LEISURE LINES

contents

Motorcross Madness 2

If you liked the first version, then take heart from the knowledge that Microsoft has more bike action in store. This second edition of the racer has new tracks, but there won't be many radical changes as far as the gameplay is concerned.

There will be two new racing modes, however. One, pro-circuit racing, is a new single-player mode where you compete against computer-controlled opponents to progress from rookie biker to superstar. The opponent AI looks set to be fairly good, and we expect that you'll need to get a fair bit of practice in before you can beat them.

There are various different modes of play that give different emphasis to different skills. One, for example, involves finding the next flag on a pre-set course. This can be quite tough when mountains surround you and you are racing against your AI opponent. Another involves driving around a specially designed stunt course, taking care not to veer off the track – again against a computer opponent.

The fun stunt event remains, and new moves are promised here for those who enjoyed it the first time around. The graphics will have a higher level of detail than the original to take advantage of the latest hardware, and developer Rainbow Studios has secured licensing deals to make the bikes and clobber look authentic.

You'll be able to download a track editor from the web, which will be redesigned to allow players to create their own track and to customise the bikes and racer skins. Motorcross Madness 2 is currently scheduled for a summer release, so keep an eye on these pages for a full review near then.

www.microsoft.com/games

JASON JENKINS

Martian Gothic Unification

The year is 2019 and you are about to descend into hell. A Martian base has gone strangely quiet, and you control the three-person investigative team sent in.

Soon, they discover that, not only is the base infected with alien bacteria, but there's also an alien spirit knocking around. All the old crew are dead, their bodies scattered throughout the Martian complex. However, in 1950s, horror B-movie style, they come to life with one mission – your destruction.

This looks to be an interesting third-person, 3D action game. The three characters can work independently of each other and you have to solve puzzles and prevent the three from being killed.

Each character has different abilities that will help them complete each task.

You'll have to co-ordinate their actions, though, as most of the puzzles require one of the characters to be in a specific place at a specific time to help the other two out, by opening a door, for example. There will be a strong back-story to the game, written by science-fiction writer Stephen Marley, and some captivating sound and graphics to create the sinister atmosphere.

www.take2games.com

JASON JENKINS

Soldier of Fortune

Remember Goldeneye for the N64? It's time to get your teeth into more mission-based play.

It seems that a month can't pass without a new first-person perspective shooting game appearing on the PC. In fact, the most powerful gaming platform around seems to have fallen into a trap of perpetual Quake clones and real-time strategy games. It's easy to get jaded about the state of the PC gaming industry, but just because something follows a genre, it doesn't mean it can't be a good game.

With the recent batch of games in this genre all the emphasis has been on deathmatch play, with very little concern for the single player. Don't get me wrong, I love multiplayer deathmatch sessions as much as the next gamer, but not everyone has access to multiple machines and a LAN, and the solo PC gamer has been a little hard done by of late.

It was therefore very refreshing to load up the copy of Soldier of Fortune that arrived on my desk a little while ago. As well as being rather graphically violent, the game offers some excellent single-player scenarios with an in-depth storyline to get your teeth into. Of course, I'm not saying that graphic violence makes a game good, but when you're dealing with a violent subject the realism helps to immerse you in the game.

Rather than follow the Quake scenario of wandering around various levels until you reach the ultimate boss, Soldier of Fortune owes more to Goldeneye on the Nintendo 64. Regardless of the fact that the N64 is suffering badly these days from a lack of support, there's no denying that Goldeneye is one of, if not the best first-person shooter around. One major aspect of Goldeneye's supremacy is its mission-based play, where you have to complete specific objectives in each level to progress to the next one. Thankfully Soldier of Fortune is structured in exactly the same way.

Splitting the game into specific mission objectives makes the whole virtual environment work more convincingly, and it's easy to slip into the persona of a mercenary working for a mysterious and well-funded organisation.

Graphically Soldier of Fortune most resembles the excellent Kingpin, which made a big splash with PC gamers last year. The environment is very dark and uninviting and the first stage in a subway system is very effective at setting the scene. The chances are that you'll only make it through a few seconds of your first fire fight before you realise just how devastating a weapon the shotgun is. A head shot is literally that, so don't expect your opponent to have anything left on their shoulders afterwards. Likewise, if you go for a leg or an arm it will be a one-way ticket to amputation city for the victim. If you find this kind of graphic violence unsettling you can tone things down, but it's unlikely that most players will.

After you've cleared the gangs out of the subway the story really begins and you set off to track down some missing nukes that are on their way to terrorist factions. The second mission is set on a train and appears very difficult at first until you realise that there are doors in the sides of the carriages which, unfortunately, look nothing like doors. Only one of the nukes is on the train and you'll have to travel the world looking for the others.

The game has a very cinematic feel, from the real-time cut scenes to the action-specific score accompanying the missions.

There's still a deathmatch option, and the idea of blowing friends to pieces will appeal to hardcore gamers.

Soldier of Fortune is a solid entrant into a well established genre that offers a great single-player environment.

RIYAD EMERAN

DETAILS

★★★★★

PRICE £34.99 inc VAT

CONTACT Activision 01895 456 700

www.activision.com

SYSTEM REQUIREMENTS Pentium 233MHz, 64MB RAM, OpenGL graphics card, Windows 9x/NT

RECOMMENDED
Personal
COMPUTER
WORLD

Star Trek: Armada

Learning Klingon may have been pointless, but this real-time strategy is a lot more rewarding.

With a heritage like the one *Star Trek* enjoys, there's a lot to live up to, but Star Trek: Armada is equal to the task. It is a real-time strategy game built around a superb 3D engine and follows a post-Federation war storyline featuring the faces and voices of the *Next Generation* stars. In the Federation corner is Jean Luc Picard, while Martok represents the Klingons. The Romulans and the Borg make an appearance as well.

The single-player campaign takes control of each race in that order, starting with the Feds. Each mission gets progressively more difficult, the last four being the Borg finale. There's no tutorial, however, and you are dumped in the thick of it from the outset, on a mission to confirm rumours of attacks on a Federation outpost.

