

LEISURE LINES

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Grand Prix 3

One of the best driving simulations is to get a follow-up. Grand Prix 3 will be the latest in Geoff Crammond's successful series of games. It is a fully licensed product, and we have been told to expect real teams, drivers, tracks and races. Unlike EA Sports' latest offering, though, it will concentrate on the 1998 season, as opposed to the current one.



Driving a Formula One car isn't as easy as popping down to your local newsagent – controlling the speed and direction of the cars is a lot more difficult than it looks on the television. Luckily, there are a number of driving aids included in the product that'll help those who just want to drive and not worry about spinning off the track.

We're expecting the game to be a polished simulation and a completely new physics system is promised. You'll be able to make adjustments to your car, changing things such as the springs, dampers and ride height, all of

which affect the way the car performs.

The menu system has been overhauled to make it easier to access the different areas of the game. Realistic weather effects are present, so expect rain and wind alongside glorious sunshine.

LAN support for four people and above will be built in, along with direct serial link. It doesn't look like you will need a 3D accelerator to run the game, although there will be a large benefit if you have one. We'll have a full review as soon as we get the final code.

www.grandprixgames.com

JASON JENKINS

Vampire: The Masquerade

The next few months should see the release of a new RPG game, Vampire: The Masquerade – Redemption. This title will use Nihilistic software's Nod engine, allowing the scenes to be rendered in full 3D. It uses the White Wolf role-playing system and plenty of strong back-story is promised. This started life as a board game and the developers are hoping they will be able to recapture the success of that for the PC.

You will play Christof – a vampire who is forced by his nature to feed on the blood of humans. You'll need to employ stealth tactics, though, for if too many mortals discover your identity, you'll be killed. However, you're not on your own, and as the story unfolds over a period of 800 years in four different cities, you'll



get to meet fellow vampires. They will help you to fight off the mortals, as well as solve the numerous puzzles that will come your way.

At this stage, it is not entirely clear whether the developers are going to try to translate the gameplay exactly from the board game to the PC, or try to make it accessible to those who have not played the board version before.

Multiplayer support is promised to be something to write home about – the storyteller mode allows one player to create an entire adventure and host it for a group of players to saunter through. Keep a look out for more in a future issue, and while you are waiting, take a look at www.activision.com.

JASON JENKINS

The Devil Inside

A great mix of **gun-toting and game show** adds a new twist to this blow-'em-to-bits shooter.

Here we go again – a blood and guts gore fest to entertain the gaming masses. Ultra-violent shoot-'em-ups seem to be all the rage these days and the strange thing is that almost all of them – from Kingpin and System Shock 2 to Half Life and Soldier of Fortune – are excellent. Perhaps it says something about the nature of what we find entertaining. No matter – The Devil Inside is a worthy addition to the genre, as it features not just extreme nastiness, but also a splendidly constructed storyline.

It goes something like this: you play a man called Dave who likes to run around in the dark with a gun investigating paranormal goings on. What you don't know when you start off is that Dave has a penchant for cross-dressing – give him enough skin-tight leather and he turns into his female counterpart, Deva.

Deva is actually a foxy little devil of sorts and has all manner of mystical powers, but we'll leave them for you to discover. The twist in the tail is that the action takes place against a backdrop provided by a futuristic game show à la *The Running Man* (which inspired the French developers of this game), featuring a roving cameraman and links from a splendidly cheesy, crimpolene-clad, studio-based host. The various threads of the story all come together well and impart a certain frisson of excitement to each new development in the game. A pat on the back has to go to crazy Frenchman Hubert Chardot for the contributions from his *Alone-In-The-Dark*-warped mind.

Anyway, let's put the light, yet filling, entrée that is the plot to one side and sample the delights of the hard-core action of the stodgy main course. The

first thing most gamers will notice is that the minimum specs listed on the box will barely get this off the ground. We were only able to get it running smoother than Michael Johnson by using a Pentium III 750MHz with a stonking great chunk of a 3D graphics card inside. You won't need

and legs off the festering undead can be rather satisfying. Sick? Maybe. Fun? Without a doubt. Even the studio audience seems to get a kick out of it, judging by the crowd noises.

