leisure lines

contents

Euro League Football

Back in the dim and distant past of PC gaming – 1992 to be precise – Spanish software developer Dinamic hit on a winner; football management simulations. PC Futbol, as it was known in Spain, was to prove a gold mine for Dinamic, selling over one million copies in eight years. Mega-developer Gremlin was so impressed it signed up the Spaniards to help produce its Premier Manager series, adding to the programmers' cachet and market for football management sims.

Now, having acquired some of Gremlin's best game designers to add to its own experience, Dinamic has decided to go it alone in the British market with Euro League Football. This time, however, it is a game of two halves, the reason being that Euro League Football goes one step further than other manager games by incorporating an element of arcade play to add to the plotting and scheming off the pitch.

The user interface in the management side looks to be as slick as a greased non-stick pan, with all the graphical bells and whistles we hoped for. As a management simulation, it's clear ELF will play second fiddle to no-one. The detail is staggering – everything can be customised, from training players to building a multi-national team. It's even rumoured that real-life managers consult the Dinamic database for information on players, speaking of which, every league from every major footballing nation is here.

Should you want to, for the first time there is the choice to play a part on the pitch. The 3D engine for the interactive match mode looks excellent so far, but there is even more to come in the finished version. Get your tracksuits on and look out for Euro League Football in the shops.
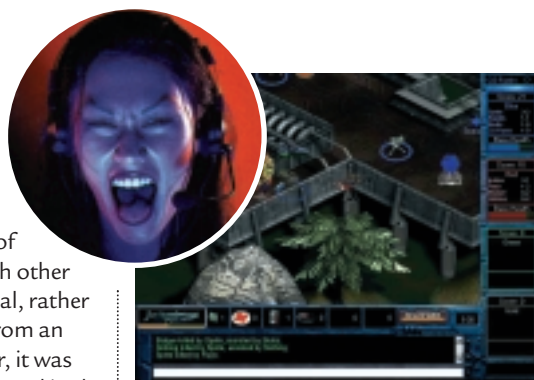**www.dinamic.net**

J MARK LYTLE

Fireteam

Fireteam, the new blockbuster from Cryo Interactive, will have real-time voice communication as a core part of the gameplay. Cryo claims it has developed technology that makes decent online voice messages possible. The possibilities are endless. Imagine playing a Special Forces sim and having realistic radio communications with squad members as you hunt the baddies, or using live chat to collaborate on puzzles in a 3D adventure.

Fireteam was released in the US a while ago, but problems with the technology have delayed the British release. Cryo assures us that things will be OK over here. As for the game itself, it's a standard one team against another affair, although the good stuff comes when you plug in the audio gear. We found the headset impressive and noticed some excitement among the throng of gamers assembled to blow each other to bits. Graphics look functional, rather than exciting, and are shown from an isometric perspective. However, it was tactics and teamplay that mattered in the Fireteam world.

All the usual features of Internet games are here, including 'Team Deathmatch', 'Capture The Flag' and 'Base Tag'. Hardened gamers will know exactly what we're looking at here – it's about working together to survive or ganging up on some poor soul and knocking seven bells out of him or her. Best of all is the ranking system for the hardest in the online community.

When Cryo took us along to try out an early version, we thought the voice communication through the dedicated US servers was impressive. One problem lay in not really knowing who was talking, but when it's this much fun, who cares? Fireteam UK is due for launch in January.
www.fireteam.com

J MARK LYTLE

Freespace 2

Sensory overload alert – with glorious sound and colour, this battle makes quite an impact.

One of the best games of 1998 was the original Conflict: Freespace. Borrowing all the best bits from space simulations to date, it impressed us in terms of its scope, and was one of the best games of all time.

Until now that is. There was no way that developers Volition could leave the grand opus alone and this fantastic sequel has all the makings of another classic game. Several decades after the Great War, the Terran/Vasudan alliance is still holding. But all is not well – you start in the middle of a bloody civil war. Admiral Bosh is fighting central command for control of the various systems and much of your time is devoted to seeing him off in his quest for dominance. Meanwhile, the deadly Shivans arrive back on the scene and spend much of the game ramping up their forces for a full-scale invasion.

Volition has chosen to keep much of what made the original game so good exactly the same. You play an ace pilot who is shuttled between several crack units and deployed in the current hotspot of the moment. Each level follows a standard format: you are given a briefing aboard your command ship and are sent out to fulfil your mission objectives. The missions are extremely varied, with some requiring you to use your best dog-fighting skills to the full while, in others, you need to take a step back and command your troops from afar. Typically, you will have to race into a danger zone and take out a few enemy fighters before guiding one of your own battle cruisers in to destroy the enemy's massive ships.