ST: Armada is a fairly simple beast. You won't have to worry about espionage, diplomacy and morale here. It boils down to exploiting resources, building a fleet and either knocking seven bells out of whoever crosses your path, running for your life or hanging on in there until reinforcements can arrive to help.

Resources come in the form of Dilithium moons, which you mine in order to start constructing your empire. To protect it you'll need an array of unmanned, armed satellites. These are cheap to produce and devastatingly effective. As you move up the ladder you can build more advanced structures, more powerful ships and research new technologies and weapons. Each race has roughly equivalent stages of development, so we were slightly alarmed to see that the once mighty Klingon Bird of Prey has been reduced to a light-class fighter with occasional

reconnaissance duties, although it certainly looks the part and still has its shimmering cloaking device. In fact, all the ships look spectacular, and if you zoom in on them you'll be pleased to note from the detailed surface textures that they've been slavishly rendered true to the originals.

In the best tradition of explore, exploit and destroy, at the beginning of each mission you are presented with a cut scene,

a brief and a blank map. Space is laid out before you on a 2D grid, with various 3D objects floating in their own squares. These are the stuff of the television series: wormholes and different types of nebulae, among others. The wispy nebulae don't just offer a startling and colourful backdrop to your stellar exploits; they have more visceral effects, such as uncloaking your enemies,

downing shields or slowly poisoning your crew. When used well, they can be decisive in battle – as places of refuge or to disable the more deadly weapons and level the field.

It is in combat that the more ingenious elements of gameplay arise. You can make your ships move more fluidly by switching to the Director's Cut mode. But, best of all, switch from the 2D overview to Cinematic View, and you can watch your battles in all their 3D glory. Should there be the slightest doubt that you're not going to completely overwhelm your opponents, however, you should stick with the strategic overview, or you'll get whipped amid the confusion.

The only real downside about Armada is the AI, or lack of it. Your computer-controlled opponent simply won't learn from its mistakes, and you can fool it time and time again with the same trick, such as a heavily guarded wormhole exit or hiding in nebulae. The other point is that mouse control is rather confusing in its use of left and right-clicking sequences.

But this aside, Star Trek: Armada is one luscious galactic romp and really gives you the thrill of being at the helm of the Enterprise-E with your finger on 'launch'. Treat yourself and make it so.

MATT WHIPP

DETAILS
★★★★

PRICE £34.99 inc VAT
CONTACT Activision 01895 456 700
www.st-armada.com
SYSTEM REQUIREMENTS Pentium 200, 32MB of RAM (64MB recommended), Windows 95/98

Star Wars: Commander

So, you've turned to the dark side and planned strategic assaults on the Rebel forces. Fun, isn't it?

As *Star Wars: The Phantom Menace* has just been released on video to massive publicity, unsurprisingly, LucasArts has chosen this moment to release a new *Star Wars* game. It's been three years in development and has gone through two graphics engines, but has it been worth the wait?

The answer has to be – sort of. In this game, you are part of the evil Galactic Empire in its attempt to crush the rebellion. There's something quite satisfying in not being a goody two shoes for once – shouting 'die rebel scum!' at the screen as you play is very therapeutic. Doing the emperor's bidding, of course, involves wiping out an awful lot of people, and so it is ideally suited to a Real Time Strategy (RTS) title. This one uses 3D. We feel that the most successful RTS titles are the ones that have 2D interfaces, such as the very successful Command and Conquer series. Star Wars: Force Commander tries to resolve the problems 3D RTS games have had, and although it does a fairly good job, it isn't entirely successful.

Considering the length of development that this title has been subjected to, the graphics aren't all that great. They are not bad, but they are nothing special. Everything looks fine from some distance away, but when you zoom in to take a look at the action close up, the characters look pixelated. This is a strategy game, though, so it's not a huge issue. You view the action through your Battlefield Holographic Control Interface (BHCI) – sitting on an Imperial ship some miles away from the action, you get to issue commands to your forces, directing them as you see fit.

It is here that the game's major flaw rears its head. You view your troops in full 3D and to navigate the scene effectively you have to tilt the camera in various different ways. This is fairly hard to master. Keyboard users will have a few problems, as the shortcuts don't make

much sense. A lot of people will want to use the mouse to navigate, however, and this is even trickier. You have to press a different combination of mouse buttons and move the mouse in different ways to move through the three axes. We found this difficult, and the navigation was made all the more difficult by the fact that the game kept returning us to default views after certain events, so we had to go through the tortuous process all over again.

This aside, the game play is fairly good. You can divide your forces up into groups, which helps if you are on a scouting mission or have to defend yourself against attack on several fronts. You can access the various areas of t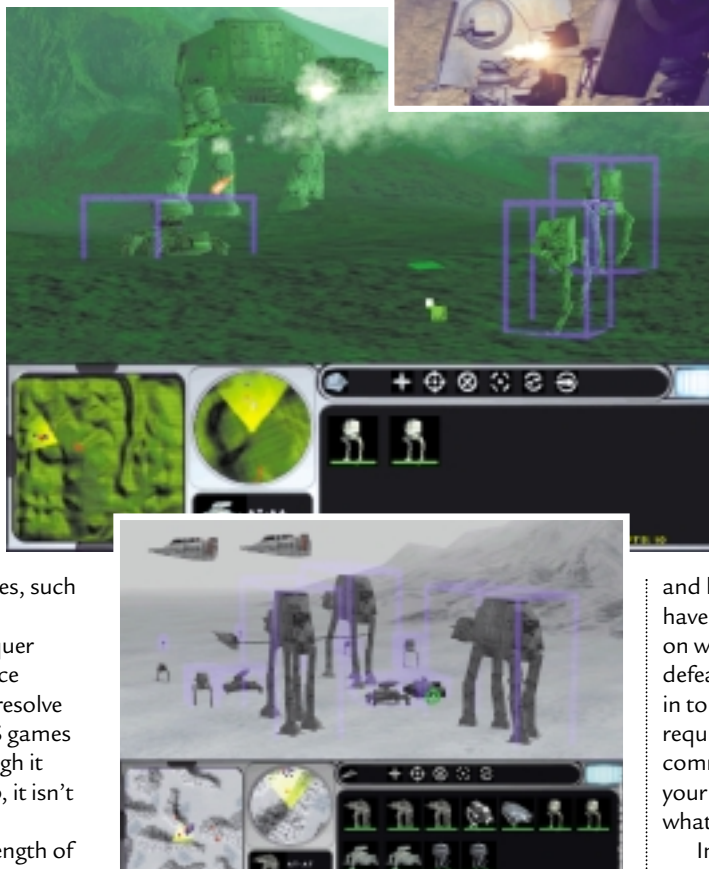he arena quickly by clicking on the basic overhead map in the bottom left. If you don't want to manually adjust each character's move every second of play, there are several basic options. You can order your troops to adopt belligerent, defensive, guard and passive stances, all of which are fairly self-explanatory. Don't worry if you are not familiar with RTS games, as there are some useful training missions to guide you through most of the functions, and to give you tips on how to win.

