DREAMCAST: THE VERDICT
DISCOVER HOW SEGA'S SUPERCONSOLE SHAPES UP

VOODOO POWER
EXPLORING 3DFX'S THIRD-GENERATION PC ACCELERATOR

THE BEST OF 1998
EDGE PICKS THE YEAR'S WINNERS

PHYSICS LESSONS
THE NEW WAVE OF SCIENCE-LED GAMING

THE LAND BEFORE 3D
WHATEVER HAPPENED TO 2D GAMES?

PREVIEWED:
ALL-STAR SMASH BROS • HIRED GUNS
RIDGE RACER TYPE 4 • SOUL BRINGER • G-POLICE 2

REVIEWED:
VIRTUA FIGHTER 3TB • PENPEN TRICELON • THIEF • XENOGEARS • R-TYPE DELTA
hen 11 individuals, with over 200 years of gaming experience between them, sat down to compile Edge’s Best of 1998 feature this month, it took the best part of an evening just to draw up a preliminary short list. Some awards were easy to pin down (votes for Legend of Zelda: Ocarina of Time as game of the year were unanimous) while others, particularly the hardware innovation category, proved rather more challenging. Could Dreamcast really waltz in and scoop the award? You’ll find the answer on p77.

It’s certainly difficult to ignore Sega’s new machine at the moment. If its launch failed to attract the same levels of frenzied attention that engulfed the Japanese launch of the PlayStation and Saturn in 1994, it’s nevertheless one of the most attractive pieces of electronic entertainment equipment that Edge has ever tinkered with.

What has been a revelation, however, is the reception the machine has received outside of Edge. Whenever new gaming kit arrives here, some odd form of underground communication network kicks in, culminating in the Edge office becoming swamped by heaving masses of eager gameheads within minutes. Unlike the N64 with Super Mario 64 or the PlayStation with Ridge Racer, however, Virtua Fighter 3tb appeared incapable of captivating this audience for more than about half an hour. If this was the effect it had on hardcore gamers, what can Sega hope to achieve with the massmarket it so desperately seeks to penetrate?

The quality of AM2’s Virtua Fighter 3tb conversion is not in doubt. But, to an increasing number of gamers, beat ‘em ups are yesterday’s news. Roll on Sonic Adventure.
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Next Month
DREAMCAST: DAY ONE

Edge was in Tokyo for the official launch of Sega's next-generation superconsole

Happy days? Sega president Shoichiro Irimajiri (centre) exemplified his down-to-earth style of management by attending Dreamcast's first day on sale. Special-edition boxes featuring Yukawa Hidekazu (left and opposite) and his popular commercial exploits were printed for the first batch of machines.

11:30am on November 27, 1998, Akihabara district, Tokyo. Four years and five days after the Saturn's sell-out release into the city's stores, leading game vendor Laex opers its doors to admit the queue of customers outside, some of whom have waited all night to buy Sega's new machine. Under a barrage of camera flashes, they file into the shop and hand over ¥29,800 (£150) for the object of their desire: the 128bit console, Dreamcast.

At 9am, Sega manager-turned-advertising-star Yukawa Hidekazu makes a personal appearance outside Laex rival Sofmap to bolster the new console's launch. Wearing a traditional Japanese festival jacket in the same burning orange colour as the Dreamcast logo, he poses by the lines of customers for the benefit of onlooking journalists. Hidekazu-san is shortly joined by Sega Enterprises charismatic president Shoichiro Irimajiri, who takes his turn in front of the cameras. Then Sofmap allows the eager punters waiting outside to make their purchases at around 9:15am. A little later, Laex staff begin subtly coaxing those queuing outside the competitor's shops to change allegiances - with loud-hailers.

Purchasing power
By 10am a second wave of Dreamcast buyers arrives, and Sega's admittance to hardware shortages keeps interest high. Among those waiting are foreign buyers,

Unable to deliver the full 500,000 console packs it intended, Sega instead managed to gather a claimed 150,000, including 80,000 pre-ordered sales.

Once your virginal Dreamcast has been torn from its packaging and hurriedly connected to the television (why did they have to make S-Video sockets so fiddly?), this is the first screen to appear. And don't ask which comes first...
TV advertising star Yukawa Hidekazu was clearly excited to be at the public launch

their get-rich-quick schemes soon to be foiled by a one-customer, one-purchase policy operating in all stores. Meanwhile, Japanese wholesalers are selling Dreamcast to small western importers at $85,000 (£425) per unit, which inflated to prices of around £1,000 once the consoles reached London stores.

By the end of the day Softmap has sold all 1,000 of its allocated consoles, a tale repeated at each of the 5,000 outlets Sega had sanctioned. While limited stocks prevented the Saturn fever that spiralled day-one sales to 200,000 consoles, Dreamcast retailers have sold out of all 150,000 available packs (including one which now resides in the Edge office).

And in a situation eerily reminiscent of the Saturn release, a Virtua Fighter title proves the only title worth investing in.

The aftermath

A change of heart part way through development has returned the company logo, and that of Windows CE, to the console's casing. However, Sega's recent advertising has focused entirely on the

Dreamcast brand, although the status of Virtua Fighter – and the forthcoming Sega Rally 2 (due January 14) – means that the machine will be known for its arcade conversions, at least in the short-term.

As reported last issue, NEC's problems manufacturing the PowerVR 2DC chipset for Dreamcast severely limited the number of consoles Sega could have available for day one in Japan. While 150,000 sales is an impressive figure, it falls far short of the intended 500,000 units Sega wanted to have in retail. Half a million units remains

Dreamcast's sales target for the end of '98, and double that by March '99.

While the initial Dreamcast range at launch was adequate, with Virtua Fighter 3tb, PanPace Trickleon, Godzilla Generations and July; plus the excellent arcade stick and an S-Video cable, Sega's new console is screaming out for software to test its abilities. Released by the time you read this, on December 23, the much anticipated Sonic Adventure might just fit the bill.

If the machine is started minus a GD-ROM disc, this options menu appears, allowing you to set the language, time and date. As with PlayStation, a music CD player is included along with a comprehensive memory card management system.
SUPERCONSOLE: PRE-LAUNCH

Prior to the arrival of Dreamcast, Edge met Sega's consumer division marketing manager Kunihisa Ueno, the man charged with delivering the console to Japan's eager gamers.

**W**hat is your target for Dreamcast hardware sales in 1998?

**Kunihisa Ueno:** This year, roughly 500,000 units. And this fiscal year, which ends in March '99, we plan to sell one million units.

**Edge:** Will you be able to fulfill demand for 500,000 units by the end of December?

**KU:** Maybe. Not yet, but that will be clarified soon.

**Edge:** Sega seems to have laid the blame for the Dreamcast shortages pretty squarely at NEC's feet. Why?

**KU:** We needed not only potential customers but also our retailers to understand what happened. So we talked with NEC's people and we decided to announce the problem of short supply, and NEC agreed to announce their name. If we didn't say anything, the customers would suspect that Dreamcast is having some major problems.

**Edge:** Has Sega altered its distribution system since the days of Saturn?

**KU:** Yes. Starting with the Saturn, we established a company called Sega United in '94 or '95. It was still a wholesaling system—under United there were 18 wholesalers for the Saturn period. Cost-wise and leadtime-wise it was not as efficient as Sony's distribution. So we decided to totally restructure our distribution, from 18 to two wholesalers.

**Edge:** Obviously the launch of every console needs retail backing. How have you gone about this?

**KU:** For the launch, we had announced five titles, but we had to change our program. Sega Rally 2 is postponed until January 14 due to adjustments being made to the title. So we have four titles for the launch of Dreamcast, with Sonic Adventure before the end of the year.

**Edge:** How different is the Dreamcast launch to the Saturn's?

**KU:** At that time, the strongest title was *Virtua Fighter*, and it was the only one which helped the volume of hardware sales. This time, from the very beginning, we wanted a strong line-up. Saturn was known for having a lot of arcade ports, you know that. We wanted to avoid such a stigma for Dreamcast; we have Sonic, which is a very home-oriented title, plus the Internet functions.

**Edge:** How many machines have been pre-ordered?

**KU:** On the first day of the campaign, October 20, we took 50,000 orders.

"FROM THE VERY BEGINNING, WE WANTED A STRONG LINE-UP SATURN WAS KNOWN FOR HAVING A LOT OF ARCADE PORTS. WE WANTED TO AVOID SUCH A STIGMA FOR DREAMCAST"

**Edge:** How big is Dreamcast's promotional budget compared to that of the Saturn?

**KU:** Three times bigger [laughs].

**Edge:** Are you worried about the announcement of PlayStation 2?

**KU:** In terms of our stock price, no, I don't think so. But in terms of the competition in the market... we've already assumed the possibility of PlayStation 2 being announced. Within a year, I think, probably in the spring.

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PROJECT BERKELEY: ARCADE QUALITY FOR DREAMCAST

Yu Suzuki's track record as an arcade game producer is unsurpassed. Space Harrier, Outrun, Virtua Racing and the Virtua Fighter series are all products of his unrivaled ability to utilise the latest hardware to its fullest extent.

Suzuki-san (opposite) is creating Project Berkeley for Dreamcast, a game previously known as *Virtua Fighter RPG*. His coin-op titles have delivered the most complete experience in the shortest time. Whether that can translate into a longer game will have been revealed in Tokyo on December 20. Expect more details next issue.
VOODOO TO THE POWER OF 3

3Dfx raises the stakes in the PC accelerator card market via AGP 2x

 Barely 12 months since the arrival of 3Dfx's benchmark Voodoo2 chipset, the California-based company has announced the third iteration of its PC graphics accelerator. Unsurprisingly entitled Voodoo3, the new chipset utilises Intel's AGP graphics port on the PC motherboard to achieve a rather startling peak performance of seven million polygons per second.

Voodoo3 will be supplied in two flavours: 2000 and 3000. Both are combined 2D and 3D solutions like 3Dfx's effectively defunct Banshee card. The 3000 is a higher-performance, higher-priced design centred around a 336MHz 128bit processor, while the 2000 is the "budget" version, using a 250MHz chip, aimed at the PC manufacturing (OEM) market. Both use AGP 2x technology, with the 2000 series able to draw up to 45 million triangles and the 3000 capable of the skyscraper seven million figure. Resolutions up to 2048x1536 are supported by both, as is full-screen anidialising, 30fps DVD video playback and digital video output for PAL and NTSC televisions.

However impressive the specifications are, Edge has doubts as to whether PC owners are ready to pay for yet another graphics card. Voodoo2, in the UK at least, has only recently fallen to an affordable price level, and for the mainstream consumer could be viewed as an expensive luxury. Tony Tamasi.

"VOODOO2 WAS IN NO WAY A STOP-GAP. IT WAS INTRODUCED IN NOVEMBER 1997 — IT HAS TAKEN SIGNIFICANT EFFORT TO DELIVER THIS KIND OF 3D"

3Dfx's graphics hardware product manager, revealed a somewhat bullish approach to such concerns.

"Our goal is to obsolete our own products as rapidly as possible," he stated, "to continue to deliver the most compelling, highest performance graphics solution in the industry. If 3Dfx can always be the first company to be "the true Voodoo killer" we're doing our job." Tamasi was defensive when quizzed about the lifespan of 3Dfx's last chipset. "Voodoo2 was in no way a stop-gap product," he claimed.

"Voodoo2 was introduced in November 1997, more than one year ago — it has taken significant effort, and advances in silicon technology, to deliver this kind of 3D performance at aggressive price points."

When asked whether the recent success of 2D games such as Eidos' Commandos: Behind Enemy Lines was due to a lack of interest from mainstream consumers, Tamasi replied that, "While it's true that many games today do not require hardware acceleration or substantial hardware platforms, the trend is towards ever-increasing levels of detail, realism, and special effects across the board." He went on to confidently add that, "What we strive to deliver is a platform that is without limits for game developers."

"By offering seven million triangles per second and more fill-rate power than a Voodoo2 SU (Scan Line interleaved) on a single chip, 3Dfx is raising the bar for game developers in terms of what they can expect the new baseline for 3D performance to be," Tamasi claimed. "In truth, it's the implementation of AGP support which has allowed 3Dfx to elevate those expectations, as Tamasi tacitly admitted. "By implementing AGP 2x," he explained, "Voodoo3 now has 512MB/sec of bus bandwidth with which to deliver enormously high triangle rates, and very high-speed texture traffic."

Since nVIDIA's Riva TNT chipset turned up the heat in the accelerator market, many industry observers have been waiting to see what 3Dfx's response would be. Judging by the 3000 series' specs, it seems that graphics card technology is locked onto an exponential increasing performance curve. With new contenders entering the fray every week (see p11), it's safe to say that Voodoo has won this round — but the fight goes on.

Voodoo3 3000 specifications

General features
- Fully integrated 128bit VGA/2D/3D/Video accelerator
- 2x AGP with sidebands
- Fully software-compatible with 30fx Voodoo Banshee
- Floating-point 2 buffer (v buffer)
- Acceleration of software MPEG2 CODECs
- Digital video output for NTSC and PAL TV-out support
- 350MHz RAMDAC C2048x1536, 72Hz mode support
- 4-16MB SGRAM and 16MB SDRAM 128bit-wide frame buffer

2D acceleration
- 366 MHz single-cycle 128bit Windows GUI acceleration
- 512MB memory expansion and single-cycle block writes
- Accelerated 8, 16, 24 (packed), 32bit modes

3D acceleration
- Dual texture units: 2 textures per-pixel per-clock
- Full hardware setup of triangle parameters
- Support for multi-triangle strips and fans
- 16bit integer and floating-point 2-buffering with biasing
- Transparency and chroma-key with dedicated colour mask
- Alpha blending on source and destination pixels
- Sub-pixel and sub-texel correction to 0.4x0.4 resolution
- 24bit colour dithering to native 16bit RGB
- Per-pixel atmospheric fog with programmable fog zones
- Full-scene polygon-based edge anti-aliasing
- Dynamic environment mapping
- Perspective-correct (true divide-per-pixel) 3D texture mapping and Gouraud shading
- Single-cycle bump-mapping
- Single-cycle trilinear mip-mapping
- Anisotropic Filtering
- True per-pixel, LOD MIP mapping with biasing and clamping
- RGB modulation combines textures and shaded pixels
- Texture compositing for multi-texture special effects
- Support for 14 texture map formats
- 8-bit paliated textures with full bilinear filtering
- Texture compression through narrow-channel YAB format

Host interface
- High-performance AGP 2x interface including sideband addressing
- 66MHz and 66MHz PCI v2.1 bus interface
- FIFO optimised for high-speed bursting of 3D rendering and texture data
- Optimised for Pentium II I/O architecture: out-of-order instruction execution in hardware
- Bi- endian byte-ordering support

Memory system
- 4, 8, or 16MB of 183+MHz SDRAM or 16MB SDRAM
- 0.23 micron, five-layer metal CMOS technology

Software
- Full BIOS and driver compatibility with Voodoo Banshee
- Windows 95, Windows 98, Windows NT 4.0 device drivers
- Extensive 3D API support: Glide 2.0 and 3.0, OpenGL, ID3D
- Microsoft D3D
- MPEG2 decode
- Software DVD support
ISDA DECLARES WAR ON ROM SITES
Is this the beginning of the end for ‘mainstream’ emulation?

With over 19 million ‘hits’ since last year, Dave’s Video Game Classics is a successful site. Will it be as popular without its prodigious ROM content? And will MAME and its ilk suffer as a result? Emulation is on its knees

Emus unite
The two most successful PlayStation emulators, PS Emu Pro and PSX REV, have joined forces. Having established a foundation named TAB – the acronym remains, at present, a mystery – the efforts of both teams are to combine in the attempt to expedite the creation of the ‘perfect’ PC PlayStation package.

Having championed both here last month, Edge is pleased to witness such practical thinking and forethought from the traditionally super-competitive emu-creating fraternity. Both packages, in their own right, have promised a great deal of progress within the next six months – PS Emu Pro now supports Tekken 3, albeit not perfectly – but the possibility that this pooling of talent might lead to an ‘exact’ PlayStation emu before too long still remains to be seen.

The ISDA, has the unenviable task of clamping down on emulation deviants. www.davesclassics.com was obliged to remove all ROM images

The need to imagine that there are few current readers unfamiliar with www.davesclassics.com. A reliable, up-to-date source of emulators and ROM images – from MAME to, say, the Atari ST – Dave’s page recently celebrated its 19th million hit since its inaugural appearance last year.

Between Monday November 9 and Thursday November 12, attempts to visit www.davesclassics.com were met with a curious error message. On Friday November 13, the reason for this puzzling ‘down time’ became clear. Emboldened by their success in limiting the supply of SNES and Mega Drive roms – now very much an ‘underground’ scene – the ISDA ‘closed’ www.davesclassics.com. Being a valued affiliate of United Gamers Online (www.ugo.com), UGO president ‘stepped up to bat’, as Dave puts it, for his site’s future. In return for removing every ROM image from the pages, Dave’s Videogame Classics was allowed to return on Friday November 13.

In the two weeks since that point (and at the time of going to press), the site has begun the slow, but patient, process of rebuilding its once-unrivalled collection of downloads. Although its actual emulators were unaffected by the ISDA’s intervention, Dave’s Videogame Classics was forced to remove even ROMs widely regarded to be ‘public domain’ software, such as Amstrad CPC and Spectrum files. With permission from the site’s ISP – which, in the event of legal action, would share a degree of responsibility – ‘freeware’ ROMs made a return on Wednesday December 3, with the reintroduction of the Vectrex archive.

The site’s militant stance – although justifiable in law – is a disastrous blow for the emulator scene. As fans of SNES and Mega Drive emulators attest, finding ROMs for either machine involves a patient, time-consuming search through many dead links and inoperable ‘fan’ sites. Without the ‘free’ availability of arcade ROMs, can MAME remain as popular as it is? And, without sites such as www.davesclassics.com providing ‘easy’ access to games, could those supporting the project lose interest? It’s a disquieting thought.

On emu-oriented message boards and newsgroups, many enthusiasts are suggesting anonymous FTP sites as a solution. Web pages are difficult to regulate and oversee, but an FTP archive of MAME or, say, Neo Geo ROMs, could remain undetected by relevant authorities for a considerable timespan (and, in a both ironic and lamentable twist, by those searching for ROMs). Edge feels this is a backwards step for the emulator fraternity as a whole – a move sure to destroy its burgeoning, pseudo-mainstream appeal.

Going underground
Without the convenience of well-known ‘sources’ for ROM images, the emulator scene will again become the preserve of hardcore retrogamers, a handful of coders to those well-versed in the art of locating obscure files on the Net. But, with the powerful arm of the ISDA guided by publishers fiercely guarding intellectual properties, how can emus be more than a niche concern? Your comments are welcome.
NEC AND VIDELOGIC POWER UP
Slightly lower specced but significantly cheaper than Voodoo3, is the PowerVR 250 set for success?

With the PowerVR 2DC-equipped Dreamcast now on sale, NEC and Videlogic have announced that first samples of the related PC graphics card chipset are now in pre-production. Dubbed PowerVR 250, the processor is a combined 2D/3D solution which, judging by its specifications (see below) and claimed five million polygon performance, should rank as a worthy rival to 3Dfx's Voodoo3 (see p9).

When contacted by Edge, a spokesperson for Videlogic also claimed that due to Voodoo3's more complex circuit board design and high-specification RAM requirements, PowerVR 250 would be significantly less expensive once manufactured for retail. Pricing for the lone 250 chip has not yet been set, while Voodoo3 2000 and 3000 are expected to sell for around $30 (£19) and $45 (£25) respectively.

NEC and Videlogic are predicting that the PowerVR 250 will be produced in the first quarter this year, joining the PowerVR 2DC and its arcade relative used in Sega's Naomi board. Although the 250 stands every chance of success, given the volatile, fast-moving nature of the PC graphics card market, the "bread-and-butter" business that PowerVR has secured with Sega should prove invaluable over the coming months.

POWERVR 250 SPECS

2D engine
• Full ROP, text and line primitives
• MPEG2 decode assist
• Integrated 230MHz DAC (1,600x1,200@65Hz)
• Multiple video windows

3D engine
• Tile-based reduced bandwidth rendering engine
• 32bit floating-point Z-buffering
• Up to five million polygons/sec

• Fill rate between 200-500M pixels/sec
• Full polygon setup engine
• Bilinear, trilinear and anisotropic texturing plus bump-mapping
• True colour 32bpp pipeline
• Translucency sorting
• Image super-sampling/scene anti-aliasing
• Per pixel loadable table fog
• Specular highlights with offset colours
• Multitexturing support
• D3D and OpenGL blend modes
• Environment mapping

TV/Video I/O
• NTSC/PAL support
• Interfaces to industry standard TV and flat-panel displays
• VMI Capture Port for camera, DVD, MPEG2 decoders

PCI/AGP Interface
• 2X AGP (133MHz) with sideband addressing
• PCI 2.1

Pentium II and AMD K6-2 3D Now!
Optimised Support for up to 32Mb of 50/50RAM

N64 SAVIOUR GATHERS MOMENTUM
Nintendo's new Zelda instalment sells a million

Cuttings
Dreamcast software further delayed
Sega's chronologically challenged game line-up for its new console has suffered more disturbances. Blue Stinger has moved from January to March while Bio-hazard Code: Veronica is unlikely to surface before the autumn. Climax Landers is also thought to be affected.

Final Fantasy date
SquareSoft has confirmed that FFVII will hit Japanese retail on February 11, priced at ¥7,800 (£39). The CD-packed game will arrive on four CDs.

Die Daikatana?
Eight members of the Ion Storm team responsible for developing John Romero's Daikatana have quit the company to set up their own studio. Publisher G3D has already signed the new Bloodshed Entertainment.

Sega of Europe chooses new leader
With Dreamcast's western launch now nine months away, a new European head has been selected to represent Sega. Jean-Francois Cecillon's past experience includes a stint as head of EMi. He joins new marketing manager Giles Thomas, formerly of MTV.

Virgin uncertainty ends
After months of speculation, previous Virgin interactive owner Vivacom has sold the company to a management team led by Tim Chaney. A sign of the firm's renaissance is the return of Archer Maclean's 'Jimmy White Cue Ball' from the Electronic Arts portfolio.

Heavyweights sink Virtua Fighter 3tb
Part way through Edge's review of Virtua Fighter 3tb, a major flaw in the game's physics engine came to light. When two of the heavier characters are located on the very edge of Shun's boat, it starts to gently tip, before 'sinking', leaving the fighters floating in mid-air, legs hilariously akimbo (see below). Sega's testers must have been tired...
There's this guy going around at parties who used to be just an underling at some game developing company and he brags all evening about going to the French Riviera on business and that, thanks to a stand he had at this trade show in Cannes, he met an interactive media publisher, sold him a game concept, and now has his own company supposedly with offices all over the world.

Well, the guy must be dreaming, because Milia Games didn't exist, yet.

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1999: The year of Nintendo?
The PlayStation has been king of the hill for some time. But is showing its age

Dreamcast is coming. PlayStation is everywhere and Nintendo is... where? Recent figures show that the installed base of N64 users (PlayStations are owned, Nintendos are used) is now 1.3 million in the UK and 4.5 million across Europe. Compared to Sony's latest claims of 3.5 million and 15 million respectively, Nintendo would appear to have an insurmountable deficit. Until, that is, you consider that the PlayStation had a 15-month headstart.

Just as the Mega Drive preceded the SNES into the market, giving it time to build the illusion of a dominating lead, so the PlayStation has 'conquered' the N64. Later in the machines' lifecycle, the SNES, through a combination of quality titles and technical superiority - among other factors - proved as popular as its rival. Edge doesn't believe that the N64 is about to suddenly break any sales records, although the new Zelda is clearly helping its case (see News). However, it's fair to say that the battle is far from over. The arrival of Dreamcast has thrown the PlayStation's various technical inadequacies, particularly its polygon folding and lack of anti-aliasing, into sharp contrast. In comparison, the N64 seems more of a 'now' machine. The second and third generation Nintendo titles such as Zelda, Banjo-Kazooie and F-Zero X are clearly superior to anything Sony's machine can generate (in both gameplay and visual terms).

If the right software is delivered, 1999 could prove to be the year of the N64 in both Europe and Japan. The US Nintendo scene is far more healthy thanks to the heritage of the company and the massive popularity of the NES and SNES. However, NCL's store of games that can be simply suffixed with '64' has been almost exhausted; Mario, Star Fox, Mario Kart, Yoshi's Island and F-Zero have all been given reasonable updates. Even if fresh titles use Nintendo's most famous brands they will have to be presented in new ways, which is exactly what NCL has done.

Following last issue's showing of Mario Party in Alphas, a sister game dubbed All-Star Smash Brothers is previewed on page 24. Featuring Link, Mario, Donkey Kong and a clutch of other NCL stars, and developed by Kirby creator HAL Laboratory, the game is a skewed take on the beat 'em up genre. If Nintendo returns to its roots and creates innovative and unusual games that people can't help falling in love with, then the PlayStation will have a tough time keeping up in '99.

Now that Nintendo has updated virtually all of its past classics (except for Metroid...), including Mario Kart (left) and Star Fox (centre), fresh inspiration was needed. Cue Smash Brothers (right)

Edge's most wanted
Zelda landed - so where next?

Sonic Adventure
(DC) Sonic Team
Released the same day as this issue of Edge, Sonic Adventure is tempting with six characters, vast levels and crisp visuals. The new console's must-have game.

Sega Rally 2
(DC) Sega
With the coin-op version securing a place in Edge's top three arcade titles of 1998, and a Dreamcast waiting in the games room, this had better be good...

Hired Guns
(PC) Devil's Thumb
Fond memories of the Amiga original ensure that DTES's update receives full attention this issue. Four characters to control and Unreal's engine. Interested?

All-Star Smash Bros
(N64) HAL
Quirky, colourful and very involving. All-Star Daito vs Starmax brothers scores points merely on the strength of its name. Another NCL classic?
PRESCREEN ALPHAS

HORROR IS A PREVAILING THEME THIS MONTH, WHICH SEES PREVIOUS ALPHALITES RETURN IN IMPROVED FORM

SHADOWMAN

FORMAT: PC/NINTENDO 64 DEVELOPER: IGUANA UK

These latest PC shots of Iguana UK's forthcoming third-person adventure are proof that the game continues to be right on track to emerge as one of the darkest and most disturbing videogames ever created. It should also be one of the bloodiest around as you battle the evil forces within the Asylum in Deadside – the plot has been worked on heavily and suggests a totally immersive experience.
Newcastle-based Reflections has spent the few months since Edge last visited its office busily enhancing its current main development. On the PlayStation version shown, for example, the game now employs the machine's hi-res mode; the night sections boast impressive lighting and pedestrians can be seen walking, running, or just sitting around doing little. Weather effects such as rain and snow are also included to complete a potentially great title.

First seen at ECTS, the current version of Relic's space-based dog-fighting-led strategy title is very impressive. The framerate problems (a worry when Edge first saw the game) are no longer present and the whole game benefits tremendously as a result. This tweaking has meant the game has missed its anticipated pre-Christmas release, although players are more than likely to forgive the developer once the finished title ships.
EHRGEIZ

Out in Japan by the time this issue hits the streets, it will have taken Square over a year to port the System 12-driven arcade beat 'em up to Sony's 32bit box. Recent demos were promising, with the automatic function ensuring characters face each other – which proves very gameplay-friendly. As well as the coin-op's characteristics, there are five new fighters and four sub-games similar to those found in Tekken 2. According to sources, Square is not expecting to release a PAL version.

ZOMBIE ZONE

Originally entitled Blood Bullet, Sega's second zombie-filled arcade adventure mixes the company's Die Hard Arcade with Capcom's Resident Evil series. Initial impressions favoured the game's visuals although the control system felt as though it needed further work. Still, shooting hordes of walking corpses is always worth a shiny coin or two.
GT WORLD TOUR

Snowblind Studios may be responsible for the likeable Top Gear Overdrive (see p3), but this March release is Top Gear Rally's spiritual successor. True, there isn't a rally car to be seen, but it shares the same developer. This time, though, the focus is on the world of supercars with, among others, detailed Chryslers, Ferraris, McLarens, and Nissans promising realistic dynamics.