Whereas the original Freespace tended to get a bit samey, this version includes a raft of new ideas to keep your interest. You get involved in testing new technology, go undercover to undermine your enemy's supply routes and fly a new range of craft from bombers to nifty stealth fighters. Controls are complex, but there are training missions that introduce you to essential concepts such as subsystem targeting and energy management.

The graphics in this latest version are simply beyond belief. You need a 3D card to run this game and it's easy to see why – this is one of the first games we've seen that uses 32bit colour to its full effect. Several levels involve fighting inside a newly discovered nebular, and the colours inside are so incredibly vivid it's worth buying this just to gaze adoringly at them. It's fairly difficult to navigate inside the nebular, as the hazy gas combined with constant lightning flashes often obscure the screen completely, adding an innovative level of difficulty to some missions. You have to be much more careful to avoid friendly and enemy fire in Freespace 2.

The beam turrets seen in the final stages of the original reappear here right from the start. Each level is often an adrenaline-rush of beam turret fire, flak cannon shots and enemy ships whizzing around you with one thing in mind: your annihilation. The noise all these ships generate is suitably disorientating, and combined with the command ship and your fellow crew members shouting at you through the comms system, the confusion of a seat-of-the-pants battle is recreated perfectly in every sense.

There's a huge range of new weapons for you to choose from: often you will be found defending yourself from enemy fighters while the latest missile slowly acquires a lock on your foe's vast ships. One technique you'll need to learn fast is destroying bombs – if you're involved in escorting a cruiser to a jump node, it's more important to take out the bombs that the fighters launch than the fighter itself, and luckily exactly the right kind of rapid fire energy weapons have been developed for this very reason.

All of this adds up to a fantastic gaming experience. Freespace 2 is simply brilliant: the ultimate development of the space simulation genre. Buy it today and you won't be disappointed.

JASON JENKINS

Rally Championship

You have to take the rough with the smooth if you're going to make it to this finishing line.

The market is full of driving games. Unfortunately, one thing that most of them have in common is that they are nothing like driving a car in real life. Developer Magnetic Fields has taken a different approach with Rally Championship and spent two years constructing a game that comes as near as you can get to being in a real car without, well, being in a real car. There are certainly a lot of tracks to get through. Magnetic Fields has managed to grab an exclusive licence to the full Mobil 1 British Rally Championship, and there's also an A8 championship. If the prospect of picking your way through lots of different stages doesn't appeal, then you'll like the arcade mode, where you race against the clock and the computer-controlled cars to finish first.

The work that has gone into this game to make it so realistic is truly staggering. Each of the various stages is a real track somewhere in the UK and has been meticulously recreated using filmed footage and photographs of the course and cross-referenced with up-to-date Ordnance Survey information.

There are 36 stages to work your way through, taken from the six rallies of the Mobil 1 series, and you can drive around them in one of 20 different cars. These have all been recreated from pictures and specifications provided by the manufacturers and look extremely realistic.

Gameplay is good fun, but is pretty difficult if you don't perfect your technique early on. Luckily there is a single race option so you can get some practice in. One of the most important manoeuvres you're going to have to learn is sliding round corners – applying the brake and accelerating at exactly the right time will whizz you round some bends

without slamming into the nearest tree. It becomes apparent very early on that you can't treat your car with the disrespect you can in the more arcade-focused racer games. It's all too easy to flip your car over if you happen to stray off the track. If you hit an obstacle you will incur damage, which increases until finally you can't drive at all. At the end of each race, your car isn't magically restored to pristine condition. You are given 30 minutes to repair the various parts you've damaged during the race.

Each part takes a

certain amount of time to repair, so planning is essential. You have to decide what is most important: a new set of tyres or a perfectly working engine? Your car then has to pass an inspection. If it fails, you can't take part in the race and

you can kiss goodbye any chance you had of winning the championship. This places a premium on careful driving – if you've gone flat out throughout the race and taken some nasty knocks then you'll have to slow down towards the end of the race so you can make it through to the next one – better to sacrifice a few positions than lose any chance of completing the rally.

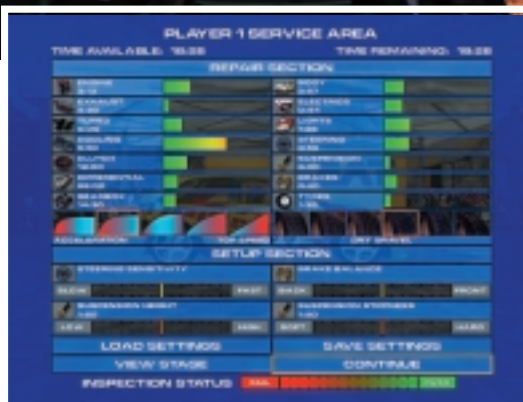The graphics are excellent, and the best aspect is that you don't need the fastest PC ever built to play it – a Pentium II 300 will run it quite happily and you can even get away with a slower machine at a push.