Before each mission you are given a briefing on what lies ahead and, if you're lucky, a great cut-scene to fill in some back-story. After that it's on to the hanger bay to pick your force and kit them out. Some decisions will have already been made for you, based on what the empire thinks you need to defeat the enemy. Then you're straight in to the action. All the in-game requisition is done through a central command point – if there isn't one on your mission you'll have to survive with what you have got.

In all, Star Wars: Force Commander is a lot of fun. It is kept from being a five-star game by the problems with the control interface, but there's enough decent gameplay there to merit it four.

JASON JENKINS

Enemy Engaged: Hokum

A flight combat sim with added strategy elements – but you'll have to put in the time to master it.

Empire Interactive has made a name for itself with a range of flight combat sims, and its current stable consists of Mig Alley, Flying Corps Gold, FA-18 Korea and Enemy Engaged: Apache Havoc. And before you think the company is getting lazy with its naming policy, the latter of these is designed to work in harmony with its latest release, Enemy Engaged: RAH-66 Comanche versus KA-52 Hokum. This is a clever concept, as owners of the previous game can fly the Apache helicopter in the missions of the new release – and vice versa. As the series progresses, more aircraft will be added and be able to take on the whole range of missions or battle it out head to head.

As far as gameplay is concerned, the biggest fear with flight sims is that, in their attempt to be realistic, the learning curve will be enormous. Unfortunately, Comanche Hokum does fall into this trap a little and there are a lot of instructions to master in order to play the game. Adding to the confusion is the fact that each button usually carries out a different function when combined with the Shift, Alt or Control keys, making memorising the controls that little bit harder. There is a full keyboard guide to help you out, but it's a little frustrating to have to keep switching on the autopilot while you look for the appropriate key.

When you're first starting out, the best way to learn how to fly is not to dive straight into the missions, but to choose the free flight option. This will allow you to take advantage of infinite weapons and fuel, as well as ignore damage from collisions or enemy weapons. Unless you are familiar with the previous Enemy Engaged title, this sequel will take some time to master – especially when it comes to taking on other aircraft in

combat. This is initially a frantic affair, as the helicopter needs to be controlled very gently and doesn't like being manhandled if you overshoot the target.

Once you've got a fairly good handle on the aircraft's systems and menus, it's time to get stuck into the campaigns. This is where Comanche Hokum really excels, as it contains a strategy

element that elevates it above a normal flight sim. You will be called upon to position ground troops and tank divisions as well as your air force if you are going to win the battles. And with air support naturally playing a large role, the artificial intelligence of your fellow wingmen will allow you to call them to help you when you're in trouble, or direct them in formation to a specific target. The most important thing to keep in mind is that the battle never stops, so

while you're off flying a mission or taking time out to refuel, remember to cast an eye over your other forces and listen for warnings from your control centres.
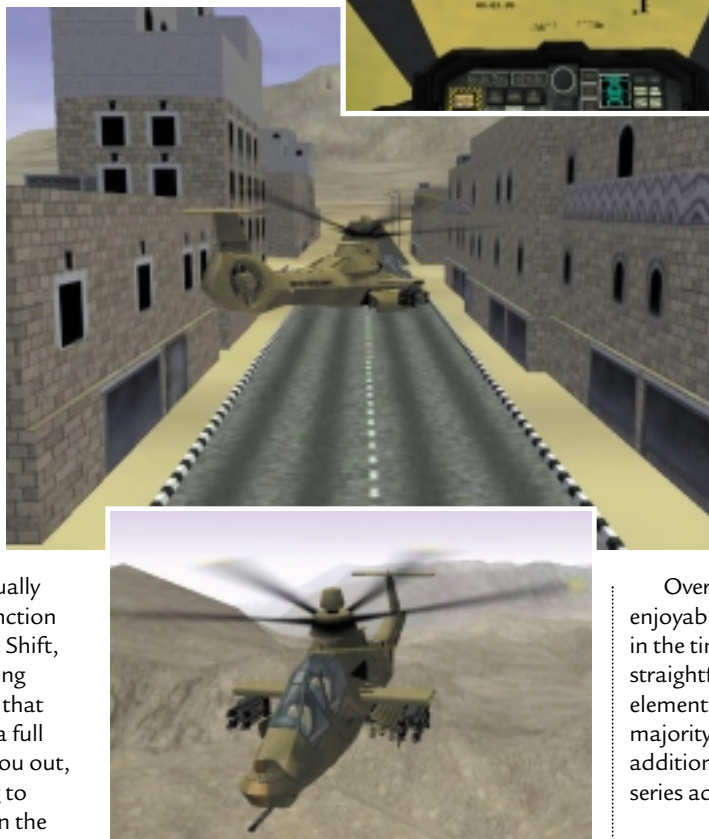
Difficulty levels aside, the game does include some good touches. The voices of air traffic control and ground control are welcome additions to guide you to the action, and the attention to detail in the scenery is excellent. The designers have closely modelled three war zones – Taiwan, Lebanon and Saudi Arabia/Yemen – each one featuring a variety of simulated landscapes as large as 400 x 200km. There is also something of a Cold War feel to the game, as the two featured helicopters are from opposing armies: the RAH-66 Comanche gunship is from the US, while the twin-rotored Ka-52 Hokum-B is its Russian counterpart. And as with most modern games, Comanche Hokum features full multiplayer functionality over serial cable, modem, LAN and Internet connections.