KINGSLEY

After the desperate failure that was Rascal, it would perhaps have been sensible for Playgness to leave the thirdperson platform genre well alone. However, the company's Camden development studio is trying to crack the young gamers market again with Kingsley, a 3D arcade adventure for the PlayStation featuring the fox-cub of the title. The game comprises 11 stages, but whether Kingsley can upset Crashy's party is a job for its marketing dept.

WILD METAL COUNTRY

It's from DMA, so don't expect WMC to make sense – at least not initially. But you can expect it to be rather playable, as well as including plenty of original – if occasionally far-fetched – ideas. Actually, compared with some of its previous titles, the fundamental concept is unusually rational: choose a tank and travel around the levels blasting the enemy equivalent.
POWER STONE

More Dreamcast shots of Capcom's forthcoming and immediately impressive beat 'em up. Making an initial appearance on Sega's Naomi arcade board, the technical similarities between the latter and the company's superconsole should ensure that not only is the confirmed conversion likely to occur with relatively little effort, but that the visual quality should remain largely untouched. Edge hopes the same applies to the intriguing gameplay.

SEVENTH CROSS

A-life titles are always very interesting from a theoretical aspect, but rarely fun to 'play'. Here, after designing a creature (by determining the character's DNA structure), you can watch it evolve and feed itself. Should you have the patience, toying with DNA sequences can produce 810,000 character combinations, which should keep fans of the genre busy for a while...

SILVER

Magic, realtime combat, many beautifully recreated locations, and mad kung-fu monks – Silver has them all. Infogrames' westernisation of classic eastern RPG elements is looking increasingly capable of delivering all it has promised in the last few months. Should it succeed, it would represent a massively significant achievement for European videogame development.
REQUIEM

As Malachi, one of Heaven's chosen soldiers, your task is to defend humanity from Hell's fallen demons. Incarnating an angel places a whole range of spells and other original angelic powers of attack and defence at your disposal as you progress through a detailed world, interacting with the characters you meet. Interestingly, not all situations you face necessitate mindless violence.

DARK STONE

It would be easy to describe Dark Stone as a Diablo clone, but with the action occurring within an interactive 3D environment. A dungeon-based, spell-casting action RPG, the claustrophobic among you will breathe a sigh of relief to learn that it does also feature outside environments such as towns, although it remains aimed at a dedicated audience.
F/A-18E SUPER HORNET

Although hardly the favourite genre of hardcore players, flight sims are – if nothing else – useful in showcasing new technology which eventually transcends other videogame categories. Digital Integration's F/A-18E Super Hornet promises intriguing new features (such as a fully functional aircraft carrier) which hopefully the gameplay will match.

DRAGON VALOR

Another RPG to emerge from Japan, Dragon Valor bases its concept on past classic interpretations of this potentially engrossing genre and requires you to explore vast lands filled with danger and guarded by unfriendly dragons. The game features a structure similar to the Mega Drive's Phantasy Star III, whereby once your character marries, your quest continues via the couple's first-born which inherits some of their attributes.

STREET FIGHTER ZERO 3

The western massmarket's interest in Capcom's long-running 2D beat 'em up series may have dwindled, but in Japan there are still enough hardcore fans to guarantee decent sales of this latest iteration of the Zero games on the PlayStation. Although close, the console interpretation is expected to lose a little graphical detail, most evidently in its animation, but this shouldn't be to the detriment of the fundamentally solid gameplay.
SHOGO
Mobile Armor Division

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CASTLEVANIA 64

Long the preferred choice of hardcore 2D platforming fans, Konami's vampire series enters the 64bit era with a three-dimensional offering.

Visually, Castlevania 64 has progressed immeasurably since the early versions from a few months back. The bosses have increased in stature, too (above).

Castlevania IV on the SNES was one of the machine's most playable titles, yet it never enjoyed the success it deserved. This was partly due to the game's first two truly uninspiring levels, which left the majority of players cold.

A little persistence would have revealed one of the 16bit era's true classics, offering a hugely compelling adventure, addictive 2D gameplay and some masterful graphical effects.

The series' PlayStation debut embodied these same values, and still stands as one of the most complete videogaming experiences to grace Sony's machine - yet it too failed to capture the attention of the massmarket. So this latest instalment, now on the N64, has rather a lot of work to do. Konami must be hoping that the series' move into 3D will attract a more mainstream audience.

Regardless of the perspective, though, you still need characters, and Castlevania 64 has two. Muscular, agile and armed with a strong sense of justice (and a handy whip), Schneider Belmont has vowed to return Count Dracula to the realm of the truly dead after learning of his recent resurrection. Carrie Eastfield, on the other hand, is fragile and weak at close combat, but then she's only 12. However, young Carrie does possess powerful magic spells, which ensure the destruction of the servants of the kingdom of the undead from a relatively safe distance.

And if there's one thing either character is sure to find before facing the Prince of Darkness for a final confrontation, it's plenty of his obedient minions. These take many forms, but expect to encounter rabid hounds, possessed knights, and suicidal skeleton bombers.

Naturally, the game also features vampires,
A combination of great graphics, excellent soundtrack and dramatic camera angles (top) ensure *Castlevania 64* is particularly atmospheric.

but, due to their aversion to ultraviolet rays, you’ll only encounter these foes when darkness cloaks the land.

In fact, *Castlevania 64*’s night/day cycle is one of its most interesting features and has significant gameplay implications. Of course, it’s more dangerous (and scarier) to venture out when the sun isn’t shining, but certain clues and puzzles can only be found or solved by returning to a particular area after dark. This doesn’t occur in realtime, naturally, but to help those with MTV-conditioned attention spans, there are items that further accelerate time.

Overall, there are surprisingly few platforming sections, and several RPG elements are included (you’ll meet several NPCs who offer useful information, for example). To avoid inconvenience, Konami has borrowed one of *Zelda 64*’s neatest features – you can lock onto the nearest enemy by holding the Z trigger, eliminating the problem of tracking a foe while fighting within a 3D environment.

In addition to the characters’ primary and secondary weapons, you’ll come across other armaments as you explore Dracula’s humble dwelling. Power-up gems are scattered throughout, as are gold coins that you can use to purchase helpful goods from a mad demon (doubling as a travelling salesman) which can be summoned every time you come across a scroll.

The latest build *Edge* played seems very promising. Graphically it is a massive improvement, with plenty of detail and special effects evident throughout. In particular, most of the bosses are stirring, attention-commanding masses of polygons – and the process of their demise can be rather gruesome, particularly the giant ram whose flesh is ripped off progressively to reveal a pack of pulsating vital organs. On a lighter note, the control system has also been tweaked and is now tighter, particularly as far as ledge jumping and combat are concerned (in fact, using Belmont’s cord-like weapon works remarkably well).

All in all, things appear to be shaping up well for *Castlevania*’s first 64bit foray.

The gigantic ram (above) appears early on in the game and is just one of many grotesque bosses that must be beaten before you reach Dracula.

The game’s 3D engine is a capable one, and Konami’s designers make full use of it with both interior and exterior sections.
ALL-STAR SMASH BROTHERS

As the pool of reiterable 16bit Nintendo classics dries out, HAL Laboratory gathers NCL’s boys together in an inspired and typically unconventional all-star beat ‘em up romp

The curious sight of former ‘nice guy’ Yoshi in combat with space-ace Fox comes as something of a shock. Edge’s money is on the furry one

Considering the furor that has surrounded Zelda: Ocarina of Time for so long, it’s easy to forget that over the years Nintendo has gained a reputation for ambushing gamers with its welcome and brilliant titles. Over the last 18 months, 1080° Snowboarding, Diddy Kong Racing and GoldenEye have emerged from nowhere to delight the games world.

The latest piece of software to join that list is the fabulously monikered All-Star Dai-Rantou Smash Brothers, developed by longtime Nintendo affiliate HAL Laboratory, responsible for the Kirby series of games. Smash Brothers is, like new sister title Mario Party (see Prescreen Alphas, E66) and the wonderful SNES racer Super Mario Kart, an off-kilter spin on NCL’s hottest intellectual properties. Since the N64’s birth, owners have been crying out for a well-executed fighting game. This, true to form, is Nintendo’s unconventional response.

All-Star Dai-Rantou Smash Brothers is, in fact, the full title of this unusual beat ‘em up, which translates as All-Star Big Free-fight Smash Brothers

found much to enjoy in its products. Perhaps the closest point of reference is AM1’s mech combat coin-op Virtual-On, not for its visual style but its gameplay design. Smash Brothers pitches classic Nintendo characters into battle in open arenas, where long-distance attacks and avoidance tactics are more useful than close combat.

HAL Laboratory appears to have focused on making Smash Brothers as accessible (also read enjoyable) as possible. Although your character can be knocked out of the fight zone, you have a limited amount of time to re-enter and continue rather than being disqualified. Games are intended to last a little longer than in more generic beat ‘em ups, with the aim being to

It’s almost certain that the game will have hidden characters, levels and play modes

| Format: | Nintendo 64 |
| Publisher: | NCL |
| Developer: | HAL Laboratory |
| Release: | Spring (Japan) |
| Origin: | Japan |
A fourplayer bout sees the respective characters using their individual skills. Each of them has weaknesses, but if you can’t put them down and your energy is fading fast, then you can always resort to the ring out option.

All-Star Smash Brothers’ graphics are spattered with Nintendo’s usual bright palette of colours. Donkey Kong’s head is a bit pointy, though

knock down your opponents or push them out of the arena as many times as possible. The player with the most hits and highest energy level at the end of the round wins. Simple.

Each of the classic Nintendo stars employed in Smash Brothers has their own strengths and weaknesses. Mario (unusually) is the all-rounder; Donkey Kong is more powerful; Link has his sword and boomerang to hand; Samus has good long distance and air attacks; Yoshi’s skill at kicking up foes and popping them out of his rear as eggs hasn’t been forgotten; Kirby can mimic his opponents’ abilities; Pikachu can turn quickly and zap the others with an electric shock; and Fox is very fast and carries his blaster. Long-time Mario foe, the overbearing Bowser is also scheduled to make an appearance, as is Blue Falcon from F-Zero X, although it’s not clear at the moment whether these will be boss, playable or bonus characters. Up to four players can compete at once.

Smash Brothers follows the beat ‘em up convention of having a level dedicated to each of the protagonists. So far HAL and Nintendo have demonstrated three stages – Mario’s Stomping Ground which is set on the rooftop of Princess Peach’s castle, Donkey Kong’s Home Ground in the Congo jungle, and Pickachu’s Pad

Ever since the N64’s birth, owners have been crying out for a well-executed fighting game. This is Nintendo’s response in Yamabuki City, which features moving platforms. It’s expected that Smash Brothers will unlock several bonus stages and characters once various targets have been met by the player.

Though it has been developed out of house, All-Star Dai-Rantou Smash Brothers bears all the hallmarks of past Nintendo masterpieces. Little touches, such as power-ups appearing during fights with either healing or destructive effects, or even ‘dead’ characters flying up out of the combat zone to become stars in the sky are part of what makes NCL’s games such fun to play. Edge, for one, is already hooked.

This star-studded cast reminds you just how skilled Nintendo is at creating videogame characters. Even Link and Pikachu appear
G-POLICE 2

Subtitled Weapons of Justice, Psygnosis' sequel to 1997's G-Police is unlikely to win the attention of any arthouse film buffs with its blockbuster-style explosions and plot.

As in the original game, G-Police 2 manages to create a moody, if slightly sterile world in which to hunt the forces of evil.

Rather than mire themselves in trying to extend the draw distance, the development team instead implemented a smarter wireframe system.

Video games—indeed much of modern technological culture—owes a debt to 'Blade Runner'. In 1982 Ridley Scott's grubby filmic interpretation of Philip K Dick's novel 'Do Androids Dream of Electric Sheep' redefined the world's view of its future, and no right-thinking film or videogame producer could expound an optimistic or pleasant vision ever again.

Psygnosis' G-Police epitomised the 'Blade Runner' gaming experience, casting the player as the pilot of a hi-tech police attack ship in pursuit of rebellious criminal elements. Through a dank and oily nocturnal cityscape, naturally.

The game, developed by Psygnosis' Wheelhouse studio on the outskirts of Stroud in south west England, was an absorbing and atmospheric experience — if its complex control system could be mastered. Certainly G-Police was in a different league to the shallow offerings that have typified Psygnosis' recent output.

And now, led by Stuart Wheeler, who worked as a level designer on the original game, the development team has a fully overhauled sequel on the way — although the PC version has been abandoned.

"We're very conscious of the fact that it [G-Police] was a very good game, but there were fundamental flaws in it that stopped it reaching a wider audience," says Wheeler.

"That's due more than anything to the fact that we got too close to the product, too used to the way we had become expert at it," he admits. "The difficulty curve and the controls weren't tweaked as much as they should have been."

As Wheeler says, G-Police's greatest shortcomings centred around the clunky control system, and a limited draw distance brought about by the over-complex vehicle and building...
Simple yet highly effective refinements to the control system have wrought a minor miracle and improved the gameplay significantly over the original game.

models used in the game. Both of these factors are being addressed, along with other additions to the core concept because, as Wheeler puts it, "We do not want to do a mission disk – we want to do a proper, full sequel."

The team has taken an unusual and cunning approach to the short-draw-distance problem. Rather than trying to embellish the 3D engine to push back the fogging (and thereby slowing the framerate), the programming team, led by Gavin Whitlock, decided to outline all the distant objects in green wireframe. This option has effectively doubled the visible distance yet has cost minimal processor time – and it works superbly, if anything adding to the sense of piloting a futuristic craft.

G-Police's other glaring weakness was a fuzzy control system that required constant monitoring and adjustment of the level of thrust. In the PlayStation's high resolution mode, albeit at the expense of the attractive motion blur effect used in the rest of the game. "We want to make the sequel so that more people can appreciate it," claims Wheeler. To this end, recognisable human characters are being placed in-game, to add a sense of empathy with the action. Wheeler is setting his sights high: "There aren't many games that people complete any more, and it would be nice to make G-Police one of those games. But you're not going to get it done in an evening."

Rather than trying to embellish the 3D engine to push back the fogging, the programmers decided to outline distant objects in green wireframe.

By fitting new vehicles into the G-Police play system, Psygnosis' team is hoping to breathe fresh life into the game's sequel.

Some of the larger targets are impressive in their scale, including several gigantic craft that must be repeatedly hammered to down them.

abilities, it's the final extra craft which is likely to generate the most interest.

For the last six missions of G-Police 2, the action shifts into high orbit, as your intrepid officer follows the plot off-planet for the ultimate showdown with the renegade forces. Bearing a marked resemblance to Psygnosis' Colony Wars and Blast Radius, these stages of the game are held in free-roaming 360-degree space, rendered.
METAL FATIGUE

Psygnosis' latest game is geared up to pick off the RTS genre. Will the multilevel play and the mighty Combots be enough to rev jaded gamers' engines again?

With an able 3D engine and a multilevel play feature under its belt, Metal Fatigue offers much more than giant manga-style robots smashing each other to bits.

A heavy metal scrap in progress: your eye is inexorably drawn to the sight of the brutal blue robot playing percussion on his hapless foe.

The wheels have come off the realtime strategy bandwagon. With so many developers jumping onboard, the genre has ground to a halt under the weight of countless free loaders. Fresh impetus is needed. And this is where Psygnosis' Metal Fatigue comes in. Though inspired by realtime greats like Red Alert and Total Annihilation, Metal Fatigue will stand or fall on the successful execution of its twin innovations: multilevel play and giant DIY robots.

The multilevel play equates to three battlefield layers, with the traditional ground war spilling over into underground conflict and into the tussle for low-orbit supremacy. On the surface, the usual RTS factors hold sway. Robots rule the earth while bases, defences and cradles of industry must be established among the dips and curves of the uplifted 3D landscape. However, mastery of a map cannot be achieved unless you also control the geo-stationary asteroids above. Captured with aerial units, the orbiting stones can be transformed into huge weapons platforms, for battering the planet. Meanwhile, armies are secretly assembled below, before they burrow their way through solid rock to surprise the enemy base on the surface. You play all three operational theatres at once and the interface will be windowed so you can juggle between air, ground and crust simultaneously.

Psygnosis is also preparing an almighty combination punch with its metal behemoths. Known as 'Combots' they dwarf other units, and are the focus of battle thanks to their modular design approach. Via research and industrial espionage, you can develop or thieve new technologies for your war engines and slot them together to make individual 'bots composed of torso, arms and legs. Body parts offer combinations of speed, strength and jumping ability; while weapons include a Katana sword, power swords, buzz saws, missiles and jetpacks. Weight is a factor, so compromises will have to be made to keep a robot moving.

Backed by a respectable-looking 3D engine capable of multilife perspective in the Myth style, Metal Fatigue has every chance of breaking the RTS factory mould.

The Katana sword is a powerful weapon that also proves relatively lightweight - a factor that can affect the robots' mobility.
X-WING ALLIANCE

Just in time for the new 'Star Wars' movie, LucasArts presents another addition to its X-Wing franchise – yet Alliance has more going for it than convenient timing.

The introduction of trading elements has vastly enriched this latest addition to the popular X-Wing series.

here are few sure things in the fickle PC market, but a combination of action-based space simulation and the 'Star Wars' license is a pretty safe bet. Indeed, it has been a successful formula so far for LucasArts, whose X-Wing series of space shoot-'em ups has long been the mainstay of its PC oeuvre.

Larry Holland and his 15-person team are making a welcome return to substance and plot with X-Wing Alliance – responding to criticism from fans that X-Wing vs TIE Fighter, the last instalment, was too clinical – casting the player in the role of a Rebel pilot and strongarm of a family trading business. The result is an involving story that manages to pit the player against not only the Empire, but also the pirate armies of a rival trading family and their less than savoury overtures. Holland describes it as 'The Godfather' meets 'Return of the Jedi'.

The trading element opens up new possibilities for the 'Star Wars' universe. The number of new ships has increased, including new models that have previously only been seen in detailed sketches prepared by Lucasfilm for the movies. The chance to command the Millennium Falcon will be highly anticipated by 'Star Wars' fans, as will the promised Battle for Endor, which should include as many as 128 ships in battle concurrently. Holland maintains that they had twice that number running but reduced it to keep the framerate up.

The graphical advances made over X-Wing vs TIE Fighter are considerable. With a 3Dfx card in place, the ships are far more detailed, with pilots even visible in their 3D virtual cockpits – one of the game's most dramatic and effective improvements. There's also an impressive sense of scale when approaching a starbase – something accentuated by the wealth of moving starcraft that operate independently of your own ship.

There are only a few months left for Holland and his team at Totally Games to finish off this potential epic. Work is now centred around balancing missions and implementing some complex AI to monitor the behaviour of the non-player-controlled craft and enemy ships – a limited amount of ammo now means that they have to return to base to re-arm before returning to battle.

Around the same time Holland puts the finishing touches to Alliance, George Lucas will be sending his final cut of 'The Phantom Menace' to Fox. With Episode One hovering tantalisingly on the horizon and LucasArts already well into production of the prequel games, 1999 really is shaping up to be a truly memorable year for Star Wars fans.
ACE COMBAT 3

Will Namco finally get it right third time around? If you take to the skies for this stylishly revamped dogfight, the enemy might not be the only thing to surprise you...

Although the terrain remains predominantly a scaled bitmap, the scenery is punctuated by polygonal skyscrapers. These are fantastic to negotiate at speed.

S
ddy, the arcade-style flight sim has progressed little since Sega's glamorous but shallow Afterburner. And Namco's Ace Combat 1 and 2 supplied firm evidence of this.

By offering uncomplicated physics models, almost arbitrary 'waves' of enemy craft and a fine line in 'fire and forget', Namco lost the sense of immersion and intensity that so epitomises the best PC flight sims, yet offered little in the way of a quick, accessible blast to ameliorate that loss. Ace Combat 3 must therefore work hard to attract gamers who are intrigued by the prospect of simple plane-to-plane dogfights, yet disappointed by the failures that have marred this sub-genre.

Namco has aimed to improve the aesthetic appeal of this third Ace Combat but, unusually, the Japanese softco has decided to base Ace Combat 3's action in the 'near' future. While familiar planes and ordnance are again available for selection, a clutch of fanciful Namco-designed aircraft occupy prominent starring roles.

Namco is keen to stress that Ace Combat 3's dogfights are more involved than the often lightweight exchanges of its predecessors. Rather than firing from a distance with relative impunity, players will have to tackle the enemy and their improved AI with skill and forethought. The ability to pinpoint a distant cluster of pixels is (in principle) no longer the fast route to success.

That Ace Combat 3 features Dual Shock compatibility will come as no surprise, but the promise of an analogue control system is interesting, to say the least. Imagine, for example, the ability to use a cockpit-based view with one stick controlling craft movement and the other altering the viewpoint.

Combine such a feature with persistent, intelligent rival pilots who tail your plane in an attempt to gun you down from behind, and the potential for tense, atmospheric dogfights is huge. Alas, Namco is jealously guarding the 50-per-cent-complete version of AC3, so there are few firm gameplay details available.

The hardcore flight sim, cherished staple of the stereotypical PC owner's software collection, has little to offer console owners. Can a stylised, simplified dogfight sim succeed where its more complex cousin would fail?

This could be the first console-based flight sim to offer intelligent play and stylish dogfights.

Edge hopes that the final version will see you actually flying under the bridge leaving a wake in the river.

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Format: PlayStation
Publisher: Namco
Developer: In-house
Release: TBA
Origin: Japan

Ace Combat 3's visuals show a marked increase in quality over Ace Combat 2.
STAR IXIOM

Star IXIOM looks like a visual rework of Namco’s previous sci-fi shoot ‘em ups, but promises to be a much more challenging prospect than those linear efforts

With a back catalogue featuring such career highlights as Xevious, Galaga and Starblade, Namco requires little introduction as an exponent of the space shoot ‘em up genre. Star IXIOM sees the softcore in progressive form, addressing criticisms of Starblade’s simplistic, linear structure by establishing a framework of mission-based objectives, giving the game (unusually for a console title) strategic depth.

Like stablemate Libero Grande, Star IXIOM is a game of two halves, with play split into two distinct sections. You deal with the administrative details of your tasks in Map Mode, while the self-explanatory Combat Mode sees you fly actual sorties. Naturally, there’s a symbiotic relationship between the two. In Map Mode, for example, it is possible to establish attack routes and supply lines. Should you neglect this duty, or perform badly, it becomes more difficult to achieve your targets in Combat Mode.

There are many parallels to be drawn between Star IXIOM and Microprose’s X-Com interceptor (including, lamentably, an outing for the hackneyed ‘alien oppressors’ narrative theme). However, Japanese interpretations of a design brief or genre tend to differ from those of their western coding equivalents. One example of this is Star IXIOM’s three play modes. Practice,

Namco’s graphic artists have opted for a simple, colourful look. It’s a novel approach, and a far cry from Colony Wars

obviously, provides a training ground for the novice, offering a gentle, informative introduction to its dual play styles, while Conquest Mode offers – like X-Com Interceptor – a full-scale, non-linear campaign. But, tellingly, there’s a simplified Conquest option, where play is conducted on a more approachable and immediately gratifying mission-by-mission basis.

With progressively more powerful equipment up for grabs, and a variety of FMV sequences keeping the plot in tow, Star IXIOM’s debt of gratitude to its western cousins is obvious. In offering a more cerebral brand of play, though, it distinguishes itself as a relatively innovative PlayStation release. Edge is curious to see how the Japanese market reacts to a title with such obvious PC-style overtones.

Format: PlayStation
Publisher: Namco
Developer: in-house
Release: TBA
Origin: Japan

Space sections offer a convincing illusion of speed and scale, as well as the requisite colourful explosions
"It's a complex, involving, gob-smacking, earth-shattering simulation of real warfare...without doubt, one of the most astounding games we have ever seen"

PC FORMAT
This is the new benchmark in flight simulation technology. Pilot tested for accuracy, Falcon 4.0 models the Block 50/52 F-16C; the most versatile and unrivalled production fighter in existence. Master the F-16C using numerous training missions that range from the ‘basics of flight’ to ‘advanced dogfighting’ and combat over the Korean Peninsula in real-time dynamic campaigns.
Five years on from the Amiga original, DMA's inventive shooter is back. The simultaneous four-character play mechanic remains in place, but this time it's backed by a 3D engine whose reputation precedes it...

The visuals are generated by *Unreal*'s 3D engine, a factor evinced by the same vibrant and surreal coloured light that envelops the game world here.

If ever a genre demanded careful contemplation before developers started creating a game to fit it, it must be the first-person shoot 'em up. Certainly, now that Valve's intricate *Half-Life* has waltzed onto the scene, shattering all preconceptions about how such games should be made, the pressure is on designers to generate new and innovative ideas. Or, in the case of *Hired Guns*, revitalise old, innovative concepts.

The original *Hired Guns* was developed by DMA Design and published first for the Amiga by Psygnosis in 1992, with a PC version later. With first-person games still very much in their infancy, limited more than anything else by the available technology, *Hired Guns* was simply revolutionary.

Rather than presenting the player with one character to command, DMA's game split the screen into four quarters, one for each of the quartet of mercenaries under your control. The mouse-driven action occurred simultaneously (and sometimes confusingly) on all four sub-screens. Soldiers could group, swap arms and items, and be used tactically to solve the various missions. Conceptually, *Doom* and its progeny are simply of a lower order.

Seven years on and Colorado-based developer Devil's Thumb Entertainment is attempting to refresh and enhance *Hired Guns* to take the game into the new millennium. Formed from what was once
DMA's American studio (and still part-owned by DMA founder David Jones), Devil's Thumb is well placed to understand the demands of the task. Led by Antony Harmon, ex-NOA director of development and acquisition, now president of Devil's Thumb, the project group contains members of the first game's team. David Osbourne and Graeme Anderson are art director and programmer respectively on the update, and original script writer Steve Hammond has been drafted in as a consultant, while a further 12 staff complete the group.

**Engine for hire**

Harmon says the initial impetus for updating the game came from David Jones. "He called me as he'd seen the Unreal editor in its development stages," relates Harmon. "Dave and Tim Sweeney [of Epic] met and had some great gaming discussions. DTE and Dave decided to do this game out of our US office as some of the key original staff were based here." And so, powered by the acclaimed 3D engine that gathered so much attention for Epic and Unreal, Hired Guns has been in development for around 17 months.

Sub-letting the 3D engine rather than creating one from scratch has had significant benefits, as Harmon explains. "We feel the Unreal engine is the best one for colours and lighting, and the editor is a joy to work with," he beams. "In essence, this gave us time to hit the ground running, to make the most of our development time by building the levels and making the environments graphically outstanding." Visually, there's no mistaking the many-hued influence of Epic's polygon engine, although Devil's Thumb has had to watch the load being placed on the graphics code. "We had to be very disciplined and develop tricks along the way to maintain the polygon count and texturing goals we had set ourselves," admits Harmon.

However, he is also adamant that, "A leap forward of five years in technology means..."
The original *Hired Guns* was often confusing when all four characters were under attack. Edge hopes that this was due to the slow scene update, and won’t prove a problem in this latest outing.

...that we can bring the game to life, increase the pace, improve the graphics from slide shows to full 3D, and expand the size and detail of the levels.” (The original game’s core limitation was that movement took place in large steps, rather than through smooth 3D progression.

Rather than quartering the screen as before, Devil’s Thumb has opted to display *Hired Guns*’ action via one larger segment, representing the currently controlled character, plus three smaller views for the others. The remaining space is occupied by a panel containing buttons to activate the various strategic commands. However, you’ll also be able to expand one of the four mercenaries’ views to full-screen when occasion demands it. Only by swapping between the protagonists can the missions be successfully completed.

Clearly, the potential within *Hired Guns* for multiplayer gaming is enormous, as even the Amiga original was able to host a simultaneous two-player experience through the use of two mice with one machine. Harmon and the team have ambitious ideas for the update, with support for both LAN and Internet connections.

“When in the quad-screen mode, the player will be able to see his three other teammates in the lower, smaller screens in real-time,” enthuses Harmon. “We feel this quad-screen mode is really the multiplayer direction of the future – instead of the current simple solution of making one team ‘red’ and the other team ‘blue’. *Hired Guns* will allow players to attack tactically and act more as a team.” With network gaming seemingly on the cusp of a major growth period, *Hired Guns’* targeted June release may prove timely – although a Dreamcast version seems unlikely, due to Sony’s ownership of Psygnosis.