For those with more powerful systems, however, there are some fantastic graphical touches to enjoy – such as rain – that gives the whole thing an even more realistic edge.

On some levels, you'll even find yourself driving at night: it really gets the blood pumping when you're driving down narrow country lanes at a considerable speed and you can't see further than the few metres lit up by your headlights.

Rally Championship combines adrenaline-pumping action with heart-stopping realism. A must-buy for any rally fan.

JASON JENKINS

PCW DETAILS

★★★★★

Price *£34.99 inc VAT*
Contact *Electronic Arts 01753 549442*
www.rally99.com
System requirements *Pentium 200 (Pentium II 300 recommended), 64MB RAM, 8MB Direct X-compatible graphics card, Direct X 6-compatible sound card, Windows 95/98*

FIFA 2000

Fancy tackling Best and Beckham? Well now you can and you don't have to worry about cost.

The latest in a series that seems to churn out a new edition with more regularity than a Dennis Wise red card, FIFA 2000 has a lot to live up to. The previous game was the fastest, most realistic, most playable football game so far. And yet, from the opening sequence to the final whistle, the millennium edition supersedes it in every way.

Typically for an Electronic Arts title, the opening sequence is stunning and will whet your appetite for the action to come. To the strains of a new Robbie Williams number written especially for the game, the familiar overgrown polygons mutate into beautifully animated, well-rounded figures. You'll soon see this approach has been transferred to the game itself with stunning effect. For a start, the stadia are superbly detailed and the players look like their real-life counterparts – from David Beckham's coiffured locks to Gazza's bulk. The real difference, though, is in the way the players move.

More frames of animation have been added so that it's much easier to get a feel for exactly what your player is doing. Whether you're sprinting down the wing chasing a hopeful through-ball or attempting a last-ditch tackle in the penalty area, you'll soon be caught up in the atmosphere thanks to the responsive control system and realistic impression of speed and inertia.

Aficionados of previous games in the series will find the control system hasn't changed much, bar a few important additions. When you have the ball a small arrow now appears at the feet of players and flashes red, amber or green depending upon the likelihood of the pass reaching its target. This makes it much easier to set up penetrating attacks, while also improving the tactical aspect of the game. Rather than simply hoofing the ball up the field à la Wimbledon, you'll soon be stringing passes together in a manner that is more suited to the beaches of Brazil.

Another innovation is the way that, upon taking a free kick or corner, each player is allocated a letter relating to a button on your control pad. Again, this allows you to pick out players with far more accuracy than the old extending arrow system.

A few new tricks and turns have also been added, including the ability to shield the ball Mark Hughes-style, but thankfully none of these intricacies take away from the simple pick up and play nature of the control system.

You are also spoilt for choice when it comes to options. You can either engage in a full season or simply play a friendly fixture against the club of your choice. As well as just about every major club side in Europe, you can choose from a selection of sides from around the world or even classic sides from the past.

This means that you can pitch the likes of Johan Cruyff and Georgie Best into the fast-paced modern game to discover whether players really were more skilful in the days of cloth caps, meat pies and Bovril.

The option to carry your team forward through a number of seasons makes FIFA 2000 far more engrossing than previous versions and will have you coming back time and time again in order to try and improve your league position.

It's a shame, however, that EA hasn't improved on the transfer system – it is still possible to fill your side with the best players in the world with absolutely no need to worry about how much they cost.

Our only other gripe is the fact that the in-game commentary is still far from realistic, with John Motson remaining liable to come out with the same phrases time and time again.

It is, however, a great looking, eminently playable footie simulation – the best yet, in fact. If you're equipped with a relatively fast PC and 3D graphics card and are even remotely interested in the beautiful game, then you definitely won't be disappointed.

OWEN GIBSON

PCW DETAILS

★★★★★

RECOMMENDED
PERSONAL COMPUTER WORLD

Price *£34.99 inc VAT*
Contact *Electronic Arts 01753 549442*
www.easports.com
System requirements *Pentium 166 (266 recommended), 32MB RAM, Direct X 6-compatible graphics card, Direct X 6-compatible sound card, 50MB hard disk space, Windows 95/98*

Age of Empires II

You've done Wallace, now it's the turn of Genghis. All in a day's work – just watch the blue lines.

Age of Empires is back with its very own sequel, Age of Empires II: The Age of Kings. Once again it's time to pretend you're a historical general, control a primitive civilisation through the ages, and take victory over oppressing forces.

Like its predecessor the game has a variety of campaigns in which to harden your battle skills, with the difficulty increasing as you go along. Campaigns are quite diverse, starting with William Wallace, but swiftly moving to Joan of Arc, the Crusades, and Genghis Khan.