Overall, Comanche Hokum is an enjoyable game if you are willing to put in the time to master it. Its blending of straightforward flight combat sim with elements of strategy will satisfy the majority of gamers, while the possible addition of further episodes gives the series added life.

MATT CHAPMAN

DETAILS

★★★★

PRICE £29.99 inc VAT

CONTACT Empire Interactive 0800 783 0156

www.empireflight.com

SYSTEM REQUIREMENTS Intel Pentium 266MHz, 128MB of RAM, 300MB of hard-disk space, DirectX compatible graphics card with 8MB of onboard memory, DirectSound compatible sound card, Windows 95/98

Rollcage Stage II

Psygnosis has answered the criticisms of its futuristic racer.

Rollcage was one of the best futuristic racers on the PC and offered a number of novelty gameplay additions, mostly as a result of your buggy's gravity-defying abilities. There were, however, a number of problems with the original, but developer Psygnosis has gone a long way towards solving these in the sequel.

One of the criticisms was that the single-player game didn't offer enough long-term thrills to hold the attention of hardened gamers. Psygnosis has taken these concerns onboard and expanded upon many of the original's options.

There's now a training mode to help you get to grips with the control system and prepare you for the league races. Speaking of which, the league system has been updated to feature five groups rather than three. Each group consists of three races plus a knockout stage.

The second two additions are the Scramble and Survivor modes. In Scramble you have to navigate a series of extremely tricky courses within a set time limit, without falling off the side of the track. The later tracks are some of the most fiendish we've ever seen. Survivor only becomes available when you have completed the league. This is for experts only, as you have to finish each track in first place to be allowed to progress to the next. If you fail to finish in the lead, you're sent right back to the first track.

The main difference between this sequel and the original is the fact that Psygnosis has tweaked the control system in order to make it a bit more forgiving. There's now an extra control that will right your buggy and point it in the correct direction. You do lose some time if you use this function, but it does help you avoid getting completely disorientated after doing a 360 as a result of falling off a tunnel's ceiling.

Overall, Rollcage Stage II is a huge amount of fun. If you like arcade-style thrills it's hard to find a better fix.

NIALL MAGENNIS

DETAILS
★★★★★

PRICE £29.99 inc VAT
CONTACT Take2 Interactive 01753 854 444
www.rollcage-game.com
SYSTEM REQUIREMENTS Pentium 200 (Pentium 300 recommended), 32MB of RAM (64MB recommended), 4MB OpenGL or DirectX-compatible graphics card, DirectX7-compatible sound card, Windows 95/98

Need for Speed Porsche

Let your dreams come true as you get behind the wheel of every single Porsche ever produced.

The original Need for Speed is considered one of the classic racing games, especially in its original 3DO console incarnation. You'll be glad to hear then that in Porsche 2000, EA has re-introduced many of the elements that made the first game such fun, especially the point-to-point races.

Every model that Porsche has ever produced is represented, from the first 1948 356 roadster to the speedy 959. That's more than 80 cars in all, and EA has revamped the physics to simulate the individual handling of each car.

There are three modes of play: Porsche Evolution, Factory Driver, and Quick Race. The latter lets you get straight to the action and is aimed at those who are too impatient to trawl through the set-up options offered by the other two modes. Factory Driver, on the other hand, offers you to chance to play the role of a Porsche test driver in a series of mission-based driving tasks.

In the Porsche Evolution mode you start the game in 1948 with a little bit of money and then have to gradually accrue more cars as you win more race money.

The races in Porsche Challenge mostly involve you speeding from point to point across country roads. There are nine road courses in all, and only three actual race circuits. All the courses are highly detailed, with beautiful scenery. If anything, some of the tracks are a touch too long, making it difficult to learn a good line for each corner. However, most offer shortcuts – and it's great fun screaming down the side streets on the Monte Carlo circuit.

Overall, NFS Porsche is a worthy racer. The AI of the computer-controlled cars could be better, but the tracks are well designed with some neat shortcuts.

NIALL MAGENNIS

DETAILS
★★★★

PRICE £34.99 inc VAT
CONTACT EA 01753 549 442
www.needforspeed.com
SYSTEM REQUIREMENTS Pentium 200 (Pentium 300 recommended), 32MB of RAM (64MB recommended), 4MB of OpenGL or DirectX-compatible graphics card, DirectX7-compatible sound card, Windows 95/98/2000

SURF CITY: 12 OF THE BEST

Bunnies, DVD and on yer bike

The first of my favourite websites is one that I use every month. Being an avid home cinema enthusiast I find the lack of titles and quality of the Region 2 UK DVD market rather depressing. I therefore import most of my DVD titles from overseas. The best site I've found is Canadian-based dvdboxoffice.com. This offers all the latest Region 1 titles at competitive prices, and has the added bonus of free worldwide shipping. It usually takes about a week to get your discs and any faulty discs are dealt with courteously and efficiently.
www.dvdboxoffice.com

The next site involves one of my other passions, mountain biking. The price differential between the UK and the US markets is substantial when it comes to mountain bike components, so importing kit from across the Atlantic is a good idea. One of the best sites I've found for this is www.speedgoat.com.

Speedgoat has a substantial catalogue of items and competitive prices. I ordered a new crank for my bike which took only six days to arrive and saved me over £100 on the UK price. I even got a phone call the day after I ordered, telling me that the item

wasn't in stock and asking if I was prepared to wait.
www.speedgoat.com

If you've been travelling on the London Underground lately you couldn't have missed all the posters advertising www.iobox.com. This is one of the new breed of web services that acts as a mobile phone gateway. From the website you can compose ring tones for your mobile phone, send SMS messages and have information such as weather reports sent direct to your phone. As a trial user you get 30 free SMS messages, which also gives you the option of sending pictures to suitably equipped phones. This is great fun, but do get the address right. A message I sent to my wife never got there, so if you received a mysterious picture of a bunny, please accept my apologies.
www.iobox.com