**High expectations**

While set to bring some long overdue fresh ideas to the first-person genre, Devil’s Thumb hasn’t forgotten what is expected of such games. An estimated 17 different weapons are destined for the final version of *Hired Guns*, supplied from the fictional Roth Arms Co. On offer are traditional delights such as rail guns, assault rifles and grenade launchers, plus more esoteric devices like zero-gravity rifles, the “Big Daddy” cold-fusion launcher, a mine layer and a razor-edged blade called the “Cheese Grater”. In addition, a magnetic grappling hook is available to traverse distances up to 500 metres.

Harmon and the team seem well aware of the conceptual values of the game, from its atmospheric pace and ambience to maintaining the right balance of action and puzzle elements. But, as Nintendo has discovered to its cost, updating classics can be troublesome. Fans of *Hired Guns* will have to spend another six months on the edge of their seats before seeing whether Devil’s Thumb is up to the challenge.

Your troops can be used either individually or organised into a strategic group to solve the puzzles that punctuate the game.

*Music is reportedly of the cyberpunk variety, but don’t switch off – it’s intended to add atmosphere.*
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Soulbringer may contain the usual RPG clichés, but it also boasts an advanced combat system, sophisticated magic features and an epic storyline that promises much demonic revelry.

When Gremlin's marketing department asked for an outline of Soulbringer to help them prepare some press releases, they didn't bargain on getting a 430-page story. It documented the heroic exploits of Harbringer, a warrior-king who died by the hands of those he sought to destroy - the legendary demon Revenants, and explained how, as Soulbringer, the player would take up his mantle in a bid to free the land 'from the yoke of the Demon Lords'.

Is Soulbringer, then, a game steeped heavily in - how should Edge put it - the heritage, or would that be the clichés, of roleplaying?

Dark, demonic and deep

"Both," reckons Paul Green, designer and author of the epic story in question. "I think there are certain elements in RPGs that roleplaying gamers want to see but, having said that, there are no dwarves and elves, none of that Tolkien stuff."

"The original idea was to come up with something with the depth of Ultima VIII, but a bit prettier," elaborates Steve Lovesay, lead programmer and first of the now 16-man team to be assigned to Soulbringer. A 3D engine viewed from a third-person perspective provides this prettiness, but 'pretty' is hardly the best word to describe the dark, hard look of...
the game, one in keeping with its central theme of demonic possession.

Soulbringer also uses the same engine for everything, cut scenes and combat included, to create a seamless feel. “Personally, I don’t like the Final Fantasy approach to combat at all,” reveals Green. “It takes you out of the environment completely. You’ve got absolutely no warning whatsoever that there’s something up ahead. They are great games, but that’s the only part that lets them down.”

Integrating the combat system with the rest of the game is proving to be the toughest aspect of the experience. Nevertheless, in Soulbringer’s two years in development, as producer Don Kirkland freely admits, “We’re really trying to make the combat system realistic so that when you fight it’s not just a case of people standing on either side of the screen waving swords at each other. Because it’s a 3D environment, when someone swings a sword we can do proper collision on the sword – it’ll stop on a model’s arm and blood will then pour out of the wound. It means we can have a very advanced combat system.”

Another advanced feature is the game’s sophisticated magic system, the Seculum.

The five elements

Based on five different elements – earth, wind, fire, water and spirit – each represented by a segment in a circle, the Seculum responds to the way the player acts during the game. The more the player casts, say, a fire-related spell, the larger the fire segment becomes and the easier fire spells are to cast – the drawback being that the spells from the other elements become harder to cast.

“We’re trying to make the combat system realistic so that when you fight it’s not just a case of people standing on either side of the screen waving swords at each other”

“In order to be a true elementalist,” Kirkland asserts, “you really have to make sure you balance out the spellcasting of all the different elements.”

As important as the mechanics of an RPG are, the Soulbringer team recognises that plot has a major part to play. But this is no backstory: to be read before the player even boots up. At the beginning, the player knows very little, only the myths of Harbinger, the local folklore. For most of the game’s first

Interestingly, as your character’s reputation increases, others join you, and a community soon develops where once there was merely a simple dwelling.
With the story being so involved, why give the player everything all at once? For a start, they're not going to take it all in. And you'll leave nothing for the rest of the game."

In five acts, the player has no idea of their role in a much grander story - a deliberate strategy on the part of Gremlin. "How much do you want to insult the player's imagination?" he asks. "With the story being so involved, why give the player everything all at once? For a start, they're not going to take it all in. And apart from that, you'll leave nothing for the rest of the game."

Thus, Soulbinder begins with your arrival in the small village of Madrigal, in the middle of winter. You're searching for your eccentric uncle, on the instructions of your dying father. He offers to teach you magic, so long as you pay him. To earn money you find odd jobs around the village and pick up stories about Harbringer's mythic struggle with the demons. At a local festival, your destiny is revealed and you are transported to the Hex, Harbringer's old tower and your home base for the next four acts of Soulbinder's story.

Returning to the Hex is a key feature of the game, one that gives it a real edge over its competitors, Kirkland claims.

Homeward bound
"Unlike a lot of RPGs, you return to the same place many times. Madrigal, for instance, is where you start and you come back to the town throughout the game."

"As your reputation increases," Green adds, "you find loads of merchants and travellers coming to Madrigal to find you. The town picks up as the game progresses until, by act five, it's a thriving community with lots of different races, all aligned under your banner."

The five acts of Soulbinder's story are further broken down into three different categories of scenario. Primary scenarios contain everything concerning the main story, secondary scenarios help you enhance your character, and tertiary scenarios exist just for fun.

"Probably 90 per cent of the tertiary scenarios are quite distinct from the other two classes - they're just caves or mines or towers," explains Green. "When it comes to secondary and primary scenarios, you're not sure which are which when you're playing the game."

Playing time for this five-act epic should be a minimum of 50 to 60 hours, five times bigger than Gremlin's (and Green's) earlier Realms of the Haunting. "If you can do one act in ten hours, you are doing well," states Kirkland. "You're also not doing any of the tertiary quests and probably none of the secondary quests either."

With the game's emphasis on a subtly revealed story, realistic combat and seamless gameplay, Edge does wonder what place hit points, experience points, encumbrance and other throwbacks to pencil-and-paper RPGs have in Soulbinder?

"I know exactly what you're saying," replies Green, "but it's a way of informing the player, 'you're getting better.' Your die-hard roleplayers love that sort of stuff."

Those die-hard roleplayers definitely have something to look forward to in Soulbinder... and if Gremlin achieves all it has set out to, many more fans will be confronting their demons.
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At last, an email worth reading.
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LucasArts has resurrected the whip-wielding Mr Jones in a quest for the holy grail that is the *Tomb Raider* phenomenon.

As a suitable yardstick to judge how popular videogames have become in the past few years, it is debatable who is the bigger star these days – weathered adventurer of yesteryear Indiana Jones or 'it girl', Lara Croft. But the similarities between the latest LucasArts-crafted action adventure and Core Design's globally renowned *Tomb Raider* trilogy are pronounced enough to raise this question. And from its exploratory-based gameplay tinged with puzzle elements, to its vast self-contained worlds based on ancient civilisations, *Indiana Jones and The Infernal Machine* is a third-person adventure that smacks so strongly of *Tomb Raider*, it's almost embarrassing.

But this doesn't seem to bother head producer Hal Barwood. The ex-Hollywood director and games designer is a big fan of the exploits of the buxom Ms Croft and sees his creation as accelerating the pace of a genre that has plenty more mileage.

"I got excited by *Tomb Raider*," he says. "It liberated 3D from the world of..."
Originally contained in the tower. Once assembled, the machine has the potential to tip the balance of world power in the Soviet's favour.

Again, Core may have been first to introduce globe-trotting to the action adventure, but Lucas is keen to stress that its game will bring a lot more cohesion to a story that spans such geographical locations as the mysterious Tian Shan Mountain region of Kazakhstan to the Aztec pyramids in Teotihuacan and beyond. The game's locales also serve as settings for action sequences that include white-water rapid rafting, an off-road jeep chase through a jungle and, predictably enough, a mine cart ride – one overused gaming cliché that Indy can justifiably lay claim to.

Swimming one step ahead of the Russians, Mr Jones will require a solution for

As well as running, jumping, crawling, climbing and whipping his way through the levels, Indy can also raft (above) and operate a selection of machinery
A ‘visual clue system’ works with the built-in map display and gives hints as to where Indy should be looking, should he need nudging in the right direction.

A variety of challenging mechanical puzzles that go well beyond the simple switch-pulling and exit-hunting of Core’s game. “The puzzles I’ve tried to design make you feel that you’re participating in an adventure that’s grounded in a certain amount of reality,” explains Barwood. “That’s why gears mesh and why, ultimately, cause has effect in everything you do.” A ‘visual clue system’ (that can be toggled on or off) works with the built-in map display and gives hints as to where Indy should be looking, should he need nudging in the right direction.

Unlike Tomb Raider, Indy is set in a distinct period of history, so he’s surrounded by military items left over from the Second World War. And while that means he might not have access to a BFG, he does get his hands on various Red Army machine guns, hand grenades and a WWI rocket launcher to add to his own trusty combination of whip and pistol. His repertoire of moves might be reminiscent of a certain female protagonist, but where Indy relies on brains as much as brawn in the films, in LucasArts’ interpretation his agility extends to running, jumping, rolling, climbing, crawling and swimming.

Greatest action hero...

Visually, The Infernal Machine gets a considerable boost from high-end PCs equipped with powerful graphics cards, with colourful textures and an impressively smooth framerate evident in the version Edge witnessed. Realistic lighting and fogging will be added to further increase the visual allure, making one of the best-looking PC adventures around. Moreover, Indy is well animated and captures the essence of his big-screen counterpart – even in the less accomplished PlayStation version, which is currently running about two months behind the PC version.

Ultimately, the challenge Barwood and his team face isn’t an easy one, but he’s well prepared. Fans of the original movie series will no doubt be hoping for a faithful Indy experience, echoing the films’ greatest moments, but it will be the expectations of gamers that will be the hardest to meet. Armed with a strong story, ingenious puzzles, masses of action, and not forgetting one of the greatest action heroes of all time, Lucas certainly seems capable of giving The Infernal Machine a fair crack of the whip.
Hollywood and the videogame industry may still remain worlds apart in many respects, but LucasArts’ Hal Barwood has overseen some of the silver screen’s biggest stars make the transition from cinema halls to the field of computer entertainment. Indiana Jones might be a hero of what now seems a bygone age, but as Barwood explains to Edge, Indy is Indy – only this time he’s in realtime 3D...

LucasArts’ Hal Barwood is no ordinary games designer. Despite having titles including Indiana Jones and the Fate of Atlantis, Yoda Stories and Indiana Jones’ Desktop Adventures under his belt, his real experience lies in a movie career spanning 20 years. He co-wrote the screenplay for Steven Spielberg’s first feature film, ‘Sugarland Express’, and also co-wrote and produced the fantasy hack-and-slash game, ‘Dragonslayer’. So how does he find working at the helm of an ambitious interactive adventure such as The Infernal Machine? Edge met up with him at LucasArts’ San Rafael HQ to garner his perspective on creating videogames.

Edge: First of all, Tomb Raider – are you worried about the similarity between your game and Core’s?

HB: I don’t look at it in quite that way. I’m a big admirer of Lara Croft and the Tomb Raider series. I’ve played them all so far and I just got my copy of ‘Tomb Raider’ today. I think it would be silly, for example, to have a first-person Indy game where you don’t see his whip, you don’t see his hat, and you really don’t feel that it’s Indy. I think that Indy is a natural character for this kind of game.

Edge: How difficult was it to create a convincing digital version of the established Indy character?

HB: I think Indy is Indy. He’s played by Harrison Ford in the films and our version is a sophisticated 3D model – that’s a legitimate Indy in the world of realtime 3D. He doesn’t have quite the academic skill of some of these other characters, and he doesn’t throw bombs that cause magical shockwaves, like Heretic for example. When it comes to those kind of things, he’s a little bit anemic, but Indy has always been an academic – an intellectual as well as a man of action – and he kind of avoids everything until he gets pushed into a corner. He’s kind of a shuffling guy who can get himself out of trouble. That’s the kind of guy I wanted to have in the game.

Edge: Given the movie heritage, how important will cinematic elements be?

HB: They’re important – that’s how we present the story – and the cut-scenes and dialogue will convey the dramatic parts of the story well. But I also want to say that I’m an old movie guy and I’ve done a lot of movies in my career, so what fascinates me about realtime 3D is that although the imagery itself is not as sophisticated as the sort of thing you can see when you watch the trailer for ‘Episode One’, for example (smiles), in terms of just the philosophy of it all, we’ve stepped beyond cinema. The player is operating in a world that is coherent.

I have nine guys off in another corner of the building, designing the chapters of the game. And they aren’t building sets, they’re building these little mini worlds. And you examine them, you can look at them from any angle, and they all have to work. So unlike a movie set which only works for the camera, this works for wherever the player wants to go.

Edge: How will the limits of current 3D technology be able to compete with what’s already been done with Indy in the cinema?

HB: 3D technology doesn’t really substitute for photography and sets and balance when you’re playing is different. So despite my story background – and I’ve been a writer for a long, long time – I go into short-circuit mode when it comes to games. Everything is very telegraphic compared to when I’m writing a story.

“I have nine guys building the chapters of the game... they’re building these little mini worlds. So unlike a movie set which only works for the camera, this works for wherever the player wants to go”

Edge: What is the balance between action and exploration/discovery in this Indy adventure?

HB: Exploration and discovery are a huge percentage of what you do, puzzling is another chunk and action is also significant – for 30 to 40 per cent of the time you will be in some kind of serious jeopardy so you’d better watch out! But it’s not the kind of intensity that you’d find in ‘Jurrasic Park’ or ‘Quake’ and it’s not intended to be like that.

People also run at normal speeds – Indy runs at around 3m/s which is a pretty good jogging pace. Whenever I watch my friends playing ‘Quake’ or ‘Xen’ every now and then you’ll see four frames of this guy shoot through the frame at the speed of sound. We don’t do that.

I want players to feel comfy and welcome in the world we’ve created. I don’t want them to feel that the jeopardy is so extreme that they’re about to die any second like in ‘GoldenEye’. On the other hand, I don’t want the whole thing to be so somnambulistic that your blood pressure never gets up at all.

(Top) A team of nine designers worked out intricate sets and ‘mini worlds’ from every angle and, using 3D technology, took great care to make Indy’s actions as realistic as possible.
R4 – Ridge Racer Type 4

Still bruised from an encounter with the Tekken 3 team during its last visit, Edge returns to Namco to take on one of the company's other premier teams, as they break from the latest instalment of one of the most important contributions to the PlayStation
Long before Gran Turismo had powerslid its way convincingly to the front of the PlayStation's racing pack, pole position had been systematically claimed by a racer with an established arcade pedigree. Namco's original Ridge Racer may have been lapping the track continuously for over three years, but the series' dominance over the rest of the field remained convincing.

A depressingly minute proportion of the endless convoy of contenders did get close, and as the ongoing shift towards realistic physics invaded the console racing genre, some would argue that Codemaster's first TOCA title may well have slipstreamed its way past Namco's finest, whose tyres had by now justifiably lost the best of their adhesive properties.

Then came Gran Turismo. In truth, the two games could not be further apart - GT epitomises authenticity enveloped within a solid, typical videogame structure while Ridge Racer, despite two PlayStation sequels, has refused to renounce its coin-op heritage, continuing instead to offer all the realism of Scalextric. They are clearly travelling on two very different, and very separate roads...

**Fast and furious**

R4 - Ridge Racer Type 4, the latest in the series to adhere to the latter ethos, is as likely to make friends among the realism brigade as GT must have done when it first ram-raided the arcade community. It has taken a team of 30-plus, full-time individuals (most of whom have previously lent their talent to the first two PlayStation incarnations of Namco's coin-op racer) 19 months to get this far. The result is fast. Unrealistically fast, in fact.

"Essentially, we haven't made a simulation but a racing game," emphasises a cheerful Motomi Katayama, the game's director. "Our reasoning stemmed from the fact that when you are driving a car, factors such as G-force from cornering, accelerating and breaking, or the level of tyre grip, are communicated via the steering wheel and the vehicle's seat - none of these can currently be simulated adequately within a videogame setting, so we've concentrated on making sure it is a game."

This, within a genre that is balancing ever more authentic dynamics with playability, is a brave stance. GT was a defining moment for PlayStation racing titles, but Ridge Racer 4 steers confidently away from realism towards gameplay by including a staggering amount of totally fictional vehicles. Katayama-san maintains there is a perfectly logical explanation.

"We included a total of 321 different types of car. This number was required in order to implement the gameplay aspect..."
that we wanted," he states. "We wanted players to enjoy R4 as many times as possible, and have therefore included as wide a variety of cars as we could."

Surely, though, there is more to crib from one of the greatest driving games of all time than just the need to include a huge collection of vehicles boasting an impressively wide range of handling characteristics? And while Katayama is adamant they weren't inspired by other no better 'sky' in games than that found in flight combat games."

Given the quality of the visuals, it's perhaps natural to discover that they were responsible for the most headaches during the development period."

"The graphics were made first, so, occasionally, it was particularly difficult to implement them into the game," explains Katayama-san. "I had many discussions with the designers in an attempt to find a way of simplifying their work in accordance with the PlayStation's processing power. They certainly piled on the pressure."

Looking good
"The graphical improvements are obvious," adds Kono-san, "the way we display the buildings, the size of the textures, the number of polygons, etc. We started from scratch and got rid of any titles as far as game content was concerned (quite the opposite, in fact, as the team looked at things that hadn't been incorporated before), there must have been a game whose development the team took an interest in..."

"Of course, from a programming point, Gran Turismo, but no other title, I think," concedes programmer Masatoshi Kobayashi. "It's the same for the graphics, really," adds Kazutoki Kono, the project's graphic art director. "Initially I looked at several racing titles for research purposes as well as other non-racing games. In fact, the sky in R4 is inspired by the latest Ace Combat — usually, there's

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The graphical detail evident in R4 exceeds what only a year ago many would have thought possible to achieve from Sony's five-year-old 32bit machine.
superfluous material, which is why, despite running on the same hardware, R4 looks totally different from the previous Ridge Racer titles. It was difficult."

As one of the members originally involved with Namco’s first PlayStation racing outing, Kobayashi-san is more than aware that things have certainly moved on.

"When we released Ridge Racer, we honestly believed we’d got the best out of the PlayStation and reached some of the machine’s limitations, which is why, from a technical standpoint, I didn’t want to develop R4! But it was a case of eliminating any waste and making full use of the PlayStation’s ability to display polygons."

Presumably, this was a job best suited for the famed Performance Analyst. By scrutinising R4’s code with the development tool, Namco’s team was able to locate routines that could be improved, and then faced the daunting task of maximising their potential. The end result is inspired.

**End in sight**

Eventually, Katayama-san points out some of the advantages of having used Sony’s development tool. "There is currently no other racing game where the background, the road, the cars – almost everything, in fact – is entirely Gouraud shaded," he proudly states. "When I first talked about it with Kobayashi-san, we thought it impossible, but we eventually managed to squeeze in environment mapping, headlight effects, transparencies and Gouraud shading. In fact, I think we managed to achieve everything we wanted."

With the end very much in sight, Kobayashi is no less enthusiastic. "For certain projects, we occasionally discover during the development period that there are things that simply cannot be done... but for R4, we were successful in implementing everything that was in the original design document."

Expect a review next issue.

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**After 19 months of hard work and numerous headaches, every aspect of the original design brief has been implemented in R4 largely thanks to this group of supremely talented individuals (from left): director Motomi Katayama, programmer Masatoshi Kobayashi, graphic artist director Kazutoki Kono, sound designer Hiroshi Okubo, CII designer Kei Yoshimizu**

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Game Boy Color arrive, and with it brings a host of wicked pocket lighters from SNK, Bandai, Sega and Sony.

Free 1999 game calendar.
Remember when game worlds looked like this? When environments were built from bitmap images pieced together like building blocks, and polygons were the preserve of geometry students? Edge does. But what happened to the 2D game? Who was responsible for its demise? And does its passing mark the end of another golden era? Edge investigates
When the human race realised that the earth was not flat at all, but in fact a globe, the ensuing contribution to sciences, geography and even the arts was remarkable. In some respects, the rise of 3D graphics in computer and console systems is akin to this, bringing more realistic, more believable game worlds to a pastime whose status as a billion-dollar commercial enterprise began with two bats pinging a square 'ball' back and forth on a resolutely two-dimensional plane.

Where this metaphor falls down, of course, is that it fails to relate the continued importance of believing that the gaming world can be flat.

As Renaissance painters once experimented with perspective within their works, modern videogame developers broaden technical horizons with successive releases. For 3D gaming’s practitioners, the learning process has only now truly begun. But does this, in effect, signal the death of 2D? Is 2D no longer a commercially lucrative medium? Has 2D reached obsolescence by fulfilling its potential to its absolute limits, or are modern trends expediting an ignoble, unceremonious early death? Over the next seven pages, Edge looks for the answers.
WHEN 2D GAMES ARE BETTER

"Some games are better in 2D, particularly puzzle games, and also some platform games. Although there's a lot more you can do with 3D where you've got a full world you can roam around, there are some specific character movements – like jumping, and judging where you're going to land – that are actually easier in 2D than in 3D."

Jez San, Argonaut

It's hard to dispute the fact that certain games – and, arguably, a few genres – are less appealing in 3D. Reduced to their constituent elements, most polygon-based games retain the creative mainstays inherent to their sprite-based forebears. So, with the introduction of an additional dimension, developers acquaint a 2D design brief with a variety of complications. From camera angles to collision detection, it's a complicated process. And certain features just don't survive the transition between the two mediums.

"Bomberman in a 2D perspective, that was a great game. It was so simple, and so accessible, so easy to get into that when it was 'converted' to 3D, it was a bit sad. It was like seeing an old friend fall by the wayside..."

Peter Molyneux

The 'update', that enduring cash cow of the industry, perhaps best illustrates the shortcomings of 3D where many simple, traditional gaming concepts are concerned. For Probe's director of communications, Joe Bonar, a Midway classic demonstrates one particular example. "Remember Defender? Could you do a 3D Defender? I don't think it would work so well. You've got to be able to see behind you. If you can't, you've lost part of the original's appeal." Essentially, it would be impossible to create a modern, 3D reiteration without altering the original concept. Would Defender's simple, compulsive 'switch' gameplay survive that process? Of course not. Tetrisphere, too, articulates a clear message to the puzzle-game developer. Tetris, despite its humble roots, remains the world's most successful game. Its role in Nintendo's success with the Game Boy is irrefutable. A 3D sequel, then, would have been deemed by NCL executives to be an important title. But, to be frank, Tetrisphere falls utterly in its attempt to reintroduce the Tetris theme to a new, polygon-hungry audience. "The Game Boy version of Tetris is the definitive version," reckons DMA Design's Brian Baglow. "There are some ideas that need the 2D treatment, and putting them into 3D just isn't the same."

3D for 3D's sake

"3D is great for some things," offers Lionhead supremo Peter Molyneux. "It's really great for things like firstperson shoot 'em ups. But some things have been tried, where they've attempted to put something into 3D that was much, much more comfortable in 2D. The example that springs to mind, and I only played it very, very briefly, is Bomberman 64. Bomberman in a 2D perspective, that was a great game, and I played it loads and loads and loads. It was so simple, and so accessible, so easy to get into that when it was 'converted' to 3D, it was a bit sad. It was like seeing an old friend fall by the wayside..."

That's just three examples, a trilogy of instances where even the most polygon-obsessed gamer would have to concede that the sprite-based original was, and remains, better. But there's another, entirely subjective aspect to any 2D-over-3D argument.

"The thing about a 3D world that's so great is that when you're designing it, you can think 'Oh well, I can move the camera over there, over here, over there...'." says Peter Molyneux. "It's a lot less 'forced' than a 2D world. It allows you to design far more ambitious games, but you sacrifice the simplicity and often the purity of a simple interface, and simple graphics."

Where 'simplicity' and 'purity' are concerned, Capcom's Street Fighter series has few peers. It continues to eschew the convoluted pad sequences of the Tekken and Virtua Fighter series in preference of an instant, wonderfully balanced series of specials and simple punch-kick combos. Its collision detection is well-judged, and consistently believable. It's difficult to say that Street Fighter is better than its 3D rivals as such, but it is a markedly different, equally playable 2D alternative.

It's noteworthy that many purists scoffed at the 3D EX+ Alpha incarnation of Street Fighter, with comments to the effect that it seemed less responsive, less enjoyable, less 'crisp' than its original form. By contrast, the 'mainstream' PlayStation punter – and consumer press – lauded and bathed it in equal measure. Horses for courses? Almost certainly.

"I personally think Super Mario World is better than Mario 64," opines Argonaut's Jez San. Creator of 3D games for over a decade – long before the advent of dedicated 3D hardware – San is a fierce advocate of 3D's modern dominance. But can he genuinely believe that a 2D SNES game overshadows its 3D successor in gameplay terms? "Now Mario 64 is a good game, but the one I spent months of my life playing, all hours, day and night, until it was totally complete, was Mario World!"

WHEN 2D IS PERCEIVED AS INFERIOR

"With the videogames press, there's almost a cock-waving thing: 'We like this, because this is the next cool..."
So Unreal gets 90 pages, and then Half-Life gets the same. But it's not the done thing to shout about a 2D game. If it wasn't so tragic, it would be funny."  

Brian Baglow, DMA

It's not just marketing departments and developers that preach a 3D gospel - the videogames press is also part of the loop, a metaphorical noose for the neck of 2D gaming. Peter Molyneux believes that there are few descriptive terms to describe gameplay - that, perhaps, you can isolate constituent elements, like levels or genre, but to communicate the concept of 'gameplay' is a difficult task. The terms, words and phrases required have never been definitively coined.

This is, in many ways, a damning indictment of the consumer magazine market. Dedicated console magazines, in particular, can often make awkward reading for the videogaming connoisseur. How is it that the majority of gameplay-summarising copy is a variation of the 'if you like this sort of thing' cliché, yet there are innumerable ways in which reviewers berate a game for 'not being 3D'? Such is the lack of perception in some quarters of the specialist press that it's even possible to discover an 'expert' criticising the polygon-based beat 'em up Mortal Kombat 4 for 'not really being 3D' - unlike the Virtua Fighter series.

All for show

Developers, too, appear to have little time for the sprite. "There's so much more kudos in producing a 3D game than a 'cheap' 2D game within the industry," offers Peter Molyneux. "To be honest with you, if you're demonstrating a product at a show, and you've got a really, really fun 2D game - you know, a non-'engine driven' game - it's so much harder to demonstrate it at somewhere like E3 or ECTS. You've got everyone crowding around the latest 3D special effects XYZ God knows what, and there's your game - which isn't using any great technology - and where do people go? It's so much easier to say 'Look at this amazing effect!' than 'Look at this amazing gameplay!' You just can't do the latter at a show."

From a marketing perspective, there also seems to be little incentive to invest heavily in a 2D project. The tale of Activision's sprite-based Dark Reign and Cavedog's Total Annihilation perhaps best illustrates why publishers are reluctant to dedicate resources to inherently two-dimensional design briefs. Generally reviewed a month before its poly-pushing counterpart in UK PC magazines, Dark Reign was showered with accolades. And, yes, various iterations of the 'Better than Command & Conquer' line appeared in print. A month later, Total Annihilation was given a similar, though more enthusiastic treatment. Both games hit the shelves shortly afterwards, and the need the outcome be related? As a footnote, it's worth taking into account that a number of PC magazines have since suggested that, in terms of actual ingame features, Dark Reign is the more sophisticated of the two. The punter, however, remains unconvinced. Was Total Annihilation's success largely due to its use of polygonal units? It's a disquieting thought.

Jez San recognises this phenomenon. "I don't think the 2D game is dead," he says, "but, obviously, we're going through a phase where almost every game that could be done in 2D is being done in 3D. If you tried doing it in 2D, it might not sell as well, even if it's a really good game. People's expectations have changed - they want everything in 3D. I don't think 2D games are inferior, but I do think their graphics are. There's obviously something about having a three-dimensional world that just looks better. It feeds on people's sense of spatial awareness, and gives them an extra challenge, because they have to be imagining how the world fits together."