Where Age of Empires II really sticks out above other real-time strategy games is in its depth. You have complete control over the economy of your village. Collecting gold, food, wood, and stone is essential in order to build troops, buildings and, more importantly, to progress from one age to the next.

Progressing through the game is a matter of researching new technologies so you can move, for example, from the Dark Age to the Castle Age. Each new age comes with its own improvements in the kind of troops and buildings that you can build.

Control of the whole operation is where things really take off. The game system neatly divides the local populace into two categories: villagers, and the military.

Villagers are the people who collect the resources, build the buildings and perform the repairs. And because they're people you can send them anywhere on the map to put up a building. The usual real-time method where you can only place a new building a certain distance from existing ones has thankfully been put to rest. This is especially useful when you want to put up an advance watch tower. To succeed, you need to keep track of your villagers, and this is achieved through the most useful button in the game – the 'idle villager' button. Click on this and control is immediately shifted to the first villager standing around doing nothing.

While villagers are undoubtedly an essential part of winning the war effort, you're not going to get very far without an attacking force. This brings us neatly to the military, whose job, simply put, is to hit things for you. We found the choice of troops to be very good, ranging from standard foot soldiers, to archers, to large-scale siege weapons.

Control of the forces is much as you'd expect. You can make them move anywhere on the map, or attack enemy units. The real trick comes down to the additional controls. First we have the action buttons, that describe how troops will react. For example the 'hold ground' option stops troops moving from where they are standing. The default option is to run after any enemy they can see. We learnt this the hard way after all our defending troops decided to go on a group excursion to hunt down a single enemy villager. The temptation of an unguarded village was too much for the enemy and they decided that now was a good time to waltz in and start the wholesale massacre of our villagers. Needless to say we didn't make this mistake a second time. Other controls let you group units together using a hot key, so in the middle of battle you can select groups and make them perform a task. Trust us, you're going to want to use this feature a lot.

We do have to mention a small problem we ran into on the troop front, and that was losing units behind buildings. What's supposed to happen is any troop blocked from view is given a blue outline which shines through any object. However, at points even this blue outline becomes difficult to see.

At the end of the day it's an enjoyable game, and there's a lot of attention to detail. You only need to see troops marching in formation, or your villagers cutting down trees and carrying away logs to understand. It's not much of a change from the previous game, but it's still definitely worth a look.

DAVID LUDLOW

PCW DETAILS

★★★★

Price £39.99 inc VAT
Contact Microsoft 0345 002000
www.ensemblestudios.com
System requirements Pentium 166, 32MB RAM, 2MB graphics card, 300MB hard disk space

NeoGeo Pocket Color

It's an all-singing, all-dancing mobile games console that's big enough to take on Gameboy.

It may be unusual to see hardware in the games section of *PCW*, but this latest handheld games machine from SNK demanded an exception be made.

For years now there has only been one mobile entertainment system, the Nintendo Gameboy. This saw off early competition from Atari and Sega in the forms of the Lynx and Game Gear respectively. It's amazing the that Gameboy is still going after all these years, but that's what happens when a product has no natural predators. This situation has most definitely changed, though. Not too long after Nintendo breathed a new lease of life into the Gameboy by giving it a colour screen, the NeoGeo Pocket Color has hit the streets.

SNK might not be a big name in the gaming industry in the UK, but it's been making impressive arcade machines for some time. It also saw some success with the original NeoGeo games console released only in Japan, even though the games were exorbitantly expensive.

This time, however, SNK has come up trumps with an awesome new product that's priced aggressively enough to leave the Gameboy shaking in its shoes.

The NeoGeo looks similar to the Sega Game Gear with a landscape design and controls either side of the screen. Instead of a directional pad, the NeoGeo has a tiny microswitched joystick that makes controlling games a dream. Even the complicated moves involved in games like King Of Fighters are easy to pull off.

On the other side of the screen are two fire buttons and an option/pause button. The unit fits in the hands perfectly with all the controls falling naturally under the relevant fingers. The 2.6in screen is fantastic with a 160 x 152 resolution and a colour palette of 4,096 colours, although only 146 can be displayed at once. There's no backlight so you'll need well-lit conditions to play, but this is a small price to pay for decent battery life. The Lynx and Game Gear were both backlit and the battery life was appalling.

At the rear is the battery compartment, filled with two AA cells. There's also a slot for a lithium backup battery. The latter may seem unnecessary, but there's more to the NeoGeo than games. It also has a built-in calendar and a world clock complete with an alarm function. You can even enter your birth date and your little friend will give you a horoscope for the day.

Of course, no games machine is worth its salt without some decent software to play on it. Thankfully SNK has come out with a storming line-up of launch titles. Nostalgic arcade machine junkies like myself will consider the NeoGeo an essential purchase just for the chance to play Puzzle Bobble on the move. Fans of the dinosaur twins Bub and Bob will flip over this perfect conversion of the arcade puzzle classic.

