M2 EXCLUSIVE! Full specifications of 1997's hottest new 64-bit game machine

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NEXT GENERATION

The #1 computer video games authority

February 1997

Street Fighter 3
Disappointment of the year?
Page 23

Life after Mario 64?

EXCLUSIVE: Mario's creator Shigeru Miyamoto reveals his plans for the future

WORLD EXCLUSIVE!

Unreal!

(Yes, this is an actual PC game screenshot)

Better than *Quake*? *Unreal* could be the best looking PC game of 1997.

And it's coming to Nintendo 64...

Videogame Myths: Fact or fiction?

21 rumors investigated:

- Did Nintendo help design PlayStation?
- Has anyone ever died playing a videogame?
- Was Mario originally a New York landlord?
- Are one million Atari 2600 *E.T.* cartridges buried in the New Mexico desert?
- Are U.S. Marines trained on *Doom*?
- Is a U.S. Senator trying to ban all videogames?

volume three

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Yes, this cover image is a real screenshot from Epic's *Unreal* — a title that could quickly supercede Id's *Quake* as the PC's hottest 3D game. The full exclusive story begins on page 68

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02 >

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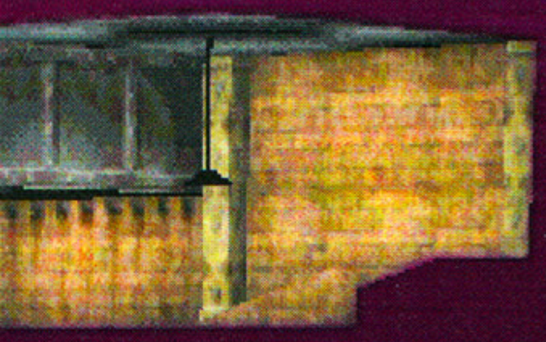
WHICH 3D ACCELERATOR SHOULD YOU BUY? Each PC 3D card played, reviewed, and rated



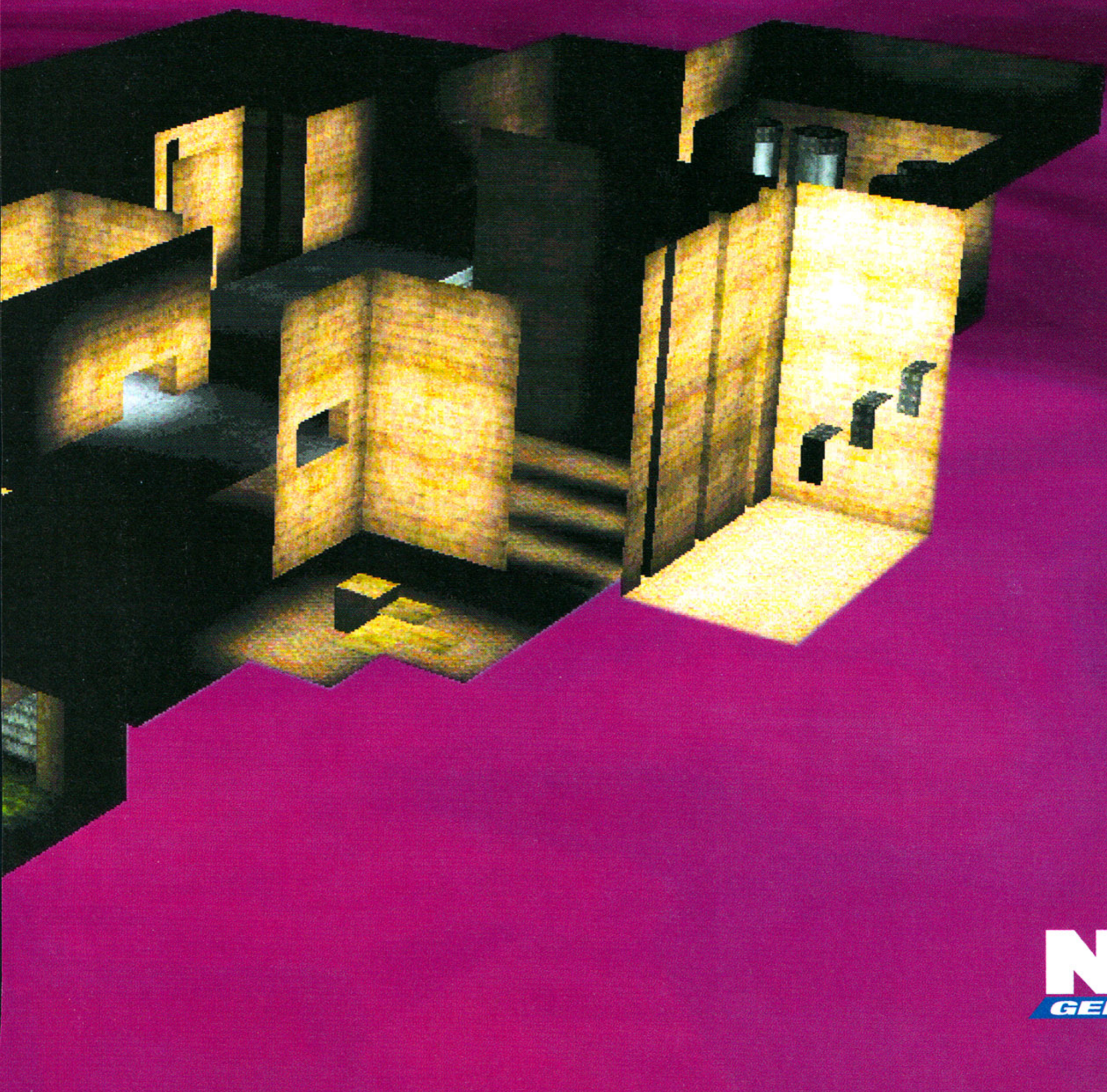
The best looking game ever?

So how come a magazine that always values gameplay above graphics gets all excited about what could be "the best looking game ever"?

Easy. Because *Unreal* promises not only great visuals, but also solid multiplayer gameplay, a thrilling one-player adventure, and a state-of-the-art level designer (shown on this page) which will enable all players to easily create their own game worlds and levels. *Unreal* is a complete package, and seems destined to give *Quake* a run for its money in every department.

But (if we're being really honest) the real reason we're so excited at this early stage of *Unreal*'s development is that... boy, it sure looks good. And the best-looking game of all time has to be considered something, even if it isn't everything.

The full exclusive *Unreal* story begins on page 68.



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February 1997

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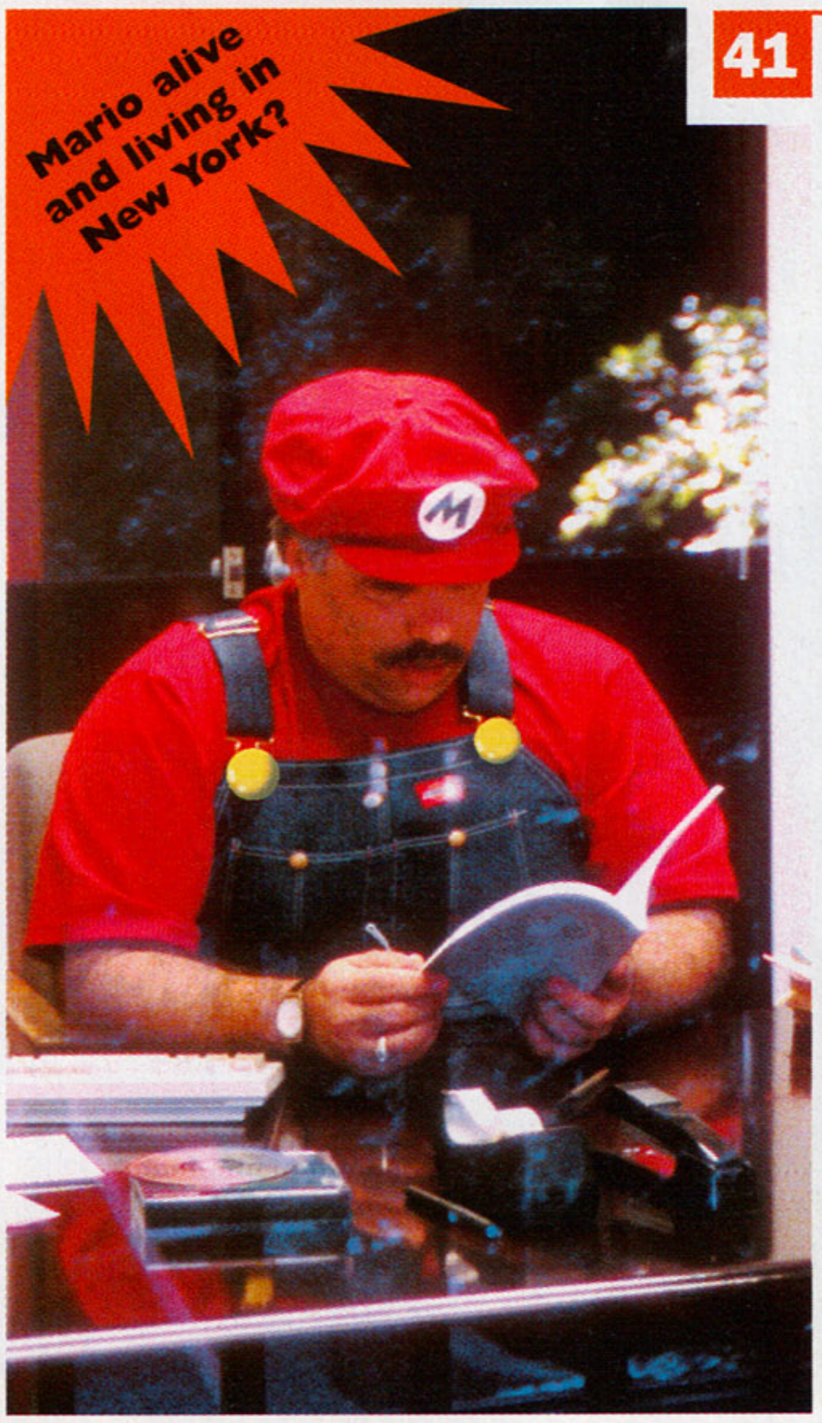
What's next for Shigeru Miyamoto?

So what would *you* do after creating the greatest videogame of all time? As Nintendo's chief game wizard and the creator of *Super Mario 64*, Mr. Miyamoto has big plans — and he shares some of them in this exclusive interview with **Next Generation**



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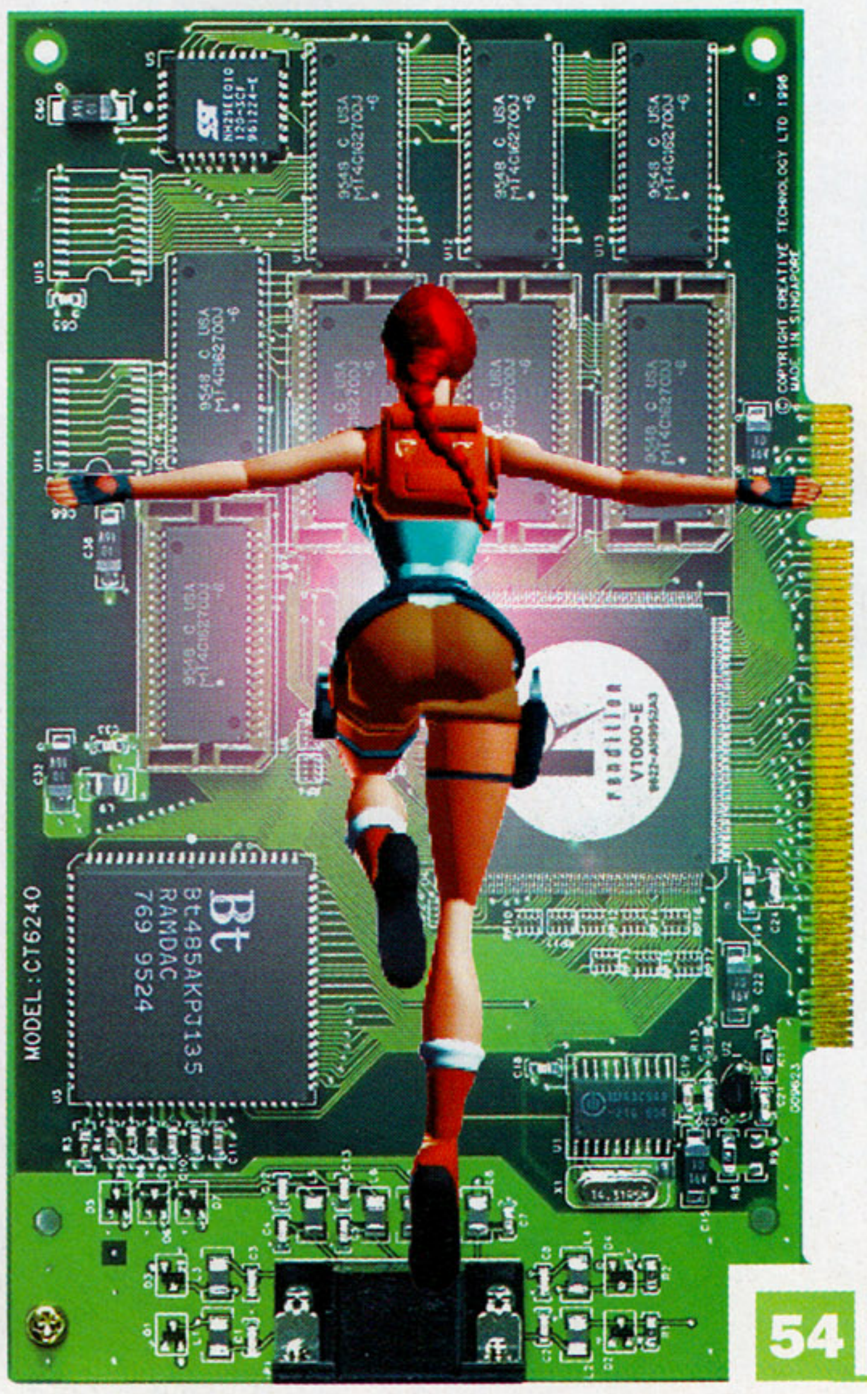
Videogame Myths

Some videogame legends are laughable, but some are stranger than fiction. Find out which is which in **Next Generation**'s peek inside gaming's mythology



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PC Goes 3D

In **NG18**, Bill Gates predicted that "all the PCs that ship in 1997" would have graphics power to rival consoles. Featured here are the 3D cards that may make his prediction come true

introducing

News

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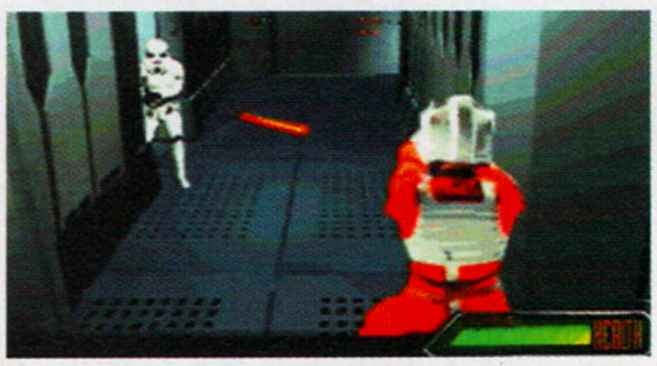
Alphas: 9 games previewed

Your chance to check out games before they're even finished, including: *Unreal*, *San Francisco Rush*, *Doom 64*, *Gambare Goemon*, and an interview with the *Unreal* team at Epic MegaGames



Finals: 28 games reviewed

Sometimes it helps to have a critic be your filter. Every month, **NG** reviews each and every major new game release, so you know which are the classics and which are the duds

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PC Goes 3D
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Alphas
Previewed this month: *Unreal* (PC CD-ROM), *San Francisco Rush* (Arcade), *10th Planet* (PC CD-ROM), *Shadow Warrior* (PC), *Mace: The Dark Age* (Arcade), *British Open Golf* (PC), *Doom 64* (N64)

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118 rating

Finals
The games you should pass on, the games you should give as gifts, and the ones you should keep yourself. Including: *Killer Instinct Gold* (N64); *Machinehead* (Saturn); *FIFA '97* (PlayStation); *Terminator SkyNET* (PC)

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Next month...
Next Generation #27 arrives on newsstands on February 11. Find out how to subscribe on page 32

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Those of you who purchased the **Next Generation Disc Edition** have the following goodies to look forward to...

Every month, we publish two editions of **Next Generation** — one has a disc with it, and the other doesn't. If you picked the **Disc Edition** (and we pause for a moment of respectful awe at your smartness if you did), then everything you see on this page awaits you. If you didn't buy the disc edition, well you still have a chance — maybe next time, eh?

The Next Generation Disc is compatible with both Mac and PC, and contains over 600MB of game demos, previews, and movies. Some of the games covered are selceted by us, and some are provided by our sponsors: if you see green text outlining information about the game before the movie plays, you know it's a game handpicked by our editorial teams.

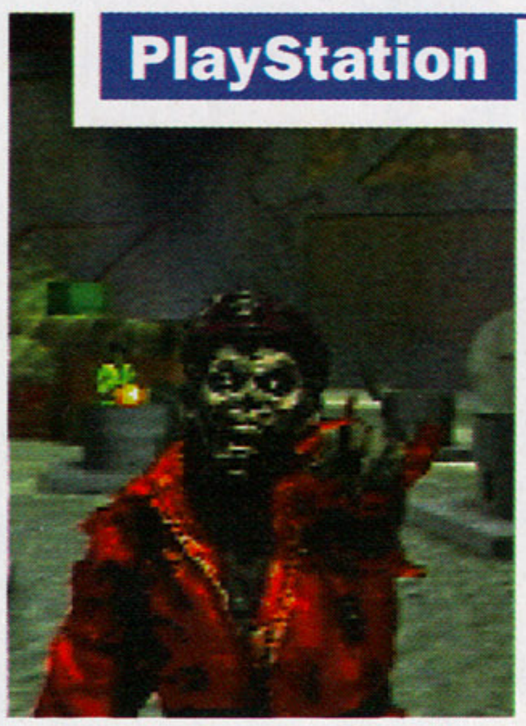
We hope you enjoy the **Next Generation Disc**, and invite your feedback. E-mail us at ugp_ng_discs@imagine-inc.com.

PC

Cover

PC demos and movies

This month's cover game is Epic's *Unreal* — a game guaranteed to excite PC gamers. Nintendo 64 gamers should also take notice, because Epic is planning an N64 conversion



PlayStation

Saturn

PlayStation, Sega Saturn, and N64 movies

Want to check out the best PlayStation, Sega Saturn, and Nintendo 64 games before they hit the store shelves? Then look at these exclusive movies of real, pre-release gameplay

2 Mac demos

Featuring:
Over The Reich (Big Time), *Derrat Sorcerum* (Mixed Metaphor)

7 PC demos

Featuring:
A Fork in the Tale (Any River), *CyberGladiators* (Sierra), *MechWarrior II: Mercenaries* (Activision), *NeoHunter* (Virgin), *Over The Reich* (Big Time), *Screamer II* (Virgin), *Tomb Raider* (Eidos), *IM1A2 Abrams Battle Tank* (Interactive Magic)

Cover feature

Unreal
This looks set to be the best looking PC game we've seen — and we've seen a lot of PC games. Check out this demo, and see for yourself

Disc-only special

Shoshinkai report
Featuring:
Blast Corps, Imagineer Pro Baseball, Wonder Project: J2, King 64, J-League Perfect Striker, Super Mario Kart 64, Star Fox 64, St. Andrew's Golf

Internet software

Four Internet software packages:
America Online 3.0
Mplayer
The Palace Chat
TEN: Total Entertainment Network

4 Nintendo 64 movies

Featuring:
Crusin' USA, Killer Instinct Gold, Shadows of the Empire (3 Movies), *Turok: Dinosaur Hunter*

12 Sony PlayStation movies

Featuring:
2Xtreme, Area 51, Carnage Heart Contra: Legacy of War, MotorToon Grand Prix NHL FaceOff '97, Puzzle Fighter, Tecmo's *Deception, League of Pain, RobotronX, Sentient, Space Jam*

5 Sega Saturn movies

Featuring:
3D Baseball, Amok, Daytona USA CCE, Sonic 3D Blast, Virtual On

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He's the greatest videogame designer in the world. Now, after the magic of *Super Mario 64*, he's taking on *Zelda* and "around ten" new 64-bit games. So what are the Nintendo game chief's plans? Is he still inspired? In the following world exclusive interview, **Next Generation** asks...

Photography by **Jude Edgington**

What's next for Shigeru Miyamoto?

Without *Super Mario 64* and *WaveRace 64*, Nintendo would be lost. Simply, these two games are leaps and bounds ahead of everything else available for Nintendo 64. And what else do these two games have in common? They are both the work of Shigeru Miyamoto, Nintendo's general manager of product research and development and resident game wizard. Once again, Nintendo's future rests on the shoulders of just one man's genius — and once again, it's the same man.

Since introducing Mario with the creation of *Donkey Kong* back in 1981, Mr. Miyamoto has been at the heart of Nintendo's in-house game development. His credits read like a NES and Super NES "Greatest Hits" list, including such gems as *Super Mario Bros, Zelda, Star Fox, F-Zero, PilotWings, Yoshi's Island, Super Mario Kart*, and — in collaboration with Rare — *Donkey Kong Country*. And now, as third-party Nintendo 64 game development stumbles, stalls, and spectacularly fails to match the excellence of *Super Mario 64* and *WaveRace 64* Nintendo needs Shigeru Miyamoto more than ever.

So how is he feeling about Nintendo 64's future? What does he think of Nintendo 64's games so far, and what gaming greatness do we have to look forward to? **Next Generation** met with Mr. Miyamoto at Nintendo's

November Shoshinkai exposition, for the following world exclusive interview:

Early days...

NG: So what was the purpose of this year's Shoshinkai exposition?

Mr. Miyamoto: This time we wanted to emphasize the hardware power of the base Nintendo 64 — and this is why I am not allowed to answer many questions concerning *Zelda* or DD64. We wanted to show that the cartridge market is strong, and that Nintendo is committed to building a strong cartridge market.

NG: How well has has been achieved so far?

Mr. Miyamoto: I think we are still on the way to achieving this in Japan. We'll need one year — maybe a year and a half — after the launch of the Nintendo 64 hardware in Japan to achieve some of our launch goals. Certainly, by the end of next year we are hoping to have a wide variety of cartridge software for N64.

NG: Do you think that the games released so far have proved that cartridges are capable of delivering the gaming experiences people want?

Mr. Miyamoto: I think we have completed enough software to prove that cartridges are a viable and important media. But unfortunately, most Japanese users don't see it this way — they see that CD-ROMs are a current trend and they feel that cartridges are in some ways obsolete.

"I believe that within the next year we will introduce a game on a 128 MBit cartridge, but in two years I have no idea what will be possible at an affordable price"

But when it comes to the software content, we have achieved a lot to prove that there is still life on cartridges — we just haven't persuaded a lot of the Japanese consumers yet!

NG: Most cartridges for Nintendo 64 have been 64 MBit, but already a 96 MBit cart has been introduced for *SMK64*. How big are N64 cartridges going to get?

Mr. Miyamoto: That's a good point. It's worth remembering that when Nintendo introduced the disk drive system for the NES in the 1980s, it was unthinkable that ROM cartridges could become so cheap. Even now, they are becoming cheaper than we were expecting them to be. I believe that within the next year we will introduce a game on a 128 MBit cartridge, but in two years I have no idea what will be possible at an affordable price.

NG: One of the great things about Nintendo 64's lack of a CD-ROM drive is that musicians can't be lazy and simply spool a pre-recorded soundtrack off CD. Instead, they have to store sounds and scores electronically — using Nintendo 64's sound chips — and and this means that the music can respond immediately to what is happening in the game. It is almost "interactive" music.

A great example is the dire dire docks level of *SM64*, in which the music immediately ups in pace when Mario reaches the far bank of the lake. How important is this "interactive music" to games?

Mr. Miyamoto: Many people want high quality music, say with a full orchestra sound or something. But I am demanding our sound staff not to seek for the quantity of the music data, but rather they should seek for interactivity in their compositions for videogames. Instead of seeking to increase the quantity of music, we should try to make the most of its quality. Without CD, musicians may be disappointed with the quantity and range of data that they can use, but over time I think they will learn to appreciate that less can be more.

They should brush-up their skills in producing interactive music, and eventually technology will allow this type of sound composition to match today's pre-recorded music.

changes during *SM64*, but now, as we start work on the next games — *Zelda*, for example — we can complete a tune-up of the *SM64* system, and games like *F-Zero* can be a completely new version.

Analyzing *Super Mario 64*

NG: What lessons can be learned from Super Mario 64 about making games in 3D?

Mr. Miyamoto: I think that basically the point that we were focusing on with *SM64* — and this may or may not be a lesson to others — is that in the past, 3D games have been developed selfishly by the creators. We came at *SM64* from the other side and tried to cater to the selfishness of the users and their desire for control, a good game camera, and ease of play. This was not a lesson for us, because we have known that this was the best way to do it since we first started experimenting with 3D using the FX chip for the Super NES. So the *SM64* project was more of a reminder to us, and it reconfirmed that as with all games, you have to cater to the users' desires.

Also, we learned a lot while making *SM64* about the potential of the Nintendo 64 hardware itself. And while making the game, I discovered many points about the game's 3D engine that could be modified or improved. We didn't have time to implement these

NG: *Super Mario 64* used 60% of N64's potential, how much does a new game like *Star Fox 64* use?

Mr. Miyamoto: Between 70% and 80%.

NG: When will we see one employ 100% of its power?

Mr. Miyamoto: Probably when Nintendo's next hardware system turns up [smiles].

NG: What feedback have you had from gamers about *Super Mario 64*, and were you surprised by anything that they had to say?

"I have noticed a lot of kindergarten kids are better than I am at playing *Super Mario 64* — so it seems to appeal to the younger audience"

Mr. Miyamoto: I have received so many fan letters — including many letters from first-graders at elementary school — that claim that they have already collected 120 stars. I have noticed that a lot of kindergarten kids are better than I am at playing *Super Mario 64* — so it seems that it has appealed well to the younger

talking

audience of game players.

NG: *Super Mario 64* features many game elements — such as the large emphasis on exploration — that seem more like a *Zelda* game than a traditional *Mario* game. Does this mean we can expect *Zelda 64* to resemble *Mario*, or will it take a new direction?

Mr. Miyamoto: In the 1980s when we started on the original *Zelda* and *Super Mario Bros*, we had the same kind of concepts for each game — so it's no wonder that the two series are converging and that *Super Mario 64* approaches the *Zelda* concept. But in fact we have a lot further still to go with the concept, so you will still see a lot of different things with *Zelda*.

"The DD64 add-on will expand the power to create new and unique games two times beyond what is possible with cartridge"

Even though the two games' underlying structures are approaching each other, emotionally I think that people will have different experiences with the two games. With *Zelda*, you are supposed to be a certain age at certain year in the past, and you are put into certain situations — and you will feel, or even "smell some air" and feel how "warm" or "cold" it is in the *Zelda* world. It will feel like a very different game.

NG: Are there any secrets in *Super Mario 64* that no one has discovered yet?

Mr. Miyamoto: [Smiles] I don't think so.

NG: Come on...

Mr. Miyamoto: [Smiles] Maybe, the penguin can be a little fatter...

Giving it some (analog) stick

NG: What feedback have you had from gamers about Nintendo 64's analog joypad?

Mr. Miyamoto: I think that generally it has been accepted with open hands. Sure, some people don't like it. But I think that most people agree that once you get used to it, it's impossible to go back to playing this type of game without a 3D joystick.

NG: Do you think most gamers have been able to change their playing habits? With a game like *WaveRace*, have you found that most gamers use the analog pad properly — pressing it halfway for a gentle turn, for example — or are most experienced gamers still making the "tap, tap, tap" turns that were required with a traditional eight-way joypad?

Mr. Miyamoto: I think it's easy to get accustomed to the analog pad, and most people master it after about two hours of playing. But, of course, it's another question altogether as to whether or not gamers will accept it in the long term.

When we first introduced the 8-bit Famicom into Japan in the 1980s everybody had been accustomed to using a joystick, and many people complained about the new joypad. They got used to it, though.

NG: Are you surprised that following the launch of N64, Sega and Sony launched their own analog pads?

Mr. Miyamoto: No, I was not surprised because I thought that if we introduced something, many other people would imitate us.

NG: The next big innovation from Nintendo will be the DD64 disk drive add-on. You say that it will help because it will make games cheaper, but what plans do you have to exploit the system's writeable drive?

Mr. Miyamoto: I think that the power or ability to create a new and unique game will be expanded two times beyond what is possible with cartridge.

We have a lot of original and unique game ideas but we have not been able realize them because there is no writeable medium.

Where no game designer has gone before...

NG: What are you working on at the moment?

Mr. Miyamoto: [Laughs] Now I'm working for the PR department!

My job has three main parts. First, there is my normal job which is as a game producer working closely with the game directors of four of five different games. But this is always the case with me, I always seem to be working on four of five games at any one time. Second, I work with producers working for other companies — so I am supervising the development of around ten third-party games. Third, I am involved with

(continued on **page 143**)

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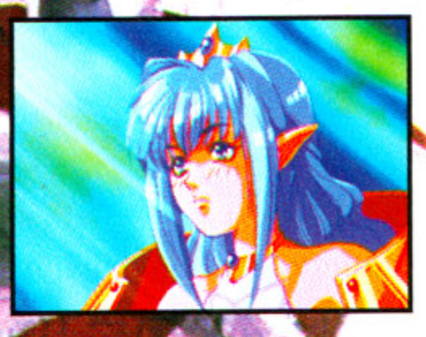

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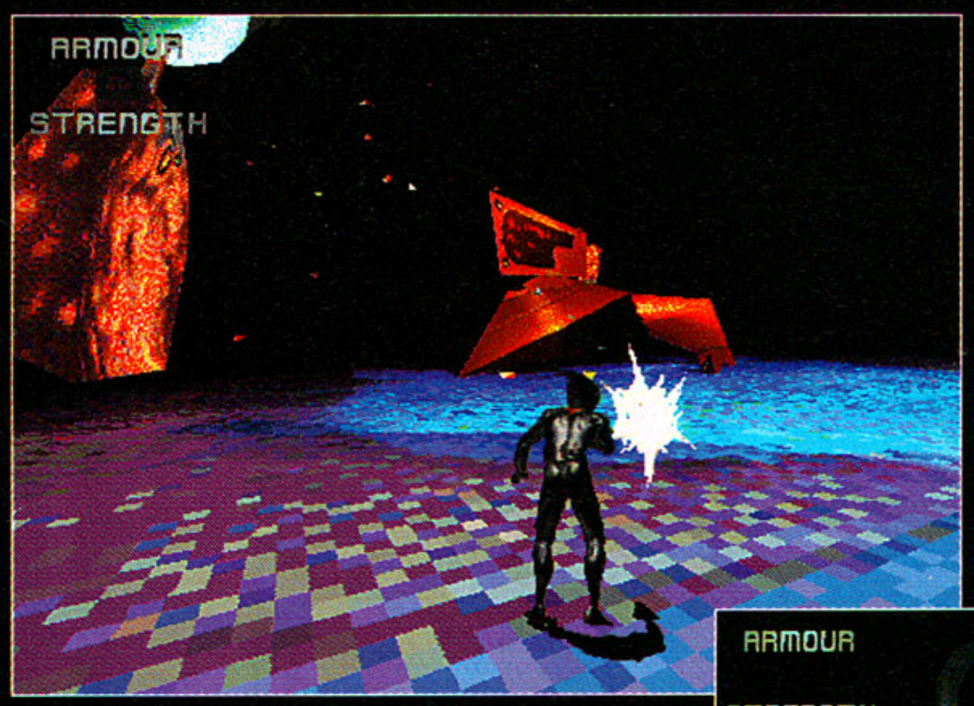

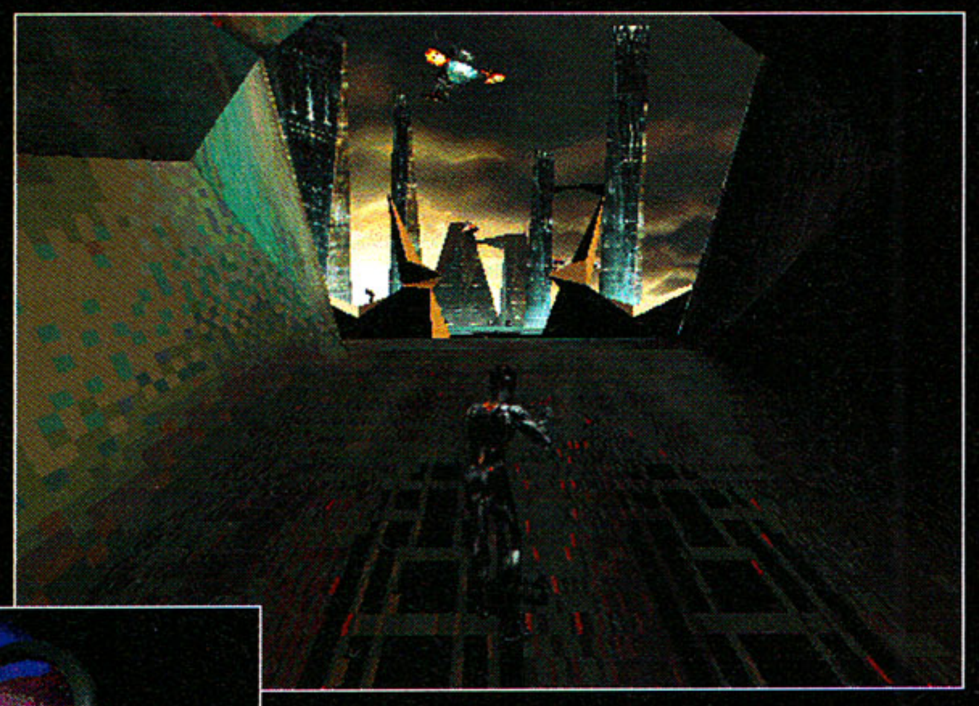

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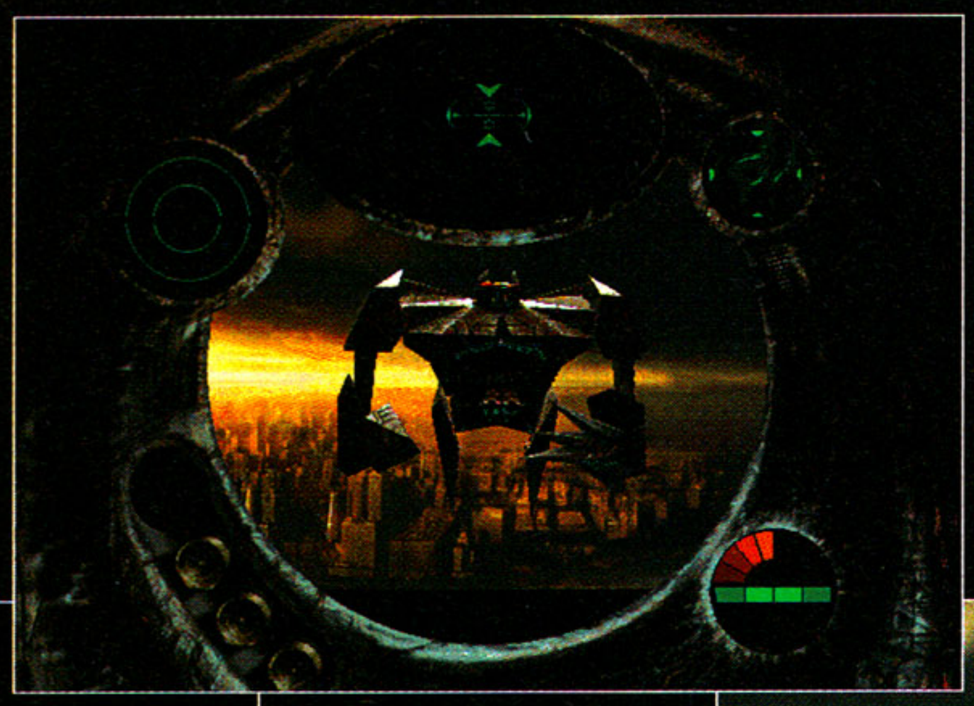

Actual screen shots

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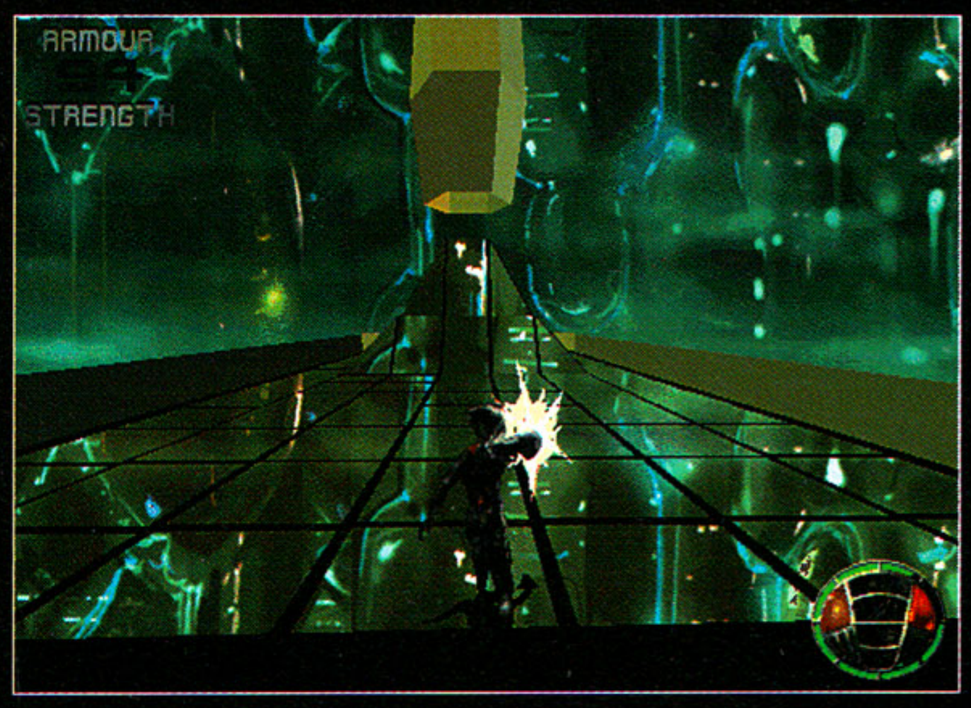

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M2: The low-down on the new machine from Matsushita • **Shoshanki:** A report from Tokyo's Nintendo tradeshow • **Movers and Shakers:** Industry news and analysis • **Joyriding:** Surfing your way to better gaming • **Arcadia:** News from the land of arcades • **Street Fighter III:** The inside scoop

All the videogame news that's fit to print

World exclusive:

M2 specs revealed

It's impressive — on paper. But can Matsushita really take on PlayStation and Nintendo 64? The world awaits...