The show unfolds from a Croft-esque third-person perspective, which can be irritating, especially when running round corners or negotiating tricky locales. Most action fans prefer the first-person style of Quake and its siblings, however, adjusting

only takes a little time. Some of the gameplay can feel very linear, as you rush from one task to the next, but when it's this much fun, who cares? One final negative comment concerns the controls, which somehow feel odd and restricting, particularly because you have to press a key twice simply to make our protagonist run forward.

In spite of the negative aspects of *The Devil Inside*, there are plenty of great moments that will keep players hooked – just

wait until you get the chance to fish around in the toilet bowl for an important clue, for example. The gender-bending transformation into Deva is almost worth the price of the ticket alone, while there's always something surprising around the corner ready to carve itself a slice of Homo Sapien sashimi. This one's a keeper – get it before the Powers That Be force us all to play 'nice' games.

J MARK LYTTLE



that much power to play, but be warned.

The effort is worth it, as right from the off the graphics are sumptuous indeed. The lavish visuals reflect the game's French heritage – *The Devil Inside* harks from a long tradition of graphical adventures that have previously tended towards the cerebral side of the genre.

Animation of the characters (and there are dozens of zombies and spooks for you to hang out with) is equally detailed, as are the splattery bits. As shameful as it is to admit, blowing arms

DETAILS

★★★★★

PRICE £39.99 inc VAT

CONTACT Cryo Interactive 01926 315 552

www.devil-inside.com

SYSTEM REQUIREMENTS Pentium II 266 (Pentium III recommended), 32MB of RAM (64MB recommended), Direct X-compatible 3D graphics card, Windows 95/98



Messiah

Gory detail, violent action and the ability to possess your enemy. What more could you want?

From the people who brought you Earthworm Jim and MDK, Shiny Entertainment's next installment is the long-awaited Messiah. It's been in development for some years, but despite this it requires a lot of downloading to make it work properly. Once patched up you're ready to literally fly into Bob's world, where this endearing winged cherub has to clean up a futuristic, but sinful Earthly and lunar wasteland. Satan has taken control and it's your mission to save humanity from destruction.

Messiah is a game both gory in detail and violent in action, but it's terribly addictive. Some may say it's blasphemous in nature, particularly considering that the angelic lead has the ability to possess beings, including the odd rat here and there.

However, most gamers will probably be more interested in the gameplay that we found kept us glued to our keyboard. At first glance, you may be forgiven for thinking that Messiah is a traditional third-person shooter, and at times it is, but there are also a lot of puzzles to solve. Bob's ability to possess other beings adds a new dimension to the action and makes a welcome alternative from the usual gun-wielding commando scenario.

There are four major locations: The Metropolis, The Second City, Orbit and Dark Side of the Moon – all of which are split into five levels. Some levels are trickier than others, with puzzles that can be solved in a variety of ways, and this is where your innate ability to possess all things organic comes in handy. Some tasks can only be completed if you have possessed the relevant being, whether it be a nuclear technician, corrupt cop or even a suspender-clad prostitute. So don't be reckless. Kill everything in sight and you may find that you're trapped in that level. If you start shooting

indiscriminately, you'll find yourself in severe trouble – cops will come rushing from all corners and gun you down.

Graphics are splendid. The maps are exceptionally well rendered, with the movements of the characters fluid and lifelike. Messiah is one of the first games to use Real-time Deformation and Tessellation (RT-DAT) technology. The Real-Time Deformation component

avoidance tactics as ducking and circling behind you. Messiah comes with a separate audio CD containing tracks courtesy of Fear Factory, which adds something to the overall atmosphere and gives you the opportunity to really get immersed in the gameplay.

Unfortunately, it's not all good news. The shipping version is full of bugs, many of which will have been fixed by the time you read this. You'll need to download a large patch from Shiny's website, though, so if you're

one of those people who can't stand the thought of mucking around to get a new game to work, then this isn't for you.

Shiny claims it will eradicate all the problems that US gamers have experienced so far. You'll also almost certainly need to upgrade your graphics card drivers to work with the new engine as well, but this is par for the course with many of today's PC games.