"At DMA we've got a few people who will look at a game, and if it's not 3D, they're not interested. They won't even take the time to look at it properly. I think that's a trend that seems to be pretty much universal at the moment"  

Brian Baglow

"I think it's a shame that there's this perception that 2D games are dull," laments Brian Baglow. "I mean, even at DMA we've got a few people who will look at a game, and if it's not 3D, they're not interested. They won't even take the time to look at it properly. I think that's a trend that seems to be pretty much universal at the moment."

2D: THE DARLING OF THE RETRO FRATERNITY

"If I showed a 2D game like Super Metroid to a group of kids, none of them would buy it. They'd be like: 'What's all this retro crap?'"

Joss Ellis, Virgin

Although retrogaming's take on geekish chic remains more Johnny Ball than Jarvis Cocker, the appeal of the 3D is massive. For some, an emulator is a desktop toy, a plaything for work hours sans work. For others, it's an opportunity to rediscover past favourites, with the age of a title and its modern day acceptability having a strange inverse relationship (although there are, of course, a few notable exceptions). For the enthusiast, though, old games compete with new releases for a share of waking hours. It's a disappointing reality, but the predominantly 2D games of yesterday often don't bear close examination well in the late '90s. This also applies to one-time favourites and, in principle, seminal classics. "Unfortunately,
Is Manic Miner (left) really unplayable today? The more recent Super Metroid (centre) certainly remains a sublime gameplay experience, while Capcom is coining it today with a series of old coin-op re-releases.

"I think it's sheer optimism to think that 2D games will come back. It's been and gone, and we all remember it - and some of my favourite games were 2D - but I can't see it happening again. I don't think the market will let it happen," Jez San thought. "This is just awful! I can't play this! And it was a shock, a real shock."

The opposite applies, too. Indeed, it's almost embarrassing to look at a Nintendo game over a decade old possess a greater level of creative integrity than a PlayStation equivalent today. Although many developers and software houses seek to distance themselves from their 8bit and 16bit heritage, almost every publisher has at least one title that could justifiably receive a present-day reworking. Some games, such as the SNES classic Super Metroid, would almost certainly find favour with today's switched-on gamers, even if presented in their original form.

It's a contentious point, but there are 'forgotten' 2D games that have a potentially greater claim to shelf space than the slew of shoddy, polygon-based dross released this year. "The amount of people here that play emulators rather than current games is huge," reveals Brian Baglow. "You've got many, many people playing emulators rather than going out and buying new games like HotLifef and Sin."

"Now, some people have said, 'Ah! An absolute classic!' And then you've got the other half, who say, 'What the fuck is this? This is awful!' In some magazines, they've marked Lemmings 3D higher than the original Lemmings. It seems that the people who played it years ago, on the PC and Amiga, are the ones who like it..."

This raises an interesting point. Could it be that today's gamers have to somehow 'learn' to enjoy 2D? Could it be that 2D games are almost too abstract for the coveted mainstream gamer? Does 2D need a killer app to reintroduce itself to the massmarket?

Single-screen, multiplayer gaming is an area in which 2D has an impressive track record. In this instance, cartoon-style bitmaps and a fixed viewpoint could be a positive boon. For inspiration, designers need only cast their minds back to history's many examples. "There are old games that I do still play in 2D, and they're still absolutely brilliant," enthuses Peter Molyneux. "Games like M.U.L.E. on the Commodore 64 - it's excellent. But that's not because it's 2D or 3D, it's because it's very, very primitive, and a great idea for a multiplayer game."

Market forces
"All these people say that retrogaming is coming back in, that it [3D] is just a phase, and we'll be back to 2D... I really don't think so," argues Jez San. "I think it's sheer optimism to think that 2D games will come back. It's been and gone, and we all fondly remember it - and some of my favourite games were 2D - but I can't see it happening again. I don't think the market will let it happen."

"If you can suspend the player's disbelief, get them involved, then whether it's 2D or 3D just doesn't matter," offers Joe Bonar. "Take Pac-Man. It was a 2D game, and you used to shit yourself - you really used to react when you were being chased. There was an emotional response, even though it was 2D."

The gulf between Resident Evil and Pac-Man is huge, both in time and appearance. Yet both, in their own respective ways, have engendered tangibly similar responses from engrossed gamers. Can sprites evoke similar feelings in the '90s? The dedicated retrogamer would argue they already do.

PRETTY POLY: THE DEVELOPER'S NEW FANCY

"I reckon, and this is purely a theory, that if you took the average game from ten to 15 years ago, it would have taken around two, three months to complete. Ninety per cent or so of that time would have been dedicated to gameplay. I'd say that exactly the same amount of time is spent on gameplay and balancing now, but the projects can take over two years. But the vast majority of that time is spent on the graphics, the 3D world and trying to get your interface right."

They may be poles apart technically, but Joe Bonar points out that Pac-Man and Resident Evil inspire the same responses - they both 'scare the shit' out of players.
You’re left with the 11 or so weeks at the end to put the ‘game in.’

Peter Molyneux, Lionhead

Development teams have embraced 3D with an almost religious fervour, some would argue for little reason other than they can. On this topic, Joe Bonar makes an important contribution: “The reason why 2D games proliferated in the past was because you could only do 2D games. 3D games were hard to produce, and before you had all the hardware to manage it for you, you had to be Jez San to do it…”

Of course, the transition from simple, sprite-based routines to complex poly-pushing code has seen the bedroom coder consigned to distant history. While it’s possible for an individual, like Peter Molyneux, to possess a near-complete degree of creative control over a project, the one-man development team can now barely aspire to producing ‘decent’ shareware. “I’m sad to see 2D games go,” says Molyneux, “because I think we’ll see far less simple, easily accessible games. The saddest thing for me is that it’s further taking games away from the time where you could just ‘knock one up’. No one would ever think you could do that these days.

“It’s the ability to have a really good idea for a little puzzle game, or something like that, and then be able to code it up in a couple of weeks. When you’re starting out in the industry, it’s really important to be able to do that. Now, of course, we’re dealing with computer, 3D worlds and interfaces, and, from that perspective, it’s sad…”

Joe Bonar agrees that the days of development periods being measured in weeks are a thing of the past. “It was once easier to mass-produce games. I think there used to be a joke in the industry: if Probe are doing a game for a company, the spec is ‘How many platforms do you want in it?’. Essentially, what we did was to create a set of tools which allowed us to produce 2D games very, very easily. It was called CRISP, and was programmed by Carl Miller. That allowed us to program games such as Stargate, Judge Dredd, Pogomaster… Oh God, these are all bad games! But they were all done on time.”

The idea that even the most simplistic contemporary 2D game could be completed in weeks is ridiculous. In its own way, the gestation period of a 2D game can be as protracted as that of a poly-oriented equivalent. Nintendo’s Yoshi’s Story, for example, was the result of many, many months’ work; its production values were no less stringent than the current crop of 3D platforms.

Blinded by ambition?

In some instances, developers are attempting to be too ambitious with 3D games. One example of this can be found in the real-time strategy genre. Westwood’s Command & Conquer, for instance, illustrates how a 2D game provides a consistently clear, precise view of the action at hand. Disregarding the importance of Total Annihilation’s polygon-based units for the moment, consider the next evolutionary jump for this game style: the introduction of a first-person perspective. Although many would argue that Activision’s Battlezone and Microsoft’s Urban Assault are different ‘styles’ of game, their roots are firmly grounded in real-time strategy principles.

“Sometimes, it’s the difference between good design and bad design,” states Virgin’s VP of production, Joss Ellis. “You’ve got developers saying ‘Let’s have more units, massive landscapes, waypoints, preprogrammed functions’, and they’re just adding complexities for the sake of it. You’re making entertainment software, not a military issue combat sim.” Indeed, one palpable flaw of both Urban Assault and Battlezone is that, by combining strategy with combat elements, they could overburden the one piece of PC hardware that can’t be upgraded – the player. As many coders overburden them with the misunderstanding that ‘bigger’ and ‘more’ equate to ‘better’, there’s a genuine danger that successors for both games will alienate players with hugely over-taxing rules and features.

Of course, market forces will always prevail at such a point – Darwin’s theories of natural selection are applicable in a software retailing

“We’re not worrying too much about what the lay person might think, like ‘That looks terrible – her legs have just gone through the side of that door…’ We’re not worrying about that because we want to be more ambitious” Peter Molyneux

Is there an aspirational aspect to the proliferation of 3D games? Regardless of wireframe (Battlezone, left) or filled-poly (Urban Assault, right) graphics, coders aspire to be the best sense, too – but there’s obviously an upper limit to the abilities of the solitary gamer. Create Urban Assault in 2D, however, and the concept as a whole becomes more approachable. Rather than clumsy map overlays or distracting strategy screens, gameplay issues and tactics can be addressed from a fixed view. The player isn’t required to utilise their sense of spatial awareness, so the additional thought processes required to negotiate a 3D environment can be ‘spent’ elsewhere. Both Battlezone and Urban Assault are excellent games – but could they be more enjoyable in 2D? It’s an interesting question.

Quality control

In terms of quality control, the 2D game will almost customarily be superior to its 3D kindred. Even the most well produced and tested 3D games are released with graphical glitches and inconsistencies, from pop-up to polygon glitching or warping. Peter Molyneux looks to the cinema for a suitable analogy. “An example would be sound. You had black-and-white films, and then suddenly they had sound. And all the disasters, the laughable things that happened when they
introduced sound for the first time is similar to how it was with 3D at first. We’re trying to leap ahead of ourselves and trying to be so ambitious and not worrying too much about what the lay person might think, like ‘That looks terrible – her legs have just gone through the side of that door...’ We’re not worrying about that because we want to be more ambitious.”

Ardent, pro-2D fansatics should know better than to make this a rallying cry for their cause, though. “It’s rather like when you used to have multiplexed sprites on the Commodore 64,” says Molyneux. “It used to support about seven or eight, I think, and then some mad bastard worked out a way of getting more and more sprites on there, but occasionally they’d flicker. We forgave it, because there were 200-odd sprites on screen, or whatever. But if you ever saw that on the PC or consoles now in a 2D game, you’d think ‘Oh, bloody hell, that’s not very good.” In many ways, then, the PlayStation’s propensity for warping textures is a ‘90s equivalent of the Spectrum’s colour clash.

“Really, we know these problems are just going to go away in the next year or so,” says Molyneux. “And then, when you do see a game with polygon clashing, it’s going to be laughable.”

What’s in a game?

Obviously, the biggest difference between most 2D and 3D games is the sheer amount of time it takes to create an engine for the latter. “When you were programming games in the past,” says Peter Molyneux, “you’d do the graphics, or a friend would do them, but all the visual stuff was over and done with in a week.” Now, of course, the time frames involved are considerably larger. It’s notable, however, that many of the people providing polygon skins and textures are often the same individuals who once hand-animated sprites and built backgrounds with Lego-like bitmaps. Joe Bonar appears surprised by the enquiry as to whether the 3D revolution might have led to Probe discarding old-school graphics talent. “No!” he exclaims, “We trained them! You still need 2D art to make a 3D game. We do have to hire a lot of people with ‘traditional’ 3D skills, though. But we had this cross-pollination of abilities, where the art people taught the 3D people, and the 3D staff taught the art staff.”

2D IN THE MODERN DAY

“Although we designed the Super FX chip mainly to do 3D on the SNES, Nintendo used it very successfully for one of the best 2D games of all time – Yoshi’s Island. It was used for the sprite rotation and scaling, which is quite a high graphical technique, but they used it in a very two-dimensional way.”

Jez San, Argonaut

Isn’t it ironic that the 2D platform game – once a woefully over-subscribed genre – has, in a manner of years, become almost a ‘niche’ product? Likewise, the old-school shoot ‘em up is another gamestyle blighted, in the west, by a dearth of interest from the mainstream market. Even the graphic adventure, once a genre beloved of the programmer keen for a quiet life, now plays a far from pivotal role on the modern software retail shelf.

Can a 2D game succeed today? It’s a thorny question. During the PlayStation’s early years, the development fraternity was awash with rumours that Sony would, had, or might ‘reject’ a 2D game if it was ‘off message’; if it wasn’t a ‘progressive’ 3D title, the company’s support would be limited.

During the PlayStation’s early years, the development fraternity was awash with rumours that Sony would, had, or might ‘reject’ a 2D game if it was ‘off message’; if it wasn’t a ‘progressive’ 3D title, the company’s support would be limited.

Exception to the rule

Could it be that the market doesn’t actually care about polygons? Is it plausible, as Commandos’ success implies, that bitmap-driven games can top charts ahead of 3D-based equivalents? Abe’s Oddysee is one of a precious handful of high-profile 2D platform games released in recent years. For developer Oddworld Inhabitants, it was a pleasingly successful debut. Both games,
on their respective ‘target’ formats, are the exception rather than the rule. But should it be that way?

Has 2D, in truth, realised its potential? Did Yoshi’s Island represent the pinnacle of 2D platforming gaming? The dedicated gamer would probably argue in the negative. Is there potential, then, for a developer to create a massive 2D platforming hit for the current (or forthcoming) range of consoles? Jez San is unconvinced: “Effectively, Miyamoto tried that with Yoshi’s Story, and that’s two dimensional with 3D effects. For better or for worse, it didn’t do so well. I wouldn’t say it flopped, but I think it was a disappointment in many people’s eyes, compared to the original. I don’t think that anyone is brave enough — not even Miyamoto — to do a 2D game again. Even if you can do some gameplay elements that are better in 2D, the market wants things that are visually stunning — and that means 3D, and more and more special effects.”

2D AND 3D: FLIP SIDES OF THE SAME COIN?

“What it’s all about for me is getting your message across. Whether it’s 2D, or 3D, it’s the experience. I know it sounds all arty farty, but it’s all about the game.”

— Joe Bonar, Probe

For those raised on a diet of sprite-based games, the current trend of developers using polys for quintessentially 2D game designs can be baffling. Is it a good thing, or a bad thing? “It depends what they’re using the polys for,” says DMA’s Gary Penn. “Polys are much better for space, for a start, and they’re also a lot more flexible than sprites. It can often be easier to have a poly-based model than to have someone hand-draw and animate several thousand frames of animation.”

Does the addition of polygons automatically make a game ‘3D’? No. If a fixed camera is utilised, and play occurs on a flat plane, the game remains 2D, broadly speaking. A simple example is Cavedog’s Total Annihilation. To offer Grand Theft Auto as an example is a little more radical, as, while 2D at heart, it uses polygons to great effect with its scenery to convey a feeling of realism and movement. But if GTA is to be described as 2D, does that mean that Crystal Dynamics’ Pandemonium — despite its dynamic roaming camera — should be similarly categorised? There are no hard and fast rules, and it would be rare for two gamers to entirely agree on the subject. But one thing is certain: the sprite has fallen far from favour…

“That’s the irony,” says Gary Penn in reference to GTA’s inherently 2D design. “The cars are actually two polys with a texture on. They’re not sprites but, technically speaking, they might as well be.” This is hardly a passing fad for the industry: indeed, it’s a standard, with sprite-based games becoming increasingly rare. The classic ‘2D countenance’ may be in a terminal decline, but 2D gaming concepts live on.

“Sometimes, a 2D representation of a game is the way to go, instead of just doing 3D for the sake of it,” says Brian Baglow. “Grand Theft Auto is obviously a very good example that’s close to our hearts. There were a number of people — and not just consumers, press as well — who said ‘Oh no, you’ve got to make it 3D!’ And you go ‘No, no! We’ve made it 2D for a reason.’ The 2D, and the styling of the game, works.”

The name of progress

But it’s not only market forces that make the 3D styling of otherwise 2D games an inevitability. With forthcoming consoles and PC accelerator cards boasting huge increases in 3D performance, could there be a point where most formats will be simply incapable of handling a cutting-edge sprite engine? “If you look at the trends,” says Jez San, “and what the hardware’s built to do, the consoles and PC accelerators are all built to do 3D, and the next generation more so. More polygons, more special effects, more this, more that… perhaps the PlayStation 2 will render curves. And if it does that, it’s still three dimensional. I just don’t think 2D games are going to be anything other than a curiosity.” “If you get a load of programmers together,” confides Peter Molyneux, “they never talk about the latest ‘cool’ gameplay idea, they talk about ‘What’s the latest 3D technology? How many polygons can push on screen? Are you doing mip-mapping? Are you using polymorphic textures?’ That’s what we all talk about.

There were a number of people — and not just consumers, press as well — who said ‘Oh no, you’ve got to make [Grand Theft Auto] 3D.’ And you go ‘No, no! We’ve made it 2D for a reason.’ The 2D, and the styling of the game, works.”

— Brian Baglow

NO OBITUARY: 2D LIVES ON

“I think, in a worst-case scenario, sprites will live on in PDAs, Game Boy Colors and the back of aeroplane seats. Would I take on a 2D game? Yep. But it’s got to be bloody good.”

— Joss Ellis, Virgin

“It was kind of inevitable that 2D games would disappear,” relates Peter Molyneux, “although I
bet you that, some time in the next few years, there’ll be a brilliant 2D game come out that will prove us all wrong. It’s like, you have renaissance films like Woody Allen’s ‘Manhattan’. Films like that prove that you can still make a movie in black and white, so, obviously, you can still make a game in 2D. I think it’s inevitable that we all want to work in 3D. The sad thing is that it takes us further away from the things we should really be concentrating on in addition to that – the gameplay, the interface.”

It’s the simplicity of 2D games that, by and large, makes them appealing to long-term gamers. In the absence of 2D titles, could true ‘witch’ gameplay live on? It’s doubtful. In GoldenEye, the player is required to react with speed, and the onscreen stimulus is truly immersive. But there are many parameters for the player to consider. Indeed, many modern 3D games are so far removed from the no-brainer simplicity of, say, Defender, that it’s difficult to believe that they both share a common heritage.

“I don’t think we’ve got any 2D games in development right now,” says Lee San, “but that’s not surprising with Argonaut. We’ve always been into 3D games – even when the machines could barely achieve it properly. My first game ever that I developed was called Skyline Attack in 1984, and that was a 2D scrolling shooter in the Defender mould. But my second game was StarGlider, and since then every game we’ve done is 3D.” And herein lies an important point. Certain development teams are, and will remain, dedicated to 3D. There’s a huge appetite in western territories for increasing numbers of polys in ever-more-involved games – or so prevalent wisdom suggests. Thus, the majority of European and US developers are firmly geared towards creating three-dimensional environments, regardless of the actual style of play beneath.

Worlds apart
Japan, however, is different. There, 2D games are still held in high regard. The likelihood of a large-scale resurgence of interest in 2D gaming originating from Japan, therefore, is possible, but unlikely. The videogame industry is a global market, and any high-profile project in Japan will take success in western territories into account. The N64, for example, is a beligerated format in its home market. Many developers have shunned it in favour of PlayStation, Dreamcast and, paradoxically, Game Boy projects. The remaining faithful are developing first and foremost for the US and Europe. Are 2D games on the agenda? No prizes for the answer to that.

There’s another problem. For all the dedicated game and import, the majority of Japanese 2D games can be categorically regionalised. From horse-riding sims to hardcore shoot ‘em ups – often too difficult for the impatient, mainstream western gamer – 2D lives on in the orient, but in a form that the vast majority of UK gamers would find difficult to appreciate.

And in the west? Well, there will always be the occasional Abe’s Oddseye or Commandos: Behind Enemy Lines. Cartoon cel art will continue to appear in graphic adventure games, and god games or management simms will still, in some form or other, champion the ‘fixed’ isometric view. The news that Sim City 3000 discarded its original 3D design brief in favour of its traditional appearance was little surprise. Although the genre may embrace polygons, 3D remains impractical for certain design briefs. And it’s this reason that ensures 2D’s continued existence as a viable medium for videogames.

2D encore
The industry should be proud of its heritage, although it demonstrates a remarkable lack of maturity by continuing to regard 2D as an almost embarrassing stepping-stone to a polygonal future. Is it true that a film starring Jim Carey is superior to one featuring Cary Grant? Technology and trends indigenous to any particular era move on, but the fact that gamers have, for example, chosen to buy Commandos: Behind Enemy Lines as well as, or instead of Unreal is a revealing cestitude.

“It’s like the transition from the stage to cinema,” says Joe Bonar. “The theatre is traditionally two-dimensional. When you’re in your seat, all you can see is the stage, and you have this fixed view. In the cinema, they put the camera where they want it, for the best effect. Will there be a 2D game renaissance? Well, the stage never went away…”

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**GAME BOY: 2D’S SPIRITUAL REFUGE**

In handhelds and PDAs, the sprite lives on. Ironically, on the Game Boy, it’s the attempts to recreate 3D gaming experiences that are judged as inferior product – and rightly so. The limited nature of its 8bit processor means that sprites aren’t simply an option. They’re a requisite.

“If you count Game Boy Color games,” says Probe’s Joe Bonar. “Or the Bust A Move conversions that we’ve done, then we are producing 2D games. If you don’t, then we’re not. Simply because the ‘message’ has changed. 3D is just... well, it’s what the new systems can do.” The Game Boy, naturally, cannot.

“With the Game Boy, it goes down to the game,” says Bonar. “You’ve seen and heard about Re-Volt [663]. It’s a real showpiece. Awesome looking. It’s sweet. And we’re thinking about putting it out for the Game Boy Color. What you’ve got to do is, you’ve got to take the fundamental essentials of the game, and think ‘well, this is how it’s presented in 3D. So this is what we’ll do to make it 2D.’ Ultimately, the Game Boy Color market is going to be lucrative, because the development costs aren’t massively high. And any publisher should be able to sell a few units of anything, because there will be hundreds of thousands of GBCs out there. If you have a good product, it will sell.

“How do our programmers feel about doing 2D games? Well... everybody relishes the opportunity to make cash. [laughs] But it does effectively mean making a new design

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**Commandos: Behind Enemy Lines** (left) proved one of 1998’s biggest PC hits. Its graphics may lack the polygon excesses of GoldenEye (right), but it would appear that consumers do not actually care
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At the top grill of a car, there is a vent. The vent is used to cool the engine and control the air flow. When the car is moving, air flows into the vent, cooling the engine and providing necessary air circulation.

**Equation:**

\[ F = \frac{mg}{\cos \theta} \]

where:
- \( F \) is the force作用力
- \( m \) is the mass
- \( g \) is the acceleration due to gravity
- \( \theta \) is the angle of the vent relative to the horizontal
Physics matters

Ingame physics is the driving force behind the new wave of science-led gaming. Edge explores this trend and considers the role more advanced physics will play in the future.

Thanks to gravity, falling objects accelerate towards the ground at a rate of ten metres per second per second. A cubic metre of water weighs exactly one metric tonne, and freezes at zero degrees centigrade. The fastest tornado winds blow at 318mph, which is almost half the speed of sound. And a pint of Stella Artois contains 29.5ml of pure alcohol. Some things in life, at least, never change.

In game worlds, however, you can't always rely on the laws of physics to apply. It can be frustrating when games break the rules. Take, for instance, the handicap in football games. They have an uncanny ability to teleport their onscreen bodies into the path of the ball, or in other cases seem to exert a magnetic force over the ball so that it's sucked into their hands just when you thought a top-corner goal was certain. And how annoying is it when playing a fighting game, to be charged the same amount of damage when your opponent kicks your character in the shin as when he executes a shattering roundhouse to the head?

Fortunately, technologies are being developed that will one day do away with such anomalies. The increasing processor power that has helped make graphics and audio improve so much over the last year is also on hand to revolutionise the physical realism of game worlds. Accurate modelling of physics is becoming the order of the day for many developers. Games such as GoldenEye look and sound 'real', but soon they should begin to feel real, something Gran Turismo almost achieves, and although gameworld physics are still pretty rudimentary, Edge expects to see the next great leap forwards in game programming being made in this area soon.

By visiting each gaming genre, and speaking to the individuals responsible for the development of ingame physics, Edge seeks to discover how realistic physics are being implemented in games...
DRIVING GAMES

TOCA and Gran Turismo set a precedent for others to follow.

Prior to the shift to 'proper' 3D, racing games were relatively primitive in the way they portrayed the laws of physics. 2D worlds provided simpler shortcuts, while processor power was at a premium. The proliferation of high-end PCs, Dreamcast, and the ability of programmers to squeeze more out of the PlayStation and N64, has meant that physics engines are improving rapidly.

Where cars were once treated pretty much as blocks with wheels, it's now possible to model an automobile as a working system. It can be given a chassis and suspension system and the joints in this system can have subtle effects on the way the car handles. Though the car's actual motor isn't a simulated model of a working combustion engine, in games like TOCA 2 it's treated as a separate force which feeds the wheels. Each tyre, in turn, interacts independently with the ground – be that grass or Tarmac, wet or dry – affecting the way the vehicle moves. Models for aerodynamics and collisions are each applied individually to complete the physics of the car.

"All these things are dealt with separately and then linked together," explains Richard Ogden, the programmer responsible for the physics in TOCA 2.

"We can therefore easily advance one aspect of the model without messing with the rest of it."

The car model in TOCA 2 is, in fact, appearing in its third iteration after being used in the original TOCA, as well as in Colin McRae Rally, which goes to demonstrate its versatility. But Ogden does admit that, as cutting edge as TOCA 2 is, there's still a long way to go. "The physics in TOCA 2 are accurate as far as it goes but they are actually very simple when compared to the kind of calculations that would be done by, say, engineers analysing the performance of a real racing car," he says.

The car model in TOCA 2 is in its third iteration after being used in the original TOCA, as well as in Colin McRae Rally.

Unsurprisingly, Ogden believes that subsequent generations of graphics chips will enable better physics in games. Graphics processors are eventually expected to take charge of transformation (recalculation of 3D scenes) and lighting, leaving more CPU resources free to handle the physics. "We'll be able to do more detail in tyre physics, actually having the rubber deforming and wearing out, temperature changing, and the consequences of that," he says. "Also, aerodynamic simulation could potentially take into account the exact shape of the car. Other areas to look at would be the working parts of the car – the gearbox, etc. I reckon more advanced damage modelling will also be a feature."

FIGHTING GAMES

As genre leaders, Tekken and Virtua Fighter redefine realism with every new iteration.

The Tekken and Virtua Fighter series have both been responsible for increasing levels of realism in fighting games, principally for their introduction of true 3D fighting planes to the genre. Tekken 3 on the PlayStation and Virtua Fighter 3 in the arcade have also gone a long way towards a sense of physical realism which is absolutely necessary to the genre. Still, it's argued that there's a lack of weight and inertia in such games. In general, contemporary games of pugilism rely on motion capture animations for their realism, rather than models of the human body as a fighting system with bone, muscle and joints, subjected to attributes such as its own mass, suppleness and centre of gravity.

"The big problem with motion capture is that it's not about programming dynamics and physics," says Mark Cale of System 3. "It's more about replaying an animated sequence. You could think of it as pre-stored, not true real-world physics."

System 3, whose fighting credentials go back as far as International Karate on the Commodore 64, is currently working on a new fighting game targeted at the next generation of consoles. The as-yet-untitled project is focused on creating proper reactions to animated system they prefer – based on the move executed, or a new one based on the importance of the target.

Whereas many developers are reticent when it comes to broaching the issue, often arguing that falsified physics make for better gameplay, System 3 is wholeheartedly embracing the concept. "Having good physics is important, and represents the future in every genre of realtime 3D games whether it is in driving, fighting or first-person perspective," he concludes. "Simply put, it's how objects and people react in the real world and it should be the Holy Grail of all developers to try and simulate that realism."

"Having good physics is important, and represents the future in every genre of realtime 3D games," Mark Cale

A kick to the head in Tekken 3 (top) calls up the right animation in response, but is it physically accurate? Many regard Virtua Fighter 3 (above) to be more correct, but there is still much work to be done...
Platform Games

The concept of realistic physics is relatively alien to the platform genre. In fact, you can almost see fans of platformers forming pressure groups in favour of barring realistic physics from games. After all, how much fun would Sonic be if his body was modelled after that of a real hedgehog? Indeed, how fun would Mario be if his was modelled after that of an actual Italian plumber? More seriously, what would platformers be like if unlikely leaps of faith could not be made, if springs couldn't propel game characters five times as far as they would in the real world, or if small birds weren't able to carry characters 76 times their size across chasms filled with fire-breathing sálmánderes?