It's not all retro titles, though. The aforementioned King Of Fighters is a great fighting game with all the secret moves that fans of the genre will look for, while Metal Slug is a first-rate scrolling platform/shoot-'em-up title.

As with all mobile games consoles, the NeoGeo can be linked to another unit for multi-player action, but it has another trick up its sleeve. The hottest games machine at the moment is Sega's new Dreamcast, and the NeoGeo is great friends with Sega's new baby. Another link-up cable will be available to connect the NeoGeo to the Dreamcast, with games like King Of Fighters already having a Dreamcast link feature. With this link you'll be able to swap characters and stats between NeoGeo and Dreamcast games. Whether this feature will take off remains to be seen, but it's definitely another string to the NeoGeo's bow.

However, the best thing about the NeoGeo is its price. At only £59.99 not only is it a fantastic machine it's also fantastic value.

RIYAD EMERAN

PCW DETAILS

★★★★★

Price £59.99 (Games £24.99 each)
Contact SNK 0181 371 9911
www.neogeopocket.co.uk

☞ **Hidden cells**

You'll need to get out your spreadsheets for this one. Or maybe not. Take a look at the five sets of 25 cells, shown below. Each cell represents a reference relative to a separate cell within a separate set of five sets of 25 cells (hidden from view, of course, somewhere within an imaginary spreadsheet — this might be a good time to get yours out). Each cell contains an identical (simple) formula… once you've found that formula, it should be easy to work out exactly what belongs in the hidden set of cells. The hidden set reveals a rather well known company in the world of IT.

Find the solution and you could have a chance to win a mystery software prize. Send the solution, your name, and an address where the prize can be sent on a postcard to: *PCW* Prize Puzzle (February 2000), VNU House, 32-34 Broadwick Street, London W1A 2HG or by email to: letters@pcw.co.uk. Answers should arrive no later than 20 February 2000. Please note that we DO NOT open attachments, but you shouldn't have to use any graphics for this one.

☞ **Quickie**

Draw a five-pointed star on a piece of paper. Starting from any of the 10 points of intersection (interior or outside points), move on two points in a straight line, and draw a blob. Now find another point of intersection without a blob and do the same again, drawing a new blob at your destination. Remember that you must start on a point WITHOUT a blob and move on two points in a straight line. Fill up all the intersections, bar one, with blobs in this way (it's not as easy as you might think).
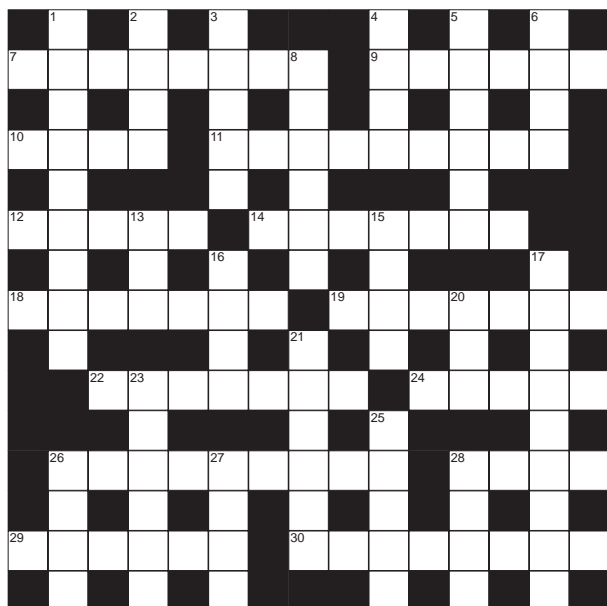
☞ **Winner of November's Prize Puzzle**

The November puzzle invoked a fair response and the problem was to find three sums of money which gave the same result if they were added together as if they were multiplied together.

There is more than one solution to this problem as stated above, but we added further conditions that each sum was more than £1, but less than £10, and that the total number of pence spent ended in seven. There is only one solution that satisfies all these conditions: £1.25, £1.62, £2.80.

Most entrants managed to supply this answer. So we called in our random number generator to settle the dispute and it chose the entry from Mr Alan Whiteley of Egham, Surrey. Congrats Mr Whiteley, your prize is on its way to you.

| 5 4 5 5 5 | 5 4 5 6 5 | 5 4 5 5 5 | 5 4 5 6 5 | 6 4 4 6 5 |
5 5 4 4 6	5 5 5 5 5	5 5 5 5 5	4 3 5 7 6	5 6 5 4 5
5 5 5 5 5	5 5 5 4 5	5 6 5 6 5	5 5 5 5 5	4 5 7 5 4
5 5 6 6 4	4 4 5 6 6	5 4 5 5 5	6 7 5 3 4	5 4 5 6 5
5 6 5 5 5	5 6 5 5 5	5 5 5 4 5	5 6 5 4 5	5 6 4 4 6

prize crossword

ACROSS

7 Symbolic smiley, perhaps (8)
9 Key part of a URL (6)
10 Second, possibly buggy, version (4)
11 Money-making on the Internet (9)
12 Standard character scheme (5)
14 Internet virgins? (7)
18 Parcels of personal details (7)
19 The V of VR (7)
22 Amount of activity taking place (7)
24 Surfer's phone-line device (5)
26 Item for audio capability (5, 4)
28 Click, hold and move (4)
29 Entry into a system (6)
30 The M of IBM (8)