RIYAD EMERAN
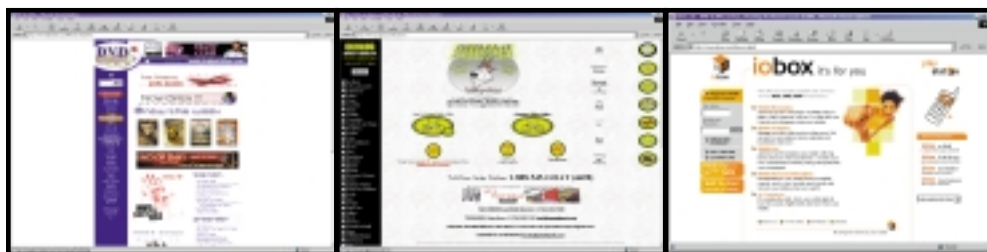
From left: Broaden your DVD choice, get the goat for cheap mountain bike parts and send pics of bunnies

Searching for ads and news

Some websites you just want to keep quiet about – they are so good that you want to keep them all to yourself. One such site is Google, which has an interesting take on the usual search engine theme. It produces the most relevant answers to any search string using the company's almost-patented PageRank system.

This looks at how many pages link to another page. The page with the most links pointing towards it is classified as the highest voted, and so will come out top in a search. However, it's not just about the quantity of links,

but also the quality. If you get a link to your page from a page that itself has a lot of links to it, this will count for more than a link from a page that only has a few links pointing towards it. The logic behind this is that the page boasting more links is, effectively, a more trusted source.

Forget about the technology, though, just give it a try, and you will see for yourself that Google consistently gives better, more relevant results than Yahoo and all the other popular search engines.
www.google.com

Unlike Google, somewhere you will want a lot of people to go – especially if you're already a member yourself – is AllAdvantage. As we all know, there's no such thing as a genuine get rich scheme on the Internet, but this site provides an easy way to make a couple of extra quid a month – just by having some ads running along the bottom of your screen. The service works fine over a modem, and it's even better on a leased line.
www.alladvantage.com

Saving the best for last, though, pop over to Salon, a daily net-based magazine. The quality and quantity of the writing puts many paper-based rivals to shame and it's certainly the first place I turn for insightful comment on the big stories of the day, and many smaller issues you'd otherwise miss.
www.salon.com

NIK RAWLINSON

From left: A popularity contest search site, get paid to surf and read all about it on a great web newspaper

At *PCW* we take net use very seriously. Whether sending pictures of bunnies or supplementing our salary, we're always on the lookout for good websites – so here are some of our favourites.

The sound of fast cars

If, like myself, you're one of those people who wants to be keep up to date on the latest music hardware and software hitting the market, then harmonycentral.com has got to be the best place on the Internet for information. While the website doesn't really have much of its own editorial content – it tends to just post reformatted press releases – it is usually first with the news.

Among the other features, you'll also find the odd review of audio software and a well stacked library of shareware and demos to download.

Well worth a visit if you are into music. www.harmonycentral.com

Those who feel the pangs of nostalgia for the good old days – when your imagination dictated the fill rate of on-screen polygons rather than silicon on a graphics card, should head over to vintagegaming.com. It's one of the best sites for emulators and has a frequently updated news section that covers all the latest releases on the emulation scene. Vintagegaming also has a huge list of the emulators available for classic home computers. There's a short

description of each to let you know how far advanced the emulator is at the current stage in its development. This is important, as most emulators never make it further than the beta stage. www.vintagegaming.com

We're all into fast processors here at *PCW*, but some of us are also into fast cars. A great place for Formula 1 news and gossip is PlanetF1.com. You'll find biographies of each driver and a history of the teams involved in the sport. You can even compare drivers in the head-to-head section, so you can see how Schumacher squares up against the great Ayrton Senna. If you're into grabbing freebies, then this is the place to download screensavers for eight of the top teams. PlanetF1 is a well-designed site that's packed with quality information. A must for F1 fans. www.planetf1.com

NIALL MAGENNIS

From left: Keep up with muso news, replay those games that drove you to distraction and get the SP on F1

PDAs, WAP and a little black magic

Cellnet's Genie service offers a multitude of facilities for the mobile-equipped road warrior. First up you'll find G-Mail, providing email delivery via SMS to any UK digital handset for free (it doesn't even have to be a Cellnet mobile). Only the first 100 characters are delivered to the handset, given the 160 limit on SMSs, but it's a handy facility. For those lucky people that have managed to get their mitts on a WAP-enabled phone, Genie also provides a useful portal to WAP content available on the net. You can access your G-Mail account, plus there

are also links to news headlines, sport and even TV listings. www.genie.co.uk; wap.genie.co.uk

Since indexing and cataloguing the web is more of an art than a science (and at times seems like black magic) it's no wonder that no single search engine is suitable for finding those really obscure sites. With Dogpile, however, you can search 12 engines at the same time. The site works by sending your query to each engine in turn and then bringing back the first 10 hits from each one. This is a simple idea and its execution is

superb, allowing you to spend less time searching and more time surfing. www.dogpile.com

For those obsessed with mobile devices, the need to keep up with the latest trends is paramount. PDANews at TUCOWS (which stands for The Ultimate Collection Of Winsock Software) provides an invaluable resource, with daily updates on the latest happenings in and around the industry. The site is fairly biased towards the EPOC OS – owing to the fact that it started life as a Series 5-based site (called 5Alive) and has since progressed to bigger and better things – although Palm and CE are still adequately covered. There's also a support section if you're having trouble with your device, plus quick links to other TUCOWS sites. http://pdanews. tucows. com

WILL HEAD

From left: Genie works its WAP magic, Dogpile fetches obscure sites and all the news a PDA fan needs

☞ Once is enough

The grid below is to be filled with the numbers 1 to 6 so that each number appears exactly once in each row and column. The clues refer to the digit totals in the squares mentioned. For example, DEF2 = 9 would mean that the numbers in D2, E2 and F2 add up to 9.