Messiah will keep you more than entertained for the duration. With an unusual take on the standard single-player game, along with its excellent graphics and soundtrack, Messiah is a game worthy of five stars. The fact that we had to spend a long time downloading a large patch and new graphics card drivers though, means that we had to deduct a star. But if you don't mind this, it's well worth a play.

JALAL WERFALLI



creates a more realistic wire-frame membrane that deforms and creases in all the right places. The tessellation part of the engine actively adds and subtracts polygons depending on the complexity of the scene. The idea is to keep the speed of the game at a more constant level.

The AI (artificial intelligence) of the other computer-controlled characters is also very impressive, especially when they become accustomed to your possessing antics. Once this happens, you'll find the enemy deciding to employ such

DETAILS



PRICE £34.99 inc VAT

CONTACT Interplay 020 7551 0000

www.messiah.com

SYSTEM REQUIREMENTS Pentium 233 (Pentium II/350 recommended), 16MB of RAM (96MB recommended), 16MB OpenGL or DirectX-compatible graphics card, DirectX-compatible sound card, Windows 95/98

Dogs of War

Use your resources wisely and **you'll be rewarded** with this high action, strategy game.

First impressions of Dogs of War are something along the lines of Play Mobile meets Jurassic Park. The opening video sequence contains figures, alarmingly similar to the aforementioned children's toys, running stiffly across an apocalyptic backdrop, pursued by roaring dinosaur-like creatures – the stuff of children's nightmares. However, this initial impression is soon stifled when the game is played. The repeated presence of the 'mission failed' screen quickly reveals that this 3D strategy game requires careful control if you're not to be killed – repeatedly.

The interface for Dogs of War is initially tricky to grasp. The reason for this is the versatile nature of the in-game views, a feature that highlights the title's exceptional graphics. The camera can occupy any 3D position over the landscape, as well as locking onto a third-person view for direct control of specific units during the action.

Movement of the camera is a little cumbersome, with the rotation and tilt controlled by the arrow and shift keys, and the zoom controlled either by clicking the mouse on the zoom icons, or through the keypad's plus and minus keys. A more intuitive camera movement and zoom mechanism, perhaps completely mouse driven as in Homeworld, would have been better. Nonetheless, once you get used to the interface, Dogs of War becomes a lot more appealing as you endeavour to put an end to the wholesale slaughter that your tiny soldiers have had to endure.

The background to the game isn't dissimilar to others in the genre: warring factions battle for dominance on a planet devoid of anything resembling

peace. But Dogs of War tries hard not to be defined by the standard norms. There are two opposing forces on the war-torn planet, but there's an additional race as well. The Mantai are an indigenous reptilian species, with characteristics that allow them to fulfil military roles. They're not unlike the

build units, Dogs of War employs a system similar to the campaigns of the Close Combat series. You have an initial number of troops who are with you through the campaign (assuming you don't get them killed), and these progress in rank as the game progresses. At the start of each mission the available weaponry appears in the 'staging area', to which further units can

be added from the armoury, based on the credits you have accrued and the availability of weapons. Before the battle commences, you decide on the force you'll use. This ultimately translates into a more realistic battle because when you lose a helicopter it's lost for the rest of the mission and you can't just build another.

Dogs of War grows on you the more you play it.

The interface may deter a lot of people, but if you're prepared to persist, the game is both challenging and enjoyable. It's not the most immediately playable game, but features such as the direct control option make it a diverse and interesting action/strategy game. It's just a shame about the initial interface learning problems – without these, it would have easily earned five stars.

SCOTT MONTGOMERY



alien bugs from Starship Troopers: flying reptiles, armoured or flame-throwing reptiles, and so on. The bonus is that once the human missions are completed there's the option of playing as the Mantai. So if controlling an army of reptilian military analogues is your thing, then this may be the game for you.

Another aspect that breaks the mould of the genre is the removal of resource harvesting as a dominant element of the gameplay. Instead of harvesting resources to make credits to

DETAILS

★★★★

PRICE £34.99 inc VAT

CONTACT Take 2 Interactive 01753 854 444

www.take2games.com

SYSTEM REQUIREMENTS Pentium II/266 (Pentium II/400 recommended), 32MB of RAM, (64MB recommended), Voodoo 1 or equivalent D3D graphics card, Direct X6-compatible sound card, Windows 95/98/2000

RS: Urban Operations

If you liked *Rogue Spear*, the multi-player mode could be enough to keep you interested.