DOWN

1 Type of water heater (9)
2 Ancient portico (4)
3 Performed (5)
4 Man of Eden (4)
5 Gradually appear (6)
6 Rodents (4)
8 Loops of rope (6)
13 Writing fluid (3)
15 Hat's edge (4)
16 Red meat (4)
17 Slashed (9)
20 Duo (3)
21 Remove guns from (6)
23 Woke (6)
25 Decree (5)
26 Dismiss (4)
27 Run (4)
28 Wimpy person (4)
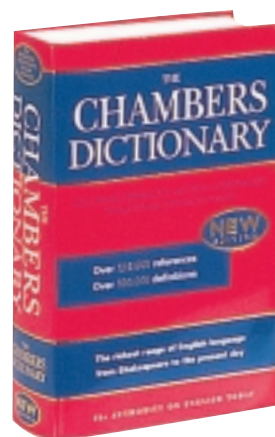
Each month, one lucky *PCW* Crossword entrant wins a copy of the new *Chambers Dictionary*. **The winner of December's puzzle is: Brian Leeming of Huntington, Cambridgeshire.** This time, it could be you. Send your completed crossword to: '*PCW* February – Prize Crossword', VNU House, 32-34 Broadwick Street, London W1A 2HG, to arrive not later than 20 January 2000. • *Please state clearly on your entry if you do not wish to receive promotional material from other companies.*

Solutions to January's crossword

ACROSS

7 Decryption 8 TIFF 9 Cassette 10 Screen 11 Tester 13 Integer 15 Prompts 17 Central 19 Routers 21 Aerial 24 Savers 26 Resident 28 Bugs 29 Fuzzy logic

DOWN

1 Decanter 2 Crisis 3 Spot 4 Tiger 5 Ants 6 Effete 8 Darkest 12 Enter 14 Niece 16 Mutters 18 Atlantic 20 Opaque 22 Indoor 23 Crazy 25 Sift 27 Says

Win VideoLogic DigiTheatre 5.1

To really appreciate the outstanding quality of DVD movies, you need Dolby Digital surround sound. However, most Dolby Digital decoders are expensive, even if we don't factor in the cost of the required amplifier, speakers and subwoofer. An absolute bargain at £249.99 is VideoLogic's DigiTheatre 5.1 Dolby Digital decoder and speaker system. This setup provides high-quality, cinema-style sound, either with a standalone DVD player or a PC with DVD-ROM.

DigiTheatre has been extremely well received, winning several awards already – in fact we gave this product five stars in last month's issue.

DigiTheatre provides full Dolby Digital decoding and output from a complete system that includes six speakers (two rear, two front, one centre, one subwoofer), six integrated amplifiers and a separate Dolby Digital decoder box. DigiTheatre also provides MPEG2 surround, stereo and full legacy support for Dolby Pro Logic.

It's styled in charcoal and black for a living room setting and also looks great next to a PC.

We have four of these fantastic systems to give away!

Four runners-up will receive VideoLogic's SonicVortex2, a high-performance and advanced audio add-in card for gamers, worth £64.99. SonicVortex2's 3D positional audio, using the acclaimed Aureal A3D 2.0 standard, brings game environments to life. Now the level of acoustic realism matches the immersive 3D worlds of the latest, greatest games.

With support for the most recent Aureal 2.0 API, SonicVortex2 delivers the ultimate in features and performance for gaming, as well as stunning 3D positional audio – all with low CPU usage to keep game-play fast. And the SonicVortex2 is not just for gamers. It also excels at music, providing a 320-voice wavetable synthesiser (64 voices in hardware), a superb 4MB sample set and an optical digital output at up to 48KHz.

Software bundled with the card includes Future Beat 3D, Making Waves, Yamaha XG Studio, Yamaha XG Soft Synthesiser, Dance Ejay2 and Jet-Audio.

For more information on the DigiTheatre or any other VideoLogic product phone 01923 260 511 or visit the company's website at: www.videologic.com.

■ **To enter this competition,** simply answer the following questions:

1) How many speakers does VideoLogic's DigiTheatre include?