Despite M2's absence from the recent, and rather low-key, Tokyo E3 show (taking place concurrently with the PlayStation Expo), where Panasonic initially planned to reveal its M2 technology, **Next Generation** has uncovered further facts concerning the 64-bit console (it will go by a different name when it is unveiled to the Japanese press) to be launched by Matsushita in the first half of this year.

As previously understood, the console will include two Power PC602 chips (each delivering over 70 MIPS), although **Next Generation** has discovered that 8MB of unified RAM will be included as well as a 4X CD drive. DVD compatibility will not be exploited until Matsushita's more grandiose consumer electronics plans for the technology are clearer — the issue that has apparently been holding back the announcement of any launch by the division responsible for the console's development, Panasonic Wondertainment.

In addition, **Next Generation** has uncovered details of the way that the much vaunted, souped-up M2 graphics engine works — previously the subject of much idle speculation. It now appears that Matsushita's machine utilizes one Power PC for calculating geometry while the second is used for ordinary game code.

The polygon engine itself can process over one million polygons per second, but it's expected that M2 will be able to display around 500,000 polygons per second with texturing and lighting effects applied (while no benchmark polygon size exists for comparison, few PlayStation games exceed 120,000 polygons/sec). M2 will also be able to map MPEG footage onto polygons as a texture.

In design terms, Matsushita's console is expected to be a top-loading device, slightly smaller and thinner than Sega's Saturn and with a front-loading memory card slot positioned in the center (cards will start at a

Panasonic chose not to unveil M2 at recent trade shows (right). The console is rumored to be aesthetically similar to this prototype (above)

The polygon engine itself can process over one million polygons per second

M2 Technical Specifications

- CPU: 2 x Power PC602 @ 66MHz
- Video Engine: 320x240 – 640x480, full color
- Audio DSP: 16-bit DSP @ 66MHz
- Quad speed CD-ROM
- BDA (custom graphics ASIC) handles memory control, system control and video/graphic control. Includes set-up engine, triangle engine, MPEG decoder, DSP for audio and different kind of DMA control and port control. Random access of frame Buffer and z-buffer possible at the same time.
- CDE (Custom ASIC): Includes a power-bus which is connected the BDA and the CPU. The 'bio-bus' is used as a low-speed bus for peripheral hardware.
- Memory: unified memory system of 8Mb SDRAM (64bit bus) @ 500 Mb/sec, average access greater than 400Mb/per second.
- Shading: flat and Gouraud
- Texture mapping: decal, modulation blending, tiling (16K/128K texture buffer built-in)
- Filtering: linear, bi-linear, tri-linear, mipmap, LOD, 3D perspective.
- Hardware buffer (16-bit)
- Alpha Channel (4- or 7-bit)

It now appears that M2 utilizes one Power PC 603 for calculating geometry while the second is used for ordinary game code

standard 128K but could theoretically reach 32 MB). The console's controller will have six main buttons and also two shoulder buttons like the Saturn's pad. On the left part of the controller, the player can use a regular directional cross-pad which, strangely enough, is surrounded by a rotating analogue, jog-shuttle-type wheel. In addition, a separate analogue joystick is included.

Matsushita's console will feature a standard PCMCIA slot to enable connection to planned peripherals such as a modem and DVD player, although the machine will initially be marketed as a straight game machine, mirroring Sony's efforts. Contrary to previous plans (and likely to cause upset with many 3DO disciples), is the news that there will be no compatibility with the aging 3DO technology — apparently because of the inclusion of the 4X drive.

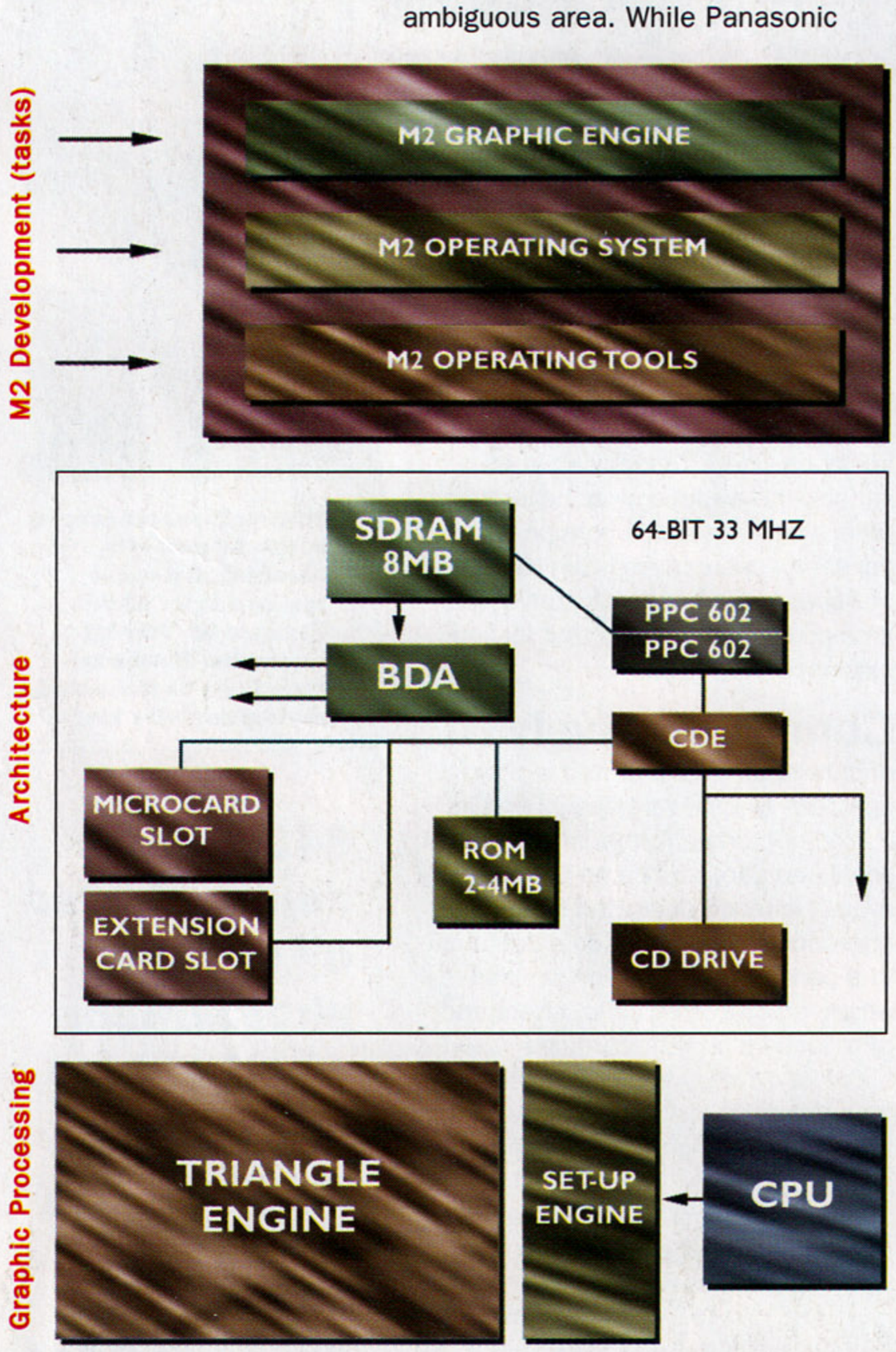
Software is perhaps the most ambiguous area. While Panasonic

Warp's *D2* is the first title to provide evidence of M2's potent real-time rendering capabilities. But when will it see the light of day?

Wondertainment is developing over 10 software titles internally in Japan, development work was recently slowed on M2 titles within The 3DO Company's U.S. offices — allegedly because Acclaim was working on these as M2 arcade titles and when delays started snowballing for the M2 launch, it ported its resources to the PlayStation. Panasonic should provide around 10 M2 titles at launch, although the only known companies with third-party contracts are Warp (which recently revealed the first M2 game, *D2*), Konami, and Capcom (which is working on a 3D fighting game). By the beginning of next year it is expected that a few other M2 developers will be officially introduced, and a complete software lineup planned for a possible late spring launch.

Capcom and Konami have arcade interests, but there's no link between the technology in M2 and that powering these companies' new arcade boards — in fact, no arcade games using the M2 technology have yet been shown. Naturally, differences between the technology planned for the console and the arcade exist — in this case there is more RAM on the arcade motherboard, and cartridges will be used as a coin-op storage medium instead of CDs.

Industry sources say that with the M2 hardware now finished and software development continuing, Matsushita's plans for the technology to form the hub of a consumer electronics range could be the only obstacle to a roll-out in the coming months. ng



At the heart of Matsushita's M2 technology are two PowerPC CPUs and the formidable graphics chip, here referred to as the BDA (center). This is a custom ASIC and comprises the set-up engine, triangle engine, MPEG decoder as well as a DSP for audio and DMA controls

What is it?

It cost $5 million, weighed almost a ton, was remarkable for its vector calculations, and needed liquid freon to keep it cool. Only 85 were ever sold — but it quickly became a household name

Impressed?

Two years ago, M2 and Nintendo 64 were the hottest pieces of vaporware on the planet. The prospect of Matsushita (the largest consumer electronics company in the world) joining the videogame industry got pulses racing, and The 3DO Company's 64-bit Power PC hardware seemed solid.

But now, with Sony and Nintendo racing ahead, M2 fails to excite. Feedback from third parties (including some very close to Matsushita) indicate that the final M2 game box is — in practice — no more powerful than Nintendo 64, and Matsushita seems to have an ambivalent attitude towards its creative talent.

In short, while keeping an open mind, Next Generation isn't holding its breath until M2 takes the videogame world by storm.

Shoshinkai '97: Nintendo gets in the games

Waving or drowning? Nintendo refuses to highlight *Zelda* or 64DD — insisting that carts are alright

Nintendo 64's future became a little clearer at the 8th annual Shoshinkai Exhibition in Tokyo, where 47 software titles were confirmed for the Japanese market. But — although present — 64DD, Nintendo's long-awaited mass-storage device, was kept out of the spotlight, and *Zelda 64* was confined to just a few seconds of videotape footage.

Although the event, held from November 22 to 24 at Makuhari Messe, was judged by many to be disappointing — chiefly because key title *Zelda 64* failed to make an appearance in playable form — promise for the future came from other titles, not least of which were playable versions of *Mario Kart 64* and *Starfox 64*.

The 64DD drew the most attention, though, with Nintendo's sleek new peripheral taking pride of place — from within the confines of a glass box, naturally — on its typically substantial stand. Without game software to accompany it, however, it was left to a demo custom-coded for the event to attempt to hint at the drive's capabilities. It did this by mapping photographs of attendees onto the sides of rotating cubes, displaying the results on giant screens — a small taster of the unit's potential (especially for those showgoers eager — or sad — enough to wait around and catch their own visages being thrown around on-screen), but hardly the glorious demo that many were rightfully expecting.

Instead, *Zelda 64* was, like many other games (including the gorgeous-looking *Yoshi's Island 2* and *Mother 3*), shown only briefly on video. Though still in its infancy, the evidence was nevertheless promising, with *Link*'s polygonal world appearing unsurprisingly similar to that of *Super Mario 64*, and featuring real-time combat sequences that looked extremely promising.

Comprehensively aware of criticisms leveled at its modular approach to hardware design and its choice of storage format in the face of continued dependence on CD from its rivals, Nintendo dedicated the afternoon of the exhibition's press day to a panel-style discussion session which, among other aims, attempted to defend its current cartridge-based software strategy and outlined the benefits and potential of the 64DD system.

Super Mario 64 producer Shigeru Miyamoto and hand-picked Nintendo cohorts (including reps from Konami, Seta, and Imagineer) took center stage to chew over various Nintendo 64-

Shigeru Miyamoto (above, left) is increasingly becoming Nintendo's spokesman for all things Nintendo 64. Dashing around the Shoshinkai show floor, he resembled a modern day Willy Wonka

It is...
The Cray 1 supercomputer, famous for its horseshoe-shaped design. Appearing in 1976, it was the brainchild of Seymour Cray, who left Control Data to form his own company in 1972

Many third parties showed N64 games, but none matched *SM64*'s standard

64DD was demonstrated by mapping photographs of attendees onto the sides of rotating cubes, displaying the results on giant screens

The traditional Japanese tradition of guys in business suits and gals looking cute prevailed at Shoshinkai — the kids, however, had the best time of everyone

related topics in front of a packed audience.

Konami's *J-League Perfect Striker* was cited as one example of silicon's superiority as a storage medium, with delegates claiming its spectacular surfeit of animation — which beats its existing 32-bit peers by a considerable margin — to be impossible on an optical storage-driven system. "We're here to show that the cartridge market is strong," confessed Mr. Miyamoto in an exclusive interview with **NG** (page 8). And largely, this goal was achieved.

The 64DD issue was tackled with a spiel concerning its capacity (64 megabytes, up to 32 of which are available for writing to during play), swift access times, and flexible architecture which leaves Nintendo 64's cartridge slot free for cartridge-and-64DD game packages (which, incidentally, is the format *Zelda 64* is rumored to adopt). Having recently dubbed Nintendo 64 "The Evolving Video Game Machine" in its official press material, Nintendo has obviously invested heavily in laying foundations for the future of its premier format.

The traditional address from NCL chairman Hiroshi Yamauchi was replaced, so there was no doubt that

Nintendo was keen to stress the fact that cartridge games can and are exciting — and employed many methods of getting the message accross

the discussion session was a PR-oriented affair. The dedicated host posing undoubtedly predetermined questions to an expectant panel was a fairly translucent arrangement, but the points made were nevertheless thought-provoking and underlined Nintendo's undying commitment to its agenda — whether it flies in the face of commonly regarded sense or not.

Ironically, Nintendo's consideration for gameplay over any other videogame aspect was countered by the lackluster nature of a significant number of titles revealed to an expectant audience elsewhere in the hall.

Several games, including *Blade and Barrel*, *Doraemon*, and *St. Andrews*, proved that no matter how powerful the silicon that sits beneath the software may be, unspectacular N64 product remains a very real possibility.

There's no doubt that the third-party software on which Nintendo has purposefully retained a short leash remains among Nintendo 64's most promising titles for 1997. Yet a number of games, on the evidence of their showing at Shoshinkai at least, could further damage the machine's reputation as a triple-A platform following the disappointment of U.S.-developed titles such as *Mortal Kombat Trilogy* and *Cruis'n USA*.

Mario Kart 64 was the undoubted star of the show in software terms. It lured hundreds of showgoers to patiently line up (lines snaked back from the many demonstration Nintendo 64 units greeting visitors upon entering the Messe's cavernous interior).

Carrying over the flavor of the Super NES title with ample style, the 64-bit update retains the original's slippy-slidey feel but adds countless new gameplay traits to offer an experience that will comfort yet refresh Nintendo devotees of old.

Starfox 64, meanwhile, broke new ground with its extravagant graphics, which surpass anything ever seen in home videogames. Stuffed with elaborate real-time cut-scenes, the game — which NCL has developed solely in-house, without the assistance of U.K.-based Argonaut Software, the coders of the Super FX-driven SNES original — like *Mario Kart 64*, retains much of its forebear's gameplay traits while expanding upon them significantly, most notably with a land-based tank combat mode.

Apart from being the most visually impressive title on display, the game also debuted Nintendo's latest hardware development, the "Jolting Pack." This peripheral plugs into

STOP press

Sony Prepares White PlayStation

Sony will launch a new "white" PlayStation this coming February in the Asian Tiger nations of Taiwan, South Korea, and Singapore.

Although entirely PlayStation compatible, the new white machine has the ability to play MPEG CDs. The market for MPEG movies is so massive in some Asian countries that Sony feels that it can no longer ignore this crucial sector. MPEG discs can contain feature films, Anime, and (as often as not) pornography.

No price-point has been mentioned although we understand Sony is looking at an equivalent if $279. The machine will also incorporate extra chip-based security measures which will attempt to lock-out pirated games — a problem which is still rife in some Far Eastern countries.

We say Yarouze, Sony says Yaroze

Following **NG**'s exclusive unveiling of Sony's "Make your own PlayStation games" initiative last month, Sony has changed the name of the program from Yarouze to Yaroze. Why? "It's kinda easy that way," offered a Sony spokesperson.

Paradigm gets serious

Paradigm, the military simulation company responsible for the technology behind *PilotWings 64* has formed a new videogames division. Paradigm Entertainment will concentrate on "creating leading edge 3D game content and tools for the entertainment industry."

breaking

64DD Specs

Size:	Drive 260mm(w)x190mm(d)x78.7mm(h) Disk 101mm(w)x130mm(d)x10.2mm(h)
Weight:	Drive 1.6kg Disk 43g
Memory capacity:	64 megabytes (approx.)
Sustained data transfer rate:	81 for 64 megabytes (approx.)
Seek time:	typically 75ms (approx.)
Motor driving time:	less than 1.9 seconds
Miscellaneous:	data correction feature included as standard
Media:	high-density, double-sided magnetic disk

64DD appeared — but only in a sealed glass case

Games of the show (top to bottom): *Zelda 64*, *Starfox 64*, *Wild Choppers*, *Mario Kart 64*, *Yoshi's Island 2*

Nintendo 64 controller's expansion port (previously believed to exist merely for the insertion of memory cards) and generates vibrating sensations in correspondence with on-screen action (the player's ship or vehicle taking a hit, for example).

A low-end equivalent to the kind of experience offered by coin-op driving games such as *Sega Rally*, the add-on was seen as merely another whimsical Nintendo fancy destined to the bin marked Good Idea at the Time. Rare (the company responsible for *Killer Instinct Gold*) showed *Blastdozer*, the only other title to make use of the wobbly peripheral. The game proved to be a quite lackadaisical playing experience, despite its obvious graphical strength.

Of the third-party games that showed promise — whether shown on videotape or otherwise — **Next Generation** is most eager for Konami's *Goemon 64* (which, though shown only in prerendered footage format, should carry the quality hallmarks its developers are famed for), Enix's *Go! Go! Trouble Makers* (an unashamedly 16-bit-styled platform game with gorgeously over-the-top 64-bit touches from acclaimed codeshop Treasure), and Acclaim's *Turok: Dinosaur Hunter* (whose selection of wondrous forms of firepower are breathtaking).

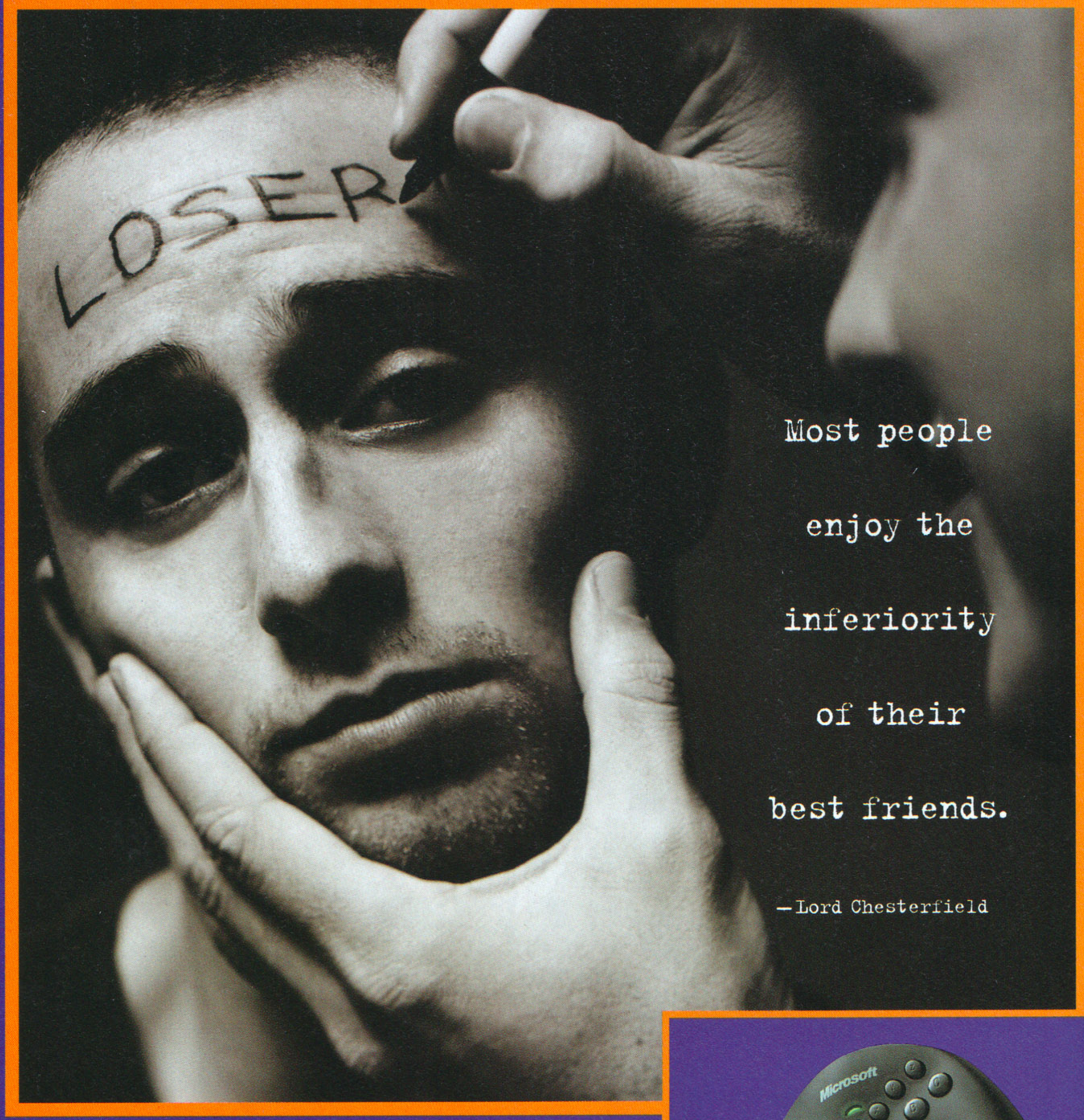
Behind the fanfare of 64-bit software lay a clutch of SNES cartridges, with Nintendo's SA1-powered, Satellaview-compatible *Bass Fishing No.1* joining Capcom's *Street Fighter Alpha 2*, Hudson's *Super Bomberman 5*, and Enix's *Dragon Quest 3* in an effort to keep the 16-bit fires burning. The Game Boy's continued popularity in Japan was confirmed by the arrival of several new carts, including Nintendo's second Gallery game, resurrecting four more *Game & Watch* titles.

Though Nintendo expended a lot of energy hammering home a message of reassurance to Nintendo 64 devotees, there were numerous disappointments which left showgoers feeling shortchanged. The 64DD's appearance in the flesh made the event worthwhile for some, but the absence of a truck-load of games to measure up to *Mario 64*'s brilliance — whether delivered on silicon or otherwise — is a point that Nintendo cannot ignore, and must take measures to rectify if the Nintendo 64 is to maintain the strength that it showed at launch. ng

Nintendo executives dutifully discuss the benefits of cartridges

NCL's N64 software line-up

Game	Publisher	Release (Japan)
Blastdozer	Nintendo	March '97
GoldenEye 007	Nintendo	TBA
Kirby's Air Ride	Nintendo	TBA
Mario Kart 64	Nintendo	Out now
Mother 3	Nintendo	TBA
Starfox 64	Nintendo	March '97
Star Wars: Shadows of the Empire	Nintendo	TBA
The Great Emperor of Jungle	Nintendo	Spring '98
Yoshi's Island 64	Nintendo	TBA
Turok: Dinosaur Hunter	Acclaim Japan	March '97
Virtual Pro Wrestling	Asmik	February '97
Pro Mah Jong Kiwame 64	Athena	January '97
Pro Baseball King	Imagineer	Out now
Holy Magic Century Eltale	Imagineer	April '97
J-League Dynamite Soccer 64	Imagineer	February '97
Go! Go! Trouble Makers	Enix	March '97
Wonder Project J2	Enix	Out now
Doraemon (working title)	Epoch	March '97
J-League Live 64	EA Victor	Out now
Hexen	Game Bank	January '97
Blade and Barrel	Kotobuki System	Out now
Mah Jong 64 (working title)	Koei	TBA
Goemon 64	Konami	TBA
Powerful Pro Baseball 4	Konami	TBA
Mah Jong Master	Konami	TBA
J-League Perfect Striker	Konami	TBA
Rev Limit	Seta	February '97
Wild Choppers	Seta	January '97
Super Real Island	Seta	May '97
St. Andrews	Seta	Out now
Like Thunder 'GO'	Seta	January '97
Morita's Shogi 64 (working title)	Seta	May '97
SDF Macross (working title)	Tomy	May '97
Cavalry Battle 3000	Japan System Supply	November '97
Chameleon Twist	Japan System Supply	November Æ97
Power League 64 (working title)	Hudson Soft	TBA
Dual Heroes	Hudson Soft	TBA
Pro Wrestling Game (working title)	Hudson Soft	TBA
New Bomberman	Hudson Soft	TBA
New Hagane (working title)	Hudson Soft	TBA
Super Robot Spirits	Banpresto	'97
Mission Impossible	Victor Interactive	April '97
Sonic Wings Assault	Video System	TBA
Mah Jong (working title)	Video System	TBA
Human Grand Prix	Human	Out now
64 Sumo (working title)	Bottom Up	May '97



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Microsoft

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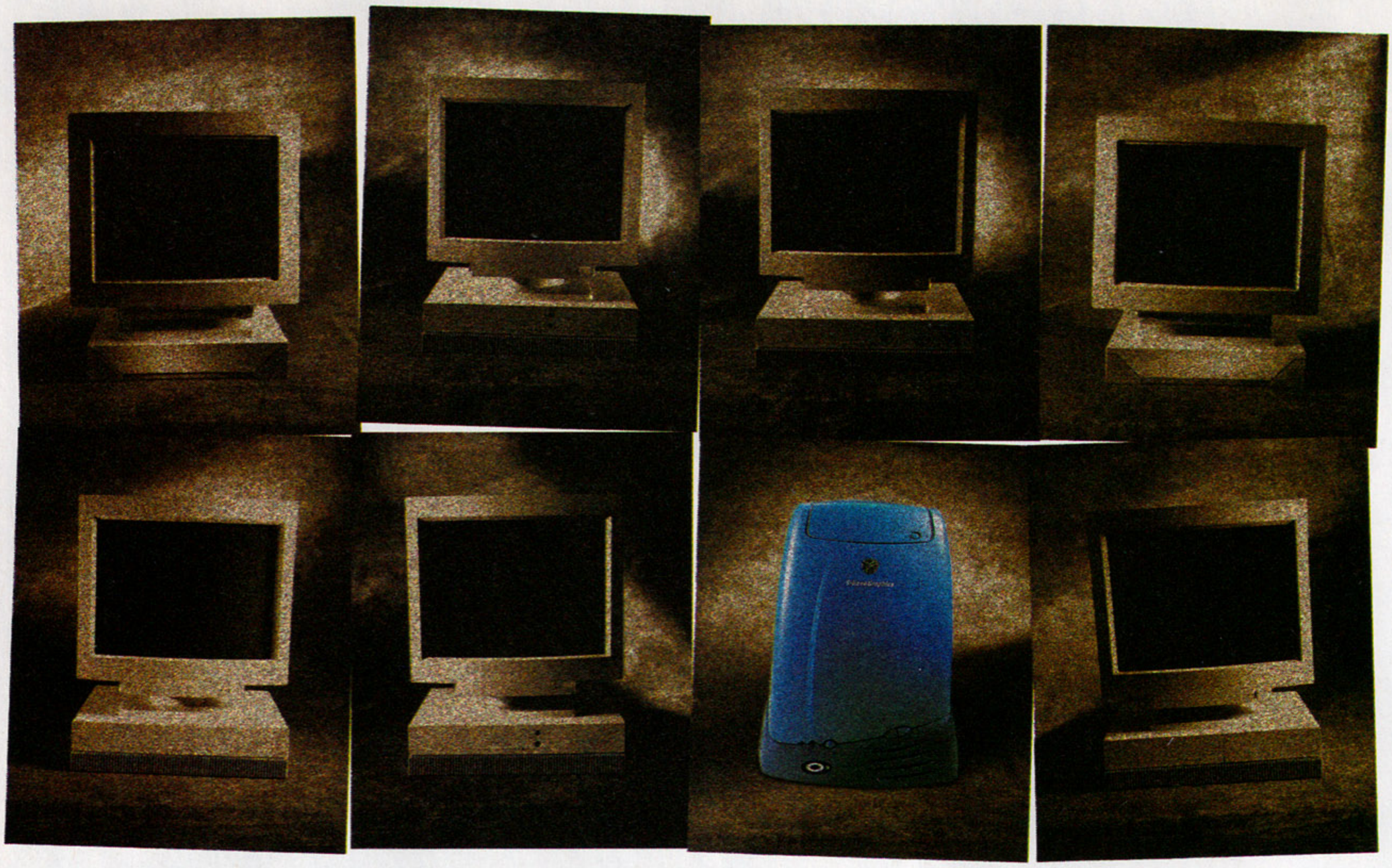

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2D or not 2D? Capcom answers with *SFIII*

Capcom's long-anticipated sequel shuns polygons for state-of-the-art 2D gameplay. But will U.S. gamers get it?

Capcom has officially unveiled its long-awaited *Street Fighter III* to audiences in Japan. In a television special, the game was presented alongside several other key Capcom releases such as *Warzard* (the first title to use the company's new CPS 3 coin-op system).

Next Generation was there, and secured an exclusive interview with Noritaka Funamizu, General Producer of Capcom's Development Division, and the man ultimately in charge of the *SFIII* project.

Noritaka Funamizu, General Producer of Capcom's Development Division is ultimately in charge of the *SFIII* project

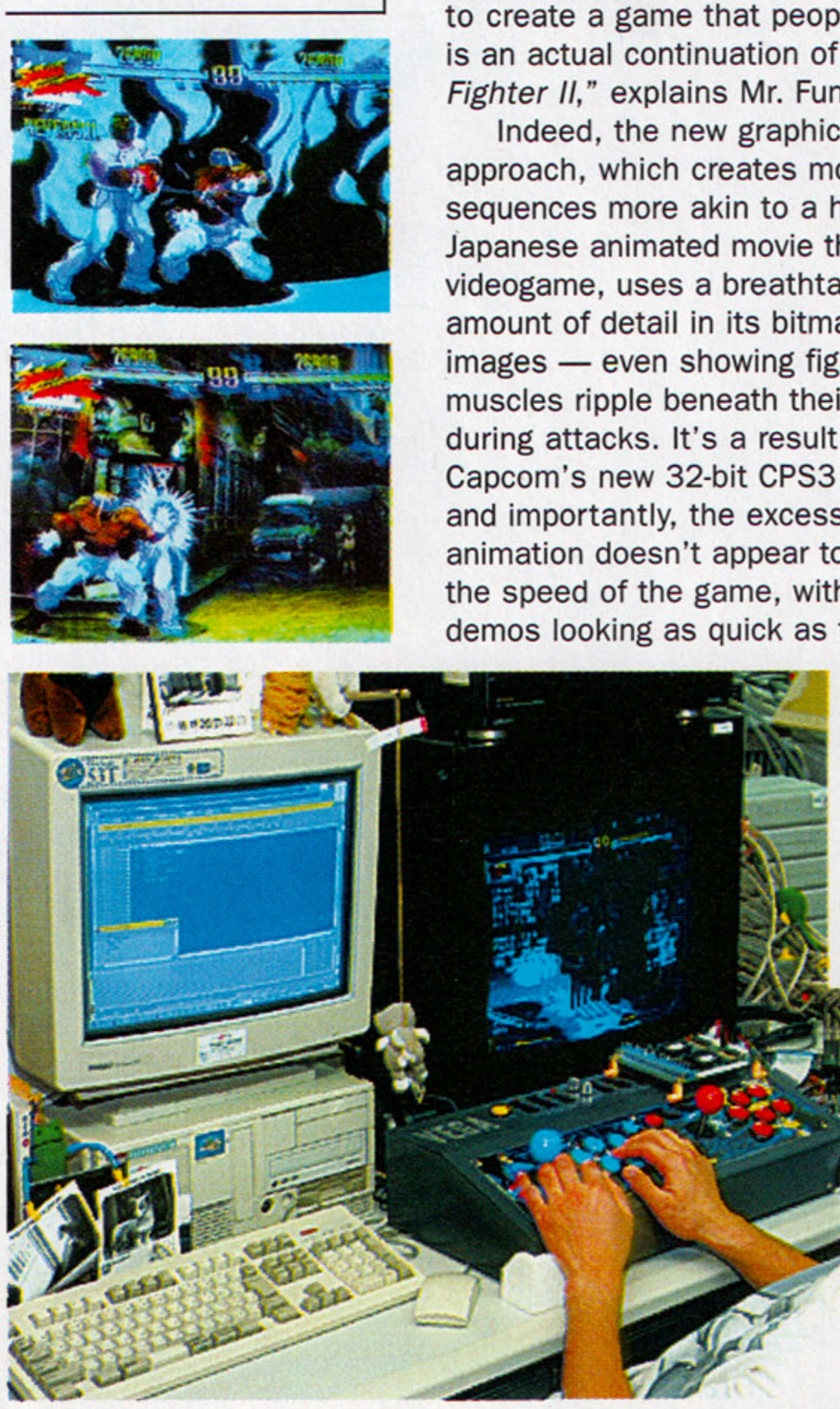
Japanese fans of the *SF* series will doubtless welcome another 2D title, but will westerners be so enthusiastic? Unfortunately, it's doubtful

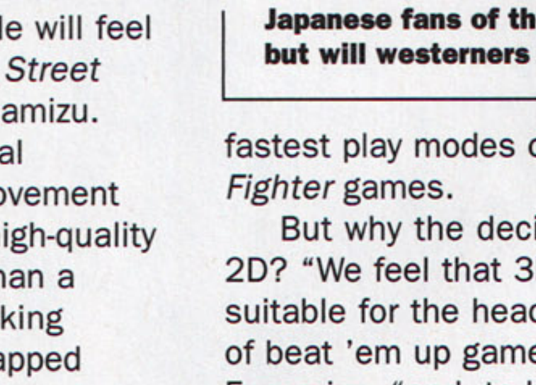
The latest episode in the *Street Fighter* legend will not be a polygon-based affair. Instead, it uses the same 2D format as its predecessors, albeit with a graphical quality far in excess of the likes of *Street Fighter Alpha 2*. "We wanted to create a game that people will feel is an actual continuation of *Street Fighter II*," explains Mr. Funamizu.