It's inevitable that a well-received game will have the mission pack add-on sooner or later. *Rogue Spear* is the latest game to have exactly this, with *Urban Operations*.

Its real worth will depend on how much you enjoyed *Rogue Spear*. Mission packs never stray far from the original concept and the single-player level only offers five additional missions, with very few new weapons to choose from. This is clearly territory for the home commando dying to play any new missions.

The new missions all involve close combat in highly populated areas, such as the London Underground. This gives a slight twist to the formula, with your team protecting innocent bystanders as well as shooting terrorists. In practice,



this tends to mean that the innocents get shot a lot and the mission immediately fails. Annoying to say the least. The old problems are still there, with some points in the game incredibly difficult to pass, as a lone terrorist, unfairly in a strong position, can easily wipe out your team.

Where *Urban Operations*, like *Rogue Spear*, scores well, is with the multi-player side of the game. In addition to the new

single-player missions, some *Rainbow Six* – precursor to *Rogue Spear* – maps have been thrown in, with eight new multiplayer maps. In addition to this, a new multi-player mode – team defence – has also been included. If anything, this makes the mission pack worth picking up, as the new options will spark some new interest in the game.

It's not a groundbreaking pack by any means, but for lovers of the original formula it is well worth a look.

DAVID LUDLOW

DETAILS



PRICE £19.99 inc VAT

CONTACT Take 2 Interactive 01753 854 444

www.roguespear.com

SYSTEM REQUIREMENTS Pentium 233, 32MB of RAM (64MB recommended), 3D graphics card, Windows 95/98

Euro 2000

If you really must have another football game, then they don't come better than this.



When we received this latest football title from EA Sports, our first thoughts were, does the world really need another football game? EA Sports seems to think it does, and after playing the game we were forced to agree.

Euro 2000 is impressive both in its playability and its attention to detail. For the novice player there's an excellent training section that tutors you through the basic moving, tackling and shooting manoeuvres. But there are also more

advanced moves available, which you'll want to learn when the basic ones are mastered. Thankfully, only the basics are required to start playing the game. Although be warned, once you've played a bit you'll be itching to get to grips with the 360-degree spin dodge.

The detail throughout the game is meticulous: from multiple-player shadows on the pitch cast by floodlights, to

scenes of players stretching legs to stop cramps during extra time. The lighting is especially good, with evening games having a night-time feel. The movement of the players is fluid and detailed. Players can trip while tackling or being tackled and their bodies visibly tense up as they sprint towards the ball. The level of realism even highlights the less palatable aspects of football with the inclusion of the 'harmful tackle' – frightening, albeit accurate.

Overall, *Euro 2000* is a playable and enjoyable title. If it's a realistic football game you're looking for then this is the one for you. It is also as accurate and up to date as a football game can be expected to be. The question you need to ask yourself is, do I really need another football game on my shelf? If the answer is yes then *Euro 2000* is a great choice.

SCOTT MONTGOMERY

DETAILS



PRICE £34.99 inc VAT

CONTACT EA Sports 01932 450134

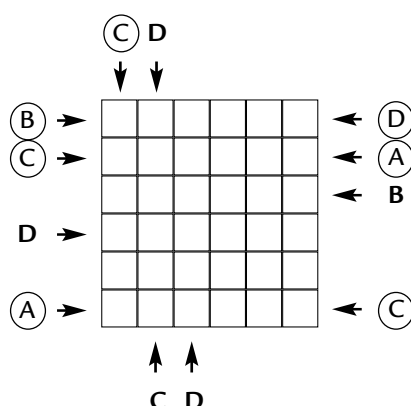
www.ea.com

SYSTEM REQUIREMENTS Pentium 200MMX (Pentium II/300 recommended), 32MB of RAM (64MB recommended), 2MB video card (8MB or greater Direct 3D-compatible Video Accelerator recommended), Direct X7-compatible sound card, Windows 95/98



ABC, easy as 1-2-3

Each row and column in the grid below originally contained one A, one B, one C, one D and two blank squares. Each bold letter refers to the first of the four letters encountered when travelling in the direction of the arrow, while each circled letter refers to the second of the four letters encountered



when travelling in the direction of the arrow. Can you complete the original grid?