2) What does DVD stand for?
a) Digi Video Disc
b) Digital Video Data
c) Digital Versatile Disc

THE VIDEOLOGIC DIGITHEATRE 5.1 PROVIDES HIGH-QUALITY, CINEMA-STYLE SOUND AND IS AN ABSOLUTE BARGAIN AT £249.99

How to enter the competition

Write your name, address and daytime telephone number on a postcard or the back of a sealed envelope. Mark your card '*PCW*/VideoLogic Competition' and send to the following address by 31 January 2000:

Personal Computer World
Building 960
Sittingbourne Research Centre
Sittingbourne
Kent ME9 8AG

◆ *Competitions are open to residents of the UK only.*

J Mark Lytle takes a gander at Micro Astrology, and charts the love story with Dell's first laptop.

20 YEARS AGO   February 1980

Turning the clock back exactly two decades to February 1980, the cover bore an unusual Catherine Denvir illustration headlining a feature on 'Micro Astrology'. Readers found Roger Elliot's piece on computerised horoscopes – complete with flowcharts – quite a talking point. Roger's business was putting computers and planets together to come up with personalised horoscopes. His equipment consisted of a Cromenco System Three PC with 64KB of RAM and a 1MB hard disk. He was offering individual star charts for £4.80 or software to produce your own, on a variety of PET, Apple and Tandy machines, from £15.

Page 78 brought us the glorious vision in tight-set type that was an exposé by Alan Mills and KT Kibase of the IEEE 488 bus. At a time when FireWire was but a pipe dream, Messrs Mills and Kibase dealt at length with the complexities of interfacing microprocessors with the outside world, concluding that 'IEEE 488 is a boon to the black art of interfacing'.

February's benchtests covered the Heath WH-89 – a 50lb all-in-one PC – and the ACT System 800, an impressive beast with 48KB of RAM. The Heath was slated by Mike Dennis for sticking to an old-time assembler, based on Octal routines, while the ACT made plenty of friends in spite of its £4,000 price tag.

15 YEARS AGO   February 1985

The era of Madonna's *Like a Virgin* saw a *PCW* that had bulked up considerably, changing the cover tagline from: 'Europe's Leading Micro Magazine' to 'Britain's Biggest Microcomputer Magazine'. The cover story, by Peter Bright, told us everything about GEM – the operating system that brought Apple-like features to Acorn, Apricot, Atari and IBM screens. As Peter said: 'Windows is still in the pipeline... so, from the user's point of view, GEM is the best thing this side of a Mac.'

Products on test included the Penman, a 'graphics turtle-cum-plotter' – Simon Craven found potential uses from illustrating spreadsheet models to educational graphics, whatever those might be. Other benchtests covered WordStar 2000 – possibly the first millennium-branded product – and Sharp's MZ-800 home computer.

WordStar 2000 was an update of its complex forerunners and proved a hit with reviewer Kathy Lang, which was surprising, as it wasn't much better. For £440 users got simple windowing, a calculator, mail merge and a spell checker. The Sharp machine, based on a 3.5MHz Z80A processor, seemed to fall between the twin stools of home and office use and was criticised by Tony Hetherington for its 'large footprint and ungainly appearance'. Finally, the best ad award has to go to Sinclair for its QL fliers, offering such delights as a 'Firefly QL Winchester disk with a full 7.5MB of storage' for £1,149, surely enough to buy a small car in those days?

10 YEARS AGO   February 1990

A new decade brought us a new breed of Intel-based computers, notably our cover star – Dell's first laptop, the 316LT – based on a speedy 16MHz 386SX processor. The quirky design and tiny screen didn't prevent Guy Swarbrick from falling in love with it, proclaiming: 'For those enamoured of Dell's excellent customer support service, the 316LT may be ideal.'

In the month that saw the release of Nelson Mandela, Nick Beard wrote about the Gibson-esque topic of neural networks and how computers were being taught to think. He underlined the advantages of neural computing, specifically that neural nets can 'learn by example' and are 'fault tolerant'. Now, let's see about getting the latest version installed on the ed's PC.

Under the covers of 'The Technology Journal of the Year', our reviews touched upon hardware as diverse as the Tulip tr486, which made use of 'the power of the 486 chip' and graphics cards tested by Mick Andon, including the Marksman 1600 at over £4,000. Mick concluded that while: 'price is an important factor... any perceptible difference in image definition is more likely to result from the quality of the screen than the graphics controller.'

Features delved into the mysteries of music on the Atari ST (about which we still receive letters) and the classic British machine, the Acorn Archimedes. We ran workshops aimed at 'Demystifying Unix' and pondered the question: 'SQL on mainframes and minis – but PCs too?'

5 YEARS AGO   February 1995

A mere five years ago and, unsurprisingly, we find ourselves in more familiar territory, particularly with the cover feature on MPEG cards. The group test by Tim Frost on 'bringing movies to your monitor' introduced the concept of compressed video and concluded that, in spite of exciting prospects, it was 'early days yet to take MPEG cards as a serious and reliable route to video on the PC.'