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6 | | | | | |
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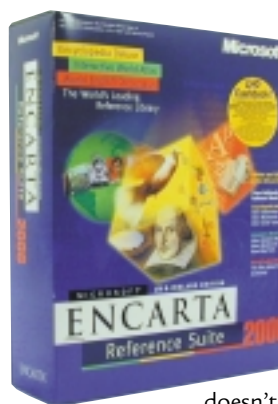
AB3 = 3
ABC4 = 15
B12 = 7

B56 = 7
BC6 = 9
BCD2 = 6
C34 = 11
D45 = 4
E456 = 6
EF4 = 5
F123 = 8

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

Send the answer, your name and an address where the prize can be sent on a postcard to: *PCW* Prize Puzzle (June 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 May 2000. Please note that we DO NOT open attachments.

☞ March's Prize Puzzle answer

The winner of March's Prize Puzzle is David Crapper, who revealed the real Dr Dolly. If you remember, the scientist had created clones of himself but, by finding out that the clones always lie, Mrs Dolly is able to find out which man is the real Dr Dolly.

She asks the first Dr Dolly if he's the real one, but doesn't hear his answer so she asks the second man what the first had said. He replies 'yes'.

As Mr Crapper rightly deduced, all three men must answer yes to the question 'Are you Dr Dolly?', so any Dr Dolly who reports that another has answered 'yes' must be telling the truth, and therefore is the real Dr Dolly. Mr Crapper points out that it was not fully established that the real Dr Dolly never lied, but as the clones' lying *distinguished* them from the real Doctor, this implied that he told the truth. We also assume that no man would lie to his own wife.

prize crossword
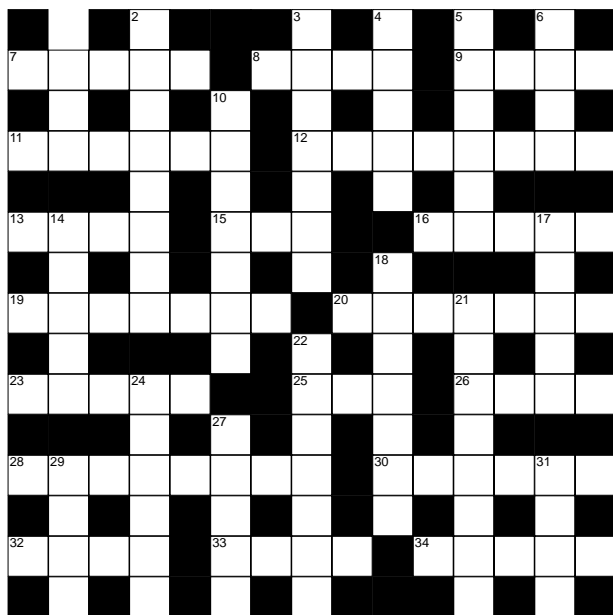
ACROSS

7 Units of memory (5)
8 The R of ROM (4)
9 Slot-in place (4)
11 Division of a disk (6)
12 Microsoft's controversial browser (8)
13 Internet programming language (4)
15 Software mistake (3)
16 Completely delete (5)
19 Picture input device (7)
20 Existing setting (7)
23 Screen dot (5)
25 19 across's text software (abbrev) (3)
26 Fundamental operating system program (abbrev) (4)
28 Browser rival of 12 across's company (8)
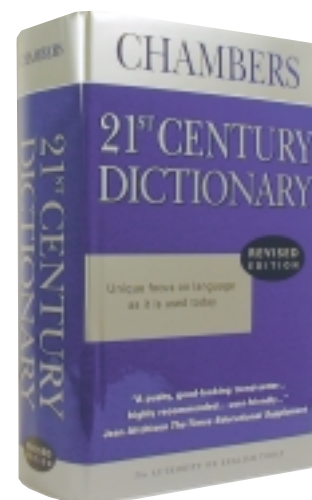30 Move down the page (6)
32 You might read it through Outlook or Eudora (4)
33 Start up a computer (4)
34 Graphic for statistical info (5)

DOWN

1 Over-publicity (4)
2 Hold back (8)
3 Retaliation (7)
4 Alter (5)
5 Pandemonium (6)
6 Genuine (4)
10 Snatched (7)
14 Character standard (abbrev) (5)
17 Volley of shots (5)
18 Female inheritor (7)
21 Of trees (8)
22 Ennui (7)
24 Simply (6)
27 Young sheep (5)
29 Dutch cheese (4)
31 Spring flower (4)

Each month, one lucky *PCW* Crossword entrant wins a copy of the *Chambers 21st Century Dictionary*.

The winner of April's crossword puzzle is: Chris Main of Alderney, Channel Isles.

This time, it could be you. Send your completed crossword to: '*PCW* June – Prize Crossword', VNU House, 32-34 Broadwick Street, London W1A 2HG, | to arrive not later than 20 May 2000.

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

Solutions to May's crossword

ACROSS: 7 Encrypts 9 Erased 10 Desk 11 Chat rooms 12 Guest 14 Printer 18 Start up 19 Lithium 22 Refresh 24 Email 26 Intranets 28 Tray 29 Laptop 30 Provider
DOWN: 1 Ingenuity 2 Trek 3 Speck 4 Fear 5 Parole 6 Mess 8 Stairs 13 Sir 15 Nail 16 Purr 17 Fumigated 20 Ham 21 Asleep 23 Entity 25 Aston 26 Ivan 27 Alps 28 Trio

WIN
a great CANON bundle

This month there's a fantastic package from Canon up for grabs. Not only could you win a digital camera – the PowerShot S10 – but also the high-quality BJC-8200 Photo printer. Canon has also thrown in its award-winning FB630Ui scanner. Two lucky runners-up will win one of Canon's BJC-8200 Photo printers.

Canon's PowerShot S10, worth approximately £700, is one of the smallest and lightest megapixel-class digital cameras. Equipped with a zoom lens, the PowerShot S10 measures just 10.54 x 6.94 x 3.38mm and weighs a mere 270g. The motorised retracting lens system and silver case make it one of the most stylish as well as smallest digital cameras on the market. It comes with an 8MB Compact Flash card (with optional 340MB IBM MicroDrive compatibility), mains charger and battery, plus imaging software.

To enhance the production of your photographs, Canon has added the BJC-8200 Photo printer. This printer received four stars when it was reviewed in *PCW*, and ensures stunning results for your pictures. Canon's six-colour, Advanced MicroFine Droplet ink technology produces grain-free images and very subtle gradations. The ability to change the six ink tanks individually also produces significant savings over systems that use combination tanks.