As Argo'st's Jez San argues, this doesn't mean realistic physics engines can't be used to advance platform games. "In the past, platform games have had to have special case code written to handle each possible interaction that the player may want to have with each object in the game world," he explains. "It doesn't mean it can't be physically accurate if done this way, but it's more elegant and intuitive for both the gamer and the development team if there is a more advanced engine that can handle a higher level of physics and collision simulation."

You can almost see fans of platformers forming pressure groups in favour of barring realistic physics from games dropped it from a height, it would sink a little, and then bob up, possibly even springing out of the water. It's possible that such an engine could be written which deals with all sorts of objects, and attributes factors to them such as density (affecting buoyancy), coefficients of friction (slipperiness) and coefficients of restitution (how bouncy they are). Once a physics model is in place that applies to the entire game world it can be tweaked in different ways to create the sort of cartoon physics hitherto seen in platform games, but which work together in a consistent and integrated system rather than being programmed on a piece-by-piece basis.

First-Person Shoot 'Em Ups

The first-person perspective gives this gaming genre instant appeal thanks to its immediacy and visual realism. Players are also given a certain amount of scope to interact with the game world. In games like Quake if you can run up spiralling staircases, leap chasms, climb ladders, duck into sewer pipes and leap from great heights into pools of water. Unreal and Half-Life even enable players to move crates around then climb on them to access new parts of the game, and to destroy a number of items in the game world.

As real as these games feel, their programmers are having fun with real-world physics rather than replicating them.

Yet, as real as these games feel, their programmers are often having fun with real-world physics rather than replicating them. The heroic characters players control can, for instance, change direction in mid-air when jumping. Even the most capable gymnast knows that this defies Newton's laws. You can even combine a carefully timed jump with the force of a rocket explosion to execute the rocket jump — a manoeuvre certain to blow your legs off in the real world. Witness the space base level in Quake II, meanwhile, to see the effects of meddling with gravity.

As Scott Miller of 3D Realms points out, much of this deliberate rule-bending favours gameplay you've comfortably avoided still manage to hit you — which can prove horrendously infuriating.

Max Payne, a shoot 'em up currently being developed by Miller's team at 3D Realms, is to feature some breakthrough modelling of realistic weapons. "Bullets and projectiles actually travel at their proper speeds, rather than moving instantaneously as in previous games," says Miller. "Gameplay-wise this means that you'll need to lead opponents who are running at distance. Bullets will also ricochet correctly, and gravity will be a factor so that you will need to adjust your sniper scope for the proper range, otherwise you'll shoot too high or too low."

Max Payne (top) will include accurately modelled projectile weapons, while Quake II's space level (above) demonstrates the amusing gameplay that can be had in low gravity situations.
**SPORTS GAMES**

For the most part, playing football at Premier level is only possible when physics is involved.

Due to their immediacy and competitive nature, sports games present environments where the implementation of realistic physics can prove crucial. It's while playing these games that players often feel the most cheated, when the game world doesn't behave as it would were you playing the particular sport in real life.

In football or ice hockey games, for instance, control of the ball is often determined by the rather large collision detection boxes around the players. Situations arise where game characters intercept the ball or puck when it actually appears to be quite far away from them, spin. The net moves when the ball hits it, but it may only be an animation or built from a simple function. Corner flags move, but not really due to the amount of wind in the stadium. All of these issues will be addressed within the next few years, providing a more entertaining game world.

For Drinkwater, it will still be some time yet before the movement of players themselves is governed by a physics engine rather than an animation system. A true physics engine which controlled player movement would be based on the forces applied to muscles and gravity on the joints. This is too complicated at the moment," he believes.

In the meantime, programmers are more likely to turn to Inverse Kinematics, a simplified system of governing limb and joint interaction. Though programmers will continue to use motion-captured animation and cheat at sports physics for a while, great improvements are expected. "The leap over the next few years will be noticeable one and should enhance gameplay dramatically, producing avenues gamers have been hoping for for many years," Drinkwater concludes.

**ADVENTURE AND ROLE PLAYING GAMES**

An advanced physics model could be more than just the icing on the cake.

With RPGs coming from a turn-based background, and adventures tending to focus on guiding players through a story, neither type of game has been a particularly relevant forum for the development of physics modelling. Their cerebral and fantasy nature sees interaction with characters and collecting magical items usually taking precedence over realistic movement or combat. Plus, with a strong emphasis on fantasy, physics aren't such a critical issue. "You try modelling a stone-to-flesh spell in the real world," says Ade Carless, senior game producer at Gremlin. "Fossils don't grow on trees, you know!"

However, as with most other gaming genres the advent of 3D and the move towards real-time worlds has given game designers new avenues to explore. Gamers are tired of the swing-for-swing animated swordfights of titles like Deathtrap Dungeon. Now players crave more satisfying swordplay and weapons systems, such as those offered by the flawed Die by the Sword, or Thief.

Physics in RPGs and adventures can go much further than swords with realistic inertia. For Carless, currently working on the hotly tipped Blade, giving objects believable properties is one specific aim. "Previously, a thrown flask of oil might come to rest on hard flagstones without smashing, the crude physics model treating it the same as every other item," he says. "With a more sophisticated physics model, the flask of oil would break and spill its contents. A carelessly discarded torch would ignite the resultant slick."

Such implementations could enable players to kill or trap monsters. By letting fire loose into an RPG world, however, programmers would have to be careful what they put where – you wouldn't want players burning important gameplay items. Carless is looking for other improvements, too. If wrecking balls and battering rams, as well as walls themselves, could be better simulated, we might see a new RPG sub-genre arise: siege games.

The unwieldy swordplay in Deathtrap Dungeon (top) took away as much credibility from the game as the heroine's unlikely outfit. Gremlin's Blade (above) will base puzzles around its use of realistic physics.

Blade itself will bring puzzles where real-world physics are critical. A pendulum-based example will see players firing arrows into a suspended bucket to get it swinging, so they can eventually grab hold of it and use the rope it hangs from to swing across a chasm. There will also be water displacement puzzles. In combat, you'll be able to aim at various parts of a creature's anatomy, so you have a choice of killing or wounding it. The player can even chop off limbs and beat monsters with them. "By making the physics model resemble the real world more closely a player can assess his actions before carrying them out, and can expect a far more convincing, and fair, outcome," concludes Carless.
Flight simulators are serious games where realism is valued probably more than in any other genre. Those who program them are always quick to point out how accurate they’ve made their jet fighters, helicopters and missiles, and to the casual observer titles from Novologic, Dido or EA’s Jane’s range do seem to model the physics of the real world very well indeed. Meanwhile, more than one reviewer has claimed, “The game makes you feel like you’re in the cockpit of a real F-16,” without having any knowledge at all of what it’s actually like to fly such a plane. It’s therefore pretty difficult to verify the accuracy of the physics in any flight sim, particularly those of the supersonic variety.

Flight sim programmers currently aim to model all the airborne effects you’d expect, such as lift, thrust, drag, gravity and angle of attack, and where jetfighters are involved Mach and G-forces come into the equation, too. Planes and missiles themselves can be moved around in 3D according to relatively simple vector calculations. The complexity grows quickly, however, with each factor added to the plane’s flight dynamics or the game environment.

The inclusion of crosswinds, thermals and varying air pressure is currently uncommon or non-existent. It’s in this area that Novologic CEO John Garcia believes the next set of advances will arrive. “Consumers can expect flight simulation games to begin incorporating atmospheric and meteorological conditions such as rain and wind effects,” he says. “With the swift advance of technology and the availability of increasingly powerful desktop computers in the marketplace, developers will also be able to model more sophisticated system malfunctions, such as holes shot through the wing.”

“Developers will be able to model more sophisticated system malfunctions, such as holes shot through the wing.” John Garcia

Despite the very strong claims in the area of physical and mathematical accuracy, flight sims are by and large bound by the same considerations affecting other games. “Developers must take into account the law of diminishing returns,” says Garcia. “With limited CPU resources, there comes a point where fine tuning the flight model becomes unnoticeable to the consumer. With simplified physics in the flight model, more bandwidth can be devoted to other aspects of the game, such as management of the AI, complex environments, networking and graphics rendering.”

Grame developers do have a very compelling reason for bringing greater levels of realism into games, particularly in the area of physics modelling. If game worlds can be made to behave in the same way as the real world, players will be able to understand them better. They’ll know what to expect in given situations, and thus can be led into more complex, less tenuous gameplay situations which they’ll be able to deal with intuitively rather than by trying to second-guess the game designers.

On the other hand, games are an escapist form of entertainment. Take away the improbable from them and they wouldn’t be half as much fun. If games began to resemble the real world too strongly, where would gamers be able to turn?

It seems clear that no matter which genre they’re dealing with, game programmers will come up winners when they find the right balance between realism and fantasy. Fantasy dungeons that look and behave like real ones, powerful cars or jets that most of us will never get our hands on, blood-and-guts fist fights, and surreal outer space experiences involving gogos can all still benefit from an injection of realism. Whether it’s a sort of realism that’s tweaked, twisted or exaggerated, it doesn’t really matter as long as the resultant games feel consistent and believable. To this end, physics engines look destined to take charge of games. The 3D revolution is old news. Physics is the new young pretender.

Powerful cars or jets that most of us will never get our hands on, blood-and-guts fist fights, and surreal outer space experiences can all still benefit from an injection of realism.

As with 3D graphics, the hardware considerations are of most concern to developers. They remain very realistic about creating their physics engines, wary of overburdening processors in the arcade machines, consoles and PCs their games are designed for. No one wants to cripple gameplay. “To truly simulate real-world physics to a substantial degree would take as much computing power as the graphics themselves,” points out 3D Realms’ Scott Miller. “Maybe that’s a new business waiting to explode: physics accelerator cards!”
...huh! Breathe in that clean, crisp woodland air and ask yourself is there anything better than a fun day out in the country. Just you, an arsenal of serious firepower and all those cute, little furry animals.

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THE BEST OF 1998

Some of the most exciting developments the gaming scene has ever witnessed have occurred this year. Edge picks the highlights.

This year has been a remarkable one for the videogames industry. It will go down in history as the 12 months in which the hobby truly became a massmarket entertainment medium, discussed in social circles in the same breath as music, cars and sport.

But, as well as proper acceptance in the mainstream, videogames have matured this year to the point where new landmarks have been set time after time, month after month, such is the ambition and talent prevalent within the creative community that drives the industry. Which naturally makes choosing the most accomplished endeavours of the last 12 months especially difficult.

But that was the task Edge set itself once more as the year drew to a close. Videogames may have reached a saturation point which sees a new title garner as much space in a tabloid newspaper as it does a specialist games publication, but this is the recognition that truly matters...
GAME OF THE YEAR
Seeking the title whose content delivers the most successful mix of everything that makes videogaming great.

1st
LEGEND OF ZELDA: OCARINA OF TIME
Developer: NCL
Format: Nintendo 64
Publisher: Nintendo

It may re-use some old Zelda gameplay elements a little too brazenly, its opening hour of gameplay may not be as inspiring as hype followers had been led to expect, and its structure may not always be as easy to follow as previous 2D extravaganzas from Nintendo, but Ocarnina of Time nevertheless stands out as a pinnacle of console gaming.

2nd
GRAN TURISMO
Developer: Polyphony Digital Inc.
Format: PlayStation
Publisher: SCEA

It takes something rather special to convincingly and completely revolutionise one of the most popular genres in the history of videogames. With its astounding structure and playability, GT is it.

3rd
METAL GEAR SOLID
Developer: Konami (KCE)
Format: PlayStation
Publisher: Konami

After so many developers' attempts to capture the spirit and atmosphere of action adventures on celluloid, this is the first true realisation of the potential for movie-inspired gaming. A work of art.
GAMEPLAY INNOVATION

Recognising the enhancements that thoroughly enrich the overall gaming experience

1st

LEGEND OF ZELDA: OCARINA OF TIME

Developer  NCL
Format      Nintendo 64
Publisher   Nintendo

Using a thirdperson Mario 64-style viewpoint was an obvious choice for Nintendo with its 64bit Zelda update, but the masterstroke was the introduction of a firstperson mode and a lock-on facility during combat. The implementation of a wide range of weapons, all manageable in 3D, plus the existence of myriad sub-games cements the game’s ingenuity.

2nd

METAL GEAR SOLID

Developer  Konami (KCE)
Format      PlayStation
Publisher   Konami

Stealth-based action and many original touches – from its Dual Shock use to its ‘knoing’ memory card references – reveal the effort that went into making this one of the cleverest games ever.

3rd

BATTLEZONE

Developer  In-house
Format      PC
Publisher   Activision

Uprising may have started the trend towards firstperson strategy games, but Battlezone refined the concept beyond recognition. The sense of ‘being there’, in command of your units, is still unrivalled.

1998 ACCORDING TO JEZ SAN

MANAGING DIRECTOR, ARGONAUT SOFTWARE

What was your favourite game of the year?
Panoppy the Rappa.

What was the best experience of 1998 for you?
Scuba diving in Maui, where I swam with the turtles. But a close second was seeing Croc reach number one, stick there for months, then stay in the charts for most of the year, and go on to sell over a million full-price copies. Also, visiting Tokyo and seeing the Dreamcast games and meeting Naia-san and innai-san.

And your biggest disappointment?
Edge reviews being biased towards the firstperson shooter genre, and downgrading ‘younger’ character games. Oh, and the appearance of far, far too many firstperson shooters!

What are your plans for next year?
To show people what we already know: that we got over our management difficulties a few years ago, and that we’re now a happening developer like we used to be, with some cool games and technologies and a great team. And, of course, to try and repeat – and maybe even beat – the performance of our games in 1998.

What are you looking forward to in 1999?
Releasing several new games, and perhaps Edge liking one or two of them. Oh, and getting my Open-Water PADI licence.

Finally, which piece of hardware are you most looking forward to? Why, all of them, of course! And my Suunto Snyder diving watch.
GRAPHICAL ACHIEVEMENT

Tracking the most distinguished examples of realtime videogame art

1st

VIRTUA FIGHTER 3TB

Developer: Genki/AM2
Format: Dreamcast
Publisher: Sega

So it isn’t arcade perfect, but it remains the most potent demonstration of how dramatically the gap between arcade and home technology is closing. Exquisitely detailed textures, solid-looking models, intricate realtime 3D environments – all manipulated at a rate of 60fps. This is the game to usher in the new wave of visual delights.

2nd

LEGEND OF ZELDA: OCARINA OF TIME

Developer: NCL
Format: Nintendo 64
Publisher: Nintendo

Using an enhanced version of the engine that powered Mario 64, this allowed Nintendo’s artists to truly let go, whether creating huge, fantastical 3D realms or distinctive character models. Sublime.

3rd

HALF-LIFE

Developer: Valve
Format: PC
Publisher: Sierra

Who could have guessed that a tweaked Quake II engine was capable of rendering a game world as credible as Half-Life’s? Lighting and textures are magnificent, but attention to detail marks this out.
TECHNICAL ACHIEVEMENT
Dragging the most out of current hardware limitations via inspirational programming trickery

1st
METAL GEAR SOLID
Developer: Konami (KCEJ)
Format: PlayStation
Publisher: Konami

Everything in Konami's stealth fest teets solid, no pun intended. The move from third-person to first-person in realtime is seamless and instantaneous; the texture range is massive and adventurous, and the visual quality is sterling - everything combines to create a totally convincing environment which must be pushing the PlayStation to the limits of its processing capabilities.

2nd
TEKKEN 3
Developer: Namco
Format: PlayStation
Publisher: SCEE

Had VF3b been arcade perfect, it would have been a landmark achievement, although in some respects not as impressive as what Namco squeezed out of an ageing 32bit machine with this.

3rd
F-ZERO X
Developer: NCL
Format: Nintendo 64
Publisher: Nintendo

This super-fast futuristic racer may not have the highest polygon count, but it is supremely fluid, displays 30 vehicles simultaneously at 60fps, and offers a workable split-screen four-player mode.

What was your favourite game of the year? Banjo-Kazooie was my personal fave. The execution of the genre was excellent, the game was paced right, and the tasks were achievable. I've always wanted to remake the classic platformer, but with this one out there it'll be more difficult now.

What was the best experience of 1998 for you? Being promoted to the head of Acclaim Studios role. This really gives me a position to influence our total output, quality, and the platforms we support. I have four excellent studios to work with, and the prospect of growth is very exciting indeed.

And your biggest disappointment? Personally I was disappointed that we couldn't squeeze Turok 2 into the pre-Thanksgiving period. Although the game turned out to be fantastic, and deserved the extra time, we always tried to hit an early-October completion. Everybody involved worked very hard to realise this goal, but in the end quality won out. Of course, this leaves lots of room for improvement next time...

What are your plans for next year? Growth, better games, expansion into new genres, solidification of the technology base, to name a few. During the next 12 months you'll see us produce more quality products than ever before, and more products on time, on budget. My main goal is to create a bigger, better studio group that is more focused on the task of making great games.

What are you looking forward to in 1999? Game-wise, anything from Rare is a good bet for a fun game. As for the games from our own studios, South Park qualifies as a 1999 game, and it is very, very different in terms of content than any other N64 title. Also, our next generation baseball game should push the envelope, technology-wise. On a more adult, sinister front, Shockem is turning out to be excellent, as well.

Finally, which piece of hardware are you most looking forward to? Personally it has to be Dreamcast for 1999, but looking beyond that PS2 is also exciting. We will be looking at both, and are thrilled to be working in an environment that enables us to do this.
AUDI0 ACHIEVEMENT

The most accomplished exponents of an often-overlooked fraction of the videogaming equation

1st

METAL GEAR SOLID

Developer: Konami (KCE)
Format: PlayStation
Publisher: Konami

High-end visuals, dramatic camera angles and wonderfully addictive gameplay would have amounted to little had Metal Gear Solid suffered a poor sonic score. Thankfully, every one of its many tunes is not only musically accomplished but outstandingly atmospheric, too, and the inspired sound effects further enhance the authentic-environment feel.

2nd

HALF-LIFE

Developer: Valve
Format: PC
Publisher: Cendant

Subtle atmospherics, chunky blasts, yells, shouts and an occasionally cinematic score. Not to mention the speaking NPCs who communicate the absorbing plot to you as the game progresses. Classic stuff.

3rd

GRAN TURISMO

Developer: Polyphony Digital Inc.
Format: PlayStation
Publisher: SCE

Forget the music and concentrate instead on the sound effects. Whizzing turbos, grinding disc brakes, screaming rubber and raucous exhausts. Racing soundtracks don’t get better than this.
HARDWARE INNOVATION
Because no matter how good, software is always limited by – and of no use without – hardware

1st
DREAMCAST
Manufacturer: Sega
Origin: Japan/UK (graphics chipset)
Price: £29,800 (£150)

After the bloated, underdesigned failure that was Saturn, few could have foreseen that Sega's new console would be as svelte, complete and downright sexy as it is. PlayStation's successor may well have more horsepower, but right now there's only one machine to own: Dreamcast. All Sega now needs is to ensure that the trickle of good games turns into a flood.

2nd
N64 RAM PAK
Manufacturer: Nintendo
Origin: Japan
Price: £30

Proof that Nintendo cannot be discounted easily from the race, an extra 4Mb of RAM should give N64 titles a new lease of graphical life, propelling them further ahead of the current 32bit competition.

3rd
SOUNDBLASTER LIVE!
Manufacturer: Creative Labs
Origin: US
Price: £200

Audio has long languished in the shadow of graphics engines. Soundblaster Live is a loud reminder that players have ears as well as eyes. Listen out for surround-sound effects and some very big bangs.

1998 ACCORDING TO
PAUL DOUGLAS
CO-FOUNDER,
CONFOUNGING FACTOR

What was your favourite game of the year?
On N64 I played Banjo-Kazooie all the way through, which is pretty rare for me nowadays. Carmageddon 2 has a great physics engine and yet is still remarkably playable, although the missions seem too tough for me. Grim Fandango was great, displaying the usual LucasArts attention to detail. Grand Theft Auto and Resident Evil 2 have been the only games in my PlayStation, which seems to only have sequels, Platinum re-releases and the occasional quality Japanese game nowadays.

What was the best experience of 1998 for you?
Oohh, I wouldn't like to say.

And your biggest disappointment?
The Interplay losses were a bit gutting, but I'm sure they'll turn things around next year. After all, four of their forthcoming games appear in Edge's 1999 calendar.

What are your plans for next year?
To finish Colleen and see in the new millennium with some style.

What are you looking forward to in 1999?
Game-wise, no doubt I'll still be playing Zelda, and I'm really looking forward to Black & White, Giants and even Metal Gear Solid! And anything by Rare, of course.

Finally, which piece of hardware are you most looking forward to?
Well, as far as us Europeans are concerned it's likely we'll only see Dreamcast next year, but that's enough for me. I'm sure PlayStation 2 dev kits will appear sometime in the year but it's hard to get excited purely about hardware - it's the software that does it for me.
1998 ACCORDING TO DAVE PERRY

What was your favourite game of the year?
Independence War [aka I-War] from Infogrames.

What was the best experience of the
year for you?
The Wild 9 party at the Playboy mansion.

And your biggest disappointment?
That the party ended.

What are your plans for next year?
To release Stunt Copter, Messiah and
Sacrifice all in one year. That ought to
keep our fans happy.

What are you looking forward to in 1999?
My next Playboy party when we ship
Messiah.

Finally, which piece of hardware are you most looking forward to?
I've already asked Santa for my fully loaded
Dreamcast. It seems that he had signed
an NDA on the PlayStation 2...

COIN-OP OF THE YEAR

The arcade machines to have claimed the most £1 coins from Edge's pocket in the last 12 months

1st
TIME CRISIS II

Developer: Namco
Format: Arcade
Publisher: Namco

A straightforward rehash of the original featuring better visuals would have been
the easiest option (and, sadly, one taken
by too many developers), yet Namco
chose to put some thought into this
sequel. A good thing, really, as the
separate-screen two-player option offers
one of the most convincing forms of
cooporative play ever seen in the arcade.

2nd
SEGA RALLY 2

Developer: AM Annexe (now AM12)
Format: Arcade
Publisher: Sega

Although not as initially playable as its
super-popular predecessor, underneath
the visuals lies a considered and highly
technical rough-road racer capable of
mesmerising petrolheads for hours.

3rd
GET BASS

Developer: AM1
Format: Arcade
Publisher: Sega

If there's one thing coin-ops have the
freedom to do, it's experimentation with
custom interfaces, and few companies
have embraced this better than Sega
with this weirdly addictive fishing sim.
DEVELOPER OF THE YEAR
The videogame-creating outfit responsible for the strongest and most consistent releases

NINTENDO
Key games: Zelda, 1080°, F-Zero X
Format: Nintendo 64
Headquarters: Japan

In addition to claiming responsibility for one of the most significant titles in videogaming history, this year has seen other impressive N64 releases such as 1080° Snowboarding and F-Zero X. Sure, there are developers capable of putting out more product in 12 months, but, to Edge's knowledge, quality has never been directly proportional to quantity.

PUBLISHER OF THE YEAR
A company showing respect for innovation and quality in an industry plagued by marketeers

CODEMASTERS
Key games: TOCA 2, Colin McRae Rally
Formats: PC, PlayStation
Headquarters: UK

Over the last decade, Codemasters has made the transition from developing unambitious 8bit titles to supplying a steady stream of sparkling hits. The hugely successful TOCA series was reinforced by Colin McRae Rally, while the recent decision to publish Music shows a willingness to experiment. 1999 should see new N64 and Dreamcast titles.

1998 ACCORDING TO MARTYN CHUDLEY
MANAGING DIRECTOR, BIZARRE CREATIONS

What was your favourite game of the year?
Banjo-Kazooie from Rare. The game is god. Rare are gods. Best graphics, best structure, best playability. Sixty hours of solid gameplay. 'Nuff said.

What was the best experience of the year for you?
Being in Tokyo for the Dreamcast New Challenge Conference, courtesy of Sega, and the company proving their commitment and enthusiasm for their (and out) next generation.

And your biggest disappointment?
Turing 30. However, I still feel like a 20-year-old -- but Sarah won't let me...

What are your plans for next year?
Finishing Metropolis for Sega and also finally branching out from the racing game genre [Bizarre produced F1'97 and F1'98 for Psygnosis] with something a bit different.

What are you looking forward to in 1999?
Dreamcast. The Rare trio of Canker's, Perfect and Jet Force. And sleep.

Finally, which piece of hardware are you most looking forward to?
Sorry, this is sounding like a Party Political Broadcast on behalf of the Sega Party, but obviously Dreamcast. PlayStation 2 will most probably be cool, too. Also Plasma TVs when they become affordable (to anyone other than Jet [San] -- sorry, Jet).
THE REST OF 1998

With the obvious categories decided, Edge presents a selection of peripheral accolades.

MOST DISAPPOINTING GAME

Mission: Impossible

TACKIEST VIDEOGAME 'BABE'

Deathtrap Dungeon's Red Lotus

MOST VOCAL SPOKESPERSON FOR THE DEVELOPMENT COMMUNITY

Peter Molyneux

BEST INDUSTRY PARTY

Sony's PlayStation ECTS bash

MOST HONEST ADVERTISING

Sega's Japanese Dreamcast campaign

PROMOTIONAL COSTUME MOST LIKELY TO ERODE ITS WEARER'S SELF-ESTEEM

Tomba at E3

MOST REVELATIONARY SOURCE OF INSIDER INDUSTRY GOSSIP

The original Filthy Truth Website (now shut down, unsurprisingly)
MOST UNINTENTIONALLY RETRO-STYLESED GAMING ACCESSORY
VM Labs' Nuon controller

BEST PROMOTIONAL CGI
Tekken 3

DODGIEST PROMO PHOTO APPAREL
GoD's Mike Wilson

BIZARREST PERIPHERAL
Techno-Motor's oversized Saturn joystick

BIGGEST BOMB OF THE YEAR
Wild 9

BIGGEST WASTE OF ENERGY
Chasing a PlayStation 2 announcement

SADDEST USE OF RESOURCES
Internet sites run by clueless industry wannabes
The definitive monthly assessment of the world’s latest videogames

First impressions count

You’d think that by now anyone about to launch a new console would realise the importance of the initial software line-up. Videogaming history is filled with potentially exciting hardware launches marred by a disappointing lack of high-quality software. Tragically (despite subsequent decent software support), some of them never recovered from a lacklustre inauguration.

When they first appeared, both the 3DO and the Jaguar, with Crash ‘n’ Burn and Cybermorph respectively, only offered one title each worth pursuing. Previously, the first PC Engine buyers must have wondered about Drunken Master and Tale of the Monster Path before handing over the cash. And somewhere in between those formats, the version of Altered Beast bundled with the PAL Mega Drive must have frightened away as many as those who bought Sega’s 16-bit machine on the promise of better things to come.

Even Sony’s PlayStation only offered Ridge Racer to seriously tempt Japanese gamers into committing their yen to its global consumer electronic empire. By the time of the UK launch, Namco’s impressive racer lined up alongside Playgrands’ Wipeout and SCE’s Jumping Flash, yet although the best of a lukewarm bunch, these weren’t absolutely essential purchases.

This is the concept most companies fail to grasp – but one Nintendo seemingly understands all too well, to the point where gamers have come to expect a frustrating string of hardware delays simply because of unfinished software. When it launches a machine, NCL makes sure there are at least a couple of titles worth playing on it. But not just any two titles. The SNES boasted Super Mario World and F-Zero, while the N64 proudly showed off Super Mario 64 and PilotWings 64. All were interactive entertainment that immediately caught the gaming public’s imagination and met their expectations on every level.

Sega, on the other hand, has typically taken a different approach. Disappointingly, like the Saturn with Virtua Fighter before it, Dreamcast currently only possesses one strong, impressive title (ironically, Virtua Fighter 3tb, see p14). Admittedly, Sega Rally 2 was wisely delayed at the last minute – given its Tokyo Game Show appearance, Edge suspects its presence would have done more harm than good.

The first batch of titles is critical to a console’s success. It’s what the industry, the press, and more importantly, the consumers base their opinion of the machine on. The hardware may be able to shift a zillion polygons per second, but it’s of little use if Derivative Cutesty Pantormer 3 is all you have to play on it.

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Edge evaluates games on a scale of ten, where five naturally represents the middle value. A game receiving a ‘seven out of ten’ for example, is a competent title with noticeable flaws but which should still appeal to a considerable range of players – naturally more so to those who favour the title’s particular genre. It does, after all, score two points above average and should therefore not be considered as such.