Find the solution to this puzzle for a chance to win a copy of Microsoft Encarta Reference Suite 2000.

Send the answer, along with your name and an address where you would like the prize to be mailed on a postcard to: PCW Prize Puzzle (July 2000), VNU House, 32-34 Broadwick Street, London W1A 2HG, or by email to: letters@pcw.co.uk. Answers should not arrive any later than 20 June 2000. Please note that we DO NOT open attachments.

April's Prize Puzzle answer

The 'Legal wranglings' puzzle prompted an enthusiastic response. To recap, the puzzle involved two law students, uniquely named Jim James and Bob Roberts.



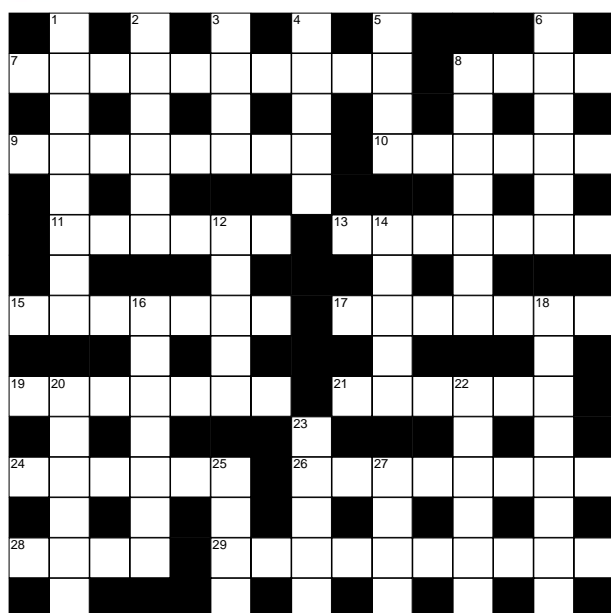
James had loaned his friend Roberts £5,000, to be repaid when Roberts won his first case. But Roberts never took a case until James took him to court over the money. Yet both lawyers remained confident they couldn't lose. How could this be?

Bart Cuffe of Swindon, Wiltshire, correctly identified the solution. From Robert's point of view, if he loses the case, then according to the original arrangement, he will not have to pay back the money. If he wins, then the court will still rule that he does not have to repay anything.

From James' perspective, if he loses the case, then Roberts will have won his first case and will have to pay back the money. If James wins, then the court will order Roberts to repay the money.

Congratulations Mr Cuffe, your prize is on its way.

prize crossword



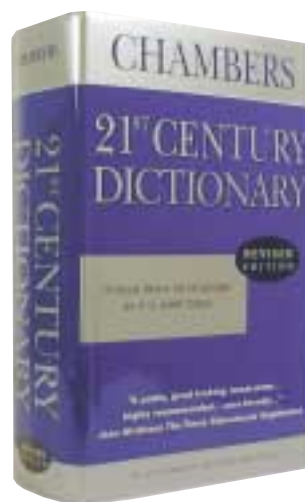
- 26 The second T of HTTP (8)
28 Microsoft's WP package (4)
29 The largest computers (10)

DOWN

- 1 Good at maths (8)
2 Nearly (6)
3 Iron decay (4)
4 Woodland clearing (5)
5 Choppers (4)
6 Slot (6)
8 Based on real life (7)
12 Frolic (5)
14 Atmospheric layer (5)
16 Gave away in a draw (7)
18 Chatted (8)
20 Agreement (6)
22 Lose (6)
23 Remove clothes (5)
25 Sports match (4)
27 _____ Romeo, make of car (4)

ACROSS

- 7 Allowing for simultaneous sending and receiving (4-6)
8 A _____ wall protects a system from other systems (4)
9 Started again (8)
10 Defined part of a disk (6)
11 Join a file to another (6)
13 Fixed amounts of storage on a disk (7)
15 Work out the code (7)
17 A jump from one site to another (3, 4)
19 Partial internal stores for data (7)
21 Communications protocol and Muppet! (6)
24 Software box requiring an answer (6)



Each month, one lucky PCW Crossword entrant wins a copy of the Chambers 21st Century Dictionary. The winner of May's crossword puzzle is: **Oliver Jolley from Lancashire.**

This time, it could be you. Send your completed crossword to: 'PCW July - Prize Crossword', VNU House, 32-34 Broadwick Street, London W1A 2HG, to arrive no later than **20 June 2000.**

• Please state clearly on your entry if you do not wish to receive promotional material from other companies.