Also noteworthy was the similarity between companies advertising in our hallowed pages then and now. The 'biggies' were out in force, including Software Warehouse, Time and Tiny.

Our splendid spread of group tests saw the lucky Gordon Laing inspect 27 monitors, while Tim Nott tapped on 15 word processing packages. Gongs in each round-up went to the Taxan Ergovision 2100LR and WordStar 2 respectively. Taxan continues to impress today, winning Editor's Choice in our group test last November, while WordStar has weathered the office suite storm and is still used today.

Not to be overlooked was the summary of the range of rivals to Visual Basic and our disapproval of Timex's bizarre Data Link watch, which never caught on. All this and more in a month when O J Simpson went on trial in California and the Labour Party held an unprecedented 36-point lead in the opinion polls.

Finally, the disk clinging limpet-like to the cover included an 'intelligent wallpaper calendar' and 'Dave's Targa Animator'. Quite what has happened to Dave, we're not sure, but his animator is still around and doing a wonderful job.

Sinclair ZX81

A top PC for only £69.95, that'll be the Eighties.

True genius can usually be spotted early on, but commercial success tends to come later. Something along these lines happened with Sir Clive Sinclair back in the early Eighties, then sans-knighthood. It's fair to say that Sinclair kicked off British home computing with the ZX80, a machine that remarkably gave you five pence change from £100 – saving a further £20 if you were willing to assemble it yourself. It wasn't the world's most impressive computer in specification or looks, but at that price you couldn't argue, and in 1980 thousands didn't.

The ZX80 was inspired by the earlier success of Sinclair's MK-14 computer, little more than a bare circuit board marketed under the company name 'Science of Cambridge'. However, it was the success of the MK-14 and ZX80, along with lessons learnt from their development, that allowed Sir Clive to come up with his first big computing hit: the ZX81 – which reportedly sold over one million units worldwide.

The Sinclair ZX81 owed more than its wedge-shaped looks and naff membrane keyboard to its predecessor. It was based on the same basic hardware, with a 3.25MHz Z80A processor and 1KB of RAM, but there were several key improvements. ZX80 owners may look back fondly, but they're probably forgetting the fact that the CPU controlled the display, blanking the screen out momentarily if it had to think about anything else – like a key press. When typing, the screen would flicker in and out, which was very distracting. Perhaps surprisingly the ZX80 also had no floating-point math facility, and what OS there was felt severely cramped in the 4KB of ROM.

Sinclair wanted the ZX81 to fix all of those problems and, better still, cost less. Nine Tiles, which wrote the original BASIC for the ZX80 (and unenviably trim it from their originally submitted 5KB to 4KB), were again asked to supply the OS. Now with an impressive 8KB of ROM to play with, Nine Tiles extended the ZX81's BASIC, wrote a fully-featured floating-

> **THE ZX81, FOR THE TIME, WAS SURPRISINGLY NON-CRASH-PRONE... UNTIL YOU ADDED THE RAMPAK!**

point package and improved the input/output side of things.

To save money, Sinclair had to reduce the component count, and recruited Ferranti to integrate most of the logic and display circuitry onto a single Uncommitted Logic Array (ULA). This chip handled the TV output, leaving the processor to more important things – eliminating the ZX80's flickering display. In the end, Sinclair managed to reduce the ZX80's 21 chips to just four on the ZX81: the Z80A CPU, 1KB RAM, 8KB ROM and the ULA. By building a computer around these chips, Sinclair could sell it for only £69.95 ready built, or a mere £49.95 in kit form. Timex built the machine, and it was marketed under this brand in the US.

The ZX81 ran from a 9v external power supply, and drove TV sets with its black and white 32 x 24-character UHF output. It also spawned the first peripherals, with the infamous 16KB RAMPAK and ZX Printer. The RAMPAK crashed every half-an-hour or so, or just as soon as you'd finished typing in the mammoth listing from early *PCW* pages. The ZX Printer produced hard copy, but on horrible thermal paper, which tended to fade at any hint of sunlight. The ZX81 FAQ fondly describes the ZX Printer and metallic paper as looking like 'a rather evil sort of toilet roll'.

I, however, warmly remember my ZX81 days, of first learning to program BASIC and fearing the genuinely scary Tyrannosaur in 3D Monster Maze. Plenty of others also still love it. Paul Robson has written one of the most popular emulators, http://users.aol.com/autismuk/sinclair.htm and Grant Searle

will even show you how to build one. See www.home-micros.freeserve.co.uk/zx80/zx80.html. The ZX Spectrum came out just a year later, but those were the most influential 365 days in kids' lives.

GORDON LAING

I warmly remember the scary Tyrannosaur in 3D Monster Maze