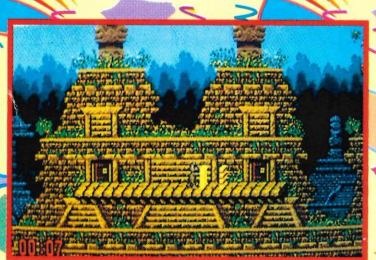


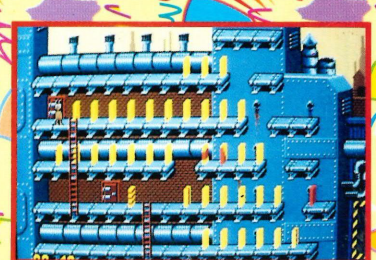
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