Solutions to June's crossword

ACROSS: 7 Bytes 8 Read 9 Port 11 Sector 12 Explorer 13 Java 15 Bug 16 Erase 19 Scanner 20 Default 23 Pixel 25 OCR 26 BIOS 28 Netscape 30 Scroll 32 Mail 33 Boot 34 Table
DOWN: 1 Hype 2 Restrain 3 Revenge 4 Adapt 5 Uproar 6 True 10 Grabbed 14 ASCII 17 Salvo 18 Heiress 21 Arboreal 22 Boredom 24 Easily 27 Lambs 29 Edam 31 Lily

WIN Packard Bell Spirit PC or ATi graphics card

This month, award-winning PC manufacturer Packard Bell is offering one lucky PCW reader the chance to win the stylish Spirit PC, worth £1,999. Packard Bell's new concept in PC design combines stylish looks with pure computing power. Based on an Intel Pentium III processor, this 500MHz PC has an S3 Savage 4 AGP graphics chip, a USB hub and an eight-speed DVD drive. All Packard Bell PCs have free, unlimited access to the Internet (excluding dial-up), email for life and a built-in 56K modem. And let's not forget the PC's sleek and stylish NXT technology flat postcard speakers and a stunning 15in TFT digital flat-panel display, which is in keeping with the sophisticated design of the PC. The winner will also gain peace of



mind with Packard Bell's 12-month on-site warranty.

Three runners-up will also each receive an ATi All-in-Wonder 128 graphic card. This highly rated graphics card is perfect for anyone wanting a multimedia board. Powered by the Rage 128 chip, the card boasts a TV tuner, video in and out, MPEG-2 encoding, not to mention 3D acceleration.

■ *For a chance to win either of these great prizes, just answer the question below and follow the 'How to enter' instructions opposite.*
What speed is the Spirit PC's modem?

- 1) 28.8K
- 2) 33.6K
- 3) 56K

How to enter

Fill in the coupon and send it to the following address by 30 June 2000:
Personal Computer World
 VNU Business Publications,
 32-34 Broadwick Street,
 London W1A 2HG

Or email your name, address and daytime telephone number to us at
pcw_competition@vnu.co.uk

Please state in your email if you **DO NOT** wish to receive information about other products and services from VNU Business Publications Ltd, and if you **DO** want your details to be passed to other carefully selected companies for marketing purposes.
 ♦ Competition open to UK residents only.

PCW July 2000 competition entry form

Name:

Email address:

Daytime telephone number:

Address:

Answer: What speed is the Spirit PC's modem?

• Please tick here if you **DO NOT** want to receive information about other products and services from VNU Business Publications Ltd ☐

• Please tick here if you **DO** want your details to be passed on to other carefully selected companies for marketing purposes ☐

Rules of entry

This competition is open to UK readers of *Personal Computer World*, except for employees (and their families) of VNU Business Publications, Packard Bell and ATi. PCW's Editor is the sole judge of the competition, and his decision is final. No cash alternative is available in lieu of prizes.

The world of microcomputing, in praise of Windows 3.0 and some long-forgotten browsers.

20 YEARS AGO July 1980



Twenty years ago Derrick Daines began the first of a series of articles designed to bring the world of microcomputing to the uninitiated. The aim, with the aid of Venn diagrams and problems that involved sorting through various toy bricks, was to encourage children to think logically and ultimately develop their understanding of logic gates. Now with talk of spinach diodes in this month's *Futures* replacing such technology, it seems that today's kids no longer have an excuse to avoid their greens.

This month's benchtest looked at the British designed Acorn Atom, although Mike Dennis was disappointed with its styling. The five-page article revealed that at the heart of the machine was a 6502 CPU clocked to a whopping 1MHz. Memory came with a standard 2KB of RAM, expandable to 12KB, while the ROM chips could be upped from 4KB to 16KB, adding floating support to the built-in BASIC. High-resolution graphics, capable of 256 x 192 in two colours or 128 x 192 in four colours, were dealt with by the 6KB 6847 video controller. Mike concluded the machine was destined for the educational field as it appeared to be good value, attracting impecunious education authorities. To reassure those not convinced, Acorn also ran a series of ads claiming there was 'no need to worry that your investment will be overtaken by new technology'.

On a lighter note the entrants for this month's competitions will be relieved to know that they are far better off today – the prize for the *Leisure Lines* competition back then was a bundle of 20 13amp mains plugs.

15 YEARS AGO July 1985



Rolling back the years we find another candidate for the *Retro* page – the Commodore 128. Peter Worlock had the task of putting it through its paces in the benchtest. Lurking inside he found two processors – a 7510 and a Z80 for running CP/M, 64K of ROM and two 64K banks of RAM. Although the

machine seemed good on paper the market was becoming a tough place. Unfortunately, sales of the C128 fell short of the 64's due to growing demand for multi-tasking and graphics.

Martin Banks' column this month concentrated on the emergence of the GUI that we all know and love (or know, at least) that started out life as a research project at the infamous Xerox labs in Palo Alto. Apple learned a lot from Xerox and put it to work on the Lisa and then the Mac.

To keep PC users happy there was GEM (Graphical Environment Manager) from Digital Research. Not to be outdone, Microsoft was furiously working on Windows while IBM was pinning its hopes on Topview. The main difference at the time was that GEM was available while the others were still vapourware. This didn't stop Martin stating that 'according to Bill Gates, Windows is going to be the greatest graphical thing since sliced bread'. The rest, as they say, is history.

Chip Chat centred on the news of a parallel processing machine called the Butterfly, a prime candidate for one of Gordon Laing's home hardware projects. Containing 128 8MHz 68000 chips it was destined for use by the military.

10 YEARS AGO July 1990



A small child eating a mouse (of the computer variety) graced the cover in July 1990 in reference to the release of Windows 3.0, purported to be 'Child's Play'. Guy

Swarbrick took an in-depth look at the GUI set to revolutionise computing. The results were promising, especially given the lacklustre response that previous incarnations had received. Finally there was software support as well, with 52 applications on show at launch. In closing, Guy came to the conclusion that Windows 3.0 was here to stay. 'If you currently prefer the GEM interface to Windows, you really should take a look at Windows 3.0. It does everything GEM does and, for the most part, it does it better,' he said.

We also scooped an exclusive on a couple of super-fast 20MHz 386 SX systems. Dell and Mitac were the contenders with the Dell just edging ahead at the final hurdle, although the

top spec machine did come in at a massive £5,199 ex VAT.

Viruses may be on everyone's minds this month due to the amorous attachments currently doing the rounds, but back in 1990 Stirling University researchers thought differently about such things. When compiling a database about Human Computer Interaction they struck upon the idea that they could employ the techniques used by viruses to allow the database to propagate new information autonomously. This technique meant that the database was kept up to date for all users. The interface to the database was based around a new system called Hypertext, the spread of which could also be described as virus-like.

5 YEARS AGO July 1995



Pentium Notebooks were the cover stars in 1995 as Simon Rockman looked at six of the best. NEC was cream of the crop, mainly down to its 800 x 600 SVGA LCD screen. The hard drive may have only stretched to 810MB with a Pentium processor running at a measly 75MHz, but on the whole it impressed. The price, however, seems large even by today's standards. Mobile users are used to paying a premium, but at £5,445 you need deep pockets as well.

At a time when quad-speed CD-ROM drives were the norm, Gordon Laing had the chance to get his mitts on a six-speed model from Plextor. The SCSI drive was available as either an internal or external unit, although no SCSI card was included in the £420 package (£571 for the external version). The conclusion: 'It's official – the fastest CD-ROM drive we have ever tested. If you feel the need for speed this must be your only choice.'

We also did a round-up of web browsers, encompassing a massive seven for the review. It just goes to show the impact that the web has had, but unfortunately, of the seven browsers reviewed (Mosaic, Cello, Netscape, Internet Works, WinWeb, Spry Air Mosaic, Quarterdeck Mosaic) only two remain – Netscape and Mosaic (in the form of Internet Explorer). Although there are still alternative browsers, the majority use one of the big two.

WILL HEAD AND JALAL WERFALLI

Amstrad CPC

The late, great **Arnold** was a hit in the playground, with its neat graphics and explosion sounds.

By 1984 kids in the playground had yet another platform to fight over as the Speccy and Commodore were joined by Arnold. But, unlike its rivals, the Amstrad CPC was never marketed as a serious computer platform. Instead, Alan Sugar had cut to the chase and realised it was games that were selling the 8bit machines, not word processors (though he would return to that arena with the PCW).

The CPC got the nickname Arnold from an anagram of Roland, as in Roland Perry, one of the men who oversaw the development of the CPC.

Despite arriving late on the 8bit scene, the CPC proved extremely popular, gaining a large user base in a relatively short space of time. There were a number of reasons for this. For one, the CPC464 had a built-in tape deck which was very reliable, something that other 8bit machines couldn't boast. More importantly, though, was the fact that it shipped with a monitor, either colour or green screen, which meant that you didn't have to be disturbed by your dad mid-game when he wanted to watch the footie on TV.

Also, from its first day of release there was already software available for the platform, something unheard of in the 8bit days. Amstrad had sent prototype machines to 50 software houses well before the machine's launch – a business practice that is now common in the console industry, but Amstrad did it first with the CPC. This canny move also allowed Amstrad to bundle a bunch of games with the unit, which appealed to mums and pops who liked the fact that they were getting a complete package.

While Amstrad never really marketed the 464 at serious users, the hardware under the hood was not to be sniffed at. At the heart of the machine was a Zilog Z80A CPU beating at 3.3MHz. This was backed up by 64KB of RAM. The graphics were also pretty neat for the time. You got a palette of 27 colours (three intensities of red, green and blue) and three screen modes: mode 0 offered 160 x 200 with 16 colours, mode 1 had a resolution of 320 x 200 with four colours and the high-res mode 2 offered a massive 640 x 200 with just two colours.

Sound was much better than on the



The Arnold's graphics were groundbreaking for the time, boasting a 27-colour palette

spectrum, thanks to the General Instruments AY-3-8912 chip, though it wasn't really a patch on the C64's SID chip. Nevertheless, you did get three tone channels each with an eight octave range. For those all-important explosion sounds there was also an additional noise channel. Sound was in stereo, but this was really just achieved by setting each of the tone channels to either left, right or centre settings.

Expansion was taken care of by the 7bit printer port, which could be used with Amstrad's own dot matrix printer, or via the Edge connector, which was later home to a whole range of devices from a memory expansion pack to a speech synthesiser.

The 464 was followed by the short-lived CPC664 which added a 3in disk drive, but it was with the CPC6128 that Amstrad started to target more serious users. The CPC6128 did away with the brightly coloured keys, in favour of a more sober, all grey keyboard. Also, as its name implies, it upped the RAM to 128KB. This was a bit of a fudge, as the Z80 could only address 64KB at a time – you had to switch between the two blocks to use the extra memory.

The CPC6128 also shipped with a copy of the CPM operating system (the CPC could run CPM due to the Z80, of course) and the disk drive made it a much better proposition for businesses and serious users.

But really the CPC range will be best remembered as a gaming machine and it was home to some real classics such as Paul Shirely's Spindizzy, a cross between marble madness and an isometric adventure game, which still oozes playability even today. Sorcery+, which managed to get two of the CPC's graphics modes onto the screen at the same time, was great fun and one of the few games to truly take advantage of the CPC6128's disk drive.

Other classics include Highway Encounter, LightForce and Starfox 3D. Unfortunately, the CPC also suffered horribly from the dreaded Speccy port. Because both machines used the Z80 processor it was easy for games companies to do a quick and dirty port from the Spectrum version of the game, which failed to take advantage of the CPC's extra colours and higher-resolution modes.

Amstrad added to the range at a later date with the 464+, 6128+ and the ill-fated GX400 games console. Graphics hardware had been improved, but really by this stage the company was flogging a dead horse as the 8bit era had been superseded by 16bit beasts like the Atari ST and Amiga.

NIALL MAGENNIS