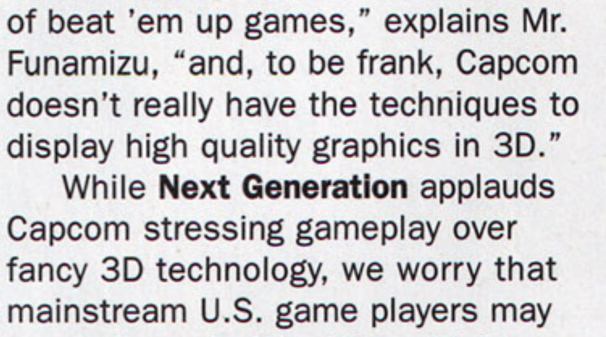
Indeed, the new graphical approach, which creates movement sequences more akin to a high-quality Japanese animated movie than a videogame, uses a breathtaking amount of detail in its bitmapped images — even showing fighters' muscles ripple beneath their skin during attacks. It's a result of Capcom's new 32-bit CPS3 hardware, and importantly, the excessive animation doesn't appear to hamper the speed of the game, with early demos looking as quick as the fastest play modes of previous *Street Fighter* games.

But why the decision to stick with 2D? "We feel that 3D is not really suitable for the head-to-head fighting of beat 'em up games," explains Mr. Funamizu, "and, to be frank, Capcom doesn't really have the techniques to display high quality graphics in 3D."

While **Next Generation** applauds Capcom stressing gameplay over fancy 3D technology, we worry that mainstream U.S. game players may not embrace it. Has *Virtua Fighter* changed the gaming landscape for ever? Time will tell. ng







The early *Street Fighter III* demo was shown to a few journalists at Capcom's development HQ in Osaka, Japan

New characters

Ken and Ryu are the only *SFII* charcaters to make it to *SFIII*. They are joined by the following new brawlers:

- **Ibuki: A Japanese female ninja of classic martial arts**
- **Elena: A black female master of the Brazillian martial art *capoeira* (she just uses her long legs)**
- **Necro: Created in a lab, this zombie/cyborg is made of rubber, has extendable limbs and "electrical" special moves**
- **Oro: A hermit dressed in rags, Oro boasts considerable psychic powers and martial arts**
- **Alex: A big, slow, blonde, American wrestler with a few, limited martial arts moves**
- **Dudley: A black English boxer (who wears a tuxedo)**
- **Yun: A fast, young Chinese (complete with backwards baseball cap) master of karate**
- **Sean: An American Ryu/Ken clone**

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breaking

Arcadia

All the latest arcade and coin-op news

by **Marcus Webb**

Marcus Webb is the editor-in-chief of *RePlay* magazine, the US' leading trade amusement magazine

Ratings Update

At press time, arcade operators expected "renewed action" by members of the U.S. Congress on the issue of coin-op videogame ratings "to begin by Christmas." Senator Lieberman and Senator Kohl, the federal government's longtime activists on game ratings, will be "working with the national PTA to get their warning out," said trade association AMOA.

This means that we can expect another round of lurid TV news stories about the dangers of kids playing violent, unrated games in arcades. State legislatures and city councils across America could feel pressure from PTAs and churches to ban "violent" videogames. Even before Christmas, in fact, the L.A. City Council passed a motion directing the L.A.P.D., city attorney, and chief legislative analyst to develop recommendations to "stop the spread of violence in arcade videogames." Trouble is, the police usually favor a simple ban which is far easier than imposing a sensible ratings system and then babysitting arcades to enforce the system.

Meanwhile, arcade trade associations are stepping up efforts to provide ratings stickers which individual game owners can voluntarily apply to games; and U.S. game factories and arcades are repeating their long-time request that Japanese manufacturers put ratings onscreen in the attract mode. This is an issue that will run and run, and there will be more on Senator Lieberman in next month's **Next Generation**.

Sega's **LBE** Delayed

Sega GameWorks has delayed the opening date for its first "Spielberg arcade" once again. Originally intended to open in fall of '96, the Seattle-area LBE site debut was then pushed to February of 1997 — and now, we hear, the target date is March. Follow-up Sega LBE sites are slated for Las Vegas and greater Los Angeles (Ontario Mills, an outlet mall) later in '97.

Play **Now**, Pay **Later**

Videogame king Namco is experimenting with a "play first, pay later" system at an arcade in Japan. Players use a magnetic-stripe card to register plays, then pay one consolidated sum upon exiting the site.

The system goes chain-wide in Japan this March, and if it works well, Namco might try it over here. Namco is America's largest arcade chain with over 450 stores nationwide.

Disney Entering **LBE** Biz

The Walt Disney Co. will open its first Club Disney site next February in Westlake Village, an upscale suburb of Los Angeles. They're calling it an LBE (location-based entertainment) site, which usually means linked, and sitdown video simulators — yet some savvy observers claim Disney isn't really going after the teenage market. Our guess is they want it all, teens plus kiddies plus parents. A spokesperson at Disney's Regional Entertainment Division said additional Club Disney sites are expected to follow nationwide, "but we don't know yet how many, where or when."

In Westlake, the freestanding 24,000 sq. ft. shell is already up, amidst a lavish shopping complex with a huge multiplex cinema, themed restaurants, and book superstores. Disney spokespeople say Club Disney will offer "more than a dozen play environments" within "four themed areas, each based on characters, stories, and values of classic Disney films." Club Disney will also include six birthday party rooms, a fast-food restaurant, and a Disney merchandise shop. It will also offer YMCA or community center type functions such as art workshops, parent/child classes and multimedial "Edventures" (just think of the daytime business they can generate by booking school classes on field trips).

Konami's **5**-in-**1**

Baseball, anyone? How about football, basketball, golf, and bowling — all in one videogame? Konami's new equipment comes complete with tournament mode so you can try to "beat the champ" in all five sports.

You want depth? Lots of different skills and difficulty levels are available in each sport: football has punting from different angles and distances; passing offers specific moving targets. Golf tests your long drive, straight drive, and ability to compensate for wind as you vie to get closest to the pin. Basketball has a free throw time limit contest, followed by "around the world" and a moving basket. Roll for strikes and spares in the bowling lane, hook for accuracy, then start "flash" rounds. Baseball offers endlessly changing pitch speeds as you go for a home run.

Home Run Derby Gets **Hot**

Interactive Light has a massive hit on its hands with *Power Home Run Derby*. It's a full-sized video batting cage where your full-sized bat hits a "virtual" baseball — with the pitch and the baseball diamond shown on an oversized TV.

The bat is covered with highly reflective material (in bright environments, it looks like a Star Wars lightsword). Infrared sensors are built into the unit which measure the speed, tilt, and angle of your swing. This data is fed into the computer which instantly shows how you "would have hit" the ball. They've already got hundreds of units in American arcades (check out the Nickels & Dimes chain) and hundreds more around the world — and now that they've been endorsed by the Louisville Slugger bat makers, how could things get better? Well, they just did — by the addition of a two-player mode.

Interactive Light has added an expansion unit which lets a second player stand outside the batting cage to use a trackball which controls the virtual pitch! The expansion is called "Pitcher's Duel" and it brings a delighted grin to the face of everyone who's tried it.

Starting next summer you'll find special versions of this game, customized for your home team, in major ballparks beginning with Boston's Fenway. Batter up!

[DIAGNOSIS : MIND BLOCK]

SYMPTOMS :

› Uncontrollable compulsion to play Super Puzzle Fighter

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NEXT GENERATION
Oct. '96

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breaking

SONY HALTS PSYGNOSIS SALE

NEWSLINE: Sony has decided not to sell off its highly regarded games subsidiary, Psygnosis. The hardware giant had been hawking the British developer and publisher the past six months, but decided to take it off the market.

Sony now feels that it would lose out in the long run if it sells Psygnosis, despite the huge short-term profits such a deal would yield. Bids from third parties, which reportedly started at $240 million, have all been turned down. Firms like Marvel Comics and a number of venture capitalists all expressed interest. Psygnosis turned down flat any and all overtures from companies already operating in the game business.

BOTTOMLINE: During the six-month adventure, relations between the fiercely independent Psygnosis and its more sober parent improved. The original sale announcement came soon after Psygnosis expressed its intention to spread its publishing activities beyond PlayStation — even to the extent of embracing the rival Saturn. Also, differences in corporate cultures are said to have caused day-to-day internal difficulties.

Sony now appears to have agreed to a hands-off approach and is reconciled with Psygnosis' multi-format ambitions. Psygnosis' high profile season — with such games as *Formula One*, *Wipeout 2097*, and *Destruction Derby 2* — will have helped persuade Sony to hold on tight.

DMA BEDS UP WITH EPIC

NEWSLINE: DMA Design (of *Lemmings* fame) and Epic Megagames (of *Unreal* fame) have formed a "strategic alliance" to share development resources. The partnering includes the sharing of two sound studios, a motion-capture studio, and offices in the U.K. and the U.S.

BOTTOMLINE: DMA has extensive experience in console development and is currently working on several Nintendo 64 and PlayStation projects. Epic has what is likely to be the next big Internet phenomenon in the works in the form of *Unreal* and wants to put it on as many platforms as possible.

In addition, DMA hopes to benefit from Epic's distribution and PC experience. Several DMA projects will be converted to PC, while several Epic projects will appear on N64 and PlayStation. Furthermore, this deal is likely to be followed by a complete merging of the two companies resulting in a considerably more influential entity.

NINTENDO'S DOWNLOAD DREAM

NEWSLINE: Nintendo is releasing a new peripheral for Super NES in Japan that will enable downloading of games via phone lines.

BOTTOMLINE: The new device, which is essentially a flash ROM cart and costs around $50, will dramatically reduce the manufacturing and distribution costs of future Super NES titles.

Videogame terminals at retail locations will enable customers to pick the game they wish to burn upon their cart at a cost of between $10 to $40 dollars. The new system enable retailers to free up space for additional Nintendo 64 products, while still meeting the seemingly insatiable Japanese demand for 16-bit gameplay.

SEGA SLAMS TRST

NEWSLINE: Sega of America's Ted Hoff slammed recent market research which had put the Saturn some way adrift of rival platforms such as Nintendo 64 and PlayStation, saying they were not representative of the larger picture.

"The TRST reports we all get — and I talked to them about this — all took place in the last week in September instead of say on the first and third week. The report showed Nintendo taking a 63% share, but that was only at a snapshot time over the two days of the month when the Nintendo 64 was launched."

He added: "The key is staying power. This is a marathon we are in. This business has gone from 1972 to 1997; we're in our 25th year. For Sony or Nintendo to take a snapshot 50 yards into a 25-mile marathon is not very valid. You've got to take the ongoing movement of this business over a platform life cycle. A declaration of a win when you've only run a hundred years is not valid."

BOTTOMLINE: The TRST figures (as near as the videogame industry gets to a means of counting sales that everyone agrees on — at least, up until now) that gave Nintendo such a huge market-share for September also appeared to give Sega a share of the market similar to that of Atari in 1995. Such a number would have been disastrous — if strictly true. Sega is annoyed that the info-gathering took place in the eye of the storm surrounding Nintendo 64's launch and on the eve of its own much rumored announcement of a pack-in. Sega is expected to release its own numbers in the near future.

Sega does have a valid point — but we don't see Sony bitching about it...

The business news that affects the games you play

by **Christian Svensson**

Christian Svensson is the assistant editor and webmaster at Next Generation Online which can be found at http://www.next-generation.com/

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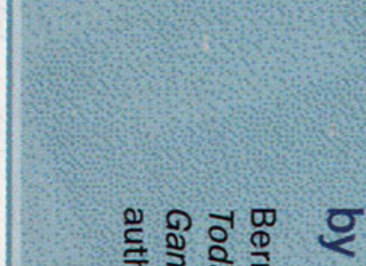
Gaming on the Internet

LAN WARS

by Bernard Yee



Bernard Yee has contributed to *USA Today* and writes regularly for *PC Gamer*, *PC Magazine*, and has authored several books on gaming

The death cult strikes online gaming!

Pop culture fanatics will remember the name of the patron goddess of the death cult who threatened to make Indiana Jones feel disheartened in *Indiana Jones and the Temple of Doom*, right? Kali is the Hindu goddess associated with the forces of destruction. You might agree after checking out Kali for yourself at www.axis.com/kali.

Most of the games you can play online have some network play component as well. A typical network might be able to communicate at around 10 megabits per second (Mbps), and newer networks run at 100 Mbps; consider that my ISDN line only chugs through at about 115Kbps, and your phone line struggles at around 33.6Kbps or less. While it's not hard to set up a LAN, you will need space, money for a couple of computers, the cables, the network cards, and some time and patience.

Windows 95 is very LAN friendly, but before Windows 95 (and Windows for Workgroups 3.11), Novell ruled the LANdscape. Novell's Netware used the IPX network protocol for LANs. A protocol is simply the agreed-upon format by which all the computers on the network find and talk to each other. IPX is still a very popular protocol supported by all networks, including Microsoft's Windows — though NETBEUI is Microsoft's protocol. The Internet uses a TCP/IP — another matter entirely. All three are supported under Windows 95. Most LAN games support IPX networking.

So what does all this have to do with online gaming? Well, Kali started out as a means for *Doom* players to play online through a program called *Frag*, written by Jay Cotton. Kali is basically the Internet's home-grown version of online gaming. A smart programmer invented a tool to utilize the TCP/IP connections of the Internet and convince it to talk to your game's IPX connectivity. Kali makes your Internet connection seem like an IPX connection to your network game. Kali95 — running under the network-friendly Windows 95 — is a must-have for any serious online gamer.

Kali has more than 50,000 users worldwide. You pay $20 for unlimited use, and it is distributed in a limited shareware version; send in your money and get your authorization code. Kali competes with TEN, Mpath, DWANGO, and other online game services that give you a place to play network/online games. It does not compete with online-only games like *Air Warrior* or *Ultima Online*. So it's $20 — a one-time fee — and your fee for your ISP, probably no more than $20/month. Then you can connect IPX-enabled games, such as *Warcraft 2*, to other Kali players.

Kali maintains a list of Kali servers that are up and running different games on the Internet, and you get updated lists regularly. Kali has a one-time fee and supports Mac, Wintel machines, even OS/2. Support? Try *Apache*, *Big Red Racing*, *Command & Conquer*, *Mission Force: Cyberstorm*, *Deadlock*, *Descent/Descent 2*, *Doom/Doom II*, *Duke Nukem 3D*, *EF2000*, *Fire Fight*, *Hellbender*, *Heretic*, *Hexen*, *Links LS*, *Mechwarrior 2*, *Monster Truck Madness*, *Mortal Kombat 3*, *Nascar Racing*, *NetDuel*, *Quake*, *Rise of the Triad*, *Shattered Steel*, *Super Karts*, *Terminal Velocity*, *Top Gun*, *VR Pool*, and *Warcraft/Warcraft 2* — just to name the list off Kali's home page. There are others.

What benefits do subscriber services such as Mpath offer? Easy connectivity, unified front-end software, ease of navigation, latency reduction, and online-only games (TEN's *Darksun*). Kali has more games than any service, and the price is right. To keep gamers, services will have to offer more than networkable games online. Kali does. Subversive, ain't it? God bless the Internet.

Hardware catch? Yep. 56Kbps modem technology is coming from companies like US Robotics. How? Well, the service has to be wired properly (AOL has committed to providing 56Kbps access in major cities), and you need a new modem (some modems purchased late in '96 will be upgradable). It uses a regular phone line with a technology called asymmetric transmission — the regular two-way connection is limited to a maximum of about 35Kbps. This makes your uplink "shut up" and pours information downlink to you.

We'll see if this no-brainer upgrade for gaming grunts will satisfy power surfers with ISDN. But most gamers should love it. ng

NG Online update

http://www.next-generation.com

• Thousands of people visit **Next Generation**'s daily news website every day. Why? Because it's the most comprehensive and exciting source of news, previews, features, reviews, opinions, contests and downloadable demos on the Internet.

• Every weekday, the site is completely updated, bringing you all the info from inside the game industry. Hard news and cold analysis sit side-by-side with authoritative reviews and exclusive previews.

• Every day there's a new chance to win software. Every day there is a new playable demo. We review every game on the same day that it hits the stores. Each day your questions are answered in a Q&A page. And every day you can contribute to the site via forums or letters pages. All this is absolutely free.

• But that's just the start. *Next Generation Online* is the sister site to four other videogame sites on the Imagine Games network covering all your favorite platforms and subjects. These are also updated every day.

• And each day one of these sites holds a special event. See the ad later in this issue to find out what this month holds on the Online Events calendar.

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NEXT GENERATION

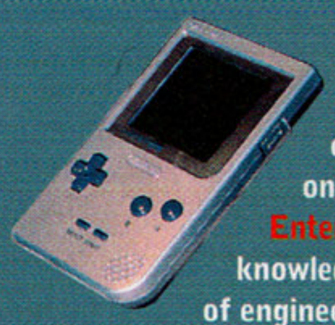
breaking

In the studio

Games in development around the world

Yu Suzuki, Sega's game guru and head of arcade development has announced that he personally will be overseeing the translation of *Virtua Fighter 3* from arcade to Saturn. His team has been scrutinizing the arcade version and have concluded that there's no technical reason why it can't be transferred to the home system. He told reporters: "The question was 'Can we actually do it?' but after studying the matter for three months we concluded that technically, the possibility is there. Department AM2 and I have the responsibility of making this possible, so please expect the best."

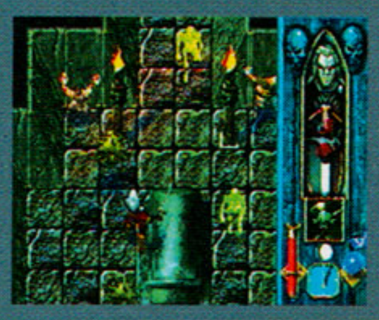
Nintendo's former hardware design guru **Gumpei Yokoi** has set up his own company. The man responsible for the design of Game & Watch, GameBoy, and Virtual Boy quit Nintendo in the summer. Now, his new company — a small R & D team called **Koto** — is working on half a dozen secret projects, none of which are games.



Author **Tom Clancy** has formed a new gaming company which will concentrate on developing online multiplayer strategy epics. **Red Storm Entertainment** will utilize Clancy's military knowledge and nose for a good story, with the talents of engineers and artists from **Virtus Studios**.

At the public launch, Clancy commented: "This is a whole new world for storytellers. Better than that, it's a way for readers to do the telling. Our goal is to define the state of the art in computer games and take it further from there."

Legacy of Kain — one of America's few homegrown RPGs — will not be released on Saturn. The highly regarded **Crystal Dynamics** game was quickly snapped up by Activision for PlayStation, but despite the Saturn version being 100% complete, no publisher was prepared to take a risk on what's perceived as a risky Saturn market.



"Quite frankly I don't know why a publisher has not been found," offered Steve Groll for Crystal Dynamics. "I think maybe they are afraid of the Saturn's smaller user base."

In a move seemingly from nowhere, **Epic MegaGames** and Scotland-based DMA Design (the company responsible for Lemmings, and one of the first members of Nintendo's N64 "Dream Team") have formed a "tight" partnership in which the two companies will "share resources and technologies." Simultaneously, both companies revealed plans to develop for Nintendo 64 and PlayStation in addition to PC and Macintosh — look for DMA Design to help with the conversion to Nintendo 64 of *Unreal*, this month's cover game (see page 70).

Enix is beavering away on a conversion of *Wonder Project J2* for PlayStation. Once thought to be a Nintendo 64 exclusive, the Enix "girl-simulator" will be appearing on the Sony machine later this year. The provisionally titled "Version 2.0" will contain animated sequences too memory-intensive for the cart-based Nintendo 64 game.

Although Wonder Project isn't seen as a hugely important title for the N64, Enix was keen to display continued allegiance to Nintendo with the announcement of *Yuke Yuke Trouble Maker*, an action game programmed by Treasure.

Datebook

January

The Consumer Electronics Show (CES) takes place in Las Vegas at the Las Vegas Convention Center January 9 to 12. For more information, contact: Consumer Electronics Manufacturers Association, 2500 Wilson Blvd., Arlington, VA 22201-3834 USA. For more information, call (703) 907-7600 or fax: (703) 907-7601. Visit the web page at http://www.eia.org/cema.

SGI and Seybold announce **World Movers: The VRML 2.0 Developers Conference**. The event will take place January 30 to 31 at the ANA Hotel in San Francisco, CA. Additional information can be found at http://worldmovers.org.

April

Computer Game Developer's Conference (CGDC) from April 25 to 29 will be at the Santa Clara Convention Center, Silicon Valley, CA. The show is for programmers, writers, producers, product managers, artists, musicians, and assorted supergeeks. Send your vitals (name, title, company name, address, and so on) to cgdc@mfi.com. To exhibit, call Gina Bovero at (415) 356-3406 or e-mail gbovero@mfi.com. Visit the web site at http://www.cgdc.com. To join the Computer Game Developer's Association, call (415) 948-CGDC or fax (415) 948-2744.

Seybold Seminars comes to New York. The Conference will be April 21 to 25; Expo will be April 23 to 25. Seybold New York will take place in the Javits Convention Center in Manhattan. For more info, visit Seybold's web site at http://www.seyboldseminars.com/

May

Multimedia 97 Exposition and Forum will take place May 6 to 9 at the Metropolitan Toronto Convention Center, Toronto, Canada. The show features five major components: Multimedia Communications, Virtual Reality World, VICOM, Showcase On Production, and Electronic Design. For more information, call (905) 660-2491, fax (905) 660-2492, or e-mail moreinfo@multimedia.ca. Visit the official WWW-site at http://multimedia.magic.ca to get show details.

June

The one and only **Electronic Entertainment Exposition** (aka **E3**) doesn't take place in Los Angeles but in Atlanta on June 19 through June 21, 1997. E3 is open to the public for one day. Visit http://www.mha.com/e3/ for more information on E3.

September

Seybold San Francisco: Seybold's Conference is from Sept 29 to October 3. Seybold Exposition will take place from October 1 to 3. For more info, visit Seybold at http://www.seyboldseminars.com/

SHOW ORGANIZERS: If your show isn't listed here it's because we simply don't know about it. But we'd really like to know about it. Please fax us at (415) 468-4686; e-mail us at ngonline@imagine-inc.com; or write us at DateBook, **Next Generation**, 150 North Hill Drive, Brisbane, CA 94005.

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NG 1 • 3DO's Trip Hawkins interviewed • A comprehensive look at all the next generation systems • The Violence Tapes: Four of the world's most controversial game developers in one virtual room

NG 2 • Shigeru Miyamoto (creator of *Mario*) interviewed • Saturn: The complete story so far• Gaming on the information superhighway (aka "Joyriding") • Revival of the Fittest: Why is retro gaming so big?

NG 3 • Sega's Tom Kalinske quizzed • Does PlayStation live up to the hype? • What's wrong with the PC? (part one) • Game music feature

NG 4 • Nolan Bushnell (the founder of Atari) interviewed • Atari: from boom to bust, boom again (and then bust again) • Gumpei Yokoi (inventor of Virtual Boy) quizzed • What's wrong with the PC? (part two)

NG 5 • Sony's Steve Race interviewed • Nintendo 64: The Story So Far • Apple: The Ripe Stuff. The story behind Apple's Pippin

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NG 7 • Sam Tramiel: Atari talks back • 3DO: Past, Present, and Future. What has 3DO achieved so far, and what is its future? • Electronic Entertainment Exposition (E^3) — the definitive 1995 show report

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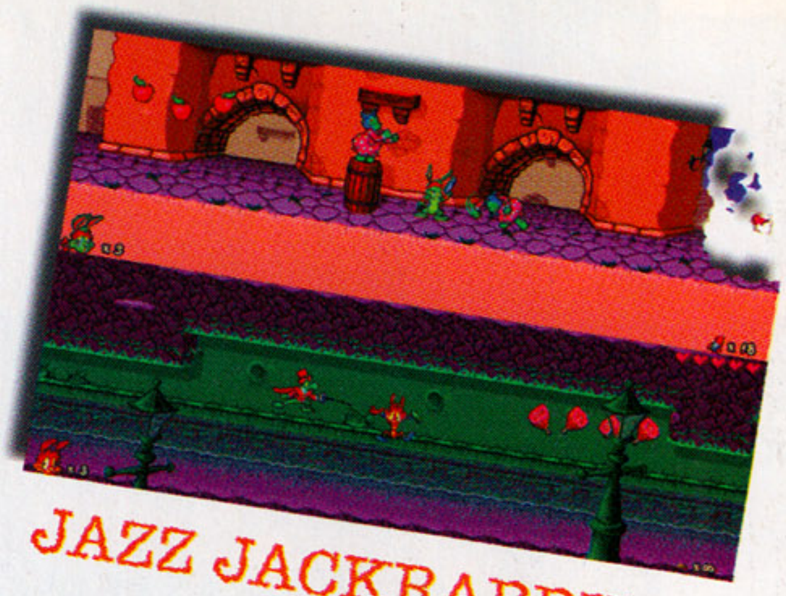

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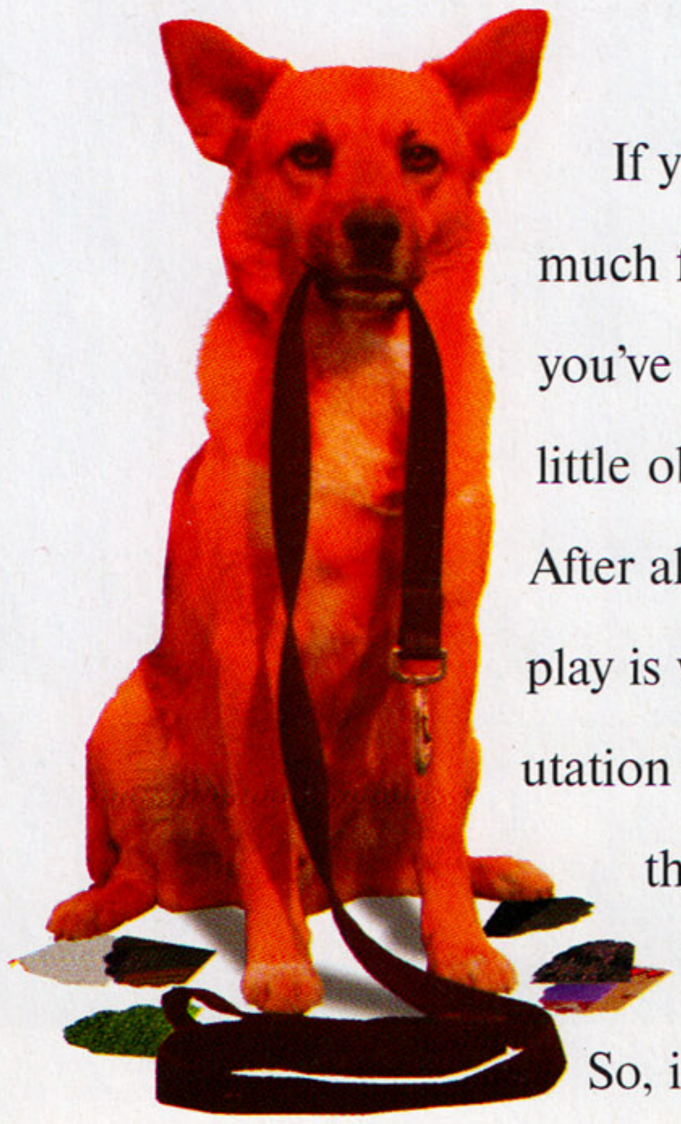

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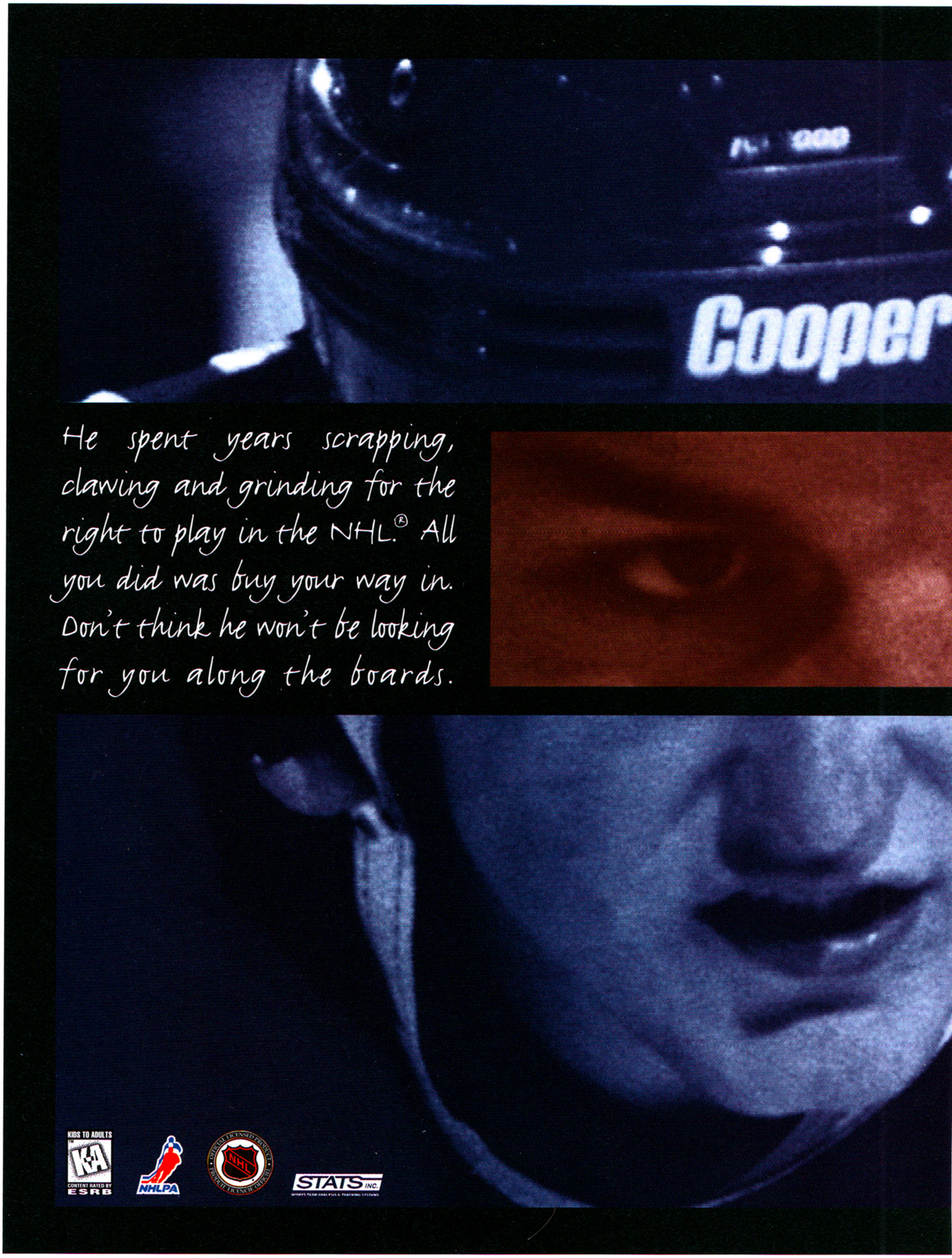

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THE TRUTH IS IN HERE

NEXT GENERATION MAGAZINE

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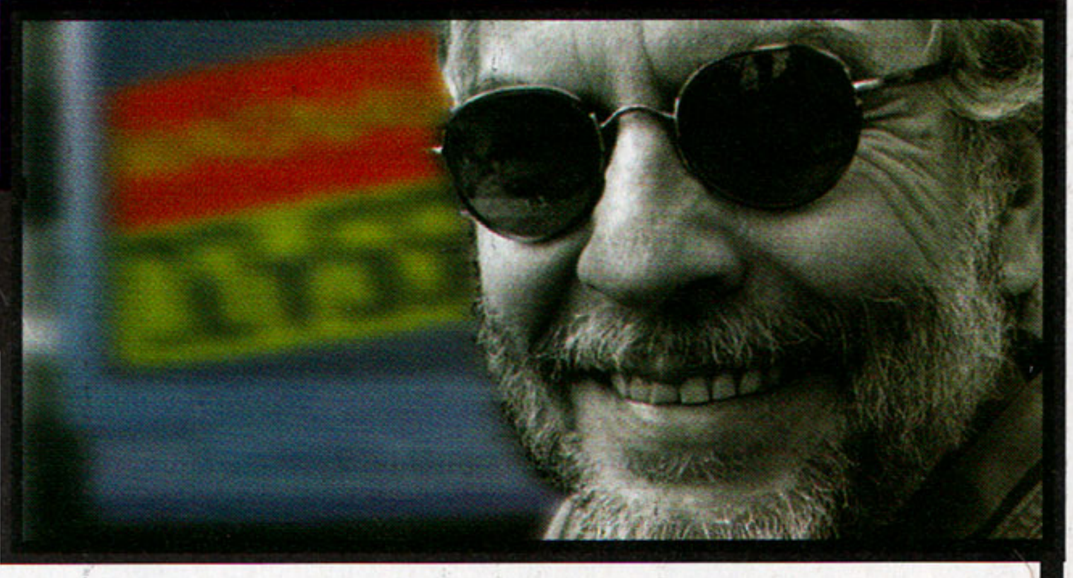
VIDEOGAME Myths: FACT OR FICTION?

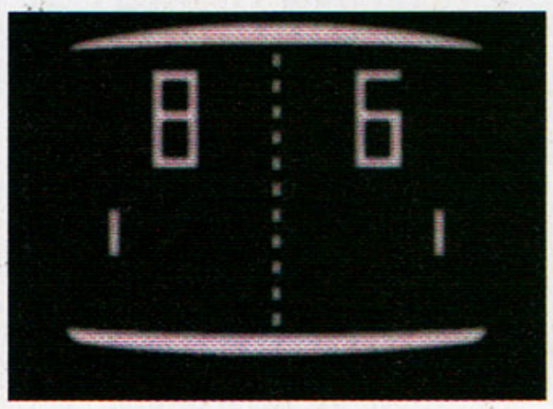
Rumors, secrets, cover-ups, and scandals — in the 25 years since videogames began, fact has often been stranger than fiction. But which of the many videogame myths are based on the truth, and which are pure legend? A "Next Files" (groan) report:

DID NOLAN BUSHNELL - OR ONE OF HIS ASSOCIATES - STEAL PONG?

Did a Magnavox prototype "inspire" an Atari employee to invent *Pong*?



The Myth:
Magnavox demonstrated a working prototype of the Odyssey, the first home videogame system, to dealers around the country. When system was shown in the San Francisco area, Nolan Bushnell saw it, copied it and turned it into *Pong*.



Just what put the original idea for *Pong* in Nolan Bushnell's head? The world will probably never know

The Truth:
Magnavox sent the Odyssey to several private showings before publicly unveiling it in New York. The first show was on May 3, 1972, in Phoenix, Arizona. Three weeks later, the Odyssey was demonstrated at a trade show in Burlingame, outside of San Francisco. Magnavox has always maintained that Bushnell attended the show and tested the Odyssey, which played, basically, *Pong*.

There is no way to prove Bushnell attended the show. He says he didn't, but a couple of Atari's early employees believe he was there. Even if he did not go, he could easily have heard about the Odyssey from a friend who did. Magnavox sued Atari, but the suit was settled out of court, with a result that seemed favorable to Magnavox at the time, but paid off big for Atari.

What is known is that Atari paid royalties to Magnavox for *Pong*, and that Bushnell, at a trade show years later (after he had secured the title "the father of videogames" for himself, thanks to *Pong*) introduced Ralph Baer, who had created the Magnavox system, as the "father of videogames." For a complete rundown on this myth, see "The Great Videogame Swindle" in **NG 23**.

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FROM RUSSIA WITH LITIGATION

The story about how the landmark Russian puzzler *Tetris* came in from the cold is as fraught with twists and turns as the best spy novel

The Myth:
Soviet mathematician Alexey Pajitnov created *Tetris*, and then a selection of Soviet-based interests sold the same rights to a variety of Western interests, including Nintendo, Spectrum Holobyte, Atari, and U.K.-based Mirrorsoft.