Topping off the package is Canon's FB630Ui ultra-thin scanner.

■ *For a chance to win a great Canon bundle, just tell us how many colour ink tanks the BJC-8200 Photo printer uses.*
1. Two
2. Four
3. Six

Carrera winners
The winner of April's competition is Mark Pearson, who wins a Carrera 500MHz Celeron PC. The two runners-up are C Fitzgerald and Mr De Leeuw Van Weenen, who each win an LG Phenom handheld PC.

How to enter
Fill in the coupon and send to the following address by 30 May 2000:
Personal Computer World
Building 960
Sittingbourne Research Centre
Sittingbourne, Kent ME9 8AG
Or email your name, address and daytime telephone number to us at **pcw-competition@vnu.co.uk**.

Please state on 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 only open to UK residents.*

Rules of entry
This competition is open to UK readers of *Personal Computer World*, except for employees (and their families) of VNU Business Publications and Canon. The Editor of *Personal Computer World* is the sole judge of the competition and his decision is final. No cash alternative is available in lieu of prizes.

PCW June 2000 competition entry form

Name: ....

Email address: ....

Daytime telephone number: ....

Address: ....

....

Answer: The BJC-8200 Photo printer uses .... colour ink tanks.

• *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 to other carefully selected companies for marketing purposes* ❑

A fond memorial to the heady days of EPROM, the first colour notebook and the *PCW* awards.

June 1980

Back at the beginning of the 1980s Tom Williams wrote, somewhat naively, about his recent trip to London to witness the 'coming out party' for Prestel. It seems that it is not only David Fearon who's been a victim of the natural progression of language over time, as this month's angry letter shows. As Tom was based out in the infamous Palo Alto hills, he noted the difference between the government-funded Prestel system, ready to launch in the UK, and the commercial systems still in their infancy in the US.

Further on in the magazine Mike Dennis came to the worrying conclusion that 'there's far more to microprocessors than zapping Klingons and balancing your chequebook' – but what on earth could he be talking about? Mike was leading us into the heady world of EPROM programming, where the fun never stops.

Softy, the intelligent EPROM programmer provided an affordable and simple way to create what are now known as embedded systems. As was the trend in those days, two flavours were available – the ready-meal fully assembled version retailing at £120 and the DIY kit form knocking £20 off the price.

Finally, on a lighter note, CE Collingham took a stroll through the world of PSUs in the article 'Power Supplies Explained'. The gripping article explained how to put together a power source for your computer creations but heeded the warning 'on one side of the transformer is mains voltage... treat it with respect'. With that in mind, this shout goes out to the mains voltage massive...

15 YEARS AGO **June 1985**

Uncle Sam, or rather Uncle Jack, adorned the cover in 1985 for the release of Jack Tramiel's Atari 520ST. Peter Bright was the chosen inspector of the 'all-singing, all-dancing machine', but did it cut the mustard? Peter admitted that the 520ST was well endowed with ports, covering MIDI-in, MIDI-out, serial, parallel, RGB out, composite out, floppy and Winchester ports, plus two joystick ports for playing those all-important games. Memory came in at a standard 512KB and on the software front there was GEM, plus Basic and Logo.

However, there were two niggling points. The first being lack of software support, and although Digital Research had committed to producing word processing and graphics packages, third-party support was less forthcoming. The second failing was the price; the cost of the box itself was reasonable, but once you strapped on a disk drive and monitor you were getting precariously close to the £1,000 price barrier.

In the *Program File* this month, where readers were invited to send in their own compilations, Nick Walker chose Mark Needham's BBC Alpha as the worthy winner of 'Program of the Month'. Hand-coded on the humble BBC micro, as fondly remembered by David Fearon in this month's *Retro* column, the program was an artificial-intelligence simulation controlled by natural language. While no contender for last month's AIBO, we decided that Mark's effort deserved the coveted title, plus an extra £50 in his back pocket for an outstanding contribution, given the limitations of the hardware available at the time.

10 YEARS AGO **June 1990**

A decade ago we scored a major coup with the first ever colour laptop. NEC was the driving force behind the technology, with the release of its ProSpeed CSX. The know-how had been around for a couple of years, with both Hitachi and Zenith previously showing off prototypes, but both were beaten to the marketplace. Guy Swarbrick had the pleasure of putting it through its paces, although he had reservations about the technology, which was clearly in its infancy.

To start with it was very bulky – due to the extra thickness of the backlit display and the larger power supply needed to drive it. So what you gained in colour you lost in portability and, unfortunately, the screen was very poor, so the trade-off wasn't acceptable.

Apart from upping the ante for laptops, the other machine getting a makeover this month was Commodore's Amiga. The repackaged Amiga 3000 was marketed as a low-end workstation with the ability to run Unix, although you wouldn't find a copy in the box. The worrying aspect was the legal wranglings between Motorola and Hitachi about the ancestry of the 68030 chip at its heart. Production, unfortunately, depended wholly on an end to the dispute.

In a departure from the straightforward review of PCs, Steve Gold took a disturbing look at the fly-by-wire systems that were becoming increasingly common in planes. The main concern was that these would lead to a de-skilling of pilots: 'This has led to what pundits have called the "I can't fly any more but I can type 80 words a minute" syndrome.'

5 YEARS AGO **June 1995**

Back in 1995 the biggest thing on our minds was the annual *PCW* Awards. To celebrate their fifth year, we opened the nominations out to the readers – leaving the staff in the office to argue over which technology or software should scoop the final honours.

The list of winners was a pointer towards today's leading companies. Gateway impressed, with prizes for Best Direct PC Dealer and Best After Sales Service, while Compaq, IBM, and Evesham took home vendor awards. Hewlett-Packard won Best Printer and Best Budget Printer, while Adobe's Photoshop 3.0 took Best Creative Software with Microsoft Office 4.0 winning Best Suite. Apple won the prize for Best PC System for the PowerMac 6100/66.