Edge’s rating system is fair, progressive and balanced. An average game deserves an average mark – not, as many believe, seven out of ten.

### Videogames on the Edge

This month’s stress relievers...

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<td>Still being picked apart by Edge’s tirelessly hardworking gamers, Zelda was a hit despite its intrigue and confusion by turn. Still being picked apart by Edge’s tirelessly hardworking gamers, Zelda has a plot that intrigues and confounds.</td>
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<td>Released by the time you read this, Edge was the opportunity to try out a nearly finished version of what could be a big hit in Japan at Christmas.</td>
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<td>Tighty plotted, visually and aurally stunning, and fantastic fun to play, Half-Life’s scanners magazine production quicker than the other.</td>
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<td>Zelda’s arrival urged Edge to check out the previous N64 title to cause such a stir in the office, and the package plunger was found in remarkable shape.</td>
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VIRTUA FIGHTER 3TB

Sega devotees were desperately hoping for an arcade-perfect conversion, but it was not to be. This is a close translation, but it lacks the coin-op's fineries.

Dreamcast's one-time development namesake, Dural, is also VF3b's final character. In this incarnation her shiny metallic 'skin' is offset by the dull surroundings.

In the age of 8bit videogaming, there was one word that could snare a potential game purchaser's attention: arcade. 'Arcade-style gameplay' and 'arcade-quality graphics' were often promised (though rarely delivered), along with the killer claim of an 'arcade-perfect conversion'. Often these assurances were accompanied by coin-op screenshots, rather than those from the far more crude home version.

That so many innocent gamers gave credence to such outrageous statements is now hard to comprehend, although EA’s recent Moto Racer 2 television adverts, which used PC visuals to sell the PlayStation version, indicate that the trend of dishonest marketing hasn’t entirely passed. It’s true that many titles have appeared to come close to delivering a coin-op experience in the home, including the likes of Ridge Racer and Tekken, but none have really replicated their original incarnation. Even now, 128bits on from the Spectrum and C64, a state of true equilibrium between arcade and home has yet to be reached. Sega’s conversion of its respected beat ‘em up Virtua Fighter 3tb is a well engineered translation from the Model 3 coin-op to its newborn console, Dreamcast. But while it’s not a perfect replication, the similarities are many.

Running at an unbroken 60 frames per second in the console’s standard 640x480 resolution, VF3tb is - if nothing else - testament to the power of its host platform. While gameplay continues to reign supreme over all else, the astounding clarity and finess of VF3tb’s visuals is the facet of the game that strikes you first. The ex-generation fighting games for the PlayStation and Saturn may have offered reasonably detailed character models, but they inhabited stark arenas devoid of features. Virtua Fighter 3tb changes everything.

Bouts take place atop sloping downtown rooftops and on flights of steps, in the lapping waters of a desert island and on the Great Wall of China. Initially this appears to be a graphical gimmick, simply a new trick in the videogaming book. But Virtua Fighter has grown into a highly
technical game since the inception of the series in 1993, resulting in the uneven floors of the third game affecting the movement and attacks of the characters. Among coin-op cognoscenti such details may seem like old news, but it’s a relatively new polyhedral achievement in the home console market.

In gameplay terms, the Dreamcast version of *VF3tb* confirms what only dedicated, cash-rich arcade frequenters must have known all along – that the AM2-developed fighting game had matured into the leading title of its genre. It may not have the instant, eye-popping explosive appeal of *Tekken 3*, but extended play reveals that there is a deeper, more satisfying complexity to the third *Virtua Fighter* title. Each of the protagonists is armed with a vast selection of attacks, utilising simple hits and complex manoeuvres to outwit and overpower opponents.

In some respects, the greater depth is due to a different approach being taken in the design of the game’s control method. Where once *Tekken’s* approachable ‘one button for each limb’ system seemed the way forward for the genre, it limits the interaction in a true three-dimensional space. *VF*’s alternative, with buttons for punch, kick, defend and dodge, while perhaps not offering the same scope for multiple attack movements, allows you to control the characters with unrivalled grace. The virtual fighters can be made to weave, dance and turn around one another – once the player has attained a reasonable level of aptitude. On the topic of control, it’s worth noting that

All 13 of the arcade original’s characters are featured (if Dural is to be counted), although the lack of a versus option verges on the ludicrous.

The **Dreamcast version** of *VF3tb* confirms what only dedicated arcade frequenters must have known all along; that the AM2 fighting game had **matured into the leading title** of its genre.
The novel (but entirely confusing) name-entry system involves beating the alphabet until the desired word is spelt.

Compared to the coin-op original, there are definite deficiencies in Dreamcast VF3tb, including a slight (but not impinging) drop in the overall speed of play.

Dreamcast's arcade sticks are constructed to just about the same standard as those of Sega's arcade cabinets, and add significantly to the playing experience. The 'To' addition to VF3's title indicates that this is a conversion of the special edition Team Battle version of the coin-op, which has the option to preselect a rounded team of three fighters. While this makes for a fine extension to the basic game, there is a noticeable lack of the other play modes which made Tekken 3 such a worthwhile purchase for the home. There is the option of a training mode and a menu system which allows you to play back the various characters ending movies once unlocked through completing the game, yet the omission of a proper 'versus' selection is unforgivable, forcing two-player fights to be organised via the singleplayer generation of software. Only in the long term will it be possible to judge whether it is utilising the console to best effect. And the lack of serious contemporary software, such as the delayed Sega Rally 2, makes appraising its true power yet more difficult.

Early impressions of forthcoming Sonic Adventure are very good, and more performance will certainly be wrung from Dreamcast in the future, as with all hardware. However, Virtua Fighter 3tb is an addictive and attractive piece of software, which gets close to replicating the output of a high-end coin-op board with seemingly little trouble. Every new console needs a killer app for its launch, and in the face of little opposition, this is Dreamcast's.

"VF3 is the key title among the first generation of software. Only in the long-term will it be possible to judge whether it is utilising the Dreamcast console to best effect."

Unlike Tekken, it's possible to force opponents out of the fight arena, with severe consequences.

Dodging is an essential gameplay element, yet it can leave you open to throws...

Edge rating: Eight out of ten
While the colourful and intricate visuals in PenPen are distinctive, they're not a fair representation of Dreamcast's true graphical capacity.

While PenPen Tricelon is quite clearly the work of unhinged minds, Edge prefers to applaud the title's innovative approach and General Entertainment's originality.

It's by no means a revolutionary concept, however. The essence of the colourful action follows a standard racing formula: players attempt to get from start to finish before any of the six other competitors. Rewards take the form of additional equipment such as helmets and shoes as necessary progression aids. It's what happens between these two points that sets it apart from other racing titles. It doesn't, for example, feature a single vehicle and the track is rarely coated with tarmac. Instead, the PenPen must complete sections of the course by walking, swimming or sliding their way through themed stages which feature anything from giant sweets to ships wrecks and the treacherous interiors of a haunted house, all depicted in impressive graphical splendour.

Naturally, these PenPen are not creatures of a variety that Edge has ever witnessed... The lower body is 'penguin', but the top half can take the form of many creatures. You'll recognise a shark, dog or hippo, while a mixture of several can't be discounted. The resulting mutations aren't as grotesque as they sound, though. In fact, the PenPen are instantly likeable mutants, oozing enough character to put many other game protagonists to shame.

Unfortunately, though, PenPen Tricelon doesn't play as well as it looks. It's a shame that only the sliding stages provide real racing thrills. Swimming sections convey a relaxing and fairly engaging atmosphere (mostly as a result of impressive scenery) but the pedestrian segments are tedious. They can also prove frustrating, as your character often gets knocked all over the screen without the possibility of regaining control until all of your nearest opponents have passed and things have calmed down somewhat.

Furthermore, the proceedings are unbalanced, failing to promote close racing (particularly noticeable in multiplayer mode), with most of the races degenerating into a solitary progression through the stage, offering an occasional glimpse of an adversary in the distance. It's fun, but its flaws far outweigh its charm.

Edge rating: Five out of ten
GODZILLA GENERATIONS

Format: Dreamcast
Publisher: Sega
Developer: General Ent.
Price: ¥5,800 (£25)
Release: Out now (Japan)

Whether hit by missiles, laser rays, a swinging tail or simply touched by a gigantic reptile, all of the buildings break up into a spectacular cascade of polygons.

Godzilla Generations is a great concept with much potential. Sadly, the end result feels underdeveloped.

Other than exploding trees, there's something odd about Godzilla Generations. It feels strangely unfinished, particularly when you compare its content to the visual splendour offered by Virtua Fighter 3tb and PanPen Tricolion.

The concept is simple: as Godzilla, or Mechagodzilla, your task is to trample all over Japan, destroying the major cities in your path. There is a variable time limit and points are awarded for the percentage of carnage, as well as any destructive combination of moves you used in the process. To this end, Godzilla's fire and laser breathing ability has been maintained in addition to a limited offensive and defensive repertoire, which differs between characters. While normal Godzilla tail-swipes everything around it, and uses its shield against helicopter and jetfighter pilots, Mechagodzilla has access to a host of projectile-based artillery, mostly fired through its fingers.

There are more characters, however. Buy a Godzilla VMS and, after a little nurturing, Godzilla USA (based on Hollywood's absurd 'Alien'-style interpretation), First Godzilla (from the very early Japanese monster films), and the young, diminutive Minilla become available on the option screen. All differ in attributes, of course.

A little more nurturing reveals up to 36 other monsters. While these cannot be used in the main game, they can be downloaded from the VMS, given a polygonal appearance and pitted against each other in turn-based combat. It's a concept very similar to the N64's Pocket Stadium, however, the baby biters eventually grow into Godzilla's famed adversaries of old, such as King Ghidorah, a three-headed dragon-esque creature.

It's an interesting addition, but not one that manages to elevate Godzilla Generations above sub-average status. The graphical quality is disappointing, the control method decidedly clumsy and the camera system, although occasionally highly cinematic, is often confusing, making it hard to locate ground-based objects such as enemy tanks and small residential dwellings.

There is some fun to be had in walking through a towering skyscraper, leaving an enormous hole gaping behind you, and later levels offer a particularly high density of buildings to destroy, but Godzilla is hardly going to frighten current 32- and 64bit owners into selling their machines.

Edge rating: Four out of ten
THIEF: THE DARK PROJECT

The story begins as a simple fantasy-based tale of thievery – but creatures and environments get more cutlindish

To the casual eye, developer Looking Glass Studios appears to have backed a loser – in a world where gamers demand increasingly extravagant ways to blast the body parts from opponents in first-person action games, Thief discourages conflict. A game where the enemies are to be avoided and where the only bloodshed is usually that of your character – can Looking Glass be serious?

Such a view underestimates the developer's experience with this kind of role playing game, however. This is the outfit that produced the acclaimed Ultima Underworld titles and System Shock: No other developer is capable of evoking such a sense of place and, by emphasising the importance of the lighting effects, stealth tactics, and by pushing character behaviour to the fore, manages to create a whole new spin on an overly familiar genre.

Shadows are the most important asset to the player, with a glowing onscreen gem indicating how well hidden stealthy hero Garrett is. The light in an area, closeness to walls, the speed at which he's moving, even whether or not he has a weapon drawn, all affect his visibility. Finding a safe area, then watching as a guard walks by just inches away, is truly nailbiting. Noise is almost as important, with the opening of doors, walking on metal gratings and other actions alerting enemies. Guards will shout into the dark if they hear something, or call for help if they do find Garrett.

The audio also aids the player immeasurably. Listening for footsteps, the sound of whistling, or conversations help gauge where the enemy is. Ignore such aids and it's easy to walk headlong into the enemy. Swords and other weapons can be used, but direct lighting is not this hero's strong point. Of more use is the bow, which enables long-distance attacks. Several arrow types are also geared towards stealth, with noisemaker arrows for providing distractions, moss arrows for covering the ground with silencing vegetation, and water arrows to extinguish lights – a great idea, and one which becomes invaluable in later levels.

The more critical will point to the slightly dated 3D engine, the limited number of enemy types, and the fact that a design that shuns battle can't possibly be as exhilarating as a proper shoot 'em up. And, yet Thief manages to create an unparalleled atmosphere and, for the most part, the avoidance of conflict provides just as many edge-of-the-seat moments as can be found in the likes of Half-Life. It may not have the same commercial appeal as that new benchmark title, but it's ultimately just as innovative and laudable in its own field.

Edge rating: Eight out of ten
Trespasser is an example of too much realism. It’s also an indication that its developer hasn’t the slightest fundamental understanding of what constitutes gameplay.

The action occurs several years after the setting for “The Lost World”. Dinosaurs roam freely, preying on each other within the aquatic boundaries of their Pacific island, known as Site B. Anne crash lands on the beach and must traverse the island, reactivating communications and make her way back into civilisation. Along the way, a variety of puzzles must be solved and several creatures are bound to show their prehistoric heads. Some are harmless, while others will eat you...

The proceedings start going drastically wrong before Anne gets to meet any of the genetically reconstructed wildlife. In its quest to implement what is a truly remarkable physics engine, capable of emulating real-world dynamics convincingly, Dreamworks has overlooked critical gameplay aspects. For instance, any imperfection in the terrain no higher than a step requires the jump key, with Anne seemingly unable to lift her leg above ankle level.

Trespasser is an impressive technical demo with an obsessively intricate physics engine. It just isn’t a game.

Edge rating: Two out of ten

Indeed, attempting to overcome the slightest obstruction becomes laborious and time-consuming. Crucially, the mouse/keyboard control system is not an adequate solution to incorporate all the movement parameters offered.

But there are visual dilemmas, too. Even on a Voodoo 2-equipped P400, progression is sluggish, with scenery constantly re-building itself without a hint of subtlety as you approach any of its environmental structures. And the dinosaurs may behave according to hunger, thirst, fear and curiosity, but they move as if suffering from chronic constipation, shattering the illusion of the real world that the developer is so keen to convey – albeit populated by creatures long extinct.

Even on a high-end PC, the scenery is constantly updating and rebuilding itself.
GLOBAL DOMINATION

There is an element of resource management (albeit simple) which comes into play during later levels.

InX, Missle Command and the holographic 'game' in 'never Say Never Again' are the three games Psygnosis quotes as the inspiration for this, its latest PC creation. And while the FMV interrupting the 2D preset singleplayer missions is a stern reminder that one can rapidly have too much of a good thing, as with most things in life, Global Domination's remarkable simplicity is the key to its addictive qualities.

This clarity has been implemented in the control system, with the majority of functions achieved via the mouse and two keys - the former rotates the globe, while the latter alternate the offensive and defensive weapons as required. Furthermore, pressing the left mouse button launches the assault artillery (missiles, submarines, bombers, jet fighters, satellites) and, predictably, the protection devices are deployed via a quick tap on the mouse's right button.

The aim of the game is to overpower and conquer any country at war with your own (the amount of territories you have/require depends on the type of game selected), by using a combination of the resources available. For instance, neutralising a hostile nation with a nuclear warhead may be satisfying and initially seem an attractive option, yet, as the damage they cause is permanent, once beaten the newly acquired terrain is unlikely to prove very useful when attacking other territories.

A much smarter approach would be to neutralise its factory (and therefore its weapon-manufacturing capabilities) and, subsequently, its attack and defence silos before inflicting enough damage to claim it as your own, safe in the knowledge, of course, that any damage caused by the invader (provided it's not atomic in origin), is instantly revoked.

Naturally, different nations possess different technologies and, while not the most advanced example of its type, the AI is capable of giving the illusion that you're up against another human brain. Nothing beats the real thing, however, which is why a multiplayer option is included, allowing for up to 16 participants.

As you progress further into the game, new and more powerful weapons become available and, before long, things can get a little hectic, with countries constantly forming and breaking alliances with frightening rapidity. Thankfully, the colour coding helps immensely when attempting to work out who's attacking who, and where the next warhead should be heading.

While it won't appeal to everyone, and is unlikely to tear you away from the real world and turn you into a drooling misanthropist, Global Domination remains an addictive, refreshingly different title that deserves to occupy your PC's CD drive on a regular basis.

Edge rating: Seven out of ten
HERETIC II

Format: PC
Publisher: Activision
Developer: Raven
Price: £40
Release: Out now

Avan's approach to its Hexen/Heretic series is becoming confusing. Heretic was the original sequel to Hexen, a fantasy-based Doom variant that has more recently spawned Hexen II, a fantasy-based Quake II variant. Now the Heretic name has been revived, justified by the switch from a first to thirdperson viewpoint - something that enables Heretic II to go up against the likes of Tomb Raider III rather than Half-Life. Very sensible.

In fact, first impressions suggest that Lara's adventures have had quite an influence on the Raven team. Hero Corvus can now leap, roll and attack enemies using a familiar auto-aiming function, as well as pull off other useful moves including a variety of climbing, jumping and special attack combos.

The range of possible moves is initially incredibly daunting, yet a high degree of context sensitivity and button multi-functionality enables the gamer to exert a level of effortless control rarely seen outside of Nintendo titles.

It's the dedication to providing an action-based experience that really sets Heretic II apart. While Core's Ms Croft spends much time exploring and puzzle solving, Corvus' adventures exist purely for the purposes of mystical warfare. Like the Quake games, there's a strong gore factor here with spit blood spurting in all directions, and limbs often flying to the four corners of the screen. Watching a mutant elf run away minus an arm is darkly comic.

The thirdperson viewpoint takes a little getting used to, and the camera system isn't infallible. As with any such game set in enclosed spaces, there are times where the viewpoint comes to rest in an awkward position. However, the character's sprightly responses and ease of control ensure that Heretic II is as pacy as id software's efforts.

The trusty character positioning also helps. Lara's jumps often require pixel-perfect accuracy, but Raven understands that a little generosity makes for a much less frustrating experience. As does the decision to dump a hub-based level design in favour of a mostly linear trip through Corvus' homeworld.

Heretic II is by no means perfect. While the environments are beautifully crafted (the Quake II-based engine incorporating excellent water and coloured lighting effects), there's a slight artificiality to the animation that recalls the stop-motion monsters in old Ray Harryhausen films. And, while the action rarely lets up, few of the creatures could be described as scary.

Nevertheless, with its mixture of platform and shoot 'em up action, a splendid array of screen-illuminating weapons and spells, and some evocative and atmospheric level design, Heretic II is great fun. Almost as importantly, it is different enough to stand out from both the first- and thirdperson crowds. It's pleasantly surprising to discover just how fresh something built from the best of two genres can be.

Edge rating: Eight out of ten
XENOGEARS

The substitution of sprites for polygons has reinforced Xenogears' anime feel.

If Final Fantasy represents the cutting edge of both Japanese role playing and console graphical grandeur, Xenogears harks back to an earlier SquareSoft age when the gap between each Final Fantasy was filled with enjoyable story-led romps, rather than the more recent attempts at experimentation with other genres.

With its full-3D environment and effects-laden battles, it could hardly be accused of being retro, but a sci-fi/fantasy hybrid setting, epic storyline, traditional cel-animation cut-scenes and strong anime-influenced characters mean Xenogears is far more in tune with the archetypal Japanese RPG than Parasite Eve ever was.

The story of a stranger raised in a world of war, oblivious to his incredible past, may seem like the offspring of many average anime videos, but the addition of the eponymous mobile suits - typically flamboyant, giant robots piloted by the main characters - is such a stroke of genius that it's amazing that they've never been so well integrated in a game before. Sections of the story must be negotiated in 30ft-high mecha, where the player must worry about fuel loss and parts damage rather than hit and magic points.

As Square seems keen to innovate, so Xenogears also benefits from its constant refinement of what remains Japan's favourite style of game. If Parasite Eve did prove one thing, it was that the standard turn-based battle format could be taken successfully in new directions, and Xenogears offers another imaginative solution to the cumbersome task of picking attacks from a menu. Taking its cue from the fighting game, combat is initiated by single and combinations of button presses, so characters learn 'combos' and special attacks in the same manner as Tekken and Virtua Fighter. Although still restricted by the 'taking turns' time gauge system, battles are fast, furious and more attractive to gamers daunted by the usual plethora of stats.

While destined never to achieve the mainstream status now enjoyed by Final Fantasy, Xenogears still manages to entertain just as much and may well end up as the title RPG aficionados will claim as 'better than FF' when trying to impress their uninhibited friends.

Edge rating: Eight out of ten

Format: PlayStation
Publisher: Square Electronic Arts
Developer: SquareSoft
Price: $50 (£30)
Release: Out now (US)
R-TYPE DELTA

Format: PlayStation
Publisher: Irem
Developer: In-house
Price: ¥5,800 (£25)
Release: Out now (Japan)

In many respects, sitting down to play R-Type Delta is like meeting up with a close friend you haven’t seen for years. You expect the outward appearance to have changed a bit, perhaps become more distinguished over time, but you hope that, on the inside, little has changed. And so it proves to be the case. Gone are the intricately designed bitmap images of 1987’s original R-Type, replaced instead by swathes of complex polygon models set against atmospherically alienesque backdrops dripping with vibrant colours. Similarly, the original’s weapon effects, which once seemed so outlandish, pale in comparison to Delta’s range of attacks, which wash the screen with searing laser effects, cracking energy bolts and overblown explosions.

Underneath all this gloss lies the classic R-Type gameplay, along with a couple of embellishments. Chief among these is the eponymous Delta weapon, executable once the player has accumulated enough power to fill the ‘Dose’ meter. The resultant effect is essentially a gloriously realised smart bomb which, in the grand shoot ‘em up tradition, is best saved for use during boss encounters – of which there are many, naturally.

Delta also offers three selectable craft to take into battle. The R9a Delta (a revised version of the original R9) is joined by the R13 and the RX, and each has its own melange of attack styles, which are further affected by the game’s power-ups (a blue pick-up gives the R9a the classic diagonal bouncing laser, for example, but equips the R13 with a more direct beam). Delta’s pacing follows that of the original, presenting familiar attack wave patterns interspersed with more showcase-style sections, which will instantly make old fans feel at home.

Ultimately, despite its graphical trickery, R-Type Delta’s central gameplay remains a product of the ‘80s. Your performance upon entering a new level depends largely on trial and error, and the game is as much a test of memory as it is joyoed dexterity. As such, it’s refreshing and frustrating at the same time. Which, oddly, has made it one of the most-played games in the Edge office for a long while. A fine shoot ‘em up.

Edge rating: Seven out of ten
The pace in this arcade-style racing game is unrealistically swift, and can be further enhanced by nitros.

At the time Boss Studios’ Top Gear Rally appeared on the N64, there was little in terms of competition; yet, without wishing to sound disrespectful to what remains a solid – if nevertheless flawed – game, things have moved on a little since. Which is why Overdrive (a “sequel” developed by Snowblind Studios) doesn’t quite make the same impact it may have done 12 months ago.

Still, gone are the vehicles usually associated with Colin McRae’s profession, to be replaced by production cars. Initially, only two underpowered and underwhelming vehicles are available, but thankfully their acceleration, top speed and handling can be upgraded with money (collected at certain points throughout the tracks) and rewards (for finishing in the top four). The five circuits – plus a bonus offering – are split into seasons, featuring mirrored tracks and variously hostile weather conditions. As you progress through these your prize fund increases, presenting opportunities to trade up to new vehicles rather than upgrade your existing one. Soon you’ll face potentially traumatic episodes such as whether to purchase a Ferrari F40 or save up for a McLaren F1.

Long before then, however, you’ll become frustrated with many of Overdrive’s shortcomings. For instance, the handling, even for an arcade title, should have been finer, and would have benefited from more progressive analogue control. Furthermore, the opponent AI is inadequate, the multiplayer options aren’t the most playable examples of their kind, and starting at the back of the grid (i.e. 12th) may have been a one-time favourite of coin-ops, but it’s unlikely to be welcomed by those whose preferred genre does not feature motor vehicles.

Ultimately, this is a decent and fairly enjoyable addition to the N64’s growing motoring scene. Naturally, racing fans will get more mileage out of it than most. With a little more refinement, it could have attracted a far wider audience.

Edge rating: Six out of ten
Above board and legal: Law in the development community

Beneath the obvious plethora of technical and managerial hassles that plague software development, there lies a raft of added difficulties waiting to hamper the game-making process. One of these is constructing workable and equitable agreements between developers and publishers in such a way that all parties get the best from the deal.

Leading videogames industry legal eagle Paul Gardner (below), a partner in the IT and Telecoms Department of law firm Osborne Clarke, has been working with game companies for over ten years, trying to smooth the negotiation of publishing agreements. Now, after witnessing the manifold knots which businesses on both sides of the fence manage to tangle themselves in, he has decided to host a series of workshops to help publishers and developers help themselves.

November 1998 saw the first two such seminars being hosted in London.

"We had people from Infogrames, Codemasters and Europress, and from DID and Simis," says Gardner. "There were some very interesting exchanges and debates going on, with the total number of people there being about 14. And the result? I think a very useful exchange of views about the issues that come up about publishing agreement negotiations, and probably a much better understanding of the other parties’ positions," relates Gardner.

By removing the understandable tensions that such negotiations might bring, the group was able to convey the different worries publishers and developers hold. But in terms of actual topics covered, the workshop’s scope was fairly encompassing. "We ran through all the legal issues, ranging from the intellectual property framework that the industry operates in," lists Gardner, "through to the nuts and bolts of negotiating, reviewing and drafting publishing agreements for original products."

Other difficulties, such as slipped development schedules, were also covered during the one-day sessions, as were changes to game budgets and specification. Gardner agrees that, "The [videogames] industry has been behind other media industries in its appreciation of the legal aspect and the issues involved." However, he adds, "It struck me that the group who came along yesterday were much more sophisticated than they would have been even five years ago, with quite a high level of appreciation for the points that needed to be covered."

And Gardner’s reason for running the workshops? "I’ve been working in this industry for 12 years now, and frankly, a lot of the problems that have arisen could have been avoided through a relatively small amount of work. It’s very much a stitch in time saves nine principle."

Workstation

So far, Edge’s peaks at the working quarters of the development community have concentrated on individuals working in the west. This month, however, it’s the turn of two Japanese creatives from Konami’s Silent Hill team: background designer Masashi Tsuboyama (workstation, left) and CG designer Takayoshi Sato (workstation, right).

High-grade model figures “They are figures of nostalgic characters. Not only are they nostalgic, but they are also very well designed. I spend a lot of time in front of my desk and I like to decorate my spot with my faves — just like the ones when they build their nest.”

Disturbing-looking head model "I created this object during my student days. It is a 3D map of the various areas of the brain, made of sponge. Anyone’s brain has these fields of specialty. The fact that it is placed on top of a computer is the irony present between our job and the coming future.”
The trials of a start-up developer: part five

After co-founding Lionhead Studios with Peter Molyneux, Dennis Hassabis set up his own development house, Elsier Studios. On his return from Elsier, he realises the company is in need of professional help...

Back to business

"With the wind in our sails following a successful Elsier, it was important to get started as soon as possible. There were still gaps in the team, though, so I redoubled my efforts to find the right people.

Nick Sturges was a friend of mine from college and because of this, I'd presented Elsier to him without any of my usual embellishments. I didn't want to feel responsible for turning his life upside down if things didn't end up quite as planned... I was delighted when he agreed to take the role of technical manager, turning down other attractive job offers in the process. It was comforting to know that he could see the adventure that lay ahead and it wasn't just my vision. I could see him working to a large scale. He was the missing piece in the puzzle, that would fit in perfectly with the others.

Ian Maber would fill the only remaining hole in the team, namely the art side. I had first met him when he was art director at Psygnosis. The timing seemed to be perfect, as he had left Psygnosis a few months previously and was ready to get back into development again. Apart from his obvious skills, his vast experience and contacts in the art world would later become invaluable. He'd be able to assemble a great team of artists and ensure that we had the right equipment and software.

From past experience I know that negotiating with publishers is an exhausting experience. If we wanted to get started before signing a deal, we would need some interim funding from elsewhere. To this end I contacted Stewart Block, a heavyweight businessman, referred to me by a friend. He heads up an organisation called AEN (funded by the St John's Innovation Centre), that helps start-ups with Cambridge University connections to get seed funding. His background in business is exceptional, much of it gained at an engineering group called BTG, which he had helped to float on the Stock Exchange. He was really excited by our proposal, so much so, in fact, that he wanted to invest himself. I offered him a position as a non-executive director and he joined the board of Elsier. His managerial experience would be a huge asset to us.

Joining Stewart on the board was Nick Gibson, one of the most respected City analysts on the Internet and games industry. His authoritative style and knowledge of the industry was extremely impressive and I thought he would be of immense worth to Elsier. His role would encompass advising us on all funding issues and any market research we needed. We also appointed a part-time financial director in Vijay Shah. He's an old family friend, a chartered accountant with his own firm and has over 30 years of experience.

The last thing I had to sort out was the legal side. Stewart already had good connections with a law firm so we arranged a meeting with one of the senior partners Dan Teacher and his associate Martine Nathan. Despite the 'This Life' image, lawyers are very often some of the most boring and pedantic people you could ever meet. However, this meeting turned out to be completely different. Dan and Martine were very enthusiastic and I took a liking to them immediately. I explained that we had a problem. There would be some serious and time-consuming negotiations with publishers ahead of us, yet we wouldn't have enough money for the huge fees that these would rack up. They thought about this and then came up with a highly unusual arrangement. They would waive their fees in exchange for a tiny equity stake in the company. Furthermore, Dan wanted to invest personally. This suited us perfectly; our lawyers would actually have a material interest in the welfare of the company. Furthermore, we took the fact that astute professionals were willing to take this sort of risk with us as a huge vote of confidence.

But what's all this got to do with games? Despite what you might think, the business side of things is as important as the games themselves. It has been the undoing of many a failed development team. We could make the best game in the world but without the business behind it, we could end up being shafted by someone. Having a heavyweight team of 'suites' behind us is amazing, they're an integral part of Elsier - if we need advice on any topic we have an expert on hand to give us their considered opinion.

So things had gone better than I could have dared to hope for. We had all the initial funding and the right people. I had loosely promised everyone a start date of July 7 and it was now the last week of June. That gave me ten days to find 11 P-400s, all the development software and, of course, 1,000 sq ft of office space. On top of this, follow-up meetings with the publishers were due very soon and I had a lot of work to do on fleshing out the game designs beforehand. These things seemed trivial compared to what we'd been through to get to this point. I could barely believe it, six months of hard graft and finally it was going to happen. Now for the difficult part..."
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We offer a stable, creative and rewarding working environment.
In return we expect talent, professionalism and endless enthusiasm for the subject matter.

We require:-

PSX 3D Programmer: Should have at least one published title.
C++ Programmers: Especially with 3D / physics / network skills.
Designers: To create content of all types.
3D Artists / Animators: Lightwave skills preferable.

Experience preferred but not necessary for the right talent.

Write to:
Alison Murphy
Particle Systems Ltd.
12 Turners Lane
Sheffield S10 1BP

Please send examples of your work, they will be returned if necessary.
Direct applications preferred.

More details are available at our website at:
www.particle-systems.com
Interactive Studios is rapidly establishing itself as a leading developer of original, cutting edge 3D games for Nintendo 64, PlayStation, Dreamcast & Windows 95/98.

We are currently seeking more people to add to our in-house development teams.

C/C++ Programmers
(Windows/Direct X/PSX/N64/Dreamcast)
2D Bitmap Artists (Dpaint/Photoshop)
3D Artists/Animators (3DS MAX)

Experience is preferred, but raw talent is recognised.

If you have a burning desire to help create the best games in the world then contact us now.

Tel: 01926 311284
Interactive Studios
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Leamington Spa
Wars, CV32 4YL

Direct applications preferred.

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Climax Group
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Standard Way
Fareham
PO16 8XT

Tel: 01329 827777
Fax: 01329 828777
Email: personnel@climax.co.uk

We require programmers, artists and producers for N64, Dreamcast, PSX, PC and Colour Gameboy product development.

Examples of work or lists of past products required.

climax
Wanted: World Champions

Codemasters is the name in electronic entertainment; voted no.1 video games publisher for highest average review score by PlayStation Plus. Codemasters has consistently hit no.1 with its releases throughout 1998. Turnover and profitability have doubled over the last three years; growth that is forecast to continue for at least the next three years. With this kind of expansion only the best staff need be recruited. Codemasters already has the best games' creators and developers in the industry - but it wants more.

Currently there are vacancies at Codemasters' Warwickshire site for:

**Games and Tools Programmers: E1GTP**
Excellent C and 3D programming, Direct X or console experience, along with a passion for gaming or: a recent graduate with a 2.1 or better in a relevant degree (Computer Sciences, Maths, Physics etc.) with extensive C programming content.

**Graphic Artists: E1GA**
Extensively experienced in 2D or 3D art, you have first class experience of using 3D Studio Max and/or Softimage. In addition, you are an accomplished freehand artist with a proven track record and a supporting showreel, or you are a recent graduate with a 2.1 or better in a relevant degree (Graphic Design, Illustration, Animation, Fine Art etc.) with a strong portfolio.

**Game Designers: E1GD**
Working in one of the most successful gaming think-tanks in Europe, you will assist in the design of games and monitor them through development ensuring that quality and gameplay is of the highest standard throughout. Educated to degree level you will have a minimum of a 2.1 and 2 'A' levels at grade C or above. You must be an avid games' player of both PC and console games, with a technical understanding of computers generally.

**Audio Technician: E1AT**
A keen games player to provide support in the production of audio for games. Duties will mainly include scripting, recording and processing of speech, and the research and creation of sound effects. Some music work may arise (if interested), but music and composition skills are not a requirement. Some experience of audio, recording and sampling on computers is essential.
QA Technicians: £12,000
Actively testing products, developed by our production teams you will be a games’ fanatic with first rate communication skills. You should have a minimum of 5 GCSE's at grade C or above including English and Maths, preferably with excellent Windows '95 skills. You will be attentive to detail. There are numerous opportunities within the company for good QA Technicians with many of our current programmers and games designers being recruited from the QA department.

DTP Designers: £15,000
To produce printed materials such as games' packaging and brochures, we are looking for creative candidates who are looking to bring new ideas and expertise to our busy DTP department.
You will either have three years reprographic experience or be a graduate with a 2.i or better (or HND with at least a Merit) in Graphic Design. Fluent in QuarkXPress, Illustrator and Photoshop, you will have a strong portfolio that demonstrates innovative graphic, typographic and logo designs, illustrations, and marker-visuals. Copywriting skills would be a benefit.

Candidates who apply directly will be given preference over applicants through agencies.
Send your CV with showreel, disk or other work examples, quoting the relevant reference number to:

Stephen Harrison-Mirfield Codemasters, P.O. Box 6, Leamington Spa, Warwickshire, CV32 0SH, UK.
Tel: 01926 814132 • Fax: 01926 817595 • e-mail: recruitment@codemasters.com • www.codemasters.com
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Rotherham, South Yorkshire S63 7DB
Tel - 01709 876877 Fax - 01709 760134
Email - sld@ardswift.demon.co.uk

All enquiries and applications are confidential

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Wanted for PC, PlayStation and Sega Dreamcast projects

3D Programmers
3D Lightwave Artists
Gameboy Programmers

Non corporate atmosphere, definitely not PC,
being a petrol head would help
Very competitive packages for the right people
18a South Bar, Banbury, Oxon. OX16 9AF

jobs@awesome.uk.com

See us in Edge July 98, about ‘Jimmy White’s 2: Cueball’
**ARTISTS**

**LEAD ARTIST** South £625k
A key role leading a new project team, training and producing.
Ref 1753

**2D GRAPHIC ARTIST** Scotland £25k
A talented artist is required to join a successful team. Industry experience preferred.
Ref 1922

**ARTISTS** France £Neg
One of the leading developers in France is seeking British talent to go over for a year to join their English speaking team. Must have 3DS Max experience, an academic background and adaptability.
Ref 1917

**ARTIST** Midlands £Neg
Must have industry experience with at least one title under their belt. Must be proficient in 3DS Max.
Ref 1775

**ARTIST** London £225k
To join one of the industry's most exciting development teams. Must have console experience and be flexible in approach.
Ref 1774

**ARTIST** South £25k
Commercial experience as a digital artist, 3D Studio Max.
Ref 1752

**GRAPHIC ARTIST** South £Neg
Must have a passion for games and experience in 3DS Max, Lightwave and Photoshop.
Ref 1757

**ARTISTS** London £30k
Experienced artists able to use 3DS Max and do character animation are needed to join a development team based in London. Must be able to work well with others as well as alone. Industry experience is a must.
Ref 1809

**ARTIST** North £Neg
A new post has arisen for an experienced artist to join a busy team. Must have a title under their belt.
Ref 1863

**ARTIST** North £Neg
Must have a passion for games and experience in 3DS Max, with traditional art training.
Ref 1807

**GRAPHIC ARTIST** Midlands £Neg + royalties
1 year's industry experience minimum. Must have an understanding of 3D packages. Beneficial to know soft image/lightrave. To join a well established and respected team.
Ref 1804

**LEVEL DESIGNER** Midlands £Neg + royalties
Experience in Level Design/Building with an interest in basic programming for level scripting. To join an established team working on a cutting edge strategy game.
Ref 1803

**LEVEL DESIGNER X2** London £17k
Preferably with console experience, the ideal candidate will be working for a large corporate company on their new action game.
Ref 1925

**ARTIST** London £Neg
A hugely talented artist with industry experience is required to join one of the most talented teams in the UK.
Ref 1866

**ARTIST** Midlands £Neg
Must have an interest in Videogames and the desire to succeed. 3DS Max experience.
Ref 1848

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**PROGRAMMERS**

**LEAD PROGRAMMER** South up to £35k
An experienced individual to lead one of the new project teams. This role includes training recruits in the art of game making, working on core code and co-ordinating the programming team. Must be able to liaise and communicate at all levels and to develop a sound studio strategy.
Ref 1750

**DREAMCAST PROGRAMMER** Midlands £Neg
2 years' industry experience with PC skills and all the relevant 3D technology. To join a new team of experienced programmers.
Ref 1802

**PSX PROGRAMMERS** Midlands £230k
2 years' industry experience. To join an expanding team.
Ref 1800

**PC PROGRAMMERS** Midlands £230k
To join a well established and respected team. Experience with low level software engines and 3D cards. 1 year's experience.
Ref 1799

**PROGRAMMERS** Scotland £230k
Minimum of BSc degree in a relevant maths or science subject. Must be fluent in C and C++ and have a working knowledge of assembly language and 3D geometry.
Ref 1768

**PROGRAMMERS** Home Counties £30k
Experience of C and C++ with 1 title under your belt.
Ref 1761

**PROGRAMMERS** LOA £200-300k
At least one year's experience in the industry. C, C++ for the PC. An interesting role, working on short projects.
Ref 1637

**PROGRAMMERS** France £30k
2/3 years' industry experience is required, knowledge of C, C++ and Object. A great sense of playability would be a plus as would experience in PSX and N64 development. To join a young team.
Ref 1916

**PSX PROGRAMMERS** North £25k
Must have PlayStation experience and at least one title under belt.
Ref 1907

**PROGRAMMER** London £Neg
Must have experience in C++, Direct 3D, A-life, AI, Dynamics and Networking Tools.
Ref 1902

**PROGRAMMERS** Midlands £Neg
Must have knowledge of C, C++ (Windows, Direct X, PSX) to also work on N64 and Dreamcast titles.
Ref 1926

**PROGRAMMERS** Scotland £Excellent Package
To join a successful team currently working on existing original products. Industry experience is preferred.
Ref 1923

**TRAINER PROGRAMMER** South £14k
Must have 1st class degree.
Ref 1751

**LEAD PROGRAMMER** South £35k
Managing a new project team, training the team in the art of game making.
Ref 1750

**PROGRAMMER** South £35k
At least 1 year's experience of either PC or PSX.
Ref 1742

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**MANAGEMENT**

**OPERATIONS DIRECTOR/MANAGER** London £Neg
A leading developer and publisher of computer software is seeking an experienced individual who has operations experience and vast industry knowledge. The ideal candidate will already be managing a team of staff and will be ready for a career move into a more challenging and exciting role.
Ref 1927

**SENIOR PRODUCER** London £55k
One of the industry's leading developers and publishers of computer software is seeking new staff to join their fast expanding UK office. Ideally you will be from an applications or productivity background. Extensive software knowledge is expected.
Ref 1910

**DEVELOPMENT MANAGER** LOA £55k + benefits + car
One of the UK's most successful developers of software is seeking a new Development Manager to run a well-established team. Must have excellent management and communication skills. A proven track record of developing innovative new products, and be well known and respected in the games industry.
Ref 1795

**EXECUTIVE PRODUCER** London £55k + benefits + car
One of Europe's leading publishers is seeking a well-known and respected professional to head up their producer group and oversee all external development. Must have excellent management skills and the ability to deal with budgets, schedules, future line-ups etc.
Ref 1837

**SENIOR PRODUCER** London £40k + benefits
A leading publisher looking for a capable producer with strong communication skills. Able to oversee external development. Console experience preferred. Must be flexible in approach.
Ref 1836

**PRODUCER** North £35k
An experienced individual is required to join a well-known studio in the North of England. Must be able to work under pressure and to tight deadlines. Console experience is required.
Ref 1968

**LOCALISATION/PROJECT MANAGER** London £30k
A leading developer and publisher of computer games is seeking an experienced individual, must have a project management background. Languages preferred though not essential. Must understand the localization process and have the ability to co-ordinate projects.
Ref 1853

**SALES ENGINEER** London £35k + benefits + car
A software tool developer is looking to employ an experienced professional with some programming knowledge who is able to deal with developers of customers on a very technical basis. A computer science degree a plus. Must have good social skills.
Ref 1886

**PRODUCER** London £25k
Examined their title under their belt from conception to completion, to work on a war strategy game to be released early next year. The suitable candidate will be flexible, organised and have strong communication skills.
Ref 1834

**PRODUCER** North £Neg
An organised and dynamic individual to manage a team of programmers, artist and associate producers is required. Must have an artistic background and possesses excellent management skills.
Ref 1863

**OFFICE MANAGER** London £22k
An organised and self-motivated individual is needed to join a small but busy team. Must be able to work under pressure, able to work in a team environment. The ideal candidate will have an eye for detail, and will be responsible for book-keeping, administration and marketing for the company.
Ref 1998

**TECHNICAL MANAGER** Home Counties £Neg
One of the UK's most exciting developers and publishers of computer games is seeking an experienced technical manager. You will need a background in programming, project management experience and sound business knowledge.
Ref 1897

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Please submit your CV with demo material on disk, video or paper detailing current salary and daytime contact:

Rachael Gadsden, Answers Ltd, The Old Rectory, Holdenby, Northampton, NN6 8DJ Tel: 01604 771122 Fax: 01604 771172
Email: recruit@answers.u-net.com http://www.answers-recruitment.com

**FRENCH OFFICE**

Anne-Marie Joassim, Answers France, 34 Rue Laborde, 75008 Paris Tel: 00 33 1 42 94 28 23 Fax: 00 33 1 42 94 28 24 Email: answers@easynet.fr
Based London

Sega Europe is the London-based arm of Sega Enterprises Ltd., Japan, responsible for the development, marketing and distribution of Sega video game systems and video games in Europe. Sega Enterprises Ltd turns over nearly US$3 billion and is recognised as the global industry leader in interactive digital entertainment – in fact it is the only company that offers interactive entertainment experiences both inside and outside the home.

Recently Sega unveiled its new console Dreamcast. The ultimate 128-Bit video game machine is much more powerful than other in-home gaming consoles and high end PCs, with better graphic, audio and speed capabilities than any competitor. The concept has received rave reviews and already Sega has secured third party agreements with partners like Microsoft, Hitachi, NEC, VideoLogic and Yamaha.

Already launched in Japan, Dreamcast has created headlines worldwide whipping up a storm of interest because of its power and on-line gaming capabilities. The European launch of Dreamcast, projected for Christmas 1999, has created a host of exciting opportunities as Sega aims to pour huge resources into making this the most exciting launch of its type.

European Public Relations Manager

Working closely with the European Marketing Director, you will be responsible for the pan-European public relations strategy surrounding the launch of Dreamcast. You will ensure that all aspects of this launch will be communicated across trade and consumer press to guarantee maximum exposure. You will have at least five years consumer PR experience, gained either in an agency or clientside environment. You must have pan-European experience and ideally will have exposure to the entertainments industry. Please quote reference number 451055

Business Development Manager

Because of the unique on-line gaming capabilities of Dreamcast, Sega feels it has a precious opportunity at the launch. The Business Development Manager will be responsible for nurturing relationships with the European telecommunications companies and the Internet service providers to ensure that costs to the Dreamcast gamers will be kept to a minimum. You will be a proven negotiator and a dynamic, commercially focused business developer, ideally with a knowledge of the Internet/telecoms industry. Please quote reference number 451057

Export Sales Manager

The London office is responsible for distribution across the Northern European territories. Sega now needs a commercially focused Export Sales Manager to assume responsibility for the distributor network in Benelux, Scandinavia, Switzerland, Austria and Eastern Europe. You will be a strong negotiator who is driven by targets and has experience of selling high end products. A second European language would be advantageous but not essential. Experience of the interactive industry would be advantageous, but you must have had full negotiation responsibility. Please quote reference number 451061

Business Analyst

The Business Analyst will be responsible for the measurement and tracking of the sales of Dreamcast across Europe and will play a vital role in providing information for senior management that will have direct effects on the pan-European sales and marketing campaigns. You will have a proven analytical background, ideally focusing on sales data on a European basis. Again knowledge of the interactive industry would be a distinct advantage. Please quote reference number 473252

If you are interested in any of the above opportunities, please apply directly to Charlie Jaggard at Michael Page Sales & Marketing, Savannah House, 11 Charles II Street, London SW1Y 4QZ. Alternatively fax on 0171 839 9086 or e-mail: charlesjaggard@michaelpage.com

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Programmers .....£16-38k  Senior Programmers .....£50k+  3D Artists .....£14-36k
(C/C++, Ass, 3D, DirectX, AI-PC, PlayStation, Dreamcast, N64 and Gameboy Development) (Alias, Softimage, Lightwave or 3DS Max)

We are currently looking for:

Products include: RPG’s, rally & racing games, shoot-em-ups, soccer management, 3D action adventures, strategy, combat/war & various sports sims

We have vacancies in the following locations:

To apply, please forward your CV in complete confidence to:
Marie Harris at Zodiac Pursuit, Raines House, 9 Edgerton Court, Tadcaster, North Yorkshire LS24 9NZ
Tel: 01937 835700  Fax: 01937 531986  e-mail: marie@zodiac1.demon.co.uk

Programmers Required
PC / Console:
Experienced Windows 95 / Direct 3D programmers (C/C++) with the ability to produce exceptional code.
We want to hear from any console programmers for a number of new projects.

Artists Required
3D modellers and animators:
3DS Max / Photoshop required.
If you are not listed above but have a burning desire to be part of an independent games developer then we want to hear from you.
Please send your CV and examples of work to:
MICROTOME
Dawn Pinkney
Microtome Developments Ltd
Microtome House
Banny Street
Camden Town
London
NW1 9PG
Tel: 0171 267 4422  Fax: 0171 267 4399
E-mail: personnel@microtome.co.uk

TROUBLE MAKERS
At Elan we make it our business to understand the people we work with - whether they're a Financial Systems expert from the City, or the tortured genius behind the latest, all format, zombie gorefest.

We have positions for everyone from graduates to senior personnel in all of the following areas: PlayStation PSX Programmers - C/C++ Programmers - Assembler Experts - 3D Artists/Animators - 3D Studio & 3D StudioMAX - Softimage - Games Producers - Levels Designers - Sound Technicians - Project Managers.

Obviously salaries range according to experience from £15,000 to £70,000.
To demonstrate your ability you can send examples of your work on Zip, CD or Video.

UK EUROPE - USA - ASIA - PAC
Contact Phil Glen, Internet & Games Specialist, Elan, Games Division, Milton House, 66-68 Chertsey Street, Guildford, Surrey GU1 4HJ. Tel: 01483 883316. Fax: 01483 883300. E-Mail: pag@elan.co.uk
Visit our website http://www.elan.co.uk
Rare’s spectacular success throughout 1997 is still reaping its rewards, with double scoops at the recent AIAS and BAFTA awards ceremonies consolidating our position as Developer of the Year. So far in 1998 we’ve followed up that success with the critically and publically-acclaimed Banjo-Kazooie, and we don’t intend to let up in months to come: our thunderous release schedule now features Jet Force Gemini, Perfect Dark, Twelve Tales: Conker 64, Banjo-Tooie and a host of others - not forgetting Conker’s Pocket Tales and its fellow Game Boy Color releases, of course.

So it’s never been a better time to show us what you’ve got to offer. At the moment we’re seeking the following to join our already established teams:

SOFTWARE ENGINEERS: To code cutting-edge software using high-end Silicon Graphics workstations. Applicants must be fluent in C or Assembler. Enthusiasm for games a definite advantage.

3D ARTISTS: With good all-round abilities in modelling, animating and designing characters and their environments. Successful applicants will use Alias and GameGen software on Silicon Graphics hardware. Previous experience with 3D packages useful but not essential.

MUSICIAN: Needing the ability to write an excellent tune in a variety of styles, coupled with a good technical knowledge of audio equipment and MIDI. Familiarity with Cubase and interest in games an advantage.

SYSTEM TOOLS ENGINEERS: To create a range of in-house development tools and editors for use in new and ongoing projects. Knowledge of C and C++ vital.

GAME BOY COLOR ENGINEERS: For development of new titles as part of our dedicated Game Boy team. Must be fluent in Assembler. Previous Game Boy experience a benefit but not essential.

GAME BOY COLOR ARTISTS: having good all-round abilities in character and background design. Some experience with both 2D and 3D packages would be advantageous.

Please submit CVs and work examples to:

Personnel Dept.
Rare Ltd.
Manor Farmhouse
Church St.
Twycross
Warks. CV9 3PJ
Due to our continued success we are expanding our London Studios* and building a new team based in Los Angeles**. We are looking for talented, enthusiastic, hardworking individuals to fill the following positions.

Programming Positions

Lead Programmers (London & US)
Highly motivated team leader with several top-selling PlayStation/N64/PC games to your credit. Most likely from a 16bit console background and have met the challenge of PlayStation/N64/PC game development, also being fluent in all aspects of 3D programming.

Senior Programmers (London & US)
Computing Graduates with at least 2 years commercial game development, 3D skills essential, C, C++, assembler optional, PlayStation/N64 experience preferred.

Artists Positions

Lead Artist/Director (US)
Experienced all rounder, expert in real time game creation utilising 3DSMax. Hands on approach needed to lead the US art team. Technical knowledge of PlayStation/N64/PC experience required.

3D Artists (London & US)
Experienced low polygon modellers fluent in 3DSMax. Self motivated individuals with the ability to produce excellent work without supervision. 2 years experience PlayStation/N64/PC.

3D Animators
Experienced animators with a good solid 3DSMax/Character Studio background, your work must be motion capture quality.

Excellent salary package with bonuses.

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**Los Angeles office in Santa Monica, California opening in January 1999.

Success breeds success, so if you want to be part of a well established (5 years) team with an excellent line up of commercial releases including ASTEROIDS, X-MEN 3D, and other major licenses please contact:

Dominic Wood
Syrox Development Ltd
Units 6 & 7 Canbury Business Park
Elm Crescent
Kingston, Surrey KT2 6HG
Tel: 0181 974 9760
Email: jobs@syroxdev.co.uk
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North
Cutting edge of broad technology, pushing back the boundaries of entertainment and information delivery. Experience C programming for Real-Time Applications. To work on Advanced Digital Television including designing Man-Machine Interfaces to bring the Internet to the TV screen.
Salary to £30,000
Quote ref: E57/122

SOFTWARE DESIGNER

Rural Midlands
Salary to £35,000
Wining as part of the Microsoft Windows CE Systems Integrator Program, this alliance allows us to offer industry-leading Windows CE Design services for PalmTop Computers, etc. Software design and implementation in C/C++ for microcontroller and microprocessor based systems.
Quote ref: E57/222

SOFTWARE ENGINEER

East Midlands
Salary to £30,000
On behalf of the European Space Agency (ESA), we develop and support a suite of class-leading tools for the thermal analysis of Spacecraft in orbit. The core technologies of the products are developed using Java, C++, C and Fortran. These tools are de facto standard in the European space industry.
Quote ref: E57/229

SOFTWARE ENGINEER

Cotswolds
Salary to £32,000
World leader in the design and supply of high performance Video Telephony Products. The position would involve the development of Graphic User Interfaces. Experience should include Real-Time embedded coding in C and familiarisation of computer-human interfaces an advantage.
Quote ref: E57/253

SOFTWARE ENGINEER

South East
Salary to £30,000
A company developing world-class products for digital imaging, network communications and control using leading-edge technologies. You will have experience of C or C++ for embedded or Windows environments. To work with video processing, JPEG, MPEG, Ethernet and TCP/IP technologies.
Quote ref: E57/104

For more information telephone Jules in total confidence: (01902) 320460
E-mail your CV: jules@arbour.co.uk
Fax your CV 24 hours: (01902) 320465

UNIVERSITY OF ABERTAY DUNDEE

SCHOOL OF COMPUTING

DIVISION OF INFORMATION AND COMMUNICATIONS TECHNOLOGY

LECTURERS IN INFORMATION AND COMMUNICATIONS TECHNOLOGY

Applications are welcome from individuals with teaching and research interests related to Information and Communications Technology. The Division has interests in systems analysis and design, databases, knowledge management, Internet and multimedia development, enterprise networks and communications. The persons appointed will be expected to contribute to the Division’s general curriculum as well as provide specific advanced subject expertise in one or more of the Division’s teaching areas. Applicants should possess a relevant higher degree, commercial or research or teaching experience within higher education.

LECTURERS IN COMPUTER ARTS

Applications are welcome from individuals with teaching, research and consultancy interests in the area of Computer Arts. The Division of Information and Communications Technology is establishing a teaching and research portfolio in Computer Arts, Multimedia, Audio, Video and Computer graphics. Applicants should possess a higher degree, or an honours degree and substantial industry or commercial experience.

DIVISION OF SOFTWARE ENGINEERING

LECTURERS IN COMPUTER GAMES TECHNOLOGY

Applications are welcome from individuals with teaching, research and consultancy interests in the area of Computer Games Technology. The Division of Software Engineering has teaching and research interests related to Computer Games Technology, Console Programming, Artificial Intelligence and 3D Graphics Programming. Applicants should possess a higher degree, or an honours degree and relevant experience in the computer games industry.
Salary scale £15,885 – £23,620 (bar) – £28,507
The posts are for an initial fixed term period of 3 years and may be made permanent subject to satisfactory performance.
For further details and application forms, please contact the Personnel Office, University of Abertay Dundee, Bell Street, Dundee, DD1 1HG, (Telephone 01382 308961). Completed application forms should be returned to this address by 22 January 1999.
### PlayStation

#### PlayStation Conversion
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- X-Men vs. Street Fighter
- Street Fighter Alpha
- Street Fighter II
- Street Fighter Zero 2
- Street Fighter Zero 3
- Street Fighter EX
- Street Fighter II Turbo
- Street Fighter EX 2 Turbo
- Street Fighter EX 3
- Street Fighter EX 3 MAX
- Street Fighter EX 3 MAX PLUS
- Street Fighter II Turbo: Hyper Fighting
- Street Fighter EX 3 MAX PLUS Alpha
- Street Fighter EX 3 MAX
- Street Fighter EX 3 MAX PLUS Zero

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Despite the currency of its subject matter, Star Wars Trilogy Arcade didn't enjoy a good reception at the last JAMMA show. Under the direction of new general manager Kenji Sasaki, AMI Annex has been hard at work on the gameplay and graphics – weaknesses that the earlier version had been loudly criticised for.

Three of the game's six levels are available initially – Yavin (destroy the Death Star), Hoth (terminate the Imperial Walkers) and Endor (neutralise the Shield Generator). Once completed, two bonus stages follow, taking the form of lightsaber duels against Boba Fett and Darth Vader, played out in a first-person perspective. Needless to say, sharp reflexes are required to counter the increasingly frenzied assaults of these daunting opponents.

Fittingly, the final stage recreates the epic all-out assault on the Death Star's main reactor – but before taking to an X-Wing fighter to engage in this climatic battle, you must hitch a ride in some of the trilogy's other famous vehicles, including Speed Bikes and Snow Speeders. Rather than take responsibility for the navigational duties, though, your task is to shoot any enemy units you may encounter.

Not only does Sega include a healthy variety of game styles to keep players interested, but much emphasis has been placed on achieving a balanced structure throughout. As such, the difficulty level automatically adapts itself to the player's skill, although better players also get rewarded: provided enough points have been accrued, additional firepower can be called upon at a touch of a button.

Now that the criticisms have been addressed, AMI Annex's first venture outside the racing scene has become a compelling game, and one that should keep Star Wars fans busy until Episode I arrives.
After the Samurai Spirits series left the 2D world behind with the 'promise' that all would be better within a 3D environment, SNK wisely attempted to appease diehard 2D heads by introducing a potential replacement. Last Blade was released on the Neo Geo and was a technically accomplished title, particularly on the graphical front. But then SNK has long been the master of development on its own hardware....

Visually, Last Blade 2 is a step ahead of its predecessor. However, SNK has put most of its effort into gameplay refinements which become obvious very quickly. There are now more airborne attack moves -- and anyone caught by a counter-offensive while in mid-air can, with a few joystick commands, fall back on his or her feet. Naturally, the combo system has been renewed in order to keep fans of the original interested, with an additional ability to cancel attacks. Other additions extend to four new characters -- Saria, Satsuna, Takane Hibiki and Mukuro -- joining the original 12 combatants.

Interestingly, once you've selected a character you get to choose between a "technical" or "bruta" expertise before entering the ring. Select the latter and your chosen fighter has a complete arsenal of attacks at their disposal. The technical option, meanwhile, offers a range of offensive and defensive moves that require you to employ a more thoughtful approach. There is nothing in Last Blade 2 that will revolutionise the beat 'em up genre, but it does offer a solid, playable experience -- just like the Samurai Spirits series.

In Japan, the beat 'em up is king -- which is why Arika is busy working on another one.

Developed by beat 'em up specialist outfit Arika, Fighting Layers was one of the bigger surprises of JAMMA's Namco booth (the latter's role is that of distributor only). In 3D fighting game terms, Fighting Layers is fairly classic stuff, aimed at a hardcore audience: the cabinet's six-button configuration allows the usual punch, kick and throw approach, but Arika has implemented a 'special attack' and 'cancel' gauge-based system usually associated with 2D beat 'em ups. Other facets, including the 'Edge Combination' feature, which combines different attacks, and 'Super Evolution', which enables you to teleport to another part of the stage (as long as you're not in the middle of an attack) are interesting, but not entirely original.

In order to woo players who prefer a more guarded style, Arika has included a defensive gauge which enables points to be saved from successful defensive moves, then used as part of an offensive action. One such move is the "Hard Reversal", which freezes time, allowing you to batter your opponent with impunity.

Street Fighter fans will be interested to discover two characters from the SF EX series among Fighting Layers' 12 combatants, although they're more likely to be attracted by the complex gameplay on offer, which mirrors Arika's previous work for Capcom. This alone should guarantee it success in Japan.
HOUSE OF THE DEAD 2

CHAINSAWS, BLOOD AND ZOMBIE MASSACRING. SEGA KNOWS A GOOD THING WHEN IT SEES IT

 Sega's follow-up to its Model 2-powered zombie lightgun shoot 'em up is the most eagerly anticipated title of the quartet of games it announced at the recent Jamma show. Usually for a first appearance, it was a playable demo. Given the 'on rails' structure of the game, House of the Dead 2 cannot be taken as a measure of the Naomi board's true performance - but it does look stunning.

The principle is the same: as either James or Gary, you have only your guns to protect you from the bilious denizens of a haunted house. Your actions dictate the direction you take through the mansion, so it's unlikely that players will follow exactly the same route in successive games. The finished game should adapt to the player's skill level, which should please those who found the original too challenging.

The arcade scene is about to be hit by an onslaught of horror titles aimed at the growing gore-hungry gaming sector, and Sega could have a winner here.

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Virtua Fighter

The advent of complex, smooth-moving polygons on home systems may now seem a distant memory, but it's one worth remembering. The generational leap gave birth to many legendary series, not least one from Sega...

While it's easy to look back at the likes of 1995's Way of the Explosion Fast and immediately see just how far technology has since moved on, looking back at the Saturn conversion of Virtua Fighter, released in Japan in November 1994, elicits a surprisingly similar response. With polygons now established to the point of being the bread and butter of videogaming, Saturn Virtua Fighter's character models, each constructed from around 1,200 flat-shaded surfaces, look rather limp.

Nevertheless, Virtua Fighter did represent a generational leap, being the first game to use polygons to represent human beings and not spacecraft, plains or Formula One cars.

Although Namco's polygonal racer Winning Run appeared in 1993—three years prior to Virtual Racing—Sega still lays claim to pushing back the boundaries of videogame visuals. "Sega completely revolutionised the game industry with polygon graphics," reckons the company's Hideki Sato.

"By using polygons we made some dogfight games and racing games, then we looked for the next step," he relates.

"So we decided to draw humans in 3D. Until this game we were not strong for fighting games. We tried to imitate some Capcom games, but you cannot become number one by imitating others, which is why we used polygons."

Graphics aside, Virtua Fighter introduced many of the elements that have become staples of the 3D beat-'em-up. Its range of elaborate throws and slams were immediately cribbed by Namco for its Tekken series, while its 'serious' combat moves (projectiles were completely out of the question) set a fresh precedent in the wake of the likes of the outlandish Street Fighter II. It may have been a 2D experience in gameplay terms, but Virtua Fighter's presentation alone ensured its status as a genre-defining title.

It may not be the fairest of tactics, but pounding your opponents while they were down (above left) was introduced in VF — and actively encouraged.

Flat environments ruled VF's day, but Sega attempted to introduce variety between stages (left column). Count the polys in this model (above right).

Publisher: Sega

Developer: In-house (AM2)

Saturn
Aiwa CSD-MDS CD/MD Radio Receiver
Contact: 0990 902902

It looks like tape has finally met its match, with MiniDisc fast becoming de rigueur in everything from hi-fi separates to mini-systems, personal stereos and in-car setups. And it's not hard to see why. The tiny optical disc is robust, increasingly cheap and offers the advantages of CD in terms of sound quality, while offering user-friendly recording features to boot. What other format gives you the ability to record, combine, move and name individual tracks with such transparent ease?

Aiwa's CSD-MDS portable stereo is the latest in a long line of 'ghettoblasters' that uses MD technology. Open the motorised flap at its centre and the user's greeted with an array of buttons and dials that makes recording from the system's built-in FM/AM radio and CD player a cinch. Sound quality from the 8W stereo speakers is good and there's a range of sound modes - including a pseudo-surround function - which further enhances your listening experience. The only limiting feature is the system's portability - mains-only power means it can't be used on the move.

Sharp VL-PD1H MiniDV Camcorder

£820 approx Contact: 0800 262958

Scarcely a month goes by without some electronics company or other announcing the launch of the 'world's smallest camcorder'. But camcorders are only getting smaller, lighter, more user-friendly and feature-rich, because they use MiniDV digital tapes - a format that not only delivers studio quality recordings, but is also only just bigger than a matchbox.

The pick of the recent MiniDV crop has to be this, Sharp's VL-PD1H. While most camcorders force the user to fiddle with increasingly small and inaccessible buttons, the Sharp comes with a four-inch touchscreen display which uses 'virtual' buttons that enable the user to do everything from zooming into a particular part of a scene to altering the colour and light settings. Add a raft of picture effects and brilliant image quality and you're left with a very fine machine indeed, only the sound quality - with its hints of background motor whirr - disappoints.
Pioneer DV-717 DVD player

Contact: 01753 789500

The UK still has a long way to go before it catches up with the range of DVD movies and machinery available in the US and Japan, but it's catching up quick. Available now, is the first of the so-called 'third generation' players which promises plenty of additional features and improvements over models available so far.

The DV-717 is certainly competitive. It should hit the shops considerably cheaper than many of its rivals, yet comes with the kind of features found on pricier machines, such as digital noise reduction, a block filter and horizontal sharpeness control which help improve DVD's already impressive picture quality. Sound isn't neglected either, since the DV-717 also comes with a comprehensive set of software for making the most of Dolby Digital and MPEG2 surround soundtracks. Best of all, it can also playback DTS (Digital Theatre Sound) soundtracks, which are fast becoming the surround-sound of choice for movie fans. The fly in the ointment is the fact that you need some DTS discs to play on it...

Siemens SL10 GSM Mobile Phone

Price: £200 (with network connection) Contact: 01344 862222

One of 1996's bigger trends has been the arrival of 'dual' mobile phones. Dual Band, a gimmick that enables phones to operate on more than one network by using two different frequencies — proved just the job for those who need to stay in touch abroad.

The most striking thing about the SL10 dual band phone, then, is its unusual design. It comes in a 'split' case with an LCD display in the top half and dialling buttons below. This not only enables the phone to have a smaller profile, but protects the buttons from being pressed accidentally.

The phone is also simple to use. The colour LCD display is pale but distinct, while the interface can easily be picked up by the most phone-phobic within a minute or two.

Speech quality is pretty good, although the battery life at 40 hours standby and three hours talktime is a little lacking compared to Nokia's sleeker 8810 (£65).
In a class of its own

UK: Following last month’s interview with BBFC president, Andreas Whittam-Smith, Edge decided to delve a little deeper into the way the BBFC actually classifies videogames.

A little probing around the board’s Website revealed a simple flowchart detailing every step of the classification process. Predictably bureaucratic in places, Edge wasn’t at all surprised at the amount of arrows used to depict a fundamentally simple process. However, a quick glance at the fees requested by the BBFC for following those arrows proved a revelation. The standard rate for classifying (ie playing) a videogame is £1,755 for four hours’ interaction, while simpler works (requiring merely 120 minutes of assessment) can be rated for a bargain £1,053 (that’s nearly £9 a minute). And that’s excluding VAT. Now, if only journalist rates were even nearly as good...

The games awarded ratings (above) and the flowchart for the Classification Process of Digital Media (right)

Lara goes to bed

UK: Silicon implants have a lot to answer for. Lara Croft might be a grossly exaggerated version of the female form, but her prolific ‘fan’ as a celebrity—which has seen her appearing on chat shows, in fashion spreads and on coffee tables—can be compared to that of fellow media marketing dolls Madonna, Melanie Messenger and Emma Noble.

Now, however, Core has become confident enough to sell its wares on the strength of the Lara ‘look’ alone—witness its new lifestyle advertising campaign (right). Has having a passion for videogaming reached a new low?

"Are you sure you want me to wear this?"
Sega hosts a flash (beats) party

 Sega's new solarium simulation attracted many eager tan-seekers

**Off beat**

Modified's all new *FrEQuency '99*: a sad case of nice beats, shame about the face. Decidedly non-interactive multimedia...

**UK:** Nestled amid the florilla of 'rave culture' multimedia that has sailed forth on an ill-advised course towards the world's PCs, 1996's *FrEQuency* and statelymate *Chaos* were the high points. Now coder/shop Modified has a sequel for the former title, unexpectedly tagged *FrEQuency '99*.

Pouring out a stream of audio and visuals for you to tweak at will, the updated version is, essentially, a stripped-down sequencer preloaded with hundreds of -- very listenable -- samples. You're able to cycle through all manner of combinations of beat, bassline and melodies to create mixes which can then be saved out as MP3 files. In addition, it's possible to hook up to Modified's Website (www.modified.com) and download extra samples to expand the package's range.

**Japan:** To celebrate the announcement of several new arcade titles, Sega held a private party in Tokyo's Hanabatatsucho (New Pier Hall) in late November. Although dominated mainly by the latest creations from Sega's prolific AM3 division, the party was also notable for the first game from fledgling group AM4, *Flash Beats*.

Featuring five long neon tubes atop a table, *Flash Beats* is a two-player electronic mixture of ping pong and snap. Seriously. By hitting one of five corresponding buttons, you send a coloured pulse of light to the other player who must react in time and return the pulse. Backed by a pulsing backdrop that comes pounding out from under the table, *Flash Beats* understandably attracted a lot of curious onlookers.

Also on show was a new 'Power Edition' of the disappointing *Daytona USA 2*, with the added feature of being connectable online. AM3 games, meanwhile, included *Gunblade NIGHTMARE* and *Crazy Taxi* in which you control, well, a crazy taxi, and yet another special cabinet game, *Magical Truck Adventure*. Developed by the team responsible for Sega's *Lost World* license, *W!* has the player controlling the truck with their arms while kicking objects with their legs. Arcade games, it seems, have found their feet. Or yours, at least.

**Don't panic**

**Japan:** Mind-controlled computers have long been a classic image of science fiction. While it's not quite touching that level of sophistication, Sega's new take on the Tetris franchise (as if there weren't been enough already) takes console gaming just a little bit closer to that goal.

The 'bio-sensor' that comes with the game is essentially a pulse monitor, connected to the N64 via the JoyPad's expansion slot and to you via your earlobe. As you play Tetris, the unit measures your heartbeat and alters the number and shape of the upcoming piece accordingly. Rumours of a strip poker title that uses the bio-sensor are, as yet, completely unfounded.

Seta's bio-sensor for Tetris: the first step on a slippery slope to Nintendo mind control?
Love at first fight

Japan: The release of Virtua Fighter 3tb for Dreamcast gave Edge a welcome excuse toamble down to its favoured coin-op shops in Tokyo’s Akihabara electronics district this month. As ever, the range of titles on offer was astounding – in terms of both price and breadth. For arcade addicts, there’s no greater satisfaction than actually owning a complete cabinet – NAME doesn’t even come close.

Although you can only play one game, the asking price of around ¥60,000 (£300) for a complete JV32b ROM and adaptor board seems tantalisingly low compared to the ¥46,300 (£230) Sega is asking for Dreamcast, the game, and two arcade sticks. (However, it must be noted that a special 24MHz display is needed for Model 3 games.) Meanwhile, Virtua Fighter 2 is priced at an even more reasonable ¥28,500 (£145) while a Spikeout ROM – for seriously wealthy beat ‘em up fans only – will set you back a cool ¥480,000 (£2,400).

Older titles are readily available, too. Classic Capcom CPSII titles such as Street Fighter Zero, Vampire Saviour, and Marvel Super Heroes Vs Street Fighter are priced between ¥1,500 (£7.50) and ¥25,000 (£125). Japanese coin-op fans with a stash of cash are able to build an enviable library of games for less than the price of a secondhand car. Dreams, surely, are made of this.

Bringing game sound to life

UK: After going through a period of relative inactivity in the PC soundcard market, Creative Labs has swept its competitors aside with its new creation, Livet, which has – deservedly – received widespread acclaim (see p77). At its most effective when paired with a set of surround-sound speakers, such as the Cambridge Soundworks Speaker 5s shown here (also sold through Creative Labs), the card is capable of several DSP effects. Reverb, chorus and delay are all standard features, as is support for surround sound via a system called EAX, which is a major advance over the current AD3 standard used by other manufacturers.

It’s this last aspect of Soundblaster Livet that’s of most interest to gamers, as it really can enhance the experience offered by leading titles such as DOA Life. First-person shoot ‘em ups are ideal testbeds for the card, with bullets zipping from the front to back speakers and footsteps echoing down hallways. Where AD3 can deal with eight streams of audio, Livet can handle 5.2 through its four speakers. Impressive stuff – especially with the volume cranked up to the max.

The creatively minded will be pleased to note that Soundblaster Livet is supplied with several pieces of software for sound editing and sampling, and has a set of MIDI connectors. However, for the purpose of playing games there’s little out there to rival Livet’s sweet sonics.
Valuing videogame visuals

UK: The seemingly unstoppable permeation of videogames into mainstream culture is being recognised not only by musicians (U2 and Dave Stewart famously having elected to work with Lara Croft in one guise or another in the past) and acclaimed modern artists (Damien Hirst recently spoke of phoning Core to request a copy of Tomb Raider II, only to be told that he'd have to buy one just like everybody else) but more increasingly by authors looking to analyse the phenomenon in print.

Following YC Herz's largely tawdry gaming chronicle 'Joystick Nation' comes 'Replay - Ultimate Games Graphics', a volume which, as the title so obviously implies, concentrates on the aesthetic aspect of the videogame experience. Compiled by Liz Faber, the book reproduces a remarkable selection of imagery from games ranging from modern-day classics such as Gran Turismo all the way back to the impressive Pong. And it's a lavish publication, rammed to bursting with glorious grubs and presented with slicky design values courtesy of London-based team State. Definitely something that will sit happily next to Edge on the coffee table.

'Replay - Ultimate Games Graphics' is published by Laurence King and retails at £20 (ISBN 1-85669-140-3).
THE FUTURE NOW
Predicting the future is the most dangerous activity that social commentators can undertake. Once down in print, the soothsayers' wisdom has a nasty tendency to be compared to the reality ten years down the line. Good luck then to the various authors of 'The Future Now' for attempting to predict what will be happening in 2010.

Originally published as a series of ten separate pamphlets, 'The Future Now' covers a discordant collection of subjects, ranging from cosmology to the middle east, warfare, disease and the media. However, as the individual authors attempt to argue how it will be in the future, they in fact end up chronicling current thinking.

The one certainty about the future is that it's not going to be boxed in by the present. Yet, few of the chapters grapple with the shocks that technology will cause. There are strong arguments that technology as a whole, and the computer specifically, have radically altered the present and will shape the future. So even if the events of the 21st century are unknown, the undercurrents that will produce them are already in operation.

THE BIOTECH CENTURY
Just as the world gets to grips with one technological revolution, it appears that another one is just around the corner. Silicon is now passé, long live the new carbon-based life forms produced by recombinant DNA splicing. The Geep, genetically half goat - half sheep, has already been created, and it's only going to get weirder.

Or so says veteran American watchdog Jeremy Rifkin. Known for his robust attitude towards technology and multinational corporations, Rifkin's tendency to dwell on abuses of power has made him a controversial figure in the U.S. However, with the recent cloning of Dolly the sheep and genetically modified food in the supermarkets, the first wave of the biotech century is already here.

Much of Rifkin's concern centres on the breaching of the species barrier allowing genes from one species to be introduced into another. In turn these experiments will raise fundamental questions about what it is to be human. If the result of the Human Genome Project is the blueprint for the 'perfect' human, what impact will that have on the mass of genetically imperfect people? The tone of the book is not alarmist, though. Rather it informs so that you can influence the science and shape the future you want.

MAGNETIC
A La Magneticà (Recordings of Substance)
Pegged as an Aphex Twin-like technical minimalist, there is a sparse beauty to several tracks on 'A La Magneticà' that recalls the Twin's early works. Although the textures used here suggest a more modern approach, 'Takashi Boots' in particular manages to build up a fantastic mode with basic ingredients. And a love of freestyle rhythms ensures that, as modelled as this is, it's never going to be filed under 'ambient'. Magnetic is a name to watch out for.

FREDDIE GALLIANO
Electronic Sextet
Live Infinitis
(F Communications)
Having brought live instrument jazz, funk, and latin together with electronically-minded house on the 'Espaces Barques' album, here is a compilation of recordings from various jazz festivals. There are acid squiggles and bass beats, but this is a more organic, album than usually graces the pages of Edge. Sticking the material into new forms, Galliano and his band pump out cool vibes with trumpet, vibraphone, and live percussion. 'Nice'.

FYZCAL ENCOUNTERS
Various
(R&S)
Darker and deeper than most, this drum 'n' bass collection from R&S is an appropriately technoflavoured set. Bringing together some of the more leftfield 12's from the label it demonstrates just how much the two genres are fusing, with collaborative offerings from Ed Rush & Optical as well as other purveyors of this harder sound. The harshness may turn some away, but behind the beats there's much to admire.

VHS
Tekken The Motion Picture
(AD Vision)
It's hard not to be disappointed with this manga release. Although it focuses on three characters, irritatingly, some of the more interesting Tekken stars (Yoshimitsu, for example), are rarely seen, and then only as part of the background. A criminal amount of the characters remain totally untouched.

Unfortunately things don't improve from there. Plot wise, the one-dimensional offering wouldn't keep a cotton-headed 12-year-old interested, and the rudimentary animation is likely to have you reaching for the remote control's eject option long before the end credits.

Oddly, for a film based on such an astounding beat 'em up, fights between characters are not only rare, but brief, tedious and lifeless. And anyone even remotely interested in videogames knows that the Tekken series deserves a whole lot more.

KRUDER & DORFMEISTER
The K&D Sessions
(Studio K7/G-Stone)
'The K&D Sessions' brings together the laidback duo's remix work to date. Nobody is safe from the jazz cigarette approach, be it Depche Mode, Lamb or even Roni Size. Their technique involves stripping out all aggression from the original music and dropping in a friendly dollop of jazz or Latin-infected rhythm. Inexplicably, Kruder & Dörfmeister somehow make this the soundtrack to the perfect night in. The vinyl alternative to Radox.
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**15 THE ARCADE, BOGNOR REGIS, WEST SUSSEX**
I felt that I had to write in to respond to Adam Wright’s letter defending the PlayStation’s reliability (£66). He appears to assume that, because his machine did not suffer an early demise, all owners with faulty machines have created this situation by mistreating their consoles.

I had my machine replaced out of warranty (from the shop I bought it from, not from Sony themselves – I phoned their helpline and they were not interested whatsoever), because I produced tens of letters from magazines listing the same problem. I also own a Saturn which has worked flawlessly and I have not heard or read of reliability problems with Sega’s machine at all. Adam states that Sony redesigned the machine to prevent the problem. If that is true then why did Sony not relate that to their customers experiencing problems? I know that they do not want to admit that the design was unreliable in the first place, but I sold the replacement machine immediately as I had no confidence in buying new games when I could not be sure that the machine would play them for long – and I wonder how many owners did the same.

I think it is Sony’s blatant disregard for its customers which is the main issue here, not the fact that the machine was unreliable in the first place. I, for one, will not be considering PlayStation 2 when it appears, solely for the reason that if there are any problems, then Sony will leave the customers with crappy bits of kit.

Andy Miles, via email

Ten pounds says you won’t be able to resist Sony’s next console…

While browsing at my local branch of Game, I became aware that all of the games on display were horrifically crap, with no real content, simply good graphics. I then began to realise that some of the best games, such as FFVII or Theme Park, weren’t on display when they were first released. I then began to ponder if displays like this, which are found in almost every videogame store, can have an effect on the publishers that push towards more graphical content rather than gameplay. This may be a fair point, generally simply clones that lack ideas and imagination.

John Swan, via email

Yes, marketing is a wonderful thing. How else do you think Electronic Arts is able to sell three versions of FIFA in one year?

I always look forward to new issues of Edge, although since ‘During a session on Micro Machines V3 it occurred to me that the Gouraud shading was of a higher quality than I remembered. I tried it on the beach stage and before my eyes a perfectly shaded landscape was being rendered!’

video game store, can have an effect on the publishers that push towards more graphical content rather than gameplay. This may be a fair point, you seem to have dropped the Apple Macintosh from your columns (and front cover), the anticipation of your magazine arriving in the shops on one of Apple’s finest. (G3s, if the contact column is anything to go by – very nice!)

However, to discount the Mac as a non-starter on the gaming scene no longer holds water. With the arrival of the iMac, interest in Apple’s machines is stronger than ever, and with games such as Tomb Raider II and Unreal (to name but two) appearing on the market, people have to take notice of the growing situation that is happening.

I’m not asking for much. A column or two a month would suffice – I feel it’s all you can do to support the company which essentially makes you money.

James Duffield, via email

Apple makes Edge its money? Hardly. And it’s not as though the magazine has ever really committed to covering the Apple gaming scene, is it? If enough Macintosh owners wrote in with requests of coverage for their format then the situation would change, but that’s just not going to happen. Is it?

A couple of months ago my ageing PlayStation gave up the ghost and stopped loading discs. It was well out of warranty (being one of the first PAL machines in the country) but a quick call to Sony and a bill for £40 or so brought me a reconditioned replacement in return for my old machine within two days. Very impressive. A number of weeks after receiving my replacement, which is a SCPH-1002 (resplendent with audio ports), I noticed something very strange.

During a session on Micro Machines V3 it occurred to me that the Gouraud shading was of a higher quality than I remembered.
I then tried the beach stage, which relies heavily on shading and used to look quite bad, with large bands of colour on the hills. Before my eyes a perfectly shaded landscape was being rendered!

At first I doubted my memory – how could the same disc give different results? But I asked a friend and he also remembered poorer quality graphics. The real clincher came when watching the FMV at the beginning, which showed graphics of a higher standard (where shading is concerned) than those on my previous machine. I wondered when I’d last played Micro Machines and sure enough I hadn’t played it since I changed machines. So, has Sony introduced PlayStation 1.2? The only thing I can come up with is that the routines responsible for Gouraud shading have been updated in the newer machine. I would dearly love an explanation for this phenomenon.

On a similar vein, if it is possible to scale graphics quality in this way, and if Sony still intends to make PlayStation 2 backwards compatible (highly unlikely in my opinion), is there any reason why PlayStation 1 games could not be run on the new machine with bi- or trilinear filtered textures?

Tony Pyle, via email

*Edge* hasn’t heard of this before, and can’t help but remain slightly dubious. It’s true that Sony has updated the PlayStation’s design since its introduction, but not in the fashion you suggest. An investigation is underway: report next month.

Any of us have been around the videogaming scene for the past ten years. We have witnessed the birth of 16bit and beyond. A lot of us have followed the games scene since its inception, and we are currently recruiting young games virgins every day. We have an online encyclopedia of information, as well as a plethora of magazine publications which no longer beat around the bush. If you don’t understand phong shading or bilinear interpolation then you own an Amiga. So why is it that our famed broadcasting heritage, which invests millions per year reinventing itself, still cannot produce a videogames TV show which a) shows videogames for the majority of its air time, and b) is broadcast when people are awake?

Since the videogame culture matured about six years ago, we have been bombarded with utter trash, with MTV-style approaches and puppet presenters. The current excuse for a ‘videogame TV show’ can be seen on Sky TV (dot TV) called ‘Game Over’, and fits in with crap comic sketches totally unrelated to games.

If you don’t have access to the Internet, you have to wait one month until the next issue of your favourite magazine. We need to petition the TV channels for a maturely produced and information TV magazine. A screen version of *Edge*, to be precise. I’d be interested to hear the thoughts of other readers.

Lee Axon, Newcastle upon Tyne

There are developments happening in this area, in fact – look out for a feature on the topic here soon.

I was reading a recent Testscreen section when I recalled one article in particular – *Fair Game* (£61) – in which it was argued that 5 and not 7 out of 10 is the average mark for a game, and that the industry is being misled.

I thought this statement to be untrue, however, and decided to check, by calculating the average rating given to the games in a particular issue of your magazine. I found the mean (average) mark in £64 and £65 to be 7.2 and 7.4 out of 10 respectively, and that of the issue in the very argument was published turned out to be exactly 7! This is in total contradiction with your argument in the article.

You are right in saying that 5 is the midpoint of the marking scale, but I find that 7 is the realistic average mark, and a title scoring this would relatively be an average title. Is it that all games reviewed by *Edge* are above-average anyway? Or is it that reviewers err on the side of caution when reviewing games rather than give them a condemning under-average mark?

Connor Treacy, Co. Tyrone, Northern Ireland

What do you think the average score would be if *Edge* didn’t spare you the boredom of reading about every single shoddy game released every month?

There simply isn’t room to write about every piece of sub-par software here on a monthly basis. If that’s what you want, then *Edge* really isn’t the magazine for you.

While re-reading issue 58 of your fine publication, I noticed on the letters page a contribution from one Robin Juber claiming to be ‘the most analytically retentive emailer’. The email pointed out *Edge*’s error in claiming that the initial ship in *Elite* was a Viper, and correctly stated that the Viper was of course the police ship. However, it went on to say that ship which launched Commander Jameson’s trading career was the Cobra Mk II. This is where our friend Robin’s claim falls to the ground.

As any true *Elite* fan will gladly point out, the actual ship which graced our Cub monitors was in fact a Cobra Mk III, as the Mk II was abandoned at the prototype stage. Who’s not been reading their Space Trader’s Flight Training Manual then? Oh, and if there’s ever been a more analytically retentive email than this, I’d love to see it.

Ron Picnic, via email

No, Ron, that does take the biscuit.
Exclusively from Japan.

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