The Truth:
Nobody knows the real truth (or, at least, those who do aren't telling), but here's how the litigation turned out. After creating *Tetris* with the help of other Soviet enthusiasts, Pajitnov began earnest negotiations with Robert Stein, founder of a European software company called Andromeda. Thinking he had a solid deal, Stein then sold the rights to Mirrorsoft and Spectrum HoloByte. When Pajitnov informed officials at Elorg (short for Electronorgtechnica—the Soviet ministry governing the import and export of computer software and hardware) about the deal, they usurped control from him.

Stein ended up controlling the computer rights of *Tetris*, which he mistakenly thought included television (videogame) rights. He sold them to Mirrorsoft and Spectrum HoloByte. Mirrorsoft than offered American coin-op and handheld rights to Atari Games and Japanese coin-op rights to Sega. In the meantime, Spectrum HoloByte negotiated with Henk Rogers, an independent businessman with ties to Nintendo, to sell the Japanese computer and television rights. Ed Logg, the man who created *Asteroids*, then programmed an NES version of *Tetris* for Tengen, Atari Games' consumer games subsidiary. Tengen *Tetris* went on sale in 1989.

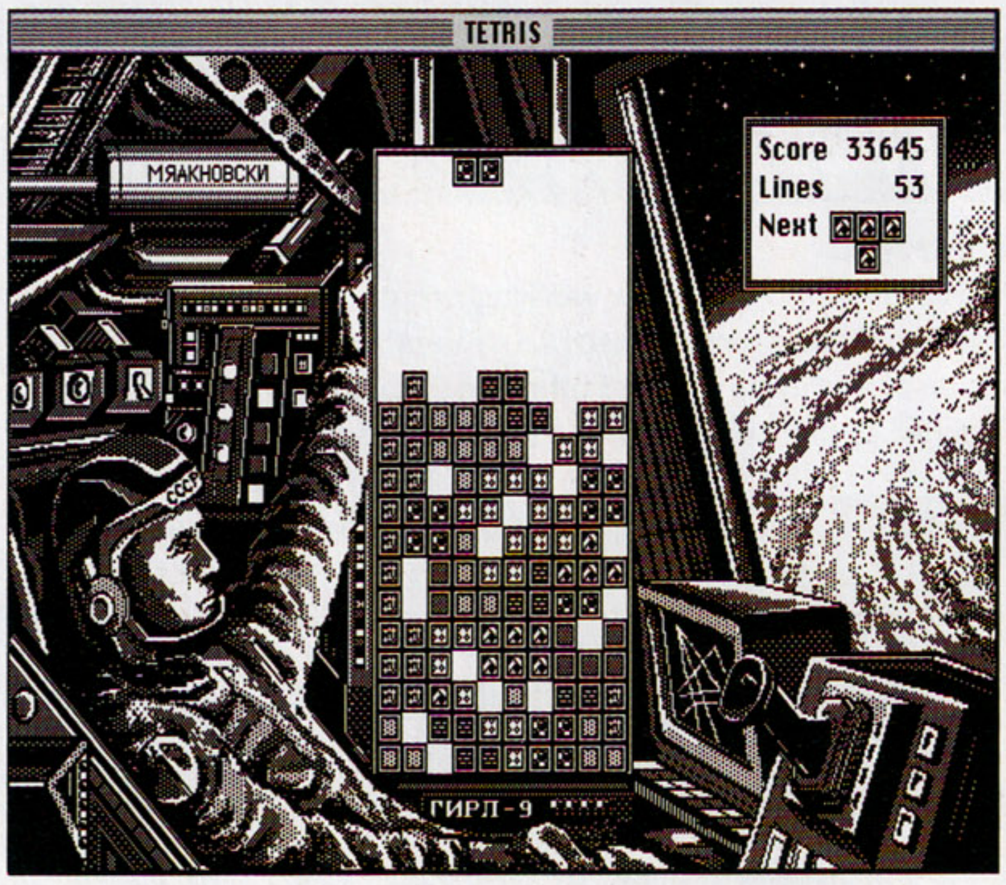
Here's the tricky part. Nintendo of America — desperate to get *Tetris* for Game Boy and NES, worldwide — challenged Mirrorsoft's claim to both the handheld and television rights to *Tetris*. On February 24, 1989, Elorg sent a letter to Rogers stating that no one controlled the television and handheld rights to the game. Rogers obtained the handheld rights, then sold them to Nintendo. Next, Howard Lincoln and Minoru Arakawa of Nintendo of America flew to Moscow and secured the television rights to the game. Atari and Mirrorsoft did not give up. Claiming that the NES was a computer (and thus covered under Mirrorsoft's arrangement with Elorg), Atari sued Nintendo for control of the game. Nintendo won the case and got a court order that forced Tengen to stop selling *Tetris*.

Although the most popular account of the suit, in David Scheff's *Game Over*, takes Nintendo's side, it should be noted that at the time, Nintendo was planning to introduce (and had announced) a keyboard, disk drive, and BASIC language cart for the NES. So was the NES a computer? The judge, who was not someone that most people would descibe as "techno-savvy" said no. "It was a travesty," says one former Atari staffer, who asked not to be named.

Still, the licensing snafus were not so much the result of dishonesty on anyone's part, except maybe the budding capitalists at Elorg. "Obviously the Russians double dipped," says former Atari senior vice president of sales and marketing Ted Hoff. "At least two companies were in negotiation for licensing simultaneously and the product was licensed to two companies. We had manufactured *Tetris* and put it on the market. In fact, it became the number one seller on the Nintendo platform." In the end, Tengen was stuck with 268,000 *Tetris* cartridges for the NES that eventually had to be destroyed. Because the Tengen version was so superior to the Nintendo version, it developed a black market following. Used versions of Tengen *Tetris* often sold for as much as $300.

In 1996, the rights to the original *Tetris* reverted back to Alexey Pajitnov, the only man who did not make millions of dollars from the game. Pajitnov and Rogers then formed the *Tetris Company* in an effort to build off the game's continuing popularity.

Most recently, Pajitnov (who had been creating — or at least endorsing — puzzle games for Spectrum Holobyte) has made the move to Seattle to work for the games division at software giant Microsoft, where he will no doubt attempt to repeat his design success for Bill Gates.



Quite possibly the most pure video or computer game of all time, *Tetris* is maddeningly addictive on every platform, from the Mac to the Game Boy. The office Mac high score is in the 90,000 range

ET: THE EXTRA 200,000 CARTRIDGES?

Were there more E.T. cartridges manufactured for the Atari 2600 VCS than there were systems in existence? Did the unsold cartridges end up getting buried in a landfill in the New Mexico desert?

The Myth:
In the late 1970s, executives at Atari were so confident that a game based on *E.T.* would be a best-seller that they manufactured more *E.T.* cartridges than there were Atari VCS (also known as the 2600) game consoles. When the game sold poorly, Atari buried millions of copies of *E.T.* in a desert landfill.

The Truth:
Atari actually made a mere 6 million tediously dull *E.T.* cartridges. At the time, the installed base of the Video Computer System was over 20 million. But according to Lyle Rains, former chief engineer of Atari's coin-op division, the reliable rumor around Atari was that there were more *E.T.* cartridges than there were VCSs *in active use*. It should be noted that the VCS came out in 1977. By the time *E.T.* came out, the VCS was six years old and a lot of older sets had been retired and relegated to closets and garages.

According to Ray Kassar, president of Atari in 1983 (and the man blamed by some for the company's demise), the story about burying *E.T.* and *Pac Man* cartridges in the desert is an "absolute lie." He claims they were dumped in discount bins, not the desert. Several other Atari executives have a very different recollection.

"Bullshit!" responds one ex-Atari vice president. "They drove 14 freight trucks into New Mexico, dug a pit, dumped millions of cartridges, drove a steam roller over them, then poured cement on top."

Regardless of how many were dumped in landfills, enough ended up in discount bins to start a price war that directly led (along with mass amounts of crummy software) to the first videogame crash.

WILLIAMS "CEMENTS" REPUTATION AS BALL BREAKER

Did Williams steam-roll (literally) a bunch of *Marble Madness 2* boards to destroy inventory?

The Myth:
When Williams purchased TWI (a.k.a. Atari Coin-op), it joined an exclusive group (Atari, with *E.T.*, and Apple with the ill-fated "Twiggy" drive), by physically demolishing hardware (*Marble Madness* 2 arcade boards, in the parking lot, with a steam roller), to destroy inventory (legally) for tax purposes.

The Truth:
According to Mark Cerny, who created *Marble Madness*, *Marble Madness* 2 was never manufactured. The prototype performed poorly at test locations, and Atari decided against manufacturing the game. At most 10 or 12 boards exist.

GAMEBOY & WALKMAN - SEPARATED AT BIRTH?

Did Sony help design NES, Super NES, and Nintendo 64?

The Myth:
Nintendo uses Sony chips in its game consoles! This means Sony has had a hand in the design of every Nintendo machine yet.

The Truth:
It's true, there are Sony chips in the NES and Super NES, but they're just the sound chips. The Super NES in particular benefits from a Sony stereo chip that gives it much better sound quality than the proprietary chips in the Sega Genesis. Only the most the most depraved and ignorant UseNet denizens have managed to concoct conspiracy theories whereby the presence of a Sony chip gives Sony any design credit in a machine.

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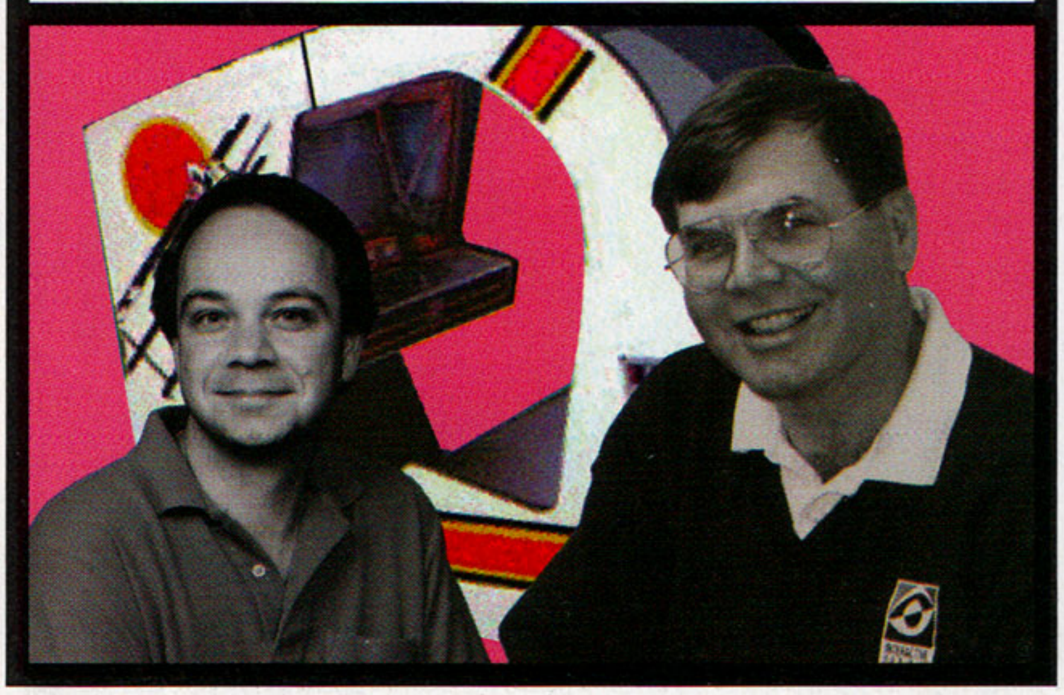
HEADS I WIN, TAILS YOU START A GAME COMPANY

Was Microprose started on a bet?

The Myth:
Long time friends and pilots Sid Meier and Bill Stealey were playing the Atari coin-op game *Red Baron*. When Meier bragged that he could make a better game, Stealey bet he couldn't, and said, "You make a better game than this, and I'll market it."

The Truth:
"I met Bill at a business meeting in Las Vegas," says Sid Meier. "They had an arcade room and we played this old *Red Baron* game. As I recall, I had a higher score then he did..." Stealey continues, "The high score on the machine was something like 32,000 and I scored 35,000. Sid marched right past me with 62,000. As a pilot, that hurt my pride, so when he said that the game wasn't very good and he could make a better one, I bet him that he couldn't and told him if he made a better game, I'd sell it." Meier came to Stealey a few months later with a game called *Hellcat Ace*.

When he tried the game, Stealey was not impressed. He made suggestions which Meier incorporated. "He had some good suggestions about things, like the bullets and the turn rate and things like that," Meier remembers. Once Meier made the changes, Stealey agreed that *Hellcat Ace* was a winning game. He began marketing it, and Microprose was born. Meier recently left MicroProse to found Firaxis (affiliated to Electronic Arts). Stealey left after the sale of Microprose to Spectrum Holobyte and is now chairman (and chief playtester) at Interactive Magic.



"FATHER" OF VIDEO-GAMES IN PATERNITY SUIT SHOCKER!

OK, so we know there's a chance that Atari may have copied the Magnavox Odyssey, but who did the actual copying?

The Myth:
Nolan Bushnell kicked his daughter out of her bedroom and used it as a workshop where he created the first "real" videogame, *Pong*.

The Truth:
Bushnell's great invention was the dedicated circuitry that made videogames cheap enough for mass production. Before founding Atari, Bushnell evicted his daughter and used her room as a workshop during the creation of *Computer Space*, a coin-operated version of Steven Russell's computer game *Spacewar*. Bushnell marketed *Computer Space* through Nutting and Associates, but the game never caught on.

In 1972, Bushnell and Ted Dabney founded Atari on a shoestring budget. As he would do many times in the future, Bushnell approached Al Alcorn, the company's first full-time engineer, gave him the concept for a game, in this case *Pong*, and let him build it.

The game Bushnell described, however, was less sophisticated than *Pong*. It had simple paddles that could only knock the ball in a straight line. Alcorn improved the game by adding segmented paddles that knocked the ball in various angles, allowing players to put English on the ball. When Bushnell saw Alcorn's finished product, he knew he had a hit; he had initially thought of *Pong* as a trial for a future game, not a releasable product.

While Nolan Bushnell may not have been responsible, personally, for the design of *Pong*, his dedication and drive, as demonstrated by the manufacture of *Computer Space*, and arcade *Pong*, certainly are enough to ensure that his title as "Father of Videogames" stands. Without him, it would have taken years before videogames caught on as fast as they did.

Photography: **Cat Butler**

DID LEGENDARY PIONEER ALREADY HAVE MAPS?

Is Spacewar really the first videogame, or were there predecessors?

The Myth:
Spacewar, a computer game created in 1962 by MIT student Steve Russell, is generally considered the first computer game ever made.

The Truth:
Other pioneers found ways to have fun with computers well before Steve Russell created *Spacewar*. MIT professor John McCarthy experimented with artificial intelligence and began teaching a computer to play chess as early as 1959, and Alan Turing, the legendary and eccentric computer pioneer, wrote a "computer" program that played chess as well. However, since no computer at the time was powerful enough to run it, he ran it in his head, and moved the pieces himself.

"There were certainly at least two interactive programs that existed before *Spacewar* where you interacted with switches on the computer," says Russell. "You got a display on the screen, and it changed depending on what you did with the switches. They weren't particularly designed as games. And they weren't very popular because as games they weren't very good."

One program involved pushing a ball off of a platform and watching it bounce. "It was a physics demonstration with a bouncing ball. The computer would simulate a ball falling off the edge of the wall and it would go bounce, bounce, bounce and would either bounce off the other side of the screen, or it would bounce through a hole."

The other program was the Minskytron, which Russell describes as "a little display program that had a bunch of spots that went whirling around." As far back as 1958, W. Higgenbothem, an engineer working for the DOE, had cobbled together a simple demonstration program (vaguely like *Pong*), that ran on an oscilliscope. The "game" was created for a DOE open house.

Later arcade manufacturers freely stole Russell's concept — Bushnell did it first with *Computer Space*, and some were bold enough to steal the name as well

So does Russell deserve credit for making the first game? Yes. *Chess* is not a videogame — computer chess uses the CPU for AI, but the program doesn't (technically) even need to be run on a machine. While a few other interactive programs may have existed before *Spacewar*, they weren't really games as we know them today — just interactive demos, with no real fail or win criteria. *Spacewar*, on the other hand is basically two-person competitive shooting, using the *Asteroids* control mechanism. It was designed to be, and is, a fully functioned videogame that requires a computer (and a monitor) to exist.

Spacewar may not have come to fruition in a vacuum, but it was certainly the first time that all the elements one associates with a game were present at the same time.

CRIME OF THE CENTURY? BUY ONE CD — COMMIT 100 FELONIES

Is it possible to buy illegal CDs and cartridges that contain hundreds of pirated games on them?

The Myth:
Foreign companies manufacture counterfeit NES, Super NES, Genesis, Game Boy, and Game Gear cartridges (presumably they're smart enough to leave Virtual Boy alone) that have anywhere from 40 to 150 games on them, as well as CDs that have hundreds of PC titles.

The Truth:
Nintendo and Sega agree on very few things, but both companies agree that counterfeited cartridges are killing the videogame business in Asia and that enforcing counterfeiting laws is a top priority. According to a Nintendo spokesperson, the company loses as much as $1 billion per year due to sales of unauthorized products.

By purchasing one pirated CD or cart, a gamer may be guilty of many, many counts of receiving stolen merchandise (the pirated intellectual property of the game). Duping that CD adds multiple counts of piracy to the bill, and the potential for millions in fines. In 1991, Nintendo caught United Microelectronics, Taiwan's largest semiconductor manufacturer, exporting multi-game cartridges for the NES to the United States. The event could have touched off an international incident as the Taiwanese government held a 30 percent share of the company, but it was settled quietly.

While the multi-game cartridges have been a problem, an even bigger issue is unauthorized copies of current hits. In January, 1995, Nintendo filed suit against Korean-based Samsung Electronics, the company that produced the custom ROM chips for *Donkey Kong Country*. Nintendo accused Samsung of knowingly supplying *Donkey Kong Country* ROM chips to two government-owned piracy operations.

A typical pirate cart for the NES. Generally, they are made in Hong Kong or other countries, where copyright enforcement is rather lax

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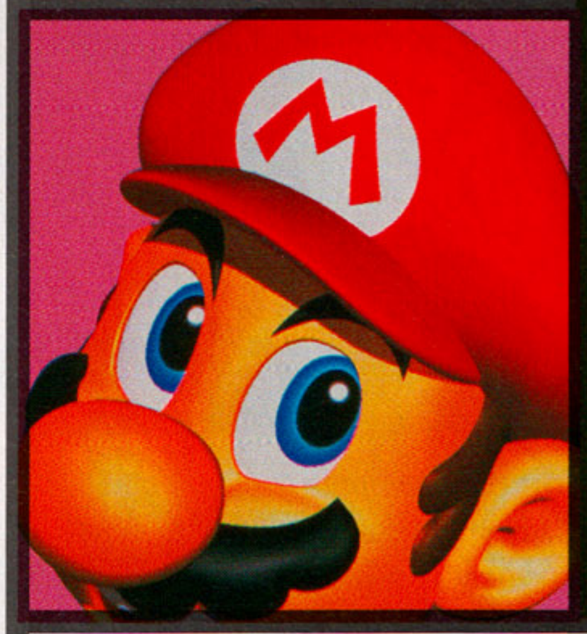
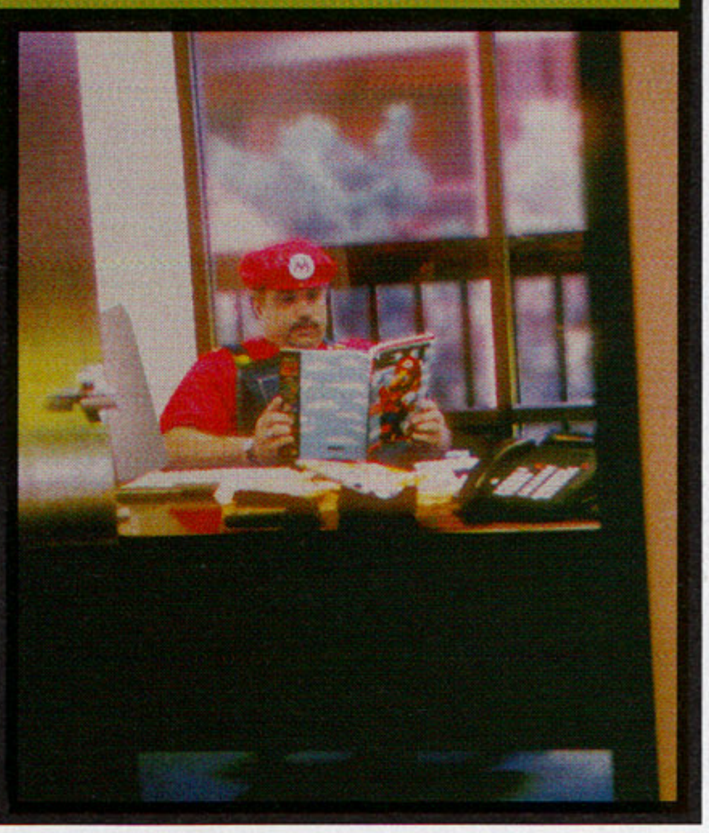


MARIO: ALIVE, WELL, AND LIVING IN THE BRONX?



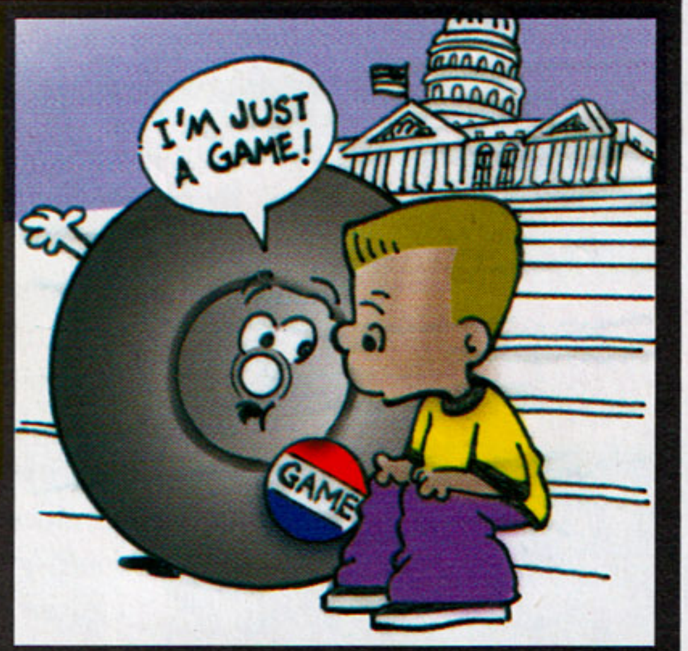
Photography: Cat Butler

Did Shigeru Miyamoto really base the character of Mario on a New York landlord?

The Myth:
Shigeru Miyamoto, creator of *Donkey Kong*, based Mario on the landlord of the New York apartment complex in which he lived.
The Truth:
Shigeru Miyamoto created *Donkey Kong* (and therefore the character that would become Mario) before ever coming to the U.S. — although his name was listed as "Jumpman" in the instructions (and he was a carpenter, not a plumber). The name Mario came from Mario Segali, the man who rented a New York warehouse to Minoru Arakawa, the president of Nintendo of America. When Arakawa needed a name for the character, he thought of the landlord (who apparently bore a surprising resemblence to Jumpman).

SENATOR CAMPAIGNS TO BAN VIDEOGAMES!

Did Sen. Lieberman say, "I really wish that we could ban [videogames] constitutionally." Is he still trying?



The Myth:
Senator Joseph Lieberman, Democrat of Connecticut, wants to outlaw videogames and told a reporter, "I really wish that we could ban them constitutionally."
The Truth:
Senator Lieberman actually said, "I'd like to ban all the violent videogames. It's hard to control every measure of this, especially in a society that values free speech and first amendment rights." (The Hartford Current, Dec. 7, 1993)

According to Dan Gerstein, Lieberman's legislative assistant and staff writer, "Senator Lieberman does not believe a ban on violent or sexually explicit video games would be constitutional, and he has no intention of seeking such a ban. He simply wants manufacturers to put ratings on the games and to encourage game makers to understand their responsibility to society and to children by producing games that entertain without causing harm."

Lieberman is very open in his disdain for violent videogames as well as irresponsible television talk shows. He openly admits that he wants to see the violence taken out of games and feels provoked by such moves as Sabrewolf urinating on fallen opponents in *Killer Instinct*.

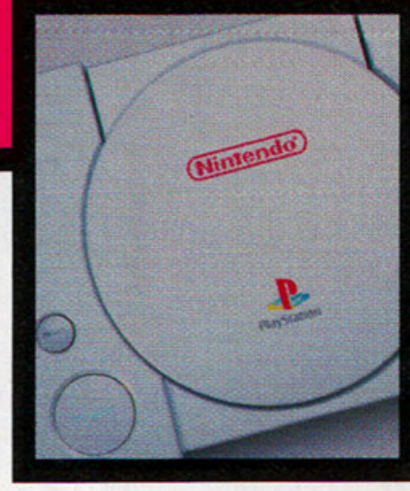
ORCHID FLASHER? KILLER!

is there a way to see Orchid's breasts in *KI*?

The Myth:
Orchid, the perky-breasted female fighter in Nintendo's *Killer Instinct*, has a finishing move in which she turns her back toward the player and opens her dress, causing her opponent's eyes to bulge as they faint in ecstasy. In one level of the game, a mirror hangs from a wall. If players move Orchid in front of the mirror before making her flash, they can see her breasts reflected there.
The Truth:
According to Nintendo of America development and evaluation manager Ken Lobb, "There is no mirror."

NINTENDO'S 32-BIT SUPER CONSOLE!

Did Nintendo have a hand in naming — and designing — PlayStation? Was the PlayStation name kept after the Super NES CD-ROM deal fell through as a slap to the president of Nintendo?



The Myth:
Nintendo and Sony formed a partnership to create a CD-ROM drive for the Super NES called the PlayStation. When the partnership dissolved, Sony decided to design an entire console around the drive, using technology partially created by Nintendo, and kept the name "PlayStation" to taunt Nintendo Limited president Hiroshi Yamauchi.

The Truth:
The name PlayStation seems to have existed even before Sony's ill-fated partnership with Nintendo. Sony first investigated entering the video game market as a partner of Philips. When that relationship failed, Sony emerged as a new partner for Nintendo, creating the PlayStation as a peripheral device for the Super NES. Sony sources, however, say the name PlayStation was first discussed back when Sony was still working with Philips.

Sony retained several engineers through all phases of PlayStation development, from its 1991 Nintendo phase all the way through the product's completion in 1994. One of Sony's top engineers says he worked with such Nintendo electronics wizards as Masayuki Uemura during the first stages of the PlayStation, but claims that all of the work done by Nintendo was scrapped and that Sony started from scratch twice before completing the final version of the PlayStation. Comparing the Super NES to the PlayStation (and even the Nintendo 64), seems to bear out the fact that the Sony PlayStation has nothing technologically in common with Nintendo machines.

ATARI SPECTACULARLY FAILS TO DO THE MATH

Did Atari turn down *Pac Man*, thinking it would never sell?

The Myth:
Atari was offered the rights to distribute *Pac Man* in the United States. When they turned it down, Namco went to Midway Games.

The Truth:
In short, it's true. But the actual story is more complicated. A feud erupted between Atari and Namco in the 70s over the game *Breakout*. Namco had bought Atari's Japanese operation and manufactured and distributed the company's games in Japan. With *Breakout*, however, Atari only allowed Namco to distribute the game and insisted on manufacturing it in the United States.

When Namco president Masaya Nakamura discovered that the Yakuza, the Japanese mafia, was manufacturing counterfeit *Breakout* machines, he began building his own counterfeits to protect his business. Atari executives accused Namco of stealing their game, and the two companies finally met in court. Atari won.

After the court battle, Atari sent an executive to smooth relations with Namco without signing any contracts for future deals. Atari's board still considered Namco a small time company and felt that Nakamura had been dishonest.

But by this time, Namco was one of the largest and strongest arcade companies in Asia, largely due to profits from *Breakout*. Namco engineers had begun developing their own games. Impressed by the quality of the new games, the Atari executive signed a contract promising $1 million in exchange for consumer rights to future games. When he returned, he was nearly fired for the action.

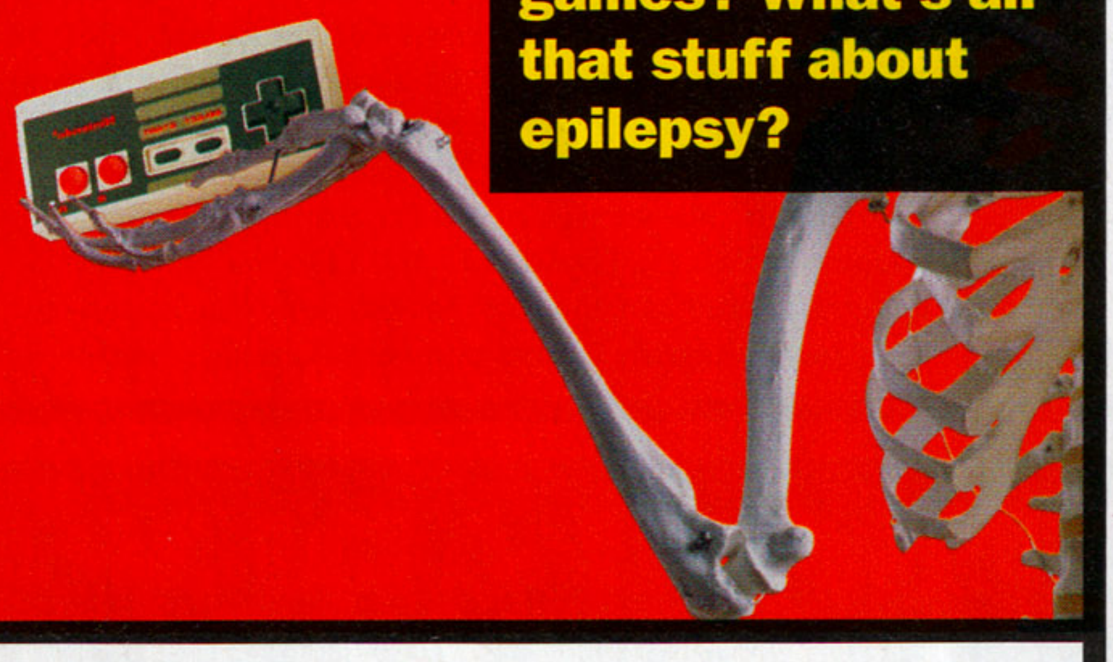
While the agreement turned out to be one of the smartest deals in videogame history, his superiors were furious. "It was like Jack and the Beanstalk," said one ex-Atarian. "We sent him to Tokyo to sell the cow and he came back with a few magic beans. One of those beans turned out to be *Pac Man*." Amazingly, Atari "passed" on that "bean" and instead the rights went to Midway. Afterwards, Atari was wise enough to handle the U.S. arcade distribution for *Xevious*, *Pole Position*, *Assault*, and other Namco games.

It should be noted that in passing on *Pac Man*, Atari was demonstrating the same feelings of most in America towards the game. At the 1981 AMOA where it was first debuted, it was considered a dog — it was too simple (just as *Defender* was deemed "too complicated").

ng special

GAME OVER: A.K.A ONE FATALITY TOO MANY

Has anyone actually died from playing video-games? What's all that stuff about epilepsy?



The Myth:
Playing videogames can cause terrible medical problems, among them fatal epileptic seizures.

The Truth:
A medical journal once reported a new infirmity called "*Space Invaders* wrist," game pads are often accused of causing "Nintendonitis," and there used to be a lot of reports of "*Pac Man* elbow;" but none of these problems have killed anybody. Additionally, videogames have been blamed in a number of deaths that occur when an unstable individual (who happens to play videogames) kills someone. The Boston Herald once reported that a man who went on a killing spree practiced his aim with *Virtua Cop*. For us, this is liking blaming rock music for juvenile deliquency — stupid. But for some, any excuse is better than taking responsibility for one's own actions, so we expect videogames to continue to be scapegoats for quite some time.

Epilepsy is quite another matter. All games today come with warnings in their instruction books for people with epilepsy. While videogames will not affect all epileptics, certain patterns and backgrounds will cause problems for a small group (who are similarly effected by looking at any TV set, or at repeating patterns like venetian blinds).

According to a spokesperson from a videogame hardware manufacturer, two or three people have had videogame-induced seizures on the floor of every major trade show. After years of experience, the game companies are no longer surprised when this happens. They quickly remove the people from the floor and try to keep them as comfortable as possible until the seizure ends.

Still, there has never been a confirmed report of a videogame induced epileptic attack leading to a (real) fatality.

For more info on the health and social effects of video and computer games, consult our feature "Do games screw you up?" (**NG 10** – also available online at http://next-generation.com).

U.S. MARINES BATTLE DEMONS FROM HELL WITH BFGS

Do our tax dollars pay U.S. Marines to play *Doom*?

The Myth:
The U.S. Marine Corps has created a special version of *Doom* for training soldiers.

The Truth:
It's true, the U.S. Marine Corps has created a special version of *Doom* for training soldiers. According to Col. Paul Hanover, the Marine-modified game "supports a series of training standards and tasks that Marines will be required to accomplish on the battlefield." It should be noted that all kinds of special versions of *Doom* exist. Someone even created a custom version of *Doom* to map out a library.

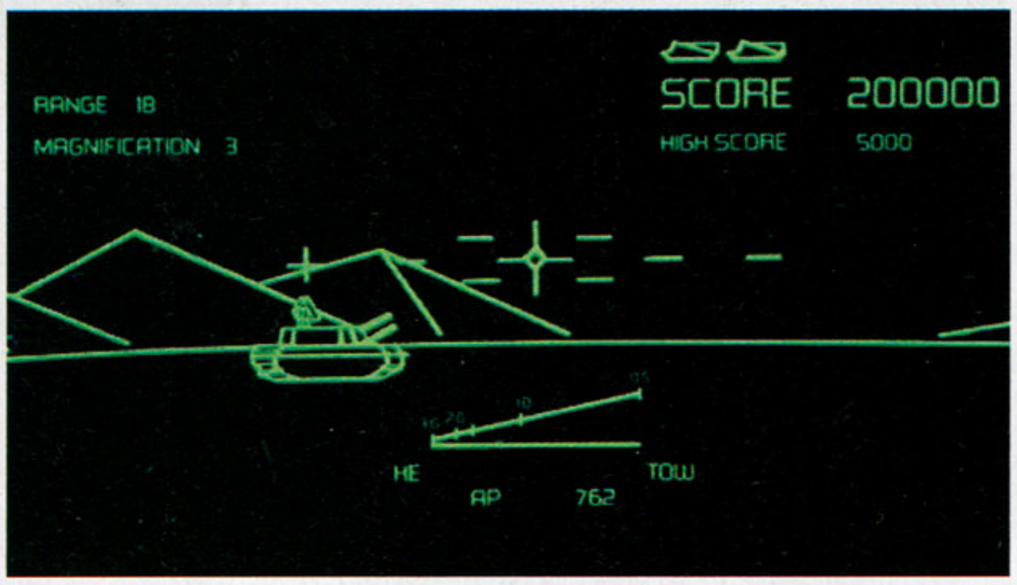
ARMY ARMED WITH QUARTERS!

Did the military really pay Atari to produce a version of Battle Zone to train soldiers?

The Myth:
After viewing *Battle Zone*, Atari's 3D vector graphics tank battle simulation, the U.S. Army asked Atari to create a modified version of the game for training soldiers.

The Truth:
According to Ed Rotberg, creator of *Battle Zone*, Atari was commissioned to make a special version of *Battle Zone* that included realistic U.S. and Soviet tanks and helicopters. The game was commissioned not by the U.S. Army, but by a consultant group of retired generals. They thought that a more realistic version of *Battle Zone* would make a good training tool for drivers of the (then preproduction) Bradley Fighting Vehicle. As the creator of *Battle Zone*, Rotberg was asked to design the customized simulation. He objected, feeling that Atari should not get involved with the military, but finally began work on the project in 1981, after receiving assurances that his role would be limited to creating the prototype (Atari would need to find someone else to create the final production version). It took Rotberg three months of constant work to develop the prototype training version of the game — according to Rotberg, he rarely saw his wife while working on the project and he has few fond memories of the job.

Maybe the popularity of the game with GIs on base convinced the generals that it would make a good trainer



The Military version of the game is quite similar to the standard one, with the exception of a range finder and weapons select menus. Note the lack of scoring accuracy of the prototype version

Although the prototype was finished by the deadline (a military tradeshow), Atari decided not to pursue the military sim business any further. At least two prototypes of *Military Battlezone* exist, in private collector's hands. *Military Battlezone* quickly became a footnote to the golden age of Atari, but it did have one lasting impression — the Bradley Fighting Vehicle's steering wheel became the model for the controller on one of Rotberg's next projects, a game to called *Warp Speed*. Rotberg left Atari in October 1981, before the project was finished, to found a new company with fellow Atari-expatriates Roger Hector and Howard Delman. After he left, Atari signed a licensing agreement with LucasFilm and Rotberg's project was finished and renamed *Star Wars*. So, even though the project itself failed, the game has had some impact on the industry.

PAC MAN: IS IT AN ASSUMED NAME?

PUCK-MAN

The Myth:
Pac Man was named *Puck Man* when it was first distributed in Japan, but Namco changed the name to avoid tempting American graffiti artists who might tamper with the "P."

The Truth:
According to a 1983 article in the International Herald-Tribune, the name *Puck Man* was changed because of what Namco founder Masaya Nakamura described as "the American penchant for four-letter words."

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ROTTEN APPLE IN ATARI'S BARREL!

Did Apple founder Steve Jobs screw Apple co-founder Steve Wozniak out of thousands of dollars while designing a game at Atari?

The Myth:
While working at Atari, Steve Jobs was promised $1,000 for each chip he could remove from the design of the arcade game *Breakout*. He asked his friend Steve Wozniak for help, telling him he'd been promised $100 per chip, and promising to split the money.

The Truth:
The story's details are wrong, but otherwise it is essentially true. The most correct version of the story (with quotes from Woz) appears in Owen Linzmayer's curiously named, but seminal, Apple History book, *The Mac Bathroom Reader*.

Nolan Bushnell wanted Steve Jobs (Atari's 40th employee) to design *Breakout*. Jobs went to Wozniak (who then worked at Hewlett-Packard) and told him that Bushnell would pay them $1,000 if the game consisted of 39 or less chips, and $700 if it had 40 or more. Bushnell needed the game in 5 days. After working 4 nights straight, without sleep, Jobs and Wozniak had gotten the number of chips to 42, and exhausted, gave up. Jobs gave Wozniak his $350 share the next day.

Years later, Wozniak broke down in tears when he discovered that Jobs had actually been paid $5000 to "design" *Breakout*, and is given sole credit for the work (which was mostly Wozniak's). In some ways, though, Wozniak had the last laugh. His circuit design was so elegant, no one at Atari could figure it out, and it had to be redesigned from the ground up for the production model.

VIDEOGAME HEROINES MOONLIGHT IN AFTER-HOURS PORN SHOCKER!

Do videogame heroines star in X-rated comics and movies in Japan?

The Myth:
In Japan, with different social mores than the U.S., it's no big deal that most videogame heroines routinely star in X-rated entertainment, when not in games.

The Truth:
It's true, sort of. Hugely popular, fat, cheap, black and white "fan-boy" comic books often have videogame vixens appearing in extremely compromising positions, but the comics are about as official as those that show the development teams from Sega and Namco fighting it out with giant swords (which are also more common than one might think). In one book, the *Tekken* and *Virtua Fighter* teams are locked in near constant combat). It is true, however, that in an officially licensed Japanese anime *Street Fighter* movie, Chun-Li goes topless in a shower scene.

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05

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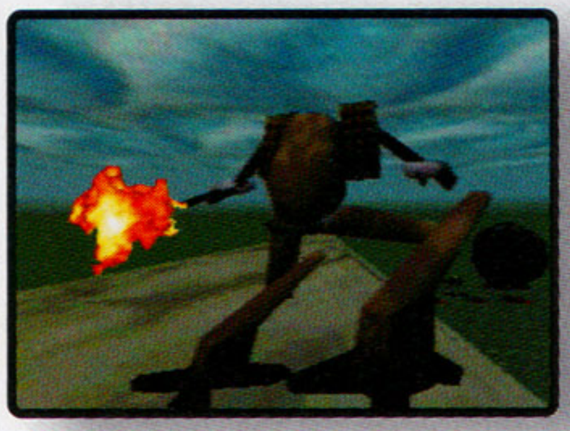

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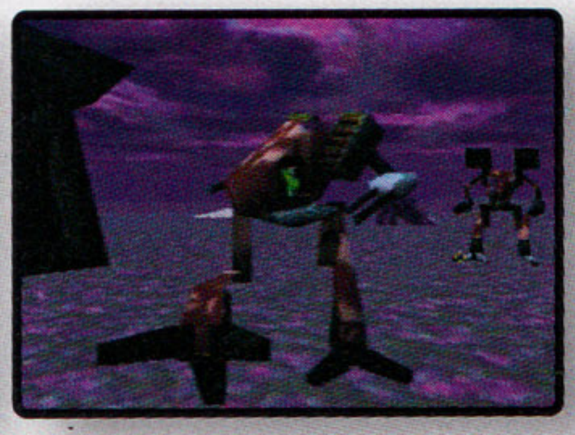

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PC Goes 3D

In his exclusive interview with **Next Generation** (**NG18**), Bill Gates predicted that "all the PCs that ship in 1997" would have greater graphics power than the home consoles. He might be right. There's a brave new world of PC graphics cards hitting the market – all of them geared to 3D, and all of them itching to kick Mario and Crash's ass

Unfortunately, 1996 was not the year of 3D on the PC (for consoles, of course, the story was quite different). Despite the swell of publicity this time last year about the coming PC 3D revolution, all that actually arrived were delays and products that fell way short of the hype. In short, nothing unusual for the computer business.

But now it's 1997, and suddenly 3D acceleration is a standard feature on many new systems. The shelves are filling with hot new 3D-accelerated games — and it is becoming increasingly hard to find a new graphics card that does not have some sort of 3D support built in. Almost overnight, 3D acceleration has gone from a gimmick to a must-have. The revolution is now.

2D's last year? This is how 1996 may well be remembered. Never before in the history of computer add-ons has the state of the art advanced so fast. Today's top cards are so much better than the struggling "decelerators" of just six months ago that any comparison would make those early attempts look like PC

Sure, graphics can't make a bad game good. But they sure add to the gaming experience

XTs next to Pentiums.

The pace of innovation shows no signs of slowing down either. For every 3D chipset currently available, it seems that there are at least three others in development. But a momentary plateau has been reached in this relentless race, and with today's latest hardware, finally the rewards of making the jump to 3D far outweigh the risks of the technology being soon obsolete. **Next Generation** can now pick the winners of the first leg.

There are four main chipsets that form the underlying technology of most of the 3D boards out there — each is evaluated on the following right-hand pages.

Although a bad game is always a bad game, no matter how good it looks, any gamer who wants the full experience of playing the latest PC titles simply must have some serious 3D horsepower: *Tomb Raider* without 3D acceleration looks like just another dungeon game, with it, the title is pretty enough to make Mario sweat. And you have never played *Quake* or *Descent 2* until you have experienced them in their full 3D-accelerated glory. Some titles now (and doubtless more in the future) will require some form of 3D acceleration to be playable at all. *Hyperblade* with 3D acceleration pops right out of the screen; without it, it is frankly too slow to be anything but dull.

So with technology advancing and prices falling so fast, the real question game players must face is not "should I upgrade?" but "when?" With new and faster hardware always on the horizon, many will find that waiting pays off. But if you don't want all of the good stuff coming out today to pass you by, now is the time to make the switch. The hardware and software have at last reached a critical level of maturity. 3D acceleration *will* rock your world and take PC gaming into, pardon the pun, the next dimension.

3D acceleration *will* rock your world and take PC gaming into the next dimension

When the first 3D cards appeared a little over a year ago, some laughingly called them "3D-decelerators." Sure the static screenshots of games that used them looked prettier, but the actual gameplay of those 3D-"accelerated" games often turned out to be slower than the original versions. This, coupled with poor to mediocre 2D performance and sky high initial costs, left many early adopters feeling disappointed and burned.

Gamers do owe much thanks, though, to Diamond for bringing out its Edge 3D line, Creative Labs for the initial VL-bus 3D Blaster, Jazz Multimedia for the 3D Magic, and Paradise for its Tasmania 3D. Why? Because although today these cards should be avoided (no matter how steeply discounted), they blazed a trail for others to follow, and helped pave the way for the much more capable cards available now.

One thing that plagued the first generation of 3D accelerators was the lack of a standard 3D API (Application Programming Interface). Software had to be specifically written to support any given card, resulting in a classic Catch-22 situation: On the one hand, no developer wanted to invest the time and money into writing a 3D port to an unproven accelerator with a tiny installed base. On the other hand, no gamer wanted to spend big bucks buying a new technology with very little game support. This meant that often the pack-in games that came with the accelerator were the only titles ever supported by the card. Worse, some graphics cards included mail-in coupons for 3D-accelerated games to be shipped later, and in a few cases these projects got shelved and gamers were left near empty-handed. It's tough, being a pioneer.

But rather than abandoning the 3D accelerator world as a failure, many manufacturers spent the past year figuring out how to do it right, fortunately.

Despite months of delays (the Vérité chip was supposed to be ready by last summer), last fall the floodgates finally opened. By around October, the true potential of 3D accelerators was plain to see, with solid 3D offerings from a host of card manufacturers. Indeed, the classic Catch-22 log jam that plagues the launch of any new technology seems to have broken.

The current batch of 3D accelerators offers better performance and games that are a real leap beyond their non-accelerated equivalent, all at much lower prices then the under-powered first generation of cards. At last, the incentive is big enough to get gamers making the jump, and, as the mass of users build, so do the ranks of developers committed to supporting accelerated 3D.

Of course, the number of game players with 3D accelerators is still just a fraction of the overall marketplace. Thankfully then, developers are being driven by another powerful whip as well — ego. No one wants to risk having the ugliest screenshots in magazines or on boxes (imagine how proud Epic is to have an actual game screenshot of *Unreal* on **NG**'s cover this month). So, as the race to take advantage

S3 ViRGE

Coming soon to a motherboard near you, the ViRGE chipset is well beyond the "graphic decelerators" of days past. But can this low-cost solution deliver?

The S3 ViRGE is leading the charge towards ubiquitous "free-D" by showing up "built-in" on more and more motherboards. And if you want to upgrade your system with the ViRGE, there are no less than 15 cards from a variety of manufacturers based on the technology.

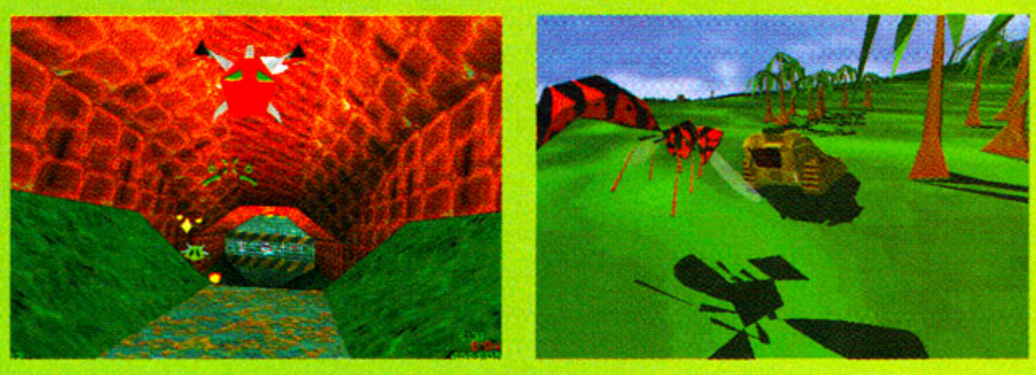
The ViRGE supports flat and Gouraud shading and perspective-corrected texture mapping. Bi-linear and tri-linear filters are supported, as is MIP-Mapping, Z buffering, alpha blending, and fogging. Anti-aliasing is not supported in hardware, however. The ViRGE provides support for video playback acceleration, but it does not do vertical interpolation, so quality in full-screen video is lacking.

The ViRGE chip currently comes in two varieties: regular and ViRGE/VX. The VX model supports VRAM and a faster RAMDAC (220MHz vs. 135MHz) to allow support of higher resolutions and color depths without a loss of performance.

None of the ViRGE-powered cards we have seen provided Vesa 2.0 support automatically. All required the loading of a driver to allow selection of high-res modes in *Quake* — this is a major annoyance.

S3 has just announced the next step in the ViRGE evolution, the ViRGE/DX and ViRGE/GX. These new chips add vertical interpolation for better video support and an improved internal pipeline to more than double the 3D performance. The smart shopper interested in the ViRGE would hold out until cards based on these chips make their debut.

The ViRGE is a fair to excellent 2D performer depending on whose card and drivers you have, but the 3D performance leaves a lot to be desired. Below is a run down of our impressions of some of the more interesting ViRGE cards that have passed our way:



***Descent II* looks great on the ViRGE, but its framerate falls well short of the constant 25+ fps seen with *Descent II* on the Rendition, and 40+ fps on the 3Dfx**

Virge-based cards

Diamond Stealth 3D 2000
$199 (4MB) $169 (2MB)

Rating: ★★
Manufacturer: Diamond / 800.468.5846 / www.diamondmm.com
Bundle: Interplay's *Descent II: Destination Quartzon*, Psygnosis's *Destruction Derby*, Compton's *Interactive Encyclopedia 1996*

In a nutshell: The Diamond Stealth 3D 2000 is an excellent 2D performer in both Windows and DOS. Diamond clearly did their homework writing the drivers. For the price this is the best ViRGE card to get. But when compared to a Vérité-powered card at the same price, the Stealth 3D only wins out if you are heavy in to DOS games.

Number Nine 9FX Reality 332
$199 (2MB)

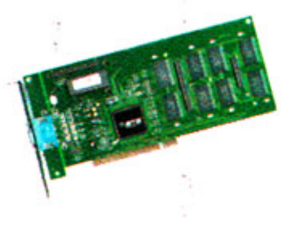
Rating: ★
Manufacturer: Number Nine / 800.438.6463 / www.nine.com
Bundle: Terminal Reality's *Terminal Velocity*, Virgin Interactive's *Screamer*, Reality Bytes' *Havoc*, Asymetrix's Web 3D, RealiMantion STE

In a nutshell: The worst performance of the ViRGE cards we have seen, and no way to upgrade to 4MB. The only nice thing about this package is the pack-in *Screamer*—a great 3D racing game that actually does a good job of showing of the ViRGE's acceleration potential.

Diamond Stealth 3D 3000 (VX)
$299 (4MB) $249 (2MB)

Rating: ★★
Manufacturer: Diamond / 800.468.5846 / www.diamondmm.com
Bundle: Interplay's *Descent II: Destination Quartzon*, Asymetrix *3D F/X* and *Digital Video Producer*, Compton's *Interactive Encyclopedia 1996*

In a nutshell: The Stealth 3D 3000's addition of VRAM really jumps up the cost but offeres little performance gains in most resolutions when compared to its 2000 sibling. But if you have need to be working in high-res true color mode, the extra cost might be justified.



STB Velocity 3D (VX)
$249 (4MB) $349 (8MB)

Rating: ★★★
Manufacturer: STB Systems / 214.234.8750 / www.stb.com
Bundle: TBA

In a nutshell: The potential to expand up to 8MB and the aggressive pricing make the Velocity 3D the most intriguing of the current ViRGE offerings. 2D and DOS performance is on par with Diamond's, as is the 3D. But the 3D performance still falls short of the Rendition Vérité and 3Dfx Voodoo.

***Tomb Raider* is a game that could not have been such a PC hit without 3D acceleration. Indeed, it's probably safe to assume that even Lara realizes that it's 3D or bust (and in her case, it's both)**

of 3D in games heats up, and as programmers learn new tricks and techniques, games will advance in looks and speed at a rapid pace.

Microsoft's Direct 3D API has to some extent solved the standard API problem. Developers are less wary of supporting 3D acceleration because writing for Windows 95's Direct3D enables acceleration automatically on machines that support it, without having to specially code software to take advantage of each particular 3D chipset. On machines without 3D hardware, Direct3D provides software emulation of the 3D environment and scales back the image quality to produce acceptable speed. Microsoft's *Hellbender* and *Monster Truck Madness* are the first two games to demonstrate the potential of Direct3D, and Activisions's *Hyperblade* demonstrates support from someone other than Microsoft.

But Direct3D was very late in arriving, and rather than taking their chances waiting for Microsoft, many game makers have picked one or two 3D chipsets and targeted them specifically. This is why we are left with 3D-accelerated *Quake* running only on Rendition Vérité chips, for example. But as Direct3D matures, the promise of a larger potential user base may lure developers away from writing proprietary versions of their games. And as CPUs and accelerators get faster, the estimated 10-15% performance hit Windows95 and Direct3D causes won't be nearly as painful. Certainly, for developers, it should be a lot less painful than writing many different versions of the same game.

Apple's answer to DirectX is called Game Sprockets, and its 3D API is called QuickDraw 3D Rave. 3D Rave is well beyond Direct3D technically, supporting object-oriented 3D programming and providing an easy way for developers to extend the API to take advantage of new features. Rave is cross-platform, so games written for it can be simultaneously released for Mac and Windows. If Apple can convince enough developers to buck Microsoft and persuade enough card makers to release optimized 3D acclerated drivers, Rave may be the dark horse winner in the API race.

The 2D mainstream chipsets will be extended with better 3D performance as engineers learn new tricks. The result will be better 3D

But as for now, there are five basic 3D acceleration technologies competing for your upgrade dollars, with a few more on the immediate horizon. Each offers certain strengths and weaknesses; the boxouts on the following pages give you a hands-on run down of what is available today.

One thing is certain about the future of graphics chipsets — 2D only cards will soon be extinct. All the classic 2D chipsets have or will soon evolve into 3D capable hybrids. The ATI mach64 architecture has been extended to become the 3D Rage, and now the 3D Rage II. The Cirrus Logic Laguna 2D has morphed into the Laguna 3D. The S3 Trio64 has grown to become the ViRGE line. And even the last of the great 2D-only acceleration chips, the Tseng Labs ET6000, is about to be retro-fitted with 3D features.

These new 3D enhanced versions of older tried and true 2D architectures usually maintain both hardware and driver compatibility with their ancestors, making it easy for card manufacturers to move up to the added functionality without having to do an expensive redesign. This has brought about the term "free-D," 3D acceleration provided for no more than the cost of the old 2D. These chips are also very appealing to system manufacturers who have been providing on-motherboard graphics. With only a minor redesign, a new model of a system that formerly depended on the common mach64 or trio64 chips can be provided with basic 3D features by moving to the Rage or the ViRGE. Thanks to such simple and cheap drop-in 3D, in six months it should be hard to find a new system that doesn't have at least some form of hardware 3D acceleration included.

On the other side of the coin are the entirely new chip architectures being engineered for 3D from the ground up. These designs tend to lead the curve in 3D performance, but lag when it comes to competing with the established chips on the 2D and market-share playing fields.

Some, such as the 3Dfx Voodoo, NEC PowerVR, and S-MOS Pix chip avoid competing in the 2D arena entirely. They ignore 2D features, and instead work in conjunction with the existing 2D accelerator in your system. Other new designs aim to be all-in-one 2D/3D accelerators. Some go even beyond that; Mpact's chip aims to take over the role of your sound card and modem too.

As the 3D-focused new designs on the block mature, it is likely that their support for 2D will be polished and refined, turning at least a few victors into real contenders for the mainstream, where integrated 2D and low cost are the key attributes. Just as certain is that the 2D descended mainstream chipsets will be extended with continually better 3D performance as engineers learn new tricks and techniques. The end result will be ever better 3D for the gaming masses.

What follows is a quick run-down of the chips and technologies to keep an eye on as 1997 unfolds, listed in the order in

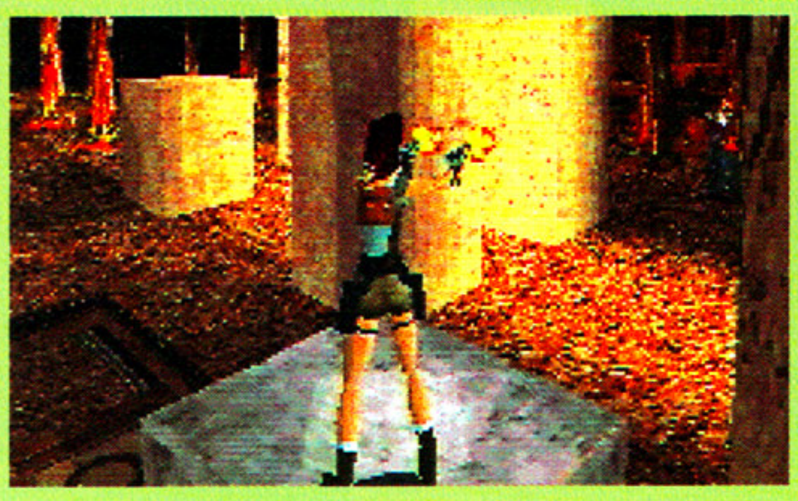
3Dfx Voodoo

The 3D is fast and smooth, but with no 2D or windowed support, the 3Dfx Voodoo requires a two-slot commitment in your PC. Is it worth the price?

The 3Dfx Voodoo is an arcade quality 3D-only chipset that, for a price, delivers the ultimate in 3D speed out of the current crop of accelerators. The catch is that the Voodoo must be paired with a 2D card, an expensive proposition that takes up a lot of slots in your machine. The Voodoo also does not allow 3D acceleration in a window — it only works when running full screen. So VRML web browsers will see no benefit.

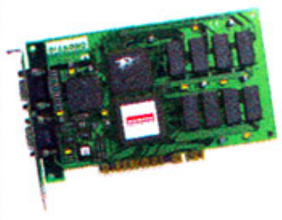
But with 4MB dedicated to nothing but 3D, these Voodoo powered cards can fly. The visual quality of Voodoo games is on par with the Vérité, but generally we saw near 50% faster frame rate. *Descent 2* looks equally beautiful on both, but whereas the Vérité cards zoomed around at a very respectable 25fps, the Voodoo gave us 45fps. Very nice.

3Dfx has announced a new version of the Voodoo chipset called the Voodoo Rush designed to be built on to the same card as a 2D chip. This will address the biggest complaint of the first generation of cards by allowing 3D in a window and no need for two graphics cards, all for the same price as the current 3D only boards. Specific Voodoo Rush boards should be announced soon now that the chipset is available.



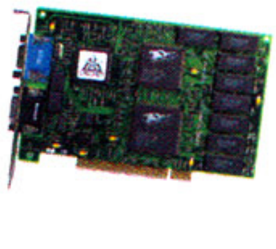
***Tomb Raider* comes accelerated for both the 3Dfx Voodoo and Rendition Verite chips. Both versions deliver silky smooth 3D at 30fps, with significantly enhanced visual quality. The chunky graphics of the PlayStation version pale in comparison. Only a Nintendo 64 has the 3D performance to do the equivalent**

3Dfx-based cards:



Diamond Monster 3D
$299
Rating: ★★★★
Manufacturer: Diamond / 800.468.5846 / www.diamondmm.com
Bundle: Activision's *MechWarrior 2* and *Hyperblade*; Criterion Studio's *Scorched Planet* trial version, Eidos Interactive's trial version of *Tomb Raider*; Interplay's *Descent II: Destination Quartzon*, *VR Soccer '96* and *Whiplash*; and Ocean's *EF2000*; plus Microsoft's Game Sampler 2 featuring *Hellbender* and *Monster Truck Madness*

In a nutshell: The Monster 3D has a great bundle of games, and really does give an arcade quality experience on your PC.



Orchid Righteous 3D
$299
Rating: ★★★★
Manufacturer: Orchid / 800.577.0977 / www.orchid.com
Bundle: Activision's *MechWarrior 2*, Interplay's *Descent II: Destination Quartzon*, *VR Soccer: Semifinals*, and *Whiplash 3D*, Criterion's *Scorched Planet* trial version, and trial versions of Microsoft's *Hellbender* and *Monster Truck Madness*

In a nutshell: The current drivers of the Righteous 3D give it a slight edge over the Monster, but otherwise there boards are nearly identical.

which they're expected to make a splash (web addresses are also given):

NEC Electronics' PowerVR

The PowerVR chip is currently available as the standard 3D accelerator in the Compaq Presario 8710, but the chip will not be generally available until the VideoLogic Apocalypse 3D board hits the shelves later this spring.

Like the 3Dfx Voodoo, the PowerVR is a 3D-only board. Unlike the 3Dfx though, it communicates with your existing 2D setup over the PCI bus rather than by chaining onto your VGA output.

The PowerVR's biggest claim to fame is that it does away with the need for a Z-buffer, saving on memory expense. Instead, it does hidden surface removal by means of an Image Synthesis Processor that is integrated into the chip. The current version of the PowerVR does not support texture filtering however, a serious flaw.

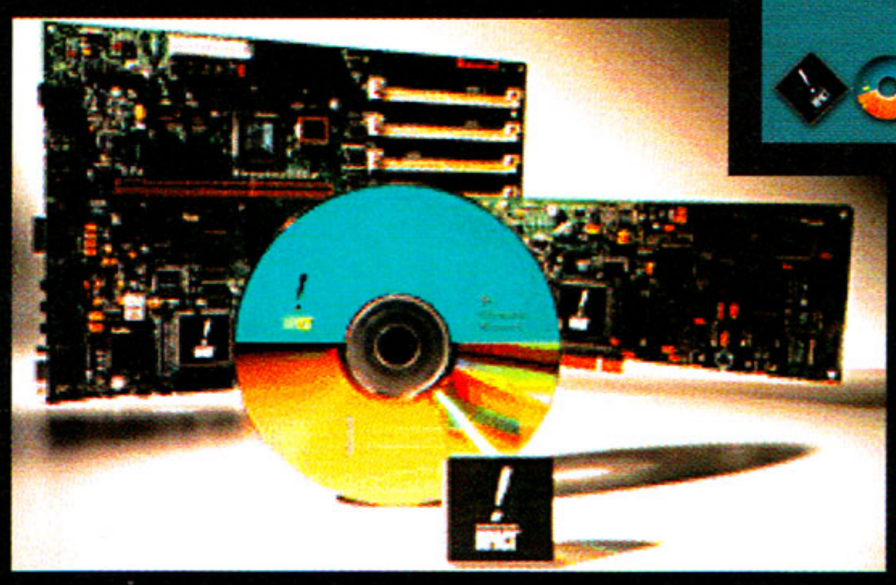
http://www.powervr.com/

Cirrus Logic Laguna 3D

The new Creative Labs Graphics Blaster model will be powered by the Cirrus Logic Laguna 3D chipset. The most interesting trait of the Laguna 3D (besides its fast Rambus memory interface) is that it works some magic with the PCI bus to enable textures to be stored in main system memory without a large performance hit. This will allow Laguna-powered boards to get by with less on board memory (read: lower prices).

In addition to Creative Labs, Cirrus claims that several other board makers will be announcing Laguna 3D-powered equipment soon. When asked how the new 3D enabled Graphics Blaster will fit in to Creative Labs lineup with the new 3D Blaster PCI, Steve Mosher, Creative's Director of Marketing clarified, "The new Graphics Blaster is going to go head-to-head with the ViRGE-based cards, the ATI Rage and Rage II, and the Matrox Mystique. The 3D Blaster PCI, however, is intended for the *Quake* fanatics."

http://www.cirrus.com/



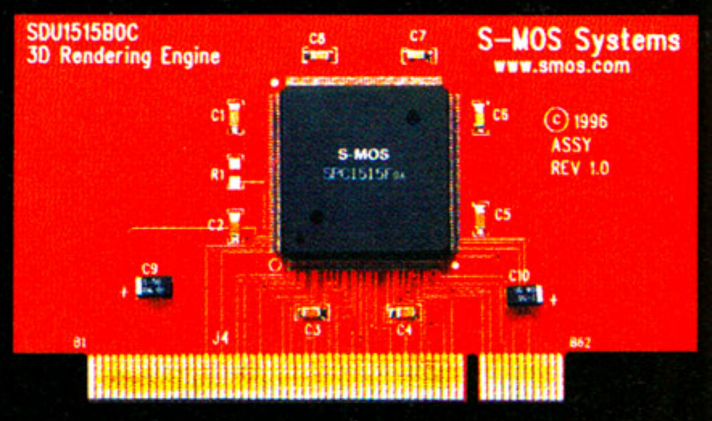
S-MOS PIX

The S-MOS PIX chip aims to keep costs to a bare minimum by making due with no onboard RAM. Final board costs of well less than $100 should thus be possible.

The PIX is a 3D-only accelerator that works in conjunction with your existing 2D system, and uses your main memory as a texture buffer. It remains to be seen what kind of performance S-MOS will be able to deliver with so much traffic on the PCI bus, but it will be hard to beat the price. Multiple PIX chips should also be able to be combined on one board to enhance performance.

The PIC does not do filtering, but S-MOS promises that its drivers will upsample all the textures in a game at load time, pre-filter them, and fill up all available main memory. So the more memory you have, the better.

http://smos.com



The S-MOS PIX requires no on-board RAM; PIX equiped accelerators can be very inexpensive

If you want to be able to really take advantage of the latest in gaming technology, now is the time to jump into 3D

3Dlabs Permedia

The expensive 3Dlabs Permedia chipset looks to be targeted as more of a professional solution, but it does have all of the necessary 3D horsepower to be a home contender if the price is right.

Creative Labs will be using the Permedia in its recently announced Falcon accelerator. A 3Dlabs representative explained that it is trying to create "pervasive" 3D, a single-chip architecture suited to everything from the high-end CAD station to the home.

http://www.3dlabs.com/

3D Accelerated Laptops

ATI has announced a version of its Rage chipset designed to drive an LCD screen. It won't be long before 3D acceleration is a standard feature in laptops as well as desktops. Still, without corresponding increases in battery life, will anyone play?

http://www.atitech.ca/

Chromatic Research Mpact

The Mpact chip is over a year behind its scheduled release, but if it delivers on its promises, it should impress.

The Mpact is not just a graphics accelerator, but rather is a very high-speed general purpose media-oriented CPU. The Mpact will ship with software modules to provide full featured 2D & 3D acceleration, MPEG-1 and MPEG-2 decoding, real-time MPEG-1 encoding, FM and wavetable audio synthesis, support for 3D audio, Dolby AC-3 surround sound decoding, 33.6kbps fax/modem, full-duplex speakerphone, and video teleconferencing over both ISDN and regular telephone lines.

Chromatic claims that adding an Mpact chip to a systems motherboard will cost no more than $150. If it can indeed deliver all of these promised features, then the Mpact could radically change the concept of what are considered "standard features" on PCs. But you know what they say about jacks of all trades...

http://www.mpact.com/

The Chromatic Research MPACT works as a general purpose co-processor to your CPU, running special 'MediaWare' modules that provide various features. Since these modules are software and not hard-coded, the MPACT's functionality can be improved in time. Who knows whether the MPACT can juggle all of its tasks at once and still deliver good performance

ATI 3D Rage II

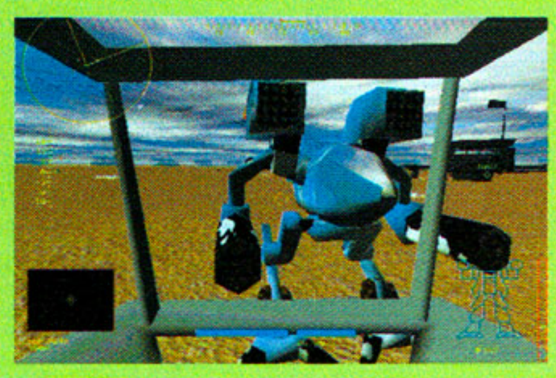
Want to play PC games on TV? This gives console quality 3D output on a TV screen

The 3D Rage I chips has shown up on just about as many motherboards as the ViRGE, including the Sony PC. But not content to rest on their laurels, ATI has already released a second generation, the 3D Rage II. Besides increased 3D performance, the Rage II pairs itself with ATI's ImpactTV chip, allowing for television output of all graphics modes 800x600 and less.

The Rage II supports all the 3D features called for by Direct3D including anti-aliasing. Also, the Rage provides the best video acceleration we have ever seen. X and Y interpolation is done flawlessly in hardware, allowing MPEG movies to be scaled to any size without problem. Using the TV output to display an MPEG stream full-screen onto a TV resulted in a picture indistinguishable from VHS.

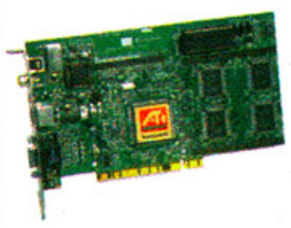
For just $129 more, you can add a TV tuner/video capture card to create a very inexpensive multi-media station.

The 2D DOS and Windows performance of the Rage 2 is on par with the ViRGE, and the 3D has a a sight leg up, but it is not in the same league as the Rendition- or 3Dfx-powered cards. But if you're interested in exploring video in/out applications, nothing else deals with it as well as the 3D Rage.



Accelerated *Mech Warrior II* is the show-horse for ATI. It looks great

Rage II-based cards:



ATI 3D Xpression+ PC2TV
$189 (2MB), $219 (4MB)
Rating: ★★★★
Manufacturer: TI / 905.882.2600 / www.atitech.com
Bundle: *Mech Warrior 2*, *WipeOut*, WIRL VRML browser, *Photosuite* Image Editor

In a nutshell: The 2D performance is very good, video playback is the best anywhere, 3D is full-featured and solid if not spectacular, and the video in/out options are a blast. This card belongs on any short list.

Matrox

Want a card without those inessentials like antialiasing, or filtering? Try this

Matrox's Millennium was the definitive 2D accelerator. Beyond being the near-ultimate 2D machine, the Millennium provided some bare-bones OpenGL compatible 3D acceleration. After releasing an accelerated version of NASCAR Racing, Matrox suddenly found itself in the heart of the games market.

The Millennium lacked features to deal with texture mapping, essential for modern games, so Matrox went to the drawing board and came up with the Mystique. And they almost got it right. Maintaining the excellent DOS and Windows performance that made the Millennium a legend, the card provides some very fast 3D, with a catch. The Mystique does not support filtering, anti-aliasing, or fogging.

Matrox argues that a well-written program can use higher resolution textures to get around the need for filtering, and special lighting effects to take the place of fog. And indeed a game written specifically for the Mystique can indeed look gorgeous. But game developers are not likely to focus their efforts on specific tricks just to support the Mystique.

Matrox has given us a valiant effort, but because of the Mystique's fatal flaw, the card has already earned the nickname of the "Mistake."

***Destruction Derby II* shows how good a game written for the Mystique can look**

Matrox-based cards:

Matrox Mystique
$179 (2MB) $279 (4MB)
Rating: ★
Manufacturer: Matrox / 514.969.6320 / www.matrox.com
Bundle: Activision's *Mechwarrior 2*, Virgin's *Scorched Planet*, Psygnosis' *DD 2*, Microsoft's *Monster Truck Madness* (demo)

In a nutshell: The Mystique is a solid performer with a few key pieces missing. The lack of filtering can be seen as nothing less than a fatal flaw.

Tri-Tech claims that their Pyramid chip can render and animate this scene in real time. If that's true, we could be looking at the end of the cut scene, and FMV game. Thank God

Intel's AGP Standard

The PCI bus just isn't fast enough to move around the massive amounts of data needed to keep 3D scenes moving smoothly. To solve this problem, Intel has announced the Accelerated Graphics Port specification for a new bus to complement PCI. The plan is that it will provide a fast standard way for 3D cards to access main memory, without tying up the PCI bus.

AGP support will require new motherboard designs and is not likely to see the light of day until the middle of the year. It should be common on PentiumPro systems by next holiday season, and every graphics chipset manufacturer has announced plans to support it when it becomes available.

http://www.agpforum.org/

Talisman

The dark horse in the race is the Talisman architecture announced by Microsoft last August. Though it is still nothing more than a design on paper, Talisman radically changes the way in which 3D is done.

Rather than using brute force to calculate 3D scenes from scratch every frame, Talisman will do ever so slight 2D transforms to simulate 3D motion, only re-rendering in 3D whatever portions of a scene have changed enough to be noticeable. This greatly reduces the amount of calculations needed per frame, and should enable much greater scene complexity. According to Microsoft documents, the Talisman project will result in "performance rivaling high-end 3D graphics workstations… achieved at a cost point of two to three hundred dollars." Of course, it remains to be seen what sort of actual working silicon will come out of this. And Microsoft's lack of punctuality should not encourage breath holding.

http://www.microsoft.com/hwdev/devdes/

One final word of advice — memory is cheap, so don't even *think* of settling for less than 4MB

Real 3D

The team that designed the Model 3 Computer Graphics System that Sega uses in *Virtua Fighter III* has its eyes set on building a low-cost PC 3D-accelerator designed around Intel's AGP bus.

A 3D-only version of the Real 3D chipset will debut in a workstation graphics card, but details on the low cost 2D/3D accelerator remain sketchy. The soonest anything will be released could be when AGP makes its debut in mid-1997.

http://www.real3d.com/

And the rest...

Even more 3D chipsets are looming on the horizon. Silicon Reality has recently posted some very impressive specs for a Direct 3D optimized engine core called TAZ, Phillips Semiconducter has announced a chip architecture called Big Cats, Trident Microsystems has announced plans for a 3D chip designed to work with DVD systems, and Singapore's TriTech Microelectronics has posted some jaw-dropping scenes on their web page they claim that their Pyramid chip can render in real time. Check this lot out:

http://www.sireal.com/
http://www.semiconductors.philips.com/
http://www.trid.com/
http://www.tritech-sg.com/

In conclusion, here's our take on your best purchase right now.

It may be worthwhile to wait just long enough to take a close look at the cards on the near horizon, such as the PowerVR and the PIX, but there is little to be gained in waiting for the monster chipsets due in a year — now, finally, is the time to buy. A gamer's best bet is probably one of the Vérité-powered cards for their excellent 3D, solid 2D, and great price.

If you feel like going all out for that 3D experience, you can not beat the sheer muscle of a 3Dfx-powered accelerator, coupled with a good solid 2D board.

If you're itching to play on a big screen, the TV-out of the ATI 3Dxpression+ PC2TV is hard to top even if its 3D power lags the best.

The Mystique is probably a mistake due to its lack of some essential features, but it does provide some excellent 2D and DOS games performance. The ViRGE-based cards are a mixed bag. Some have excellent 2D performance, as well as decent 3D muscle. If you find one with a good balance of price, performance, pack-ins, and features, it might be worthwhile.

Our final word of advise — memory is cheap, so don't even think of settling for less than 4MB on your accelerator. The extra supported graphics modes, color depths, and memory for 3D textures is worth the few extra bucks.

ng

The team responsible for *VF 3* is looking to make a similar 3D chipset for the home

Rendition Vérité

New driver code for its RISC code helps Rendition Vérité chipsets overcome initial gripes about poor 2D performance. Is this the start of a standard?

Rendition has turned a lot of heads with their Vérité chip, delivering excellent 3D performance at a great price. Initially dismissed as having poor 2D performance, thanks to it's programmable RISC core, new micro-code and drivers have given Vérité excellent SVGA performance and good to great Windows speed. The only thing that lags are straight VGA modes; performance there is a dog. Fortunately, few if any new games coming out are written for VGA; most have moved on to SVGA where the Vérité shines.

The Vérité's biggest claim to fame is that it is the exclusive home to accelerated *Quake* (at least until the Direct3D port is finished). And *Quake* does indeed shine on the Vérité, running with 16-bit color at 640x480 with filtered textures and anti-aliased edges. The Rendition version keeps getting faster and prettier every day too, be sure to check Rendition's web site to download the latest patch to make sure you are experiencing the best. http://www.rendition.com/

All of the Vérité cards come with 4MB of memory standard and support Windows resolutions up to 1280x1024 with 16-bit color. They provide for scaled MPEG video playback, with good quality, but not quite as stellar as ATI's.

***Cybergladiators* is rather plain without 3D acceleration, with it, it is gorgeous. *A10 Tank* needs acceleration to maximize texture use**

Vérité-based cards:

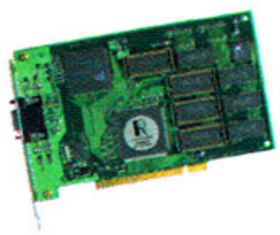
Intergraph Reactor
$149

Rating: ★★★

Manufacturer: Intergraph / 800.763.0242 / www.intergraph.com

Bundle: Shareware *Quake*, *Indy Car II*, demos of *Monster Truck Madness*, and *Hellbender*

In a nutshell: The Intergraph Reactor lacks the polished drivers and/or extra speed that have been wrung out of the other Vérité cards, but they have compensated with very aggressive pricing. A 4MB Vérité card for under $150 gives unprecedented bang for the buck, making this card definitely worth a look.



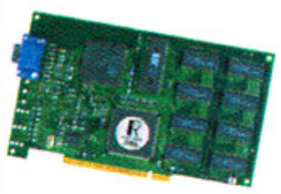
Creative Labs 3D Blaster PCI
$199

Rating: ★★★★

Manufacturer: Creative Labs / 800.998.5227 / www.creativelabs.com

Bundle: Shareware *Quake*, *Flight Unlimited*, *Rebel Moon*, a slightly limited version of *Battle Arena Toshinden*

In a nutshell: The Creative Labs 3D Blaster PCI uniquely supports the CGL API provided by the original 3D Blaster, so the few games released for that older board will continue to run. This is a solid board.



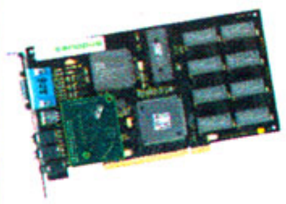
Sierra Screamin' 3D
$199

Rating: ★★★★

Manufacturer: Sierra On-Line / 206.649.9800 / www.sierra.com

Bundle: Shareware *Quake*, *Indy Car Racing II*, *Silent Thunder: A10 Tank Killer*, *Cyber Gladiators*

In a nutshell: Sierra is entering the hardware market to try and help establish a standard for 3D acceleration, the same way they sold sound cards to push that as a standard feature years ago. Besides the excellent bundle of accelerated games, Sierra delivers optimized Windows drivers that run 20-30% faster than the standard ones provided by Intergraph and Creative Labs.



Canopus Total 3d
$279

Rating: ★★★★★

Manufacturer: Canopus / 408.467.4000 / www.canopuscorp.com

Bundle: Shareware *Quake*, *Indy Car Racing II*, *Descent II*, *Whiplash*, 3D LCD Shutter Glasses

In a nutshell: Canopus built the card and wrote the drivers for Sierra, and now have release a powered accelerator of their own. They are using a 3.3 volt version of the Vérité chip that can be clocked at a slightly faster speed then the rest, and they have further optimized the Windows drivers Sierra is using, giving a little extra speed all around. Also, the Total 3D card has a sound spatializer built in to enhance your computers audio out, and a port to hook up included LCD shutter glasses. The included versions of *Descent II* and *Whiplash* have been modified to support the 3D glasses, and once your eyes adjust, the effect is stunning.

If the audio circuitry and 3D glasses are just gimmicks to you, then the Total 3D is probably not worth the premium price. But if you want the absolute best of the Vérité boards, this is the one to get.

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This rugged and mighty off-road behemoth can conquer any terrain.

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–Computer Gaming World

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THE WORLDWIDE

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My Mail Was Lost—IN SPACE!

SHOCKING PHOTOS INSIDE!

Mineola mailman mind-melds with 30-legged space worm to save happy hour crowd from crazed killer!

MINEOLA, NY—Lucky Long Islander Pat Harris has encountered plenty of killer dogs on his postal route over the years, but never any killer space aliens—until now! **"I was just minding my own business,** delivering Mrs. Panayatocopoulos' mail when these space guys ask me if I want to go for a ride." Suddenly, Harris was transported to a bizarre bar full of creepy-crawly space critters! Then the wacky E.T.'s made Harris enter the minds of space port bar patrons—including a man-sized worm thing—to retrieve clues that ultimately led space police to a shapeshifting serial killer! Sadly, after returning from the minds of various insect-like aliens, Harris is left with a life-long legacy of flashbacks that cause him to eat maggots and simulate molting. But for Harris, it's a small price to pay for intergalactic glory!

"I want to go back to Armpit VI. There, I'm an intergalactic hero. But here, I'm just another disgruntled mailman that's been abducted by aliens," reveals sentimental galaxy-trotter Harris.

In a strange twist of fate, the mail Harris was supposed to deliver to **Steve Meretzky—creator of "The Space Bar,"** "The Hitchhiker's Guide to the Galaxy" and numerous other science fiction games—ended up in the "hands" of a wide-eyed resident of planet Armpit VI.

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RATING PENDING RP CONTENT RATED BY ESRB

Designed for Microsoft Windows 95 MacOS

Developed by Rocket Science Games and Boffo™

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Previews brought down from the Mountain

Third-person action games like *Tomb Raider* may have taken center stage, but the first-person genre still has some life left. Check our exclusive coverage of Epic's *Unreal*, an all 3D action title which could outdo *Quake*. Also, read over what Williams has in store for the Nintendo 64 version of *Doom*.

Meanwhile, Bethesda Softworks already has one of the better first-person shooters, *SkyNET*, so now it's teaming up with the special effects house behind *Independence Day* for the next word in space combat sims, *10th Planet*.

68 Unreal PC CD-ROM, NINTENDO 64

Epic Megagames has a new 3D, first-person shooter, and calls it the *Quake* killer

75 Epic MegaGames

A conversation with the *Unreal* team about MMX, Direct3D, Nintendo 64, and *Quake*

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Rex Bradford, who all but invented PC golf, turns to the oldest course in the world

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With the N64 at its disposal, Williams is confident that this is the best *Doom* yet

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As in San Francisco. A new arcade racer from still-alive-and-kicking Atari games

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One of Konami's longest-running characters takes his stab at a 3D adventure

99 Mace ARCADE

This new 3D brawler looks great — but is that enough to push it ahead of the pack?

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Konami ups the number of N64 sports games by one with this soccer sim

107 Shadow Warriors PC

The designers of *Duke Nukem* are back with a new 3D shooter that's even bloodier

110 10th Planet PC

Bethesda Softworks shows us what could be the best space combat sim of the year

Unreal

Yeah, it's another first-person shooter; yes, it's got a female hero; and OK, sure, it has polygonal enemies — so why does Epic MegaGames' latest look so cool?

Format: **PC CD-ROM**
Publisher: **GT Interactive**
Developer: **Epic MegaGames**
Release Date: **June 1997**
Origin: **U.S.**

The history of videogames is marked by both sudden, groundbreaking originality, and long periods of rip-off copycats. At first glance, *Unreal* would seem to fall into the latter category. It is, after all, a 3D, first-person shooter, and despite the genre's recent addition of polygonal enemies, it may be fast approaching the limit of its creative possibilities.

However, after seeing only a few seconds of *Unreal* in action, you realize there's more going on here

Look close folks, because this could be history in the making. With its extremely high-resolution textures, high polygon count enemies, and smooth character animation, Epic's *Unreal* could be the 3D shooter to beat in 1997

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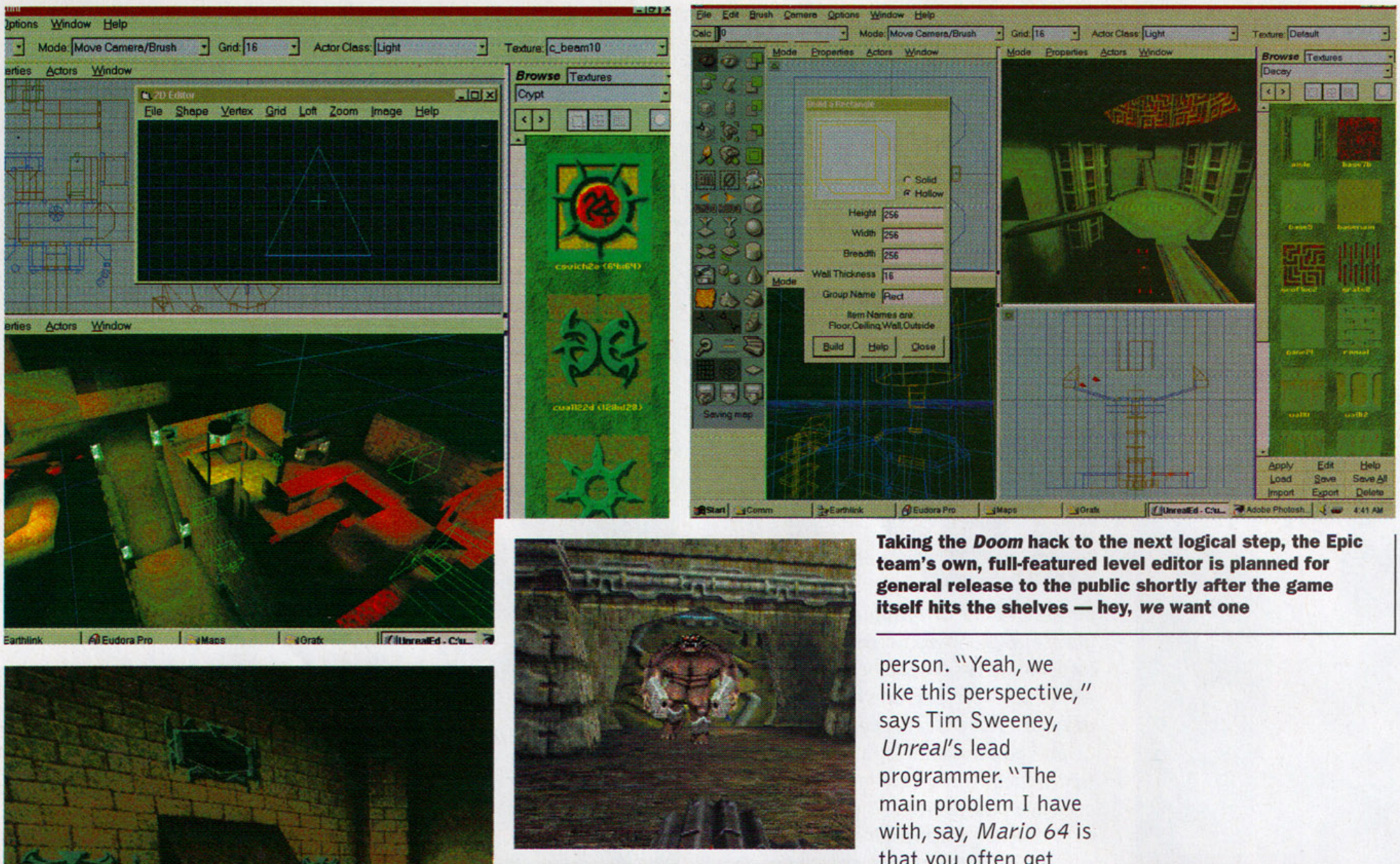

Taking the *Doom* hack to the next logical step, the Epic team's own, full-featured level editor is planned for general release to the public shortly after the game itself hits the shelves — hey, *we* want one

Familiar perspective, knockout detail — is *Unreal* the game that has it all?

than at first meets the eye. The design team humbly refers to *Unreal* as "The *Quake* Killer," and they may well be right.

To begin with, the game is built around one of the fastest, most flexible and sophisticated 3D engines ever designed, running at high resolution in 16-bit color. It boasts real-time, multi-colored, and extremely dynamic multiple light sourcing and sports a huge number of the most highly detailed texture maps **Next Generation** has yet seen in a game.

Even with the new technology, however, the game is still firmly first-person. "Yeah, we like this perspective," says Tim Sweeney, *Unreal*'s lead programmer. "The main problem I have with, say, *Mario 64* is that you often get into these confusing bits where you wish the camera would go a certain way and it doesn't, or no matter how you move the camera, it's never quite right."

The player

takes the role of a prisoner who, while being transferred, crash-lands on an alien planet. A war between two sentient races has been raging on the planet for years, and, thanks to the planet's core of an element called Turitium, other equally hostile alien races have been crashing there with appalling regularity as well. Now the player is stuck in the middle of it, struggling for survival and trying to escape.

A female hero

was originally slated for the game. However, according to co-designer Cliff Bleszinski, "Although when we started, we thought having a female character would be revolutionary, now everyone's doing it, so we're going to have a male and a female,

"We're going to have a male and a female hero, and maybe try to get an 'X-Files' thing happening"

Cliff Bleszinski, Co-designer

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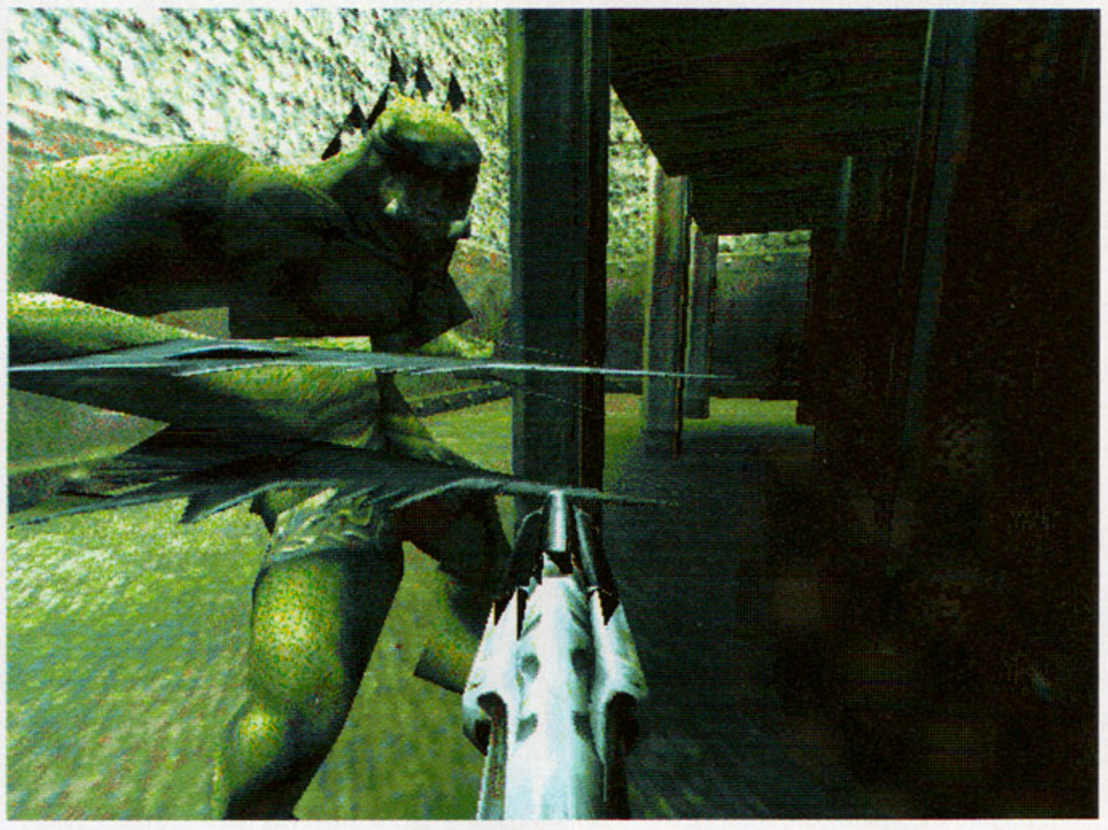
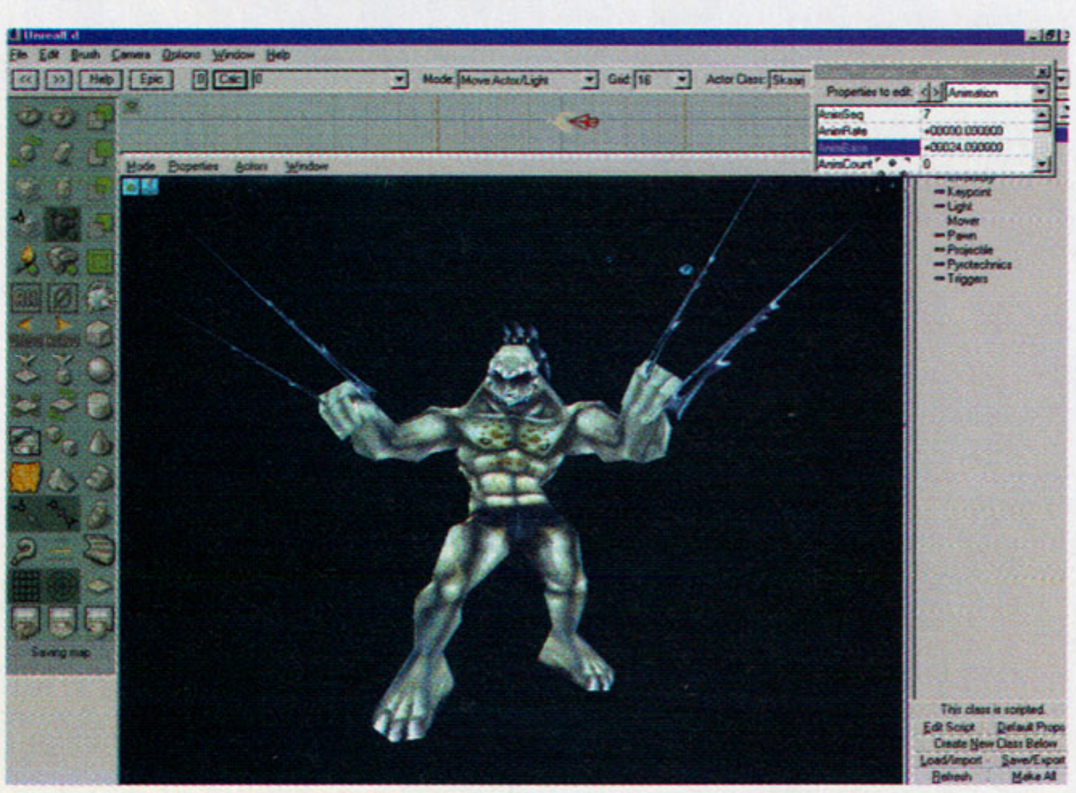


Come around a corner, meet a big ugly mutant guy with big guns — but have you ever seen one that looked this good up close in 3D?

and maybe get a kind of 'X-Files' thing going on — except I think the guy's going to be bald and the woman will have tattoos."

The sheer speed and beauty of the game's engine has been enhanced by Intel's new MMX processor instruction set. While this doesn't speed up the rendering directly, it does add to the game's detail and realism in startling ways. Bleszinski explains, "For one thing, MMX enables us to mix colored lights. So if you have a room lit in orange torchlight, with a blue light coming through the door, and you shoot a green fireball, it will all blend perfectly. The colored lights still work on a regular Pentium, but it's going to be more sector-based and doesn't shade over quite the same."



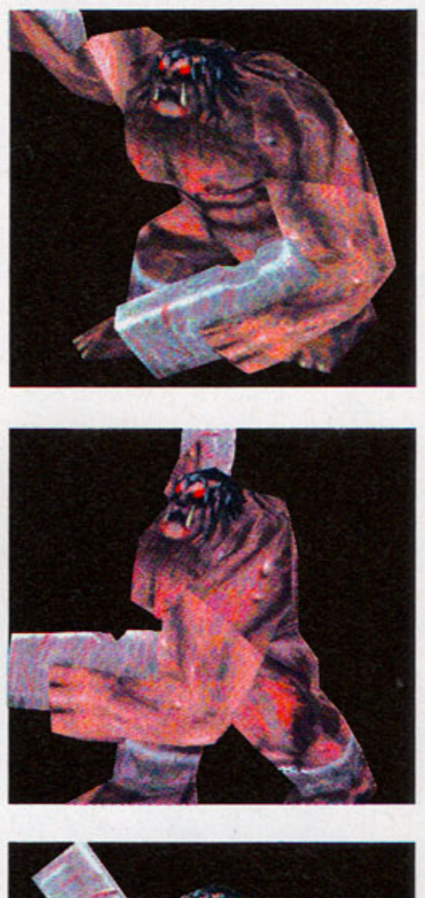
***Unreal*'s Predator-inspired critters are known as the Skarj, pronounced "scar" — for no apparent reason, the "j" is silent. Go figure**

Mark Rein, *Unreal*'s marketing director, adds, "All you have to do is look at it, at how much better the textures look in 16- and 24-bit color and the way it blends, look at the water, and how much better the transparency is — that's a lot of what we use MMX for. If you don't have an MMX machine, you're not going to know you're missing something, but if you *do* have MMX — it sure looks nice."

MMX instructions also help smooth and filter the game's numerous, detailed textures, of which the team is justifiably proud. "A lot of them are 128x128," Sweeney says, "but some are as much as 512x512 for textures that align and repeat. Some special ones are even bigger."

James Schmalv adds, "In fact, while we were testing how different things affected the frame rate, I thought, 'OK, let's try *Quake*-sized textures,' which are more modestly sized, just to see if it made *Unreal* any faster. Turns out there's a whole 3% speed increase, but we figured, 'Well, at least our way we've got four times the detail!'"

Thanks to the large number of different alien space wrecks, each of the game's planned 30 single-player



We've said it before, but these still screens can't do the animation justice

ng alphas

Most exciting is a special feature that Epic wants to release to the public: the team's own level editor

levels have a wide variety of different looks. And, thanks to the 16-bit color palette, they're not just different shades of gray and brown, they feature lots of colorful (if still quite subdued and moody) corridors and rooms. Outdoor scenes link the levels, so progress is seamless with no breaks in the game's considerable action.

The action, however, is set off by a series of puzzles and other tasks that neatly avoid the "button-door" affairs common in the genre. Instead, the game is more like a 3D *Metroid* in structure, with different special objects that must be found to progress to new areas.

A different set of levels are designed for multiplayer combat. "Designing a level that works for both multiplayer and single-player is like building a car that goes on the water," Bleszinski cracks. "It's just stupid."

You know it's a really bad day when aliens start dropping from the sky

Most exciting is a special feature that Epic MegaGames wants to release to the public: the team's own level editor. Rein explains, "What we hope to do is include an unsupported, feature limited version of the level editor. Cut out all the dangerous stuff — like what's still buggy at the time of release or needs

Designed for Microsoft Windows 95

TEEN AGES 13+ CONTENT RATED BY ESRB

What you get to do: Shoot with gun, shoot with D-pad, shoot with D-pad and partner, shoot with gun and partner,

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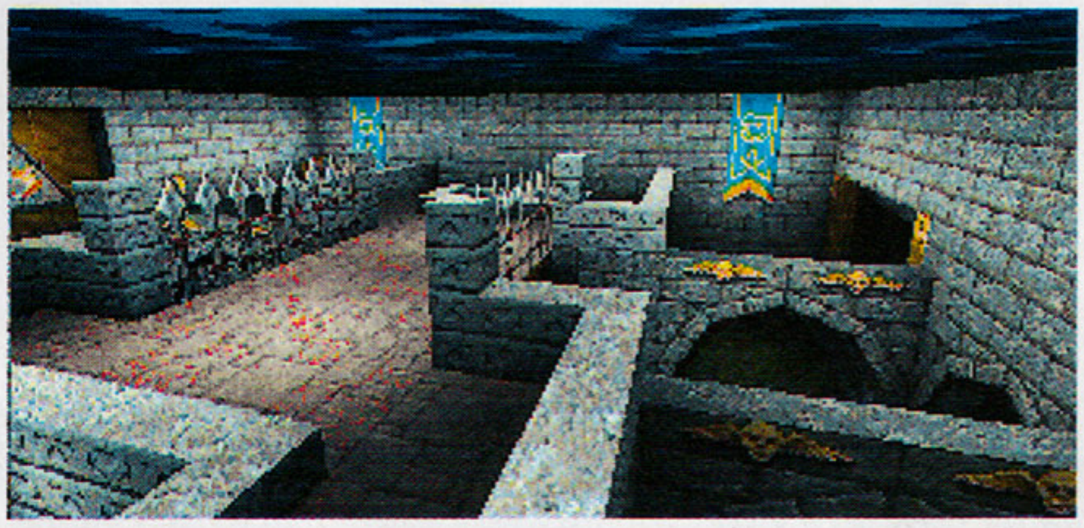

Is it live or is it *Unreal*? — the game's scenery is utterly breathtaking

to be simplified — but give something with the game to spark interest. Later we'll release a stand-alone version with a really fat manual and a lot of pre-built brushes and textures and sound effects. We'll 'product-ize' it and make it easy to use, because we want people to be able to use this and not have to be rocket scientists."

The Epic team hopes that by releasing the editor, the level hacking that began with *Doom* will go to the next level, giving thousands of eager *Unreal* fans the chance to design and implement their own worlds and concepts. The editor is sophisticated enough to enable nearly anyone to import their own textures and build practically any structure, with a scripting language for making puzzles.

So, in conclusion, if *Unreal* accomplishes nothing other than putting game design into the hands of gamers, it will have made its mark in history, and may well be a smashing game to boot. ng

"A lot of the texture maps are 128x128, but some repeating textures are 512x512 — special ones are even bigger."

Tim Sweeney, Lead Programmer

shoot with D-pad and gun, shoot with gun in each hand. What you don't get to do: Recite poetry, pick daisies, hug lovable stuffed animals.

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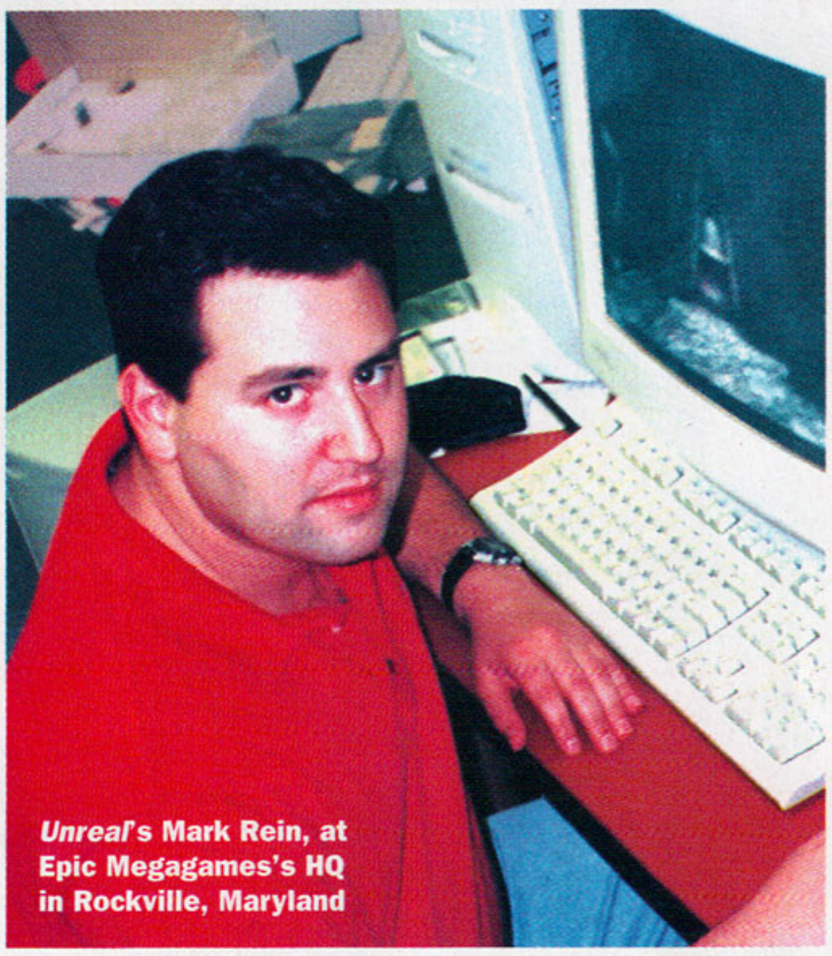
An interview with Epic MegaGames



Unreal's Mark Rein, at Epic Megagames's HQ in Rockville, Maryland

Tucked away in a nondescript office complex in Rockville, Maryland is the office of Epic Megagames, the company responsible for the *Unreal* project. **Next Generation** drops in on the *Unreal* team — marketing director Mark Rein, lead designer James Schmalv, co-designer Cliff Bleszinski, and lead programmer Tim Sweeney — and probes the design process...

Next Generation: *Unreal* has been in development for three years. How did it start?

James Schmalv: I made the terrain first. A *Magic Carpet*-type terrain.

Mark Rein: Oh yeah! This is funny: the first thing we ever had was the outdoor terrain, and we haven't had it since! [laughs] But it is going back in the game. DMA is going to use one of its SGI terrain editors to design it.

JS: I was experimenting with a cavern-set, robot-type game, and I progressed to the continuous mesh technique that we have now, so I changed it from caverns to outdoors. By then I had these polygon creatures, like this dragon flying around — that was the first good polygon creature we made up. From there we added buildings, and Tim got into making this editor for doing the buildings — after that, it took off and just became, obviously, incredible. [laughs] So I started focusing on the creatures and the artwork, and Tim took over the engine. Cliff came on... Because the editor was making it so easy to put together the structures, we had the tool to make the indoor areas, so there was less focus on the outdoor stuff. But like Mark said, we'll add that later.

NG: Why a first-person shooter?

JS: Well, it's changed a lot over the years. Once the editor started looking good, we knew we were going to set it mostly indoors, because it was so easy to make the indoor stuff look good...

MR: Well, the thing is, the indoor stuff is actually harder to do.

NG: Why?

MR: Just because you see so much more detail. The engine has to move really fast, and you need detailed textures because you can get really close to stuff indoors. Outdoors, stuff is generally farther away.

On the other hand, there's a lot of limitations doing outdoor stuff you just can't get around. Indoors there's lots of ways to trick the user's eye. It's really amazing, but some of the most detailed scenes in *Unreal*, you're only looking at 50 to 80 polygons — the details are in the textures and the lighting. We're trying to get more and more polygons in there, but the details are really in the lighting.

To do *Unreal*'s lighting on a machine like the Nintendo 64 would require way more polygons, because a lot of these 3D accelerators light whole polygons, they don't light regions. What Tim does with these little 8x8 areas of the screen — I mean, each individual area of the screen that you can assign how much light there is, they're only eight pixels by eight pixels. That's *really* small, which is why the lighting is so smooth, because you can't really see the gradations in it. There's really only 64 levels of light.

NG: Moving to the Nintendo 64 version...

MR: We still have to get Nintendo's approval on everything, but we're working on it. We're already coding the engine.

NG: Given that you have a very large number of high resolution textures, will fitting them all into a cartridge be a problem?

MR: Well, we'll have to reduce the dimensions of the textures, so they'll be scaled down quite a bit, but with the bi-linear filtering, you can get away with much lower resolution textures and it will look just as good. Plus you're also playing at a much lower screen resolution. With the Nintendo 64 and other systems that have only a few megs of RAM, we'll probably have to make some compromises — limit the number of unique textures per level, maybe cut the levels up a bit — but for the most part I think folks will be surprised how good *Unreal* looks on that system. Nintendo 64's a heck of a powerful system, and since we're hoping to do *Unreal* for the 64DD drive, storage hopefully won't be a problem. We're going to have, well, I don't know exactly with compression, but many, many megs.

NG: So *Unreal*'s not an N64 cart?

MR: I think we could do *Unreal* as a cart, but I don't think we want to do *Unreal* as a cart, because we want to keep the monster amount of detail. We want to keep the levels intact. There's a limit even with the disk, because you load each level's textures as you load the level, but we don't want to have the same look over and over again, and that's the problem with a cart. LucasArts can do *Shadows of the Empire* now and sort of get away with it because there's very few games now, but later on when there's lots of games, you won't be able to.

NG: Getting back to the PC, when did you first get excited about MMX?

MR: It's kind of funny. Intel had heard about *Unreal*, and they invited us to Portland to show it — like Microsoft, they support developers really well — and we showed it to their engineers and OEM people and marketing people...

JS: Back then it was just the outdoor terrain and the dragon...

MR: After the meeting the Intel people came back in with a stack of non-disclosure agreements about MMX. They told us about it, because I don't think they actually had chips at the time — I think they've been working on it for about six years, so it's not something they just threw together — but they told us about it, and Tim was really excited because he knew immediately what it could do, and they seemed to feel that Tim was the kind of guy who could really make it shine. So before they even had a working

We could do *Unreal* as a Nintendo 64 cart, but we want to do it for the 64DD disk drive, because we want to keep the monster amount of detail

ng alphas

version they came and taught us what the instruction sets do. Tim picked that up right away. He wrote the code on paper the night after they came and had a fully working MMX version of the rendering code before we even had the chip! Several months later they sent us an emulator, which enabled a Pentium to run MMX code — speed-wise it wasn't frames per second, it was seconds per frame, but it let us test the code — and it worked, his code actually worked the first time!

But MMX is serious technology. Intel told us right from the get-go that every one of their chips is going to have MMX, and that's what really piqued our interest. See, that's the problem with, say, 3D accelerator cards. Direct3D isn't ready enough for prime time that you can just generically support it and everybody's card works well. But with MMX, there's no question about supporting it, because in five years, everyone who's got an Intel processor will have these instructions.

NG: Then how has 3D-card support been?

MR: At the end of last summer, we got a first-generation 3D card — and I don't want to name the vendor, because it was first-gen and that's not really fair — but Tim coded a patch for it, just played around because he was intrigued by it, and in about eight hours got *Unreal* to run on it. It had bi-linear filtering, so it looked good, and it ran at a constant 35 fps, which was great until you added the lighting. The trouble was that in order to get the lighting to work the way we do it, you had to run every frame twice. Since the frame rate was constant, that means we were getting 17 frames per second. Which, you know, we just weren't going to do.

NG: Why draw it twice?

Tim Sweeney: Well, every light can be dynamic, so you can have wild lights turning on and off or pulsing or whatever. And to get shadows, you have to draw it once for the textures and twice to get the lighting effects over it. If you compare it to *Quake*, it's a lot more sophisticated. You get a slight performance hit, but we made a conscious decision to do it that way because you get so much more detail. And the process works well in software, but when you run that through hardware, it just renders the whole thing again. By the time *Unreal* ships, I think there will be some really capable cards that might be fast enough, but right now it's not an issue.

JS: Yeah, because we're supporting Direct3D [D3D] at least, so if you have a card it will run on it. It's just a question of how much better that will run over software only.

TS: Well, D3D does the job. You know, some of these different cards have a bunch of cool features that D3D just doesn't access. It's a problem because what really counts is what people have, and unfortunately that's not clear. But at least D3D is good because it sets a standard, and maybe it's not a great standard, but without one I think the market wouldn't get anywhere. It'd be like the way sound cards were under DOS.

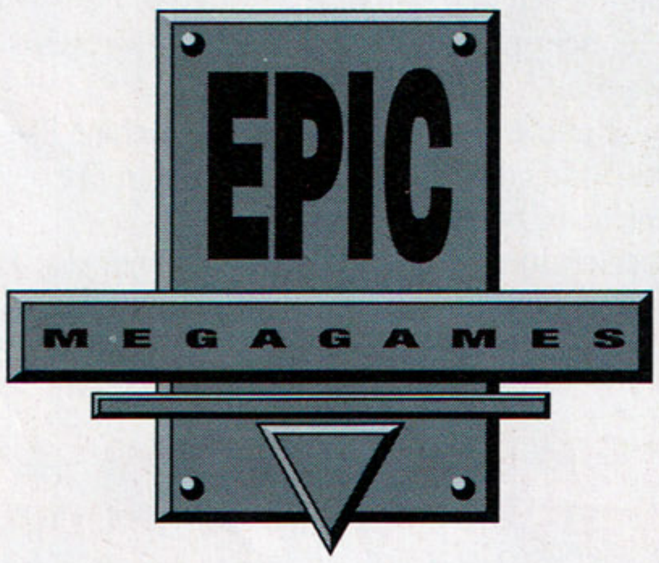
JS: Maybe supporting some of them directly might be the thing to do...

That's the challenge: create something new that people will want to play, and then create new stuff based on that technology

MR: If the card vendors want to give us money to support them! [laughs, leans into microphone] If they want direct support and they want to pay for it, they can call me direct, Mark Rein, that's R-E-I-N!

NG: Obviously *Unreal* is going to be compared to *Quake*. What are you doing to beat it?

Cliff Bleszinski: I think if you think of *Quake* as a car, it's like a really good base model that runs really fast. With *Unreal*, we're hoping to give you air conditioning, power brakes, power steering, and a real sense of style that's



lacking in some of those other games.

TS: We've got to come up with a game that's better *and* different. If people look at it and go, "Hey, it's 20% better than *Quake*," then we've failed to do anything significant. We've got to do things that distinguish *Unreal*. We've added morphing characters. Imagine changing into some giant creature with lots of power, like a dragon. That adds a lot to game play.

Also, we're making the level editor available to the public, and it's very user-friendly. I think the one goal I have is to bring level editing into the mainstream. Id started the trend with *Doom* and *Quake* by making them hackable to the point where people could create their own editors, but they're not very easy to use. With *Unreal*, we could wind up selling half as many copies of the editor as of the game. That becomes especially important with Internet play, where people can create their own levels, write their own scripts for the puzzles, and create their own new, cool stuff. Seeing what other people can do is incredibly fun for a game developer.

NG: Given that you're bringing level editing into the mainstream, with 10,000 monkeys hammering at 10,000 keyboards, aren't you worried that by the time you're working on a sequel, you'll have already been outdone?

TS: If the community is outdoing what we're doing, our sequel won't do that well, but we'll be selling so many editors and making so much money, we won't care!

JS: And if somebody's that good, we'll probably just hire them anyway!

MR: The other thing is, for the sequel, we'll certainly have new technologies, the next rev of the engine, a whole bunch of new features that can't be added through an editor for *Unreal 1*. But that's the challenge: create something new that people will want to play, and then create new stuff based on that technology. I think id will go through the same thing with *Quake* — the challenge is to make *Quake* new, make it better next time so people want to try it all over again.

NG: So you see *Unreal 2* differently from the way id saw *Doom II* or *Heretic II* — that is, not roughly the same engine with new levels and new enemies?

TS: Yeah. Especially today with the Internet and people talking about games and sequels, There's a lot more information and ideas being shared. You really have to up the stakes every time.

CB: I think with this genre of game, in order for it to advance, you need to take a few risks. We're going to have fast, hot, 3D action, but we're going to have lots of people slow the game down and find ways to kill people in creative way.

JS: Look at how we use moving 3D brushes. You can just imagine the different ways designers will come up with to manipulate those. *Quake* doesn't even have them, and that really gives a different feel to our game.

NG: How does the gore level compare?

CB: We're going to have a lot of blood.

MR: Gee, I don't know... [laughs] How much does everyone think GT will allow?

JS: Some shocking stuff is in the game...

CB: Religious symbolism. A lot of blood. I mentioned the other day, when somebody really gets shot a lot of blood goes flying, and it's more than in most of these games...

TS: Yeah — arterial spray...

JS: And when the player dies we're going to have these *Virtua Fighter*-like spinning pans, watch them twitching and bleeding to death...

CB: We'd like to have a lot of that blood flying everywhere...

MR: Something for the whole family...

CB: Yeah. Death is cool.

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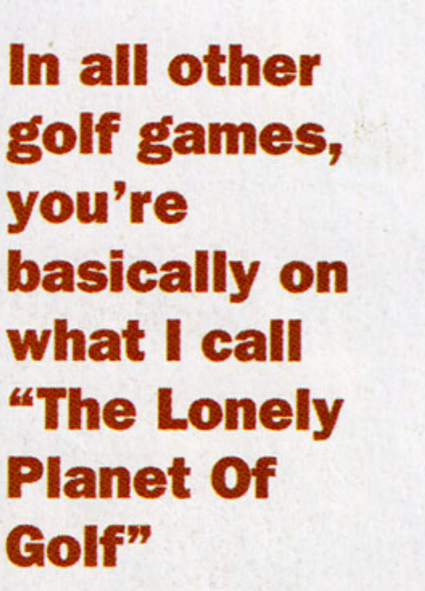
British Open Golf

One of the originators of PC golf turns to simulating the legendary birthplace of the sport, St. Andrews. Can Looking Glass successfully take golf into the future?

Format: **PC CD-ROM**
Publisher: **Looking Glass**
Developer: **Looking Glass**
Release Date: **March 1997**
Origin: **U.S.**



British Open* features the same stereo-mapping graphic technique used to create the superb visuals of *Flight Unlimited

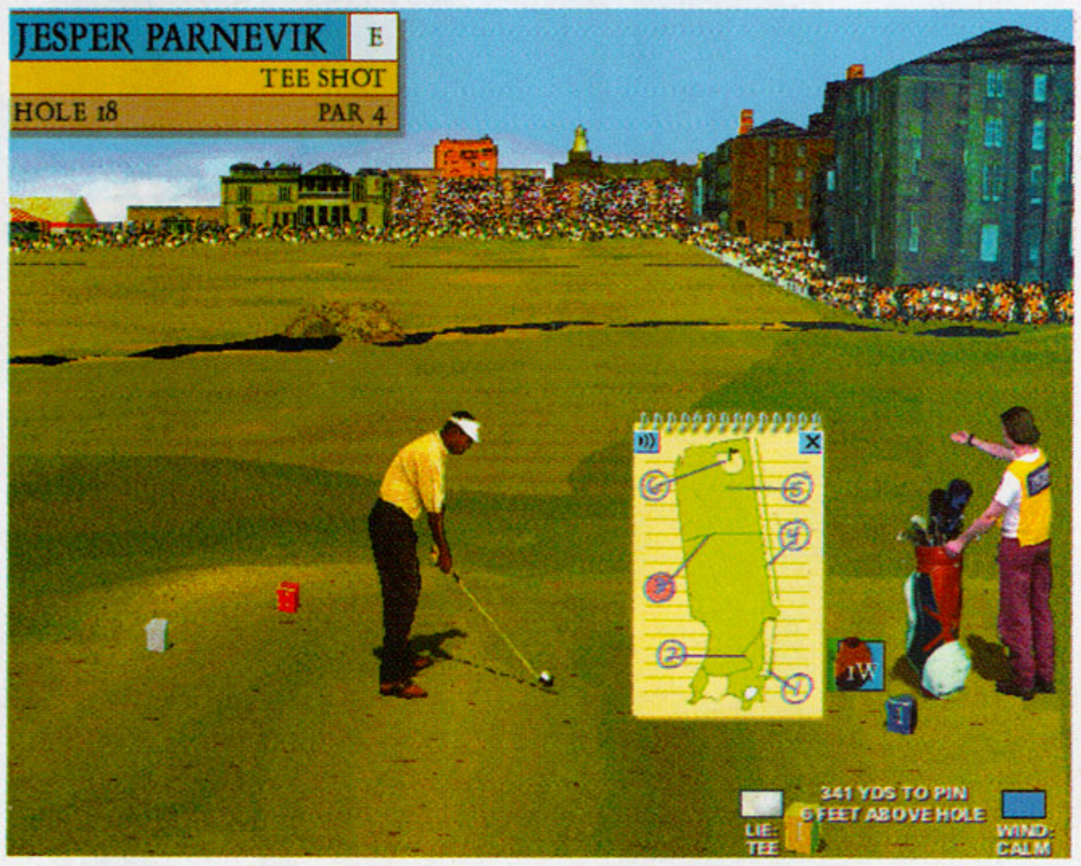
In all other golf games, you're basically on what I call "The Lonely Planet Of Golf"

Rex Bradford, Project Director

Golf. The sheer number and steady sales of computer golf games through the years testifies to their popularity. Teed up against EA's *PGA Tour Golf* and Access's *Links*, this new golf game from Looking Glass hopes to carve out its own niche by focusing on the course where (legend has it) golf was born.

British Open Golf is being overseen by Looking Glass Project Director Rex Bradford. No stranger to golf sims, Bradford developed the first PC golf sim in 1986, a down-the-fairway view, *Mean 18*. *Mean 18* was the first golf sim to feature a swing meter. It's arguable that Bradford is the one man most directly responsible for the modern PC golf game — even if he isn't so sure himself. "It's really unknown to me," Bradford says modestly, "to what extent the designers at Access, who came out with *Leaderboard* a few months later, were already doing something similar, versus being influenced by my design."

British Open features two courses, St. Andrews and Royal Troon. According to Bradford, the game captures the essence of actually playing in the British Open. "In other golf games, you're on what I call 'The Lonely Planet Of Golf,'" Bradford says. "We're bringing the feel of playing in a real championship. As you come down the stretch of the 18th hole at St. Andrews, the crowds in the grandstands cheer you on and the caddy gives you advice. You get the television-style ambiance of being in that moment."

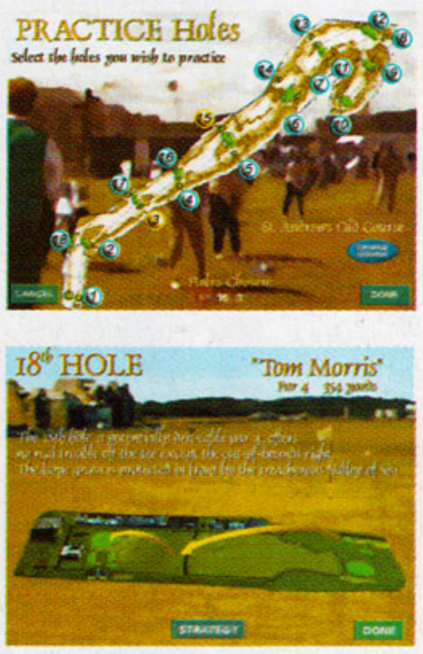


Your caddy has a highly-animated on-screen presence, as a professional with programmed AI, he actually makes helpful, tactical suggestions

These historic courses demand a lot from the game's graphics and enhance gameplay. "The courses are pretty rough, with undulations, tiny hills, and swales," Bradford says, noting the special modeling required to capture the topography. "It's an important part of playing the courses because you get a lot of funny hops off of them."

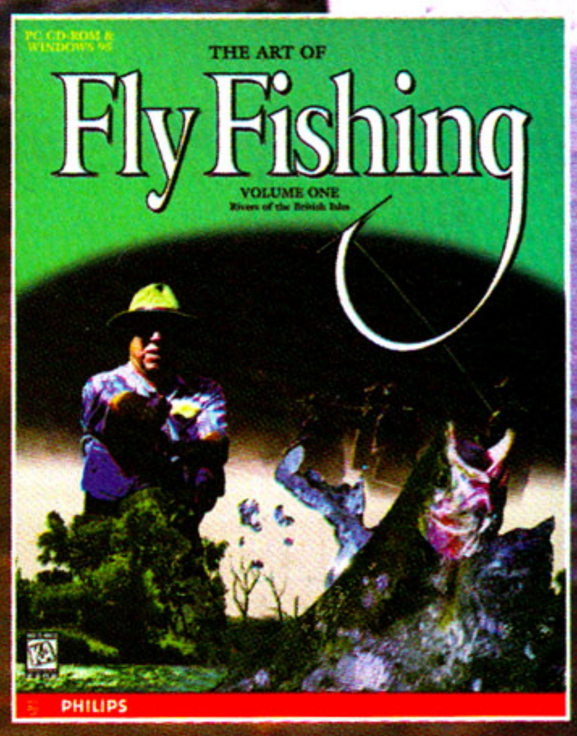
Bradford suggests a low-end Pentium for the game, which is a native Win 95 product. With 18 months development time, Bradford's team has caught up to and surpassed competitors. "We're hoping to make a splash," he says.

Given the number of water hazards on many courses, it's a sound that gamers will have to get used to. ng



***British Open* will incorporate 4,000 lines of audio commentary, with Jim McKay providing the color commentary, and a British shot analyst providing the play-by-play analysis**

Kicks Bass.



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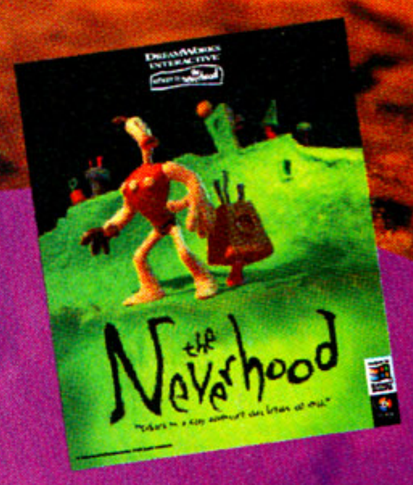

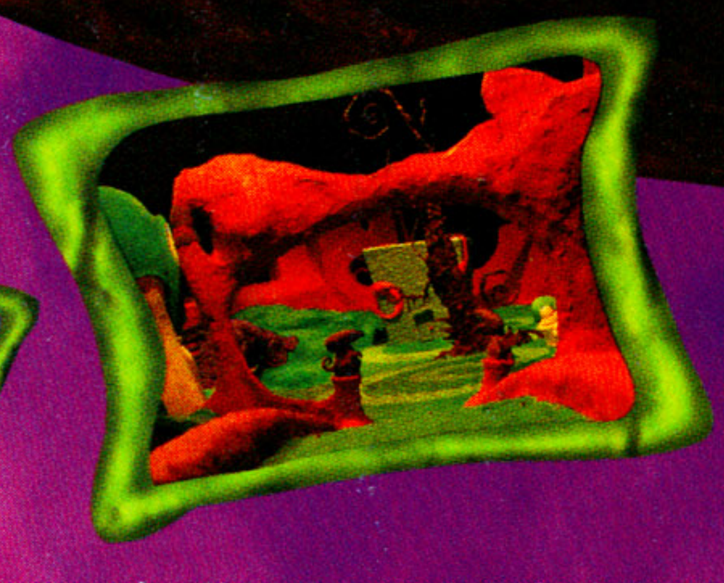

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Doom 64

Is this "original gangster" of first-person shooters still an ace in the hole?

Getting up close and personal with the hell dwellers looks to be far superior on Nintendo 64, as enemies won't pixelize nearly as much

Every weapon is rendered, and they pop from the screen like never before

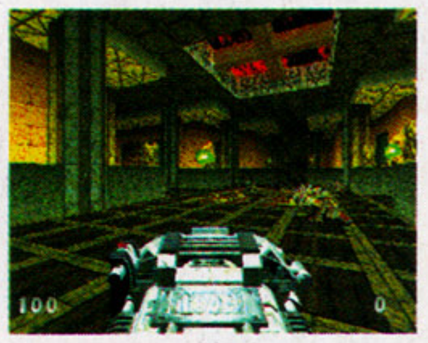
Doom, the Godfather of first-person shooters (the grandfather would have to be Id's first and lesser renowned *Castle Wolfenstein 3D*), has shown up on every possible platform over the last four years. So was *Final Doom* a misnomer? Evidently so, as Midway (formerly known as Williams) harnesses the Nintendo 64's much vaunted polygon power for a *3D Doom*.

"The levels are true 3D polygon models," says Midway's Head Artist Sukru Gilman, in response to the comparison, "but we went with sprites instead of polygon monsters." As the monsters are prerendered using SGI workstations, Gilman believes they look better than the blocky 3D enemies seen in other games. "But the main reason," Gilman continues, "is we didn't want to limit the gameplay. You can have a lot more monsters chasing you. You can open up the door, and 60 monsters can come out, as opposed to 3D polygon monsters, where you can only fight two or three at one time."

While most iterations of *Doom* have been ports of standard Id-designed levels, Midway has started this project from scratch, with approximately 30 newly designed levels. "There'll be new monsters, new weapons, and the levels are a lot larger," says Midway's Randy Estrella, Head Level Designer.

"We work with Id hand-in-hand," adds Mike Abbot, Vice President of software who's in charge of the *Doom 64* project, "but all the levels and art have originated here at Midway." Abbot concedes that Id recommends changes every once in a while, "But our art and levels stand on their own," he contends. "Id's been quoted as saying they're the best they've ever seen."

Format:	**Nintendo 64**
Publisher:	**Midway**
Developer:	**Midway**
Release Date:	**March 1997**
Origin:	**U.S.**



Most iterations of *Doom* have been ports of Id-designed levels, but Midway has started from scratch

It seems the Midway/Id relationship hasn't posed any real problems to the development of *Doom 64*. When asked if Nintendo had problems with the

ng alphas

From the pistol to the BFG, most of *Doom*'s weapons will be familiar to players

violent nature of the game (in light of Nintendo's emasculation of *Doom* for Super NES, *Wolfenstein 3D* before that, and its recent decision to remove the roadkill animation from Midway's *Cruis'n USA* port), Abbot insists he hasn't heard any complaints. "Nintendo will not be a problem," he says, "they bought *Cruis'n*, it's their game, it's their deal. *Doom*'s our game, so we have more leverage."

"*Cruis'n* is different. It's more a family game." adds Gilman. "In this game, there's nothing Nintendo can do. It's all about killing; you can't get around that."

We agree, and going in head-first, guns blazing, is much of what makes *Doom* so attractive. But at this stage in the overall lifespan of *Doom*, the game's strength is also its weakness. Offering tried-and-true gameplay, *Doom 64* strictly adheres to the game's original play mechanics, so don't expect to see any of the genre's later innovations, like jumping or aiming the gun up or down. However, Midway has made other innovations that go beyond the aesthetic.

"The programmers have incorporated new tag macros into the original engine," says Abbot. "So it allows the level designers to do much more scripting with the levels, making it more interesting for gameplay," he says.

"With Nintendo 64's scripting capabilities, a lot of different things can happen at one time," Estrella says jumping in. "The player can see a room's architecture change, mechanisms can come down from above, and say, press out the walls and reveal a staircase."

As in past *Doom* games, there's occasionally going to be one of those monsters stuck behind a cage just waiting to be shot

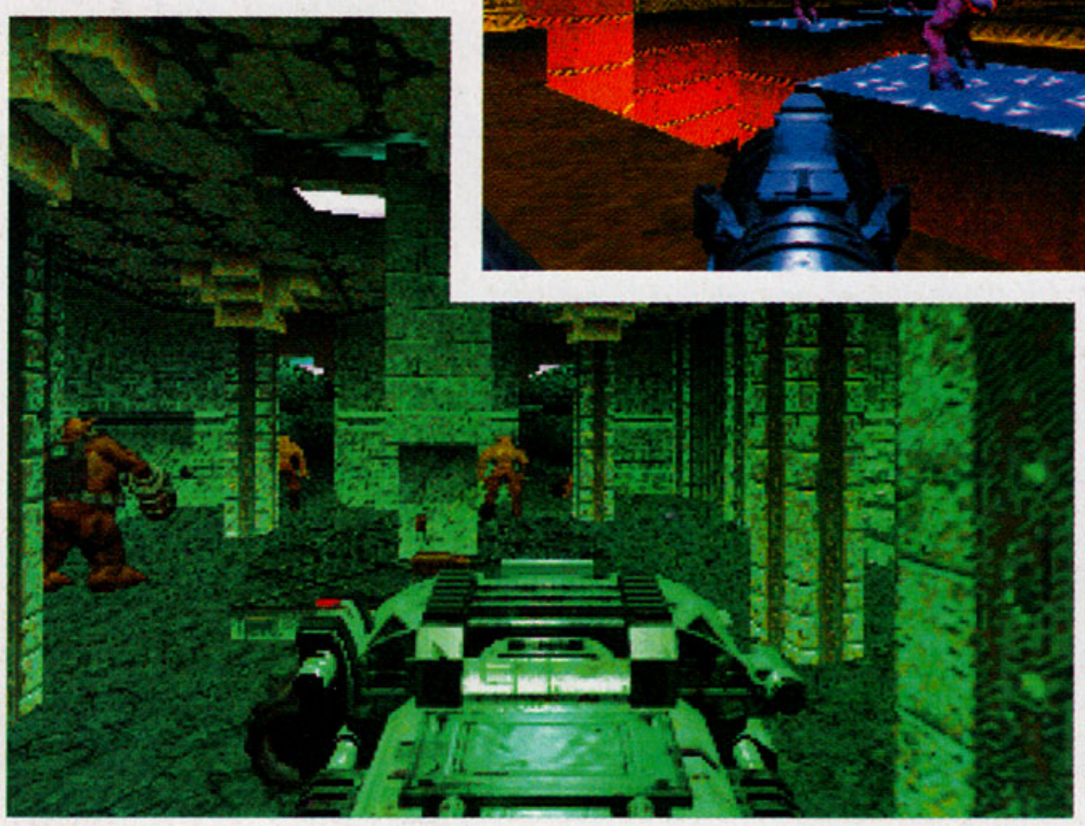
"It's all about killing, you can't get around that" **Sukru Gilman,** Head Artist

Estrella pauses before adding effectively, "It's really impressive."

"You can't compare this to *Doom* on any other platform," Estrella claims with an air of finality. "Everything has been enhanced a lot, well beyond compare."

But compared to what? The first wave of third-party developed Nintendo 64 titles have all seemed sub-standard (*Cruis'n, Killer Instinct, Shadows of the Empire*), and *Doom 64* will have to offer something truly great to once again get gamers excited.

Nintendo 64 certainly needs it. ng



As opposed to games that feature polygonal enemies, *Doom 64* features pre-rendered, sprite-based enemies, and can flood the screen with monsters

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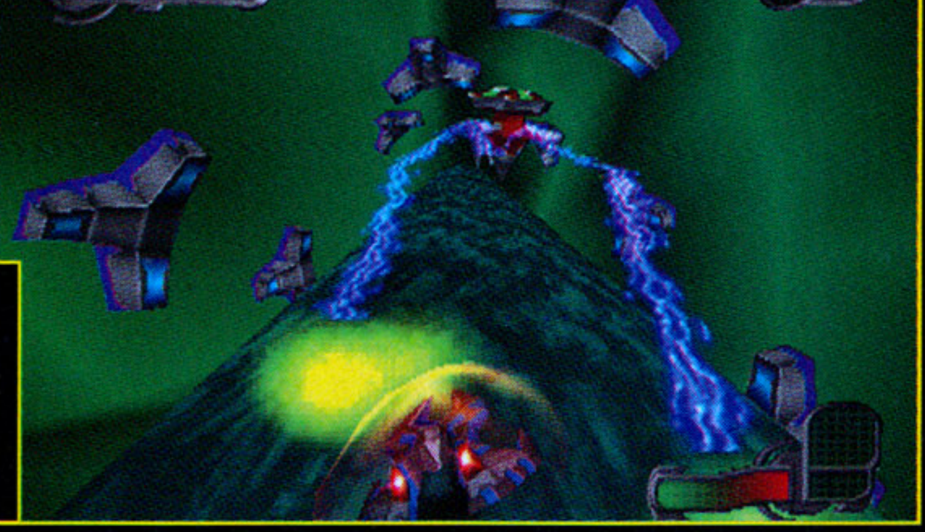

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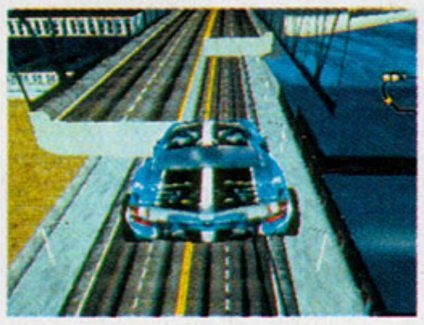
San Francisco Rush

Atari's unique arcade driving game leaves your (pumping) heart in San Francisco

Format: **Arcade**
Publisher: **Atari/Midway**
Developer: **Atari Games**
Release Date: **February '97**
Origin: **U.S.**



The highway ramp that was taken down after the '89 earthquake is ridable here

If you're bringing out a new driving game to the arcades, there's simply no room for mediocrity. Not with *Sega Touring Car*, *Model 3 Daytona*, and Namco's newest titles priming themselves for floor space (not to mention Konami's latest generation of solid racers). Atari Games is well aware of this, and its entry in the racing heat is an eight-player, arcade/sim driving blend of high jumping, precise handling, and unusual exploring. Sound weird? Wait until you see the bright lime green cabinets.

But to quote Hunter S. Thompson, when the going gets tough, the weird turn pro, and Atari is as professional as they come with its impressive new *San Francisco Rush*, a racer built around the Voodoo Graphics dual chips and geared for beginners as well as digitally savvy speed kings. Four tricked-out street cars range from easy to difficult, while force-feedback steering and an environment that's been mapped with digitized photos to resemble the videogame-friendly streets of San Francsico come together in an amazing ensemble of the absurd and realistic.

Everything is user selectable — three different tracks, automatic or manual transmission (even the clutch is adjustable for subtle feathering and speed transitions), three viewpoints, six soundtracks, and best of all, alternative routes. The shortcut options add dangerous but faster diversions to the all but standard street courses. Racing through sewers, Chinatown, the Marina, Downtown, and Golden Gate Park has never been as fun, or as risky.

But what gamers will notice right away is the ability to play with eight players and the sweet jumping sequences, which, while excessive and not much help in your quest for first place, are absolutely cool. ng

Here's why it's called *Rush*: wonderfully unrealistic jumps off real, mapped SF streets (top). There will be at least three courses, with a couple of truly cool shortcuts per level, although they won't be shown. The view of the city also serves for course select screen (right)

"When the going gets tough, the weird turn pro" — and Atari is as professional as they come

The game is an even blend of realism and arcade fantasy. When damaged badly enough, the cars melt down into a burning lump of metal, which is pretty realistic

Atari has brought back *Hard Drivin'*s excellent force-feedback steering

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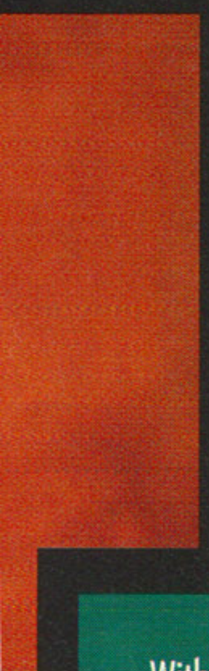

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U R N O T e

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Gambare Goemon 5

One of Konami's longest-running characters makes the leap to 3D — and the U.S.?

A hearty band of adventurers, an evil conqueror to overcome, and a Japanese flavor — *Gambare Goemon 5* is pure console RPG through and through, yet benefits immensely from its humor, scope, and real-time 3D environment. Just the sort of game the Nintendo 64 needs on its home turf

The question mark is whether the lad will make a second trip to U.S. soil

Format: **Nintendo 64**
Publisher: **Konami**
Developer: **Konami**
Release Date: **Summer 1997**
Origin: **Japan**

First appearing on the fledgling 8-bit Famicom in 1984, the character of Goemon, a puckish fellow of indeterminate age living in feudal Japan, has a longevity rivaled by few others in Japanese videogames. Yet he remains almost unknown outside his homeland. Only the second game in the *Goemon* series was ever released in the U.S., as *Legend of the Mystical Ninja* in 1991. All that may change however, when *Gambare Goemon 5*, a 3D action/RPG, is released later this year.

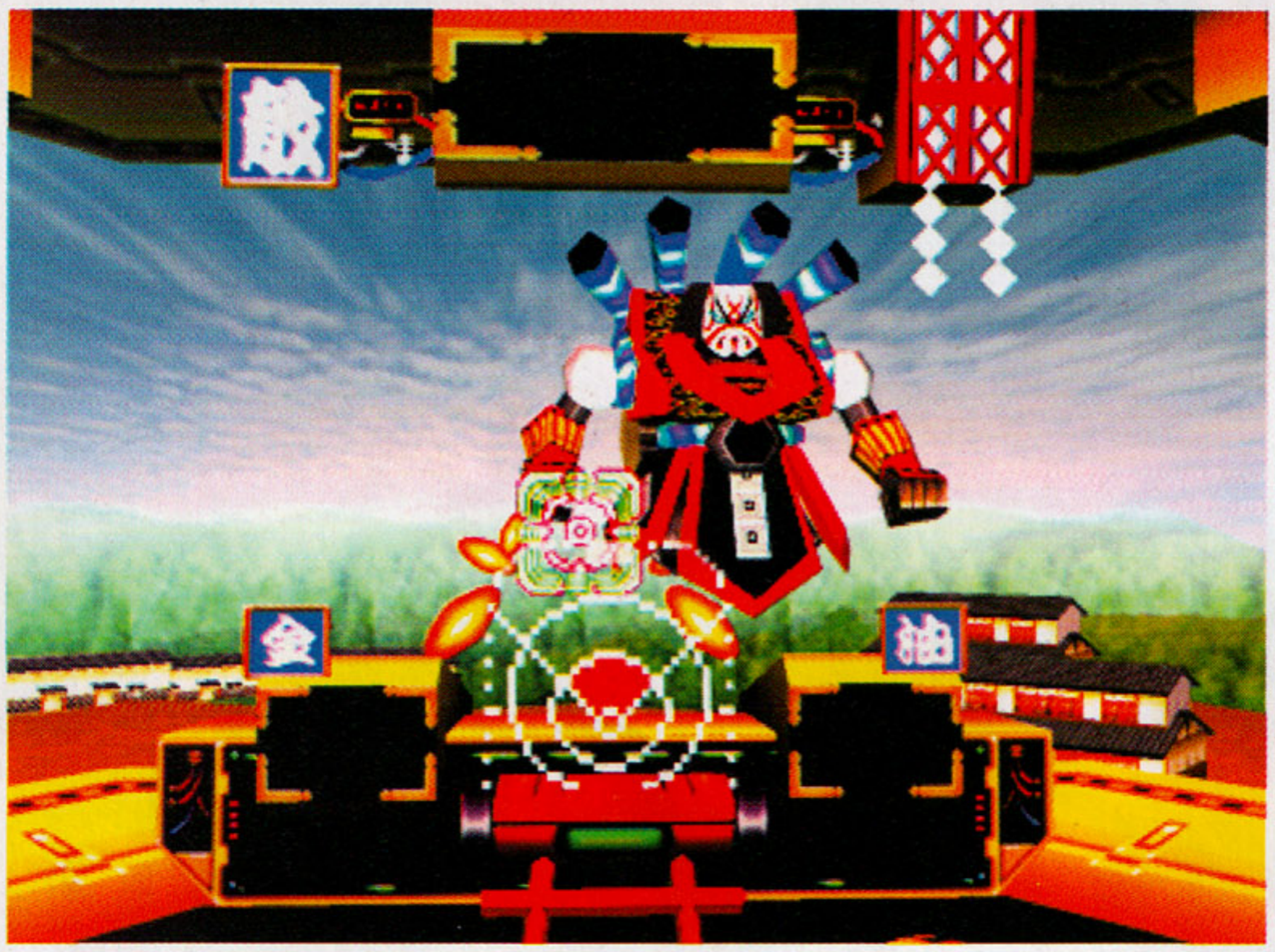
Crossed eyes and all, Goemon has no fears when confronting evil

In feudal Japan, a troublemaker named Gogers has the decidedly variant goals of: one, becoming the world's greatest dancer, and two, conquering Japan (he's just not the shrinking violet type, it's safe to assume). After raising an army and taking over much of the island, Gogers's victory seems assured, until Goemon and his friends learn of his plans and set out to stop him.

It's standard RPG backstory to be sure, but *Gambare Goemon 5* is unique among console RPGs in that, like *Mario 64* before it, the characters and environment are completely 3D. In fact, *Gambare Goemon 5* features mechanics nearly identical to those of his Italian cousin: movement is controlled through the analog stick, the camera angle is user-controllable, and while not as athletic as Mario, Goemon manages a few acrobatic maneuvers,

Some combat is resolved through real-time 3D fighting, an unusual feature for an RPG, although the special effects are impressive

ng alphas



***Goemon 5* offers many variations in gameplay; it even includes racing and mech action sections**

executed in a similar fashion.

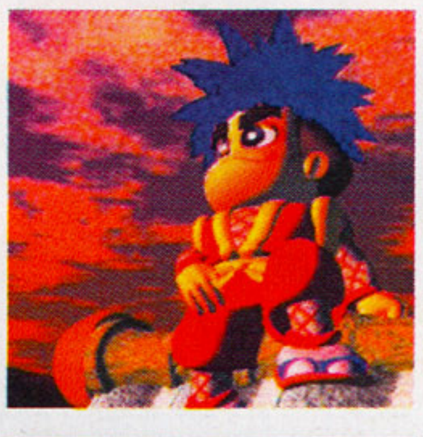
These play mechanics have been harnessed into an RPG framework, as players can choose between playing as Goemon or his friend, Ebisu Maru. Two other characters join the player on the quest, Sasuke and Yae, each of whom have different abilities and powers. Players can also switch to these characters as the situation requires.

Through the course of the adventure, other non-playable characters are encountered. As with many previous *Goemon* games, humorous conversations occur, presenting the player with a list of possible responses. Depending on which response the player chooses, the storyline shifts slightly.

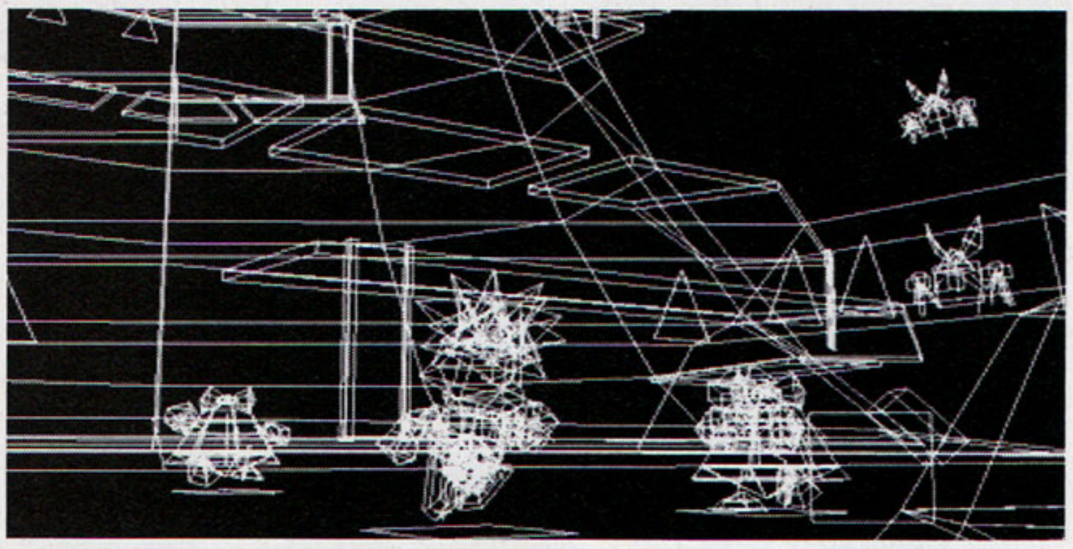
Still, *Gambare Goemon* has its share of action elements. A minimalist 3D fighting engine handles some combat, for example, and racing segments exist. Certain portions even put you in the cockpit of a combat mech (historically a fixture in feudal Japanese warfare, ahem).

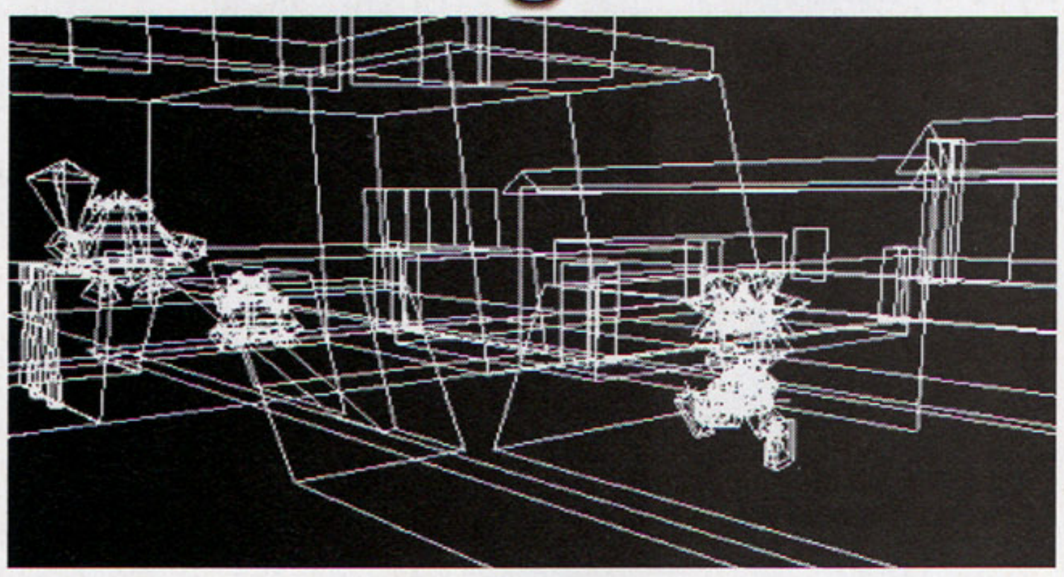
Goemon promises to be colorful and full of variety, and as far as gameplay is concerned, the only open question is whether the humor and storyline can live up to the sumptuous graphics. The other big question mark in *Gambare Goemon 5*'s future is whether the superdeformed lad will make his second trip to U.S. soil. The game is one of four being developed by Konami for the Nintendo 64 and represents the kind of substantial third-party commitment to the platform Nintendo sorely needs, especially given the traditional hunger for RPGs in Japan. However, since the system also needs more titles in general for the U.S., the plucky Goemon could very well get his shot.

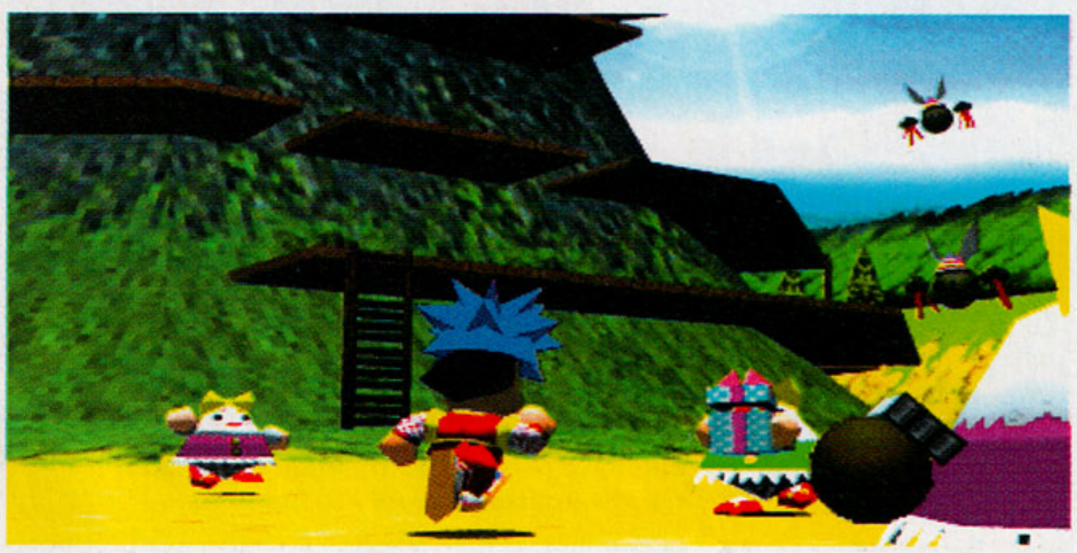
ng

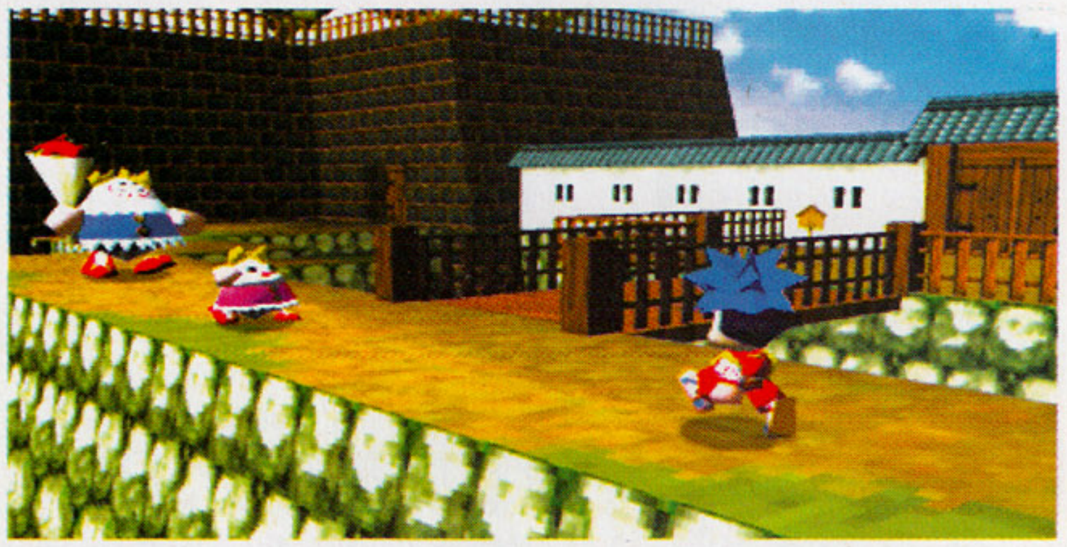


Five games and three consoles later, the plucky kid is still going strong









Compare these 3D wireframes with their fully rendered scenes — note how a simple box becomes a fence through the use of transparent

THE APOCALYPSE HAS BEGUN.

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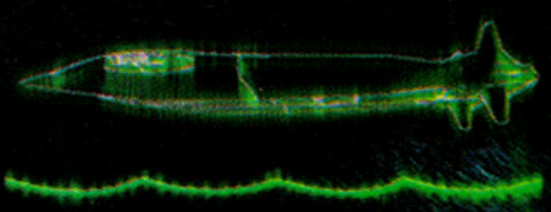

HYDROFOIL MODE:

Approx. height above ocean surface: 5′5″

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2.75′ Blowpipe heavy rockets

2.75′ F-90 cluster munitions

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A deadly hydrofoil.

SUB-SURFACE WEAPONS:

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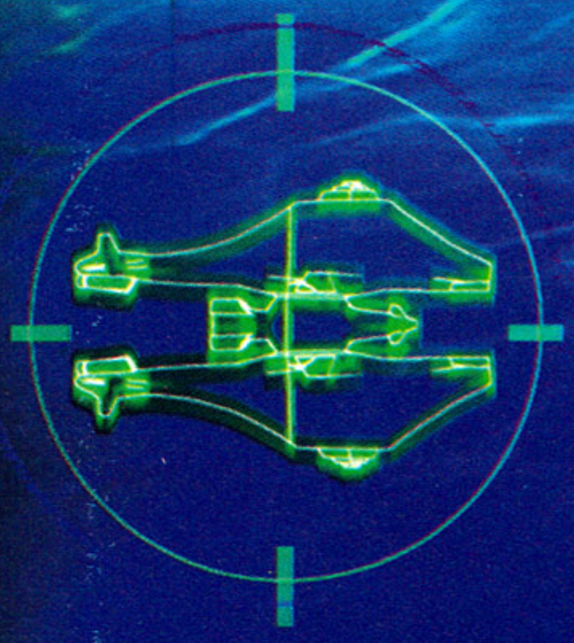
6″ Piranha heavy swarm torpedo

6″ Mark-60 Thresher torpedo

6″ Mark-65 Moray torpedo

6″ Mark-68 Barracuda homing torpedo



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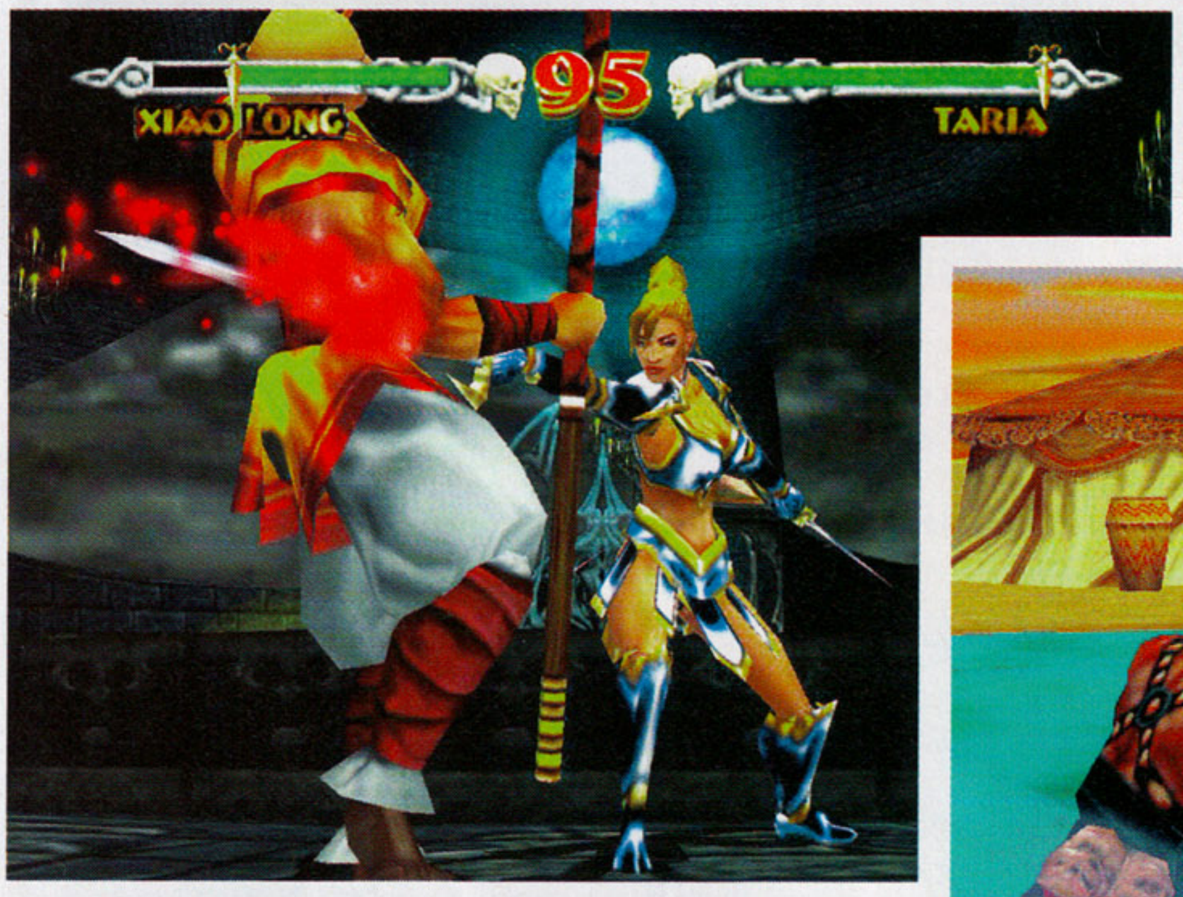
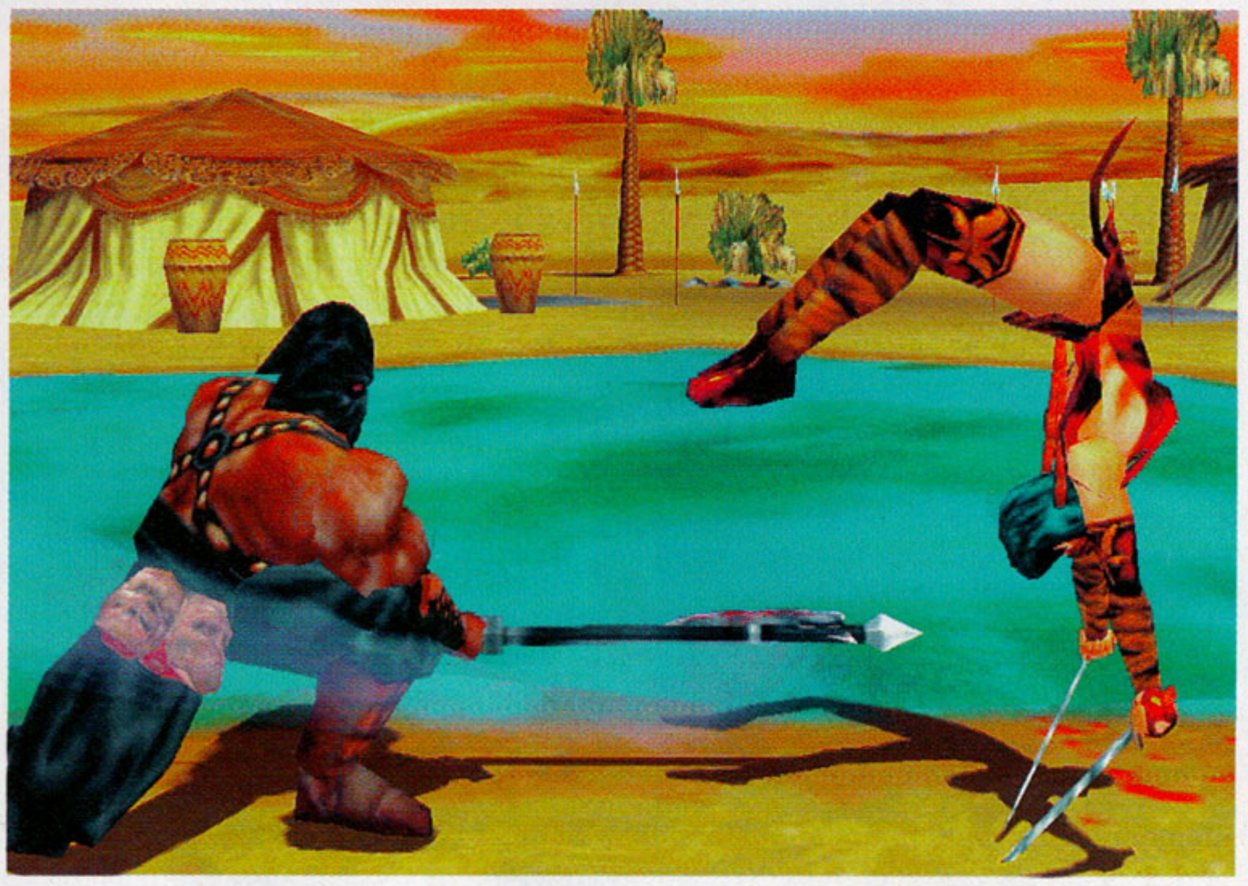
Mace: The Dark Age

Soon to be in the arcades, *Mace* is Atari's fighting chance for a prominent role in the crowded brawling genre





Amazingly enough, with the great looks of this game comes significant speed and solid player control. Multiple combos and throws also play a role

Format:	**Arcade**
Publisher:	**Atari Games**
Developer:	**Atari Games**
Release Date:	**February 1997**
Origin:	**U.S.**

Although patterned after other brawlers, *Mace* adds eccentricities and flair in surprise places

One thing the videogame industry never has to worry about is a lack of fighting games. Dozens arrive every year, striving for big success, but probably less than 5% ever really make a splash. Atari Games believes it's studied the right games and cultivated the right elements to make *Mace: The Dark Age* a keeper, despite its once tenuous beginnings.

"Before Midway came along and merged with Atari, there were no resources for this game," says Robert Daly, *Mace*'s Producer. "We were on tentative ground for quite a while. But Midway's philosophy was to let the team go and do its thing. Once we began, we pulled *Mace* together very well."

With support from Midway and 3DFX's two-chip Voodoo Graphics solution (a modified PC chipset boosted for arcade hardware), the 11 designers have transformed *Mace* into a 3D, polygonal, weapon-based fighter along the lines of *Soul Edge*. Running at 30 frames per second at a standard resolution of 512x256, *Mace* is patterned after several other well-known brawlers, but it adds eccentricities and flair in unexpected places.

"One guy on our team is in the Society for Creative Anachronisms, and he posed for our motion-capture work," said Daly. "If the moves didn't work out right the first time, we could

Despite the weapon-based fighting, body throws are still a major factor in fights

ng alphas

There are a good number of female characters in the game — and they fight as good as they look

easily redo them because he was always around. We started with 30 characters drawn onto cards. Focus groups of teenage kids narrowed the group down to 11 while reinforcing things we already knew and pointing out things about the characters that we just couldn't see."

From the initial group of 30 familiar mythological characters, the final 11 represent an international collection of gods, belly dancers, samurai, and monks. They include such disparate members as Lord Deimos, a heavily armored knight, Takeshi, a noble samurai armed with a Katana, and Namira, a former harem girl with a chip on her shoulder and an overhead sword. The two bosses — Grendal, a black and red obsidian gargoyle with a skull hammer, and Asmodious, the final boss — are dark and brooding, much like the game itself.

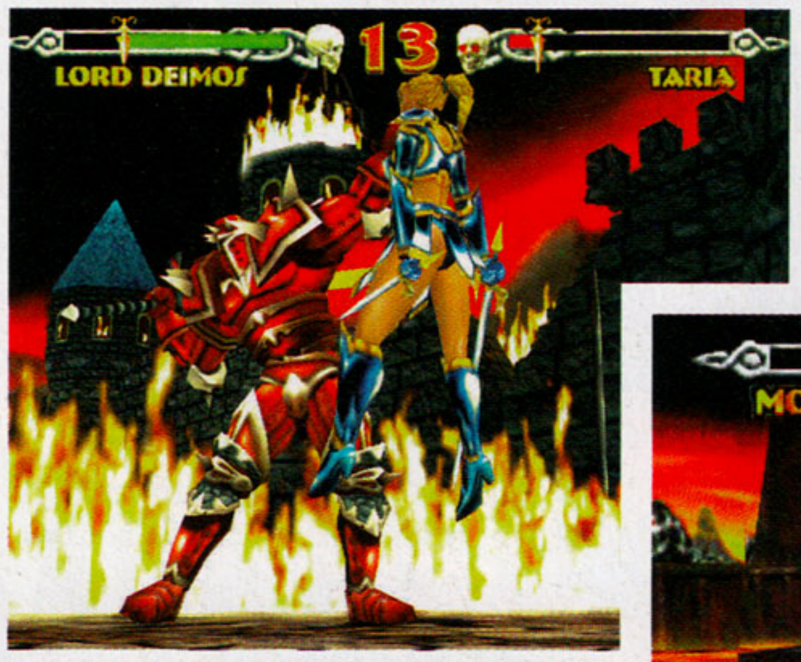
The fight mechanics boast various combinations, throws, counters, chain combos, "and plenty of decapitations," says Darryl DePriest, the game's Marketing Director, with a grin. A four-button configuration controls moves, and fighters can compete in a full 3D arena, using side-stepping and 3D attacks. Sloping backgrounds, similar to those used in *Virtua Fighter 3*, will be incorporated into play, although traditional rings outs are nonexistent. Instead, each large arena is surrounded by some life-threatening element — be it molten lava, quicksand, toxic water, or spikes — that causes damage but not instant death. These danger zones keep the fighting localized but avoid the abrupt endings seen in so many ring-out games.

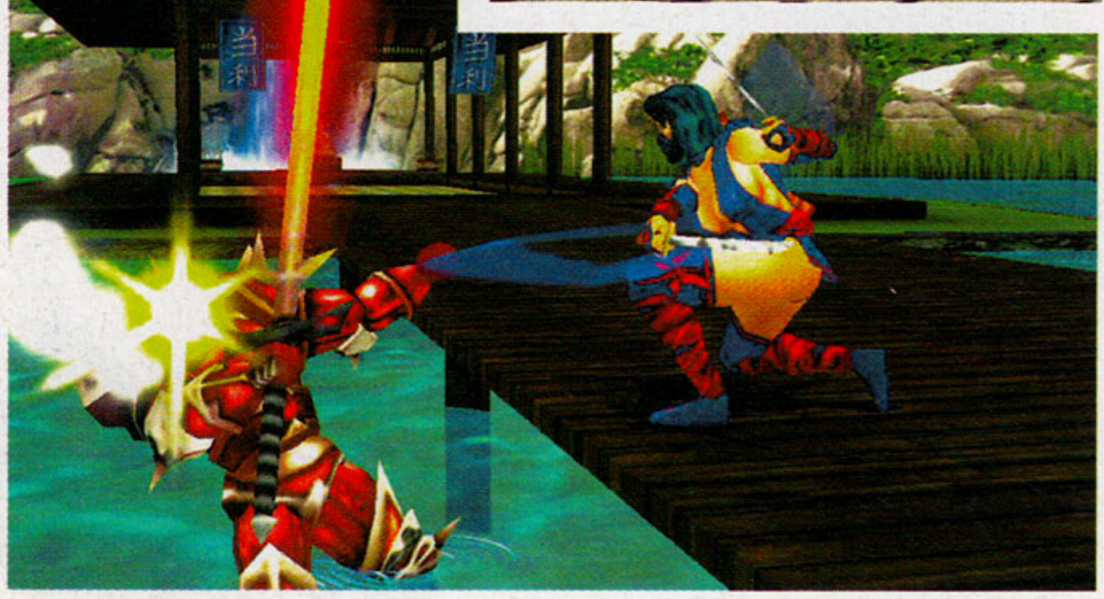
A colorful palette will translate nicely to Nintendo 64 in late December '97

***Mace* looks** amazing, with moody backgrounds intermixed with a bright color palette. The crisp, fluid animation and full incorporation of texture-mapped polygons on the characters work well and appear to create a complete look, with a level of detail and sophistication not seen in Atari games for some time.

The version previewed by **Next Generation** was nearing 60% completion, with various lighting effects having just been added and tweaked. At this early stage of development, *Mace* appears to be off to a strong start. If the final results live up to expectations, this could be the U.S.-engineered brawler that makes big Japanese manufacturers sit up and take notice. ng

The fight mechanics boast all kind of combos, throws, counters, chain combos, and plenty of decapitations





Backgrounds, or danger zones, add a unique variation to gameplay. Lava pits, quicksand, and toxic waters cause damage, but can be escaped (left)

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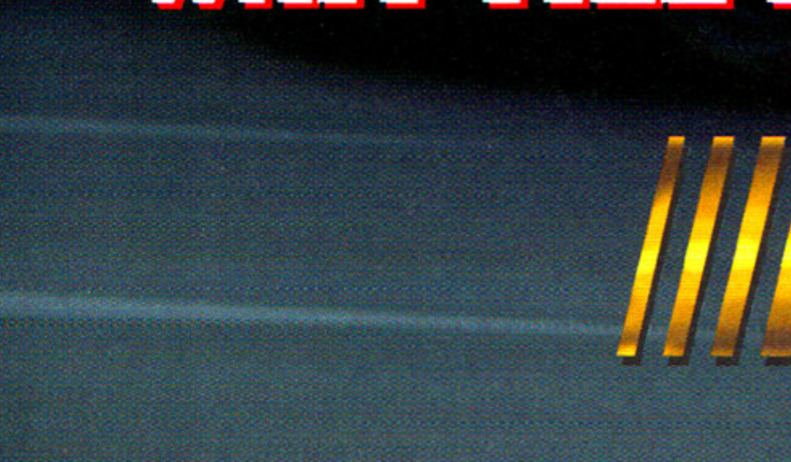

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IMAGINE

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FEBRUARY EVENTS

M 3 — 6:00PM

GAMES TOO VIOLENT

Vote in a special *PSX Power* poll to determine whether you think games are too violent.

T 4 — 4:00PM

IN THE PALACE

A Q&A with the *Next Generation* Magazine editorial staff. You've got questions, we've got answers. Join us on the Palace where we will answer all of your questions.

W 5 — 6:00PM

THE BIG DEBATE

Ultra Game Players Online gives N64, PlayStation and Saturn owners the chance to debate the pros and cons of their system. The oldest argument in the book takes place in a special forum.

T 6 — 1:00PM

MOVERS AND SHAKERS

N64.com interviews Ed Logg, creator of Wayne Gretzky's 3D Hockey, Asteroids, Gauntlet, Centipede and others. Posted in straight text, with audio downloads.

F 7 — 6:00PM

GREAT SEGA CONTEST

Cool Contest of the Month. *SaturnWorld* is the best place to win neat Sega stuff and top games.

10 — 3:00PM

LIVING IN A TREEHOUSE

In a special interview *Ultra Game Players* Online asks one of Nintendo's professional game players what it's like to get paid to play Nintendo games. Grueling stuff, obviously.

11 — 6:00PM

BIG DEMO DAY

Massive Download Mayhem. *Next Generation* Online offers three new PC and three new Macintosh demos as part of today's update. Get your modem warmed up for some extended download action.

12 — 1:00PM

WORD FROM SONY

A Q & A session with Andrew House. *PSX Power* asks SCEA's Vice President of Marketing your PlayStation questions; what's coming up, and what's going down. Send in your questions one week prior. Abridged interview also available as text and audio download.

13 — 6:00PM

TALKING WITH MIDWAY

N64.com visits Texas-based Midway for a look at the offices and what's coming from the makers of Mortal Kombat, NBA Hangtime, and other great games. Videotape downloads available.

14 — 6:00PM

NET LINK GAMING ARRIVES

SaturnWorld launches a Net Link Special including first looks at screen-shots, movies, and exclusive data on Sega Online Games.

NEXT GENERATION ONLINE

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Every day, one of the five sites in the Imagine Games Network hosts a special event. These include interviews, chat forums, downloads and extra features. ***And they're all absolutely free.***

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http//:www.imaginegames.com

17 6:00PM

RETRO UPROAR

Ultra Game Players Online takes a look at retro gaming, oldie collections, bargains from the past, and classics of the future.

18 6:00PM

WIN BIG!

Win an arcade machine. ***Ultra Game Players*** Online already gave you the chance to win VF3. Just wait 'til you see what we have lined up for February.

19 4:00PM

IN THE PALACE

Join an online chat with Psygnosis and ***Next Generation*** Online. Psygnosis has brought us some of the best titles in the last two years. Chat with some of the minds behind the games.

20 6:00PM

THE ULTIMATE DEBATE

Live Inter-company debate between the editors of ***N64.com***, ***SaturnWorld*** and ***PSX Power***. The ultimate debate between the systems.

21 6:00PM

WIN BIG!

Win 10 PlayStation games instantly in a special contest organized by ***PSX Power***.

24 3:00PM

IN THE PALACE

Chat live with EA Sports developers in this two-hour forum hosted by ***PSX Power***.

25 1:00PM

VOTE FOR SATURN 2

Saturn 2: Now or Later?- Vote in a special ***SaturnWorld*** poll to determine Sega's next move.

26 6:00PM

GAMING CONCEPT

Gaming Concept Forum - A new forum will begin on ***Next Generation*** Online where you can express what you want to see in the games of the future. Forum will last approximately two weeks after launch.

27 6:00PM

GRAB TUROK FIRST

Enter an Acclaim contest to win a free copy of Turok: Dinosaur Hunter! Enter contest at ***N64.com***, and win one of the best looking N64 games ever.

27 3:00PM

IN THE PALACE

Chat live with Sega representatives and third-party Saturn developers with ***SaturnWorld***.

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PSX POWER

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J-League Perfect Striker

The ranks of Nintendo 64 sports titles continue to swell (slowly) with the latest in Konami's signature soccer series

Polygon players, multiple camera angles, real Japanese league players — *Perfect Striker* seems to have the stuff to stand with the best of 'em, but can it beat *Worldwide Soccer '97*?

For the first time, the *Perfect Striker* series includes actual players from the Japanese league

In Japan, Konami's *Perfect Striker* series had a long, relatively successful run on the Super Famicom before making the leap to PlayStation last year. Now it's set to make the next technological jump to Nintendo 64, with the added bonus that for the first time the game includes actual players from the Japanese soccer league (hence, *J-League*).

The game offers many features you'd expect in a soccer sim with six different modes of play including single match, League Battle, and a penalty kick shoot-out. Games can be played in either day or night, with *Worldwide Soccer*-style shadows during night games. Also, players can choose from 16 formations and eight attack strategies.

But *J-League* offers some unique features as well, including a "man mark" option, which enables the player to assign a team member to cover a specific member of the opposing team. Players can also designate specific team members to handle throw-ins, corner kicks, and penalty shots. Because the teams and stadiums are fully polygonal, players can also select camera views from low, middle, and high, and close, medium, and far for a total of nine different angles.

Euro-League players will likely be substituted in the European release later this year. Plans for a U.S. release are tentative, but as with *Gambare Goemon* (page 93), the title-starved market — which is especially dry of Nintendo 64 sports games — may well dictate *Perfect Striker*'s release.

Format: **Nintendo 64**
Publisher: **Konami**
Developer: **Konami**
Release Date: **TBA**
Origin: **Japan**

As with many other N64 titles, the question is will this see a U.S. release?

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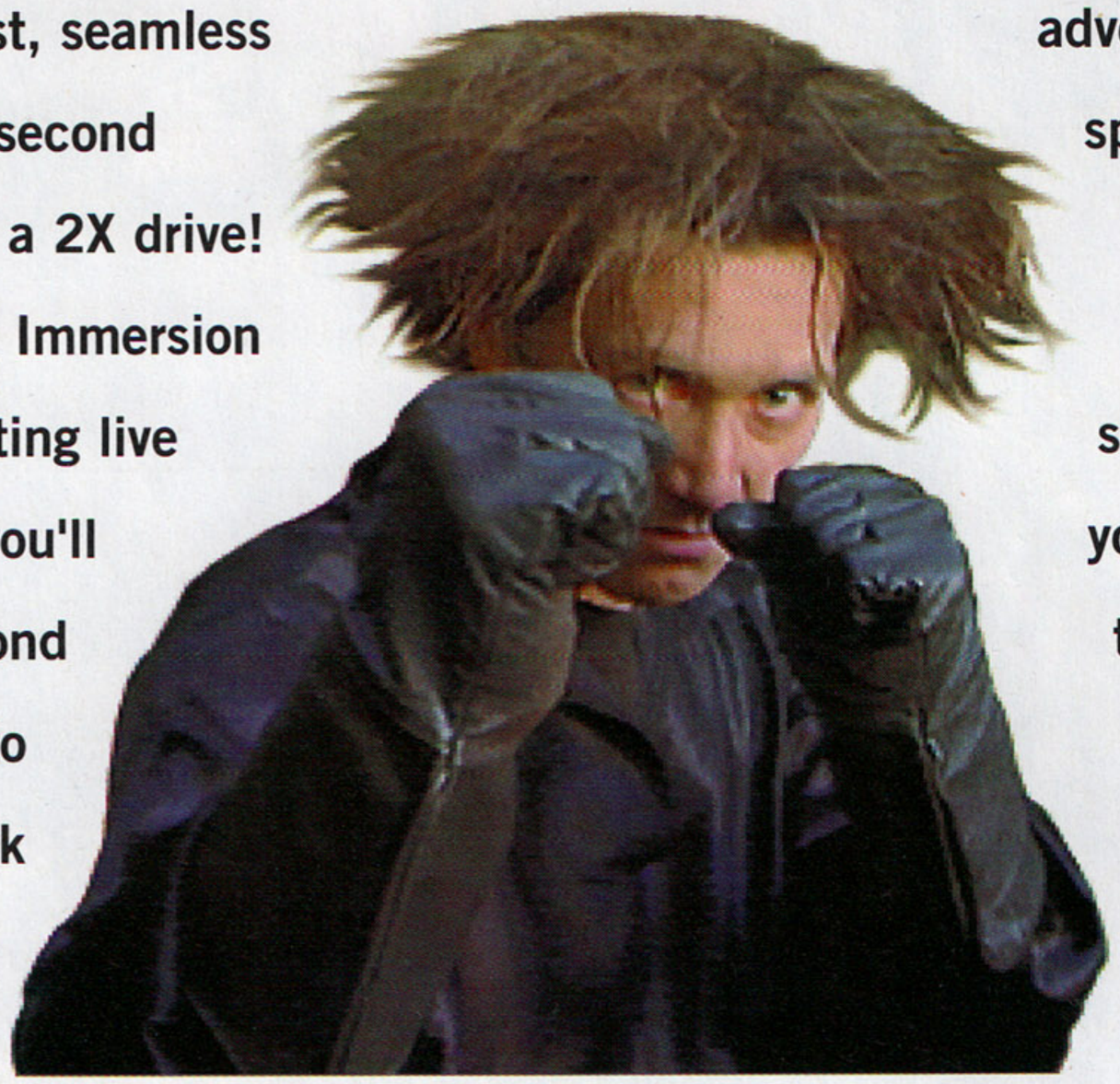

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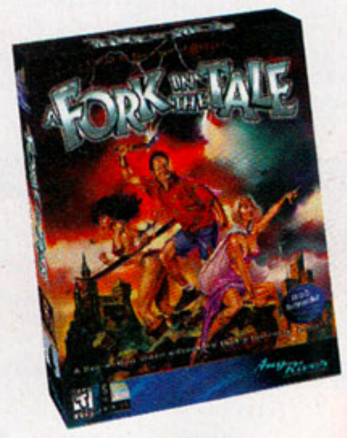

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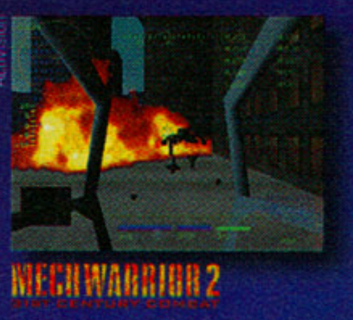

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Shadow Warrior

3D Realms takes no vacations as the game to follow *Duke Nukem* comes out blasting

Format:	**PC CD-ROM**
Publisher:	**GT Interactive**
Developer:	**Apogee/ 3D Realms**
Release Date:	**March or April**
Origin:	**U.S.**

The head and hearts of some enemies have magical powers. Once killed, you can us them as weapons. In this instance (above), the player puts a hand in back of an