Elsewhere, ISP EUnet warned against the dangers of too much video and voicemail clogging the Internet. A program called CU-SeeMe, notoriously associated with dodgy computer sex, proved to be a particular hog, interfering with other traffic and jamming the Internet. The increase in voice traffic – much cheaper than making international calls – was also taking its toll on the pipes.

One solution to these problems was the fabled Infobahn. The cable companies finally agreed a strategy that would see them becoming the largest national Internet providers – with a proposed 10Mbits/sec service. Five years on we are reaching a point where ADSL is almost ready to offer increased throughput for a similarly clogged Internet.

WILL HEAD AND MATT CHAPMAN

BBC Micro Model B

Speccyphiles will disagree, but the Beeb has a strong claim to being the classic British home micro.

In 1982 the BBC was searching for a home micro to partner its Computer Literacy Project. As luck would have it, Acorn was just finishing the design of the Proton, the follow-up to the Atom which had been out since 1979. Acorn submitted the Proton for evaluation and it beat all comers, a unit from a certain Mr Sinclair allegedly among them, to be released as the BBC Micro.

The BBC Micro was produced in two flavours, but the 32KB Model B variant quickly came to dominate over the cheaper, 16KB Model A. Anyone initially buying a Model A soon forked out for the expansion kit.

The Beeb was all about people getting seriously to grips with computers, and everything about it exuded quality. The full-size keyboard was superb. The core of the machine was the 6502 processor, running at an above-average 2MHz. Graphics capability was good for the time, with eight colours at 160 x 256 resolution, or a massive 640 x 256 in monochrome Mode 0. For serious applications, the teletext Mode 7 occupied just 1KB of memory. Sound was produced by Texas Instruments' popular 76489 Complex Sound Generator, offering three tone generators plus a white noise channel.

The operating system included BBC BASIC, the only version around that allowed structured programming,

The Model B had external interface ports and connectors coming out of its ears; so many, in fact, that four of them were mounted under the machine. At the back there were three video outputs (UHF, composite and RGB video), an RS423 serial interface, an analog input port, a cassette input

and an optional Econet port for networking. Underneath were the expansion ports: you had the printer port; the user port offering eight digital I/O lines for home-built hardware; the 1MHz Bus for attaching the likes of a Prestel unit and a connector for that must-have peripheral, a floppy disk drive. Finally, there was the connector for the immensely impressive second processor capability. Dubbed the Tube, it allowed an extra 6502 or Z80-based CPU unit to be

A few factors made the Beeb less popular than the Spectrum, Commodore 64 and latterly Amstrad machines in the playground. It was the computer that every school had in the classroom, so kids viewed them as staid and boring. And the price – £400 for a Model B – meant that you had considerably more chance of getting a Spectrum for your birthday.
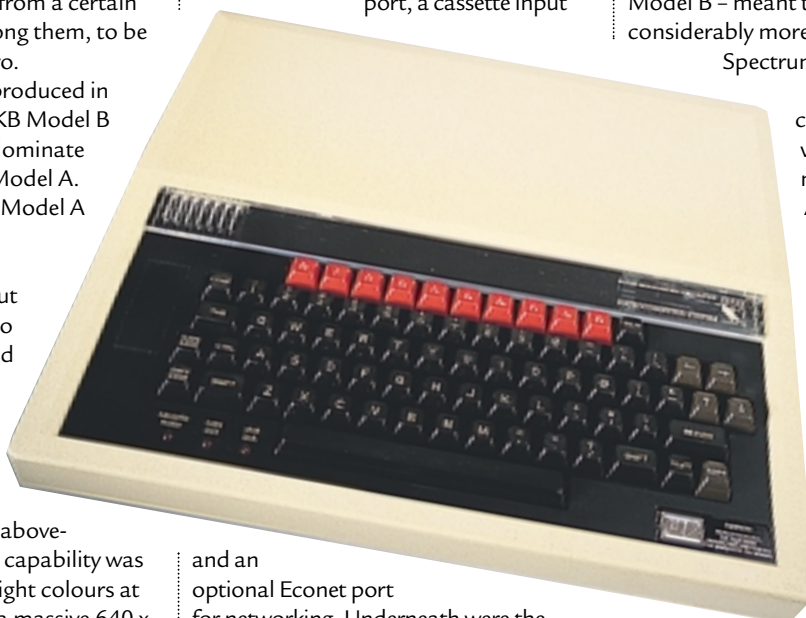
The BBC consequently wasn't viewed as a gaming machine, although Acorn produced some excellent arcade conversions, and in 1984 the machine spawned one of the most important computer games of all time – Elite. Written for the Model B by Cambridge undergraduates David Braben and Ian Bell, it changed the world overnight. It ushered in the era of three-dimensional vector-based worlds, and the gaming community is still waiting for a successor that betters it for sheer atmosphere, originality and immersion. And few people realise that Geoff Crammond, creator of the F1 Grand Prix simulations for the PC, wrote his first racing sim on the Beeb: Revs was a Formula 3 simulator that was miles ahead of anything else at the time.

The BBC Micro permeated every aspect of early British computing culture, from the playground to the library to the laboratory. Along the way it won a place in the hearts of hundreds of thousands of British and European nerds, myself included. And it still has a huge Internet presence. The best resource is Robert Schmidt's website The BBC Lives! (www.nvg.ntnu.no/bbc). It is actively updated and includes links to the dozen or so emulators available. So, long live the Beeb: we'll never see its like again, and we'll certainly never hear a sound as evocative as that two-tone start-up beep.

In 1984 it spawned one of the most important computer games of all time – Elite

avoiding the dreaded GOTO. An integrated 6502 assembler meant you could freely mix machine code and BASIC in the same program to get the best of both worlds – speed and ease of programming. Even the manual, *John Coll's User Guide*, was a classic piece of documentation, providing a thorough overview of the machine, including an excellent basic tutorial and language reference, plus circuit schematics.

attached, both with up to 64KB of RAM.

Expandability didn't stop at the outside, either. Pulling the lid off – no serious Beeb owner ever screwed it on – revealed a row of sideways ROM slots for additional utilities. Computer Concepts (www.cconcepts.co.uk) was the pre-eminent ROM company in those days, and its portfolio included the legendary Wordwise word processor: very basic by modern standards, but it never crashed!

DAVID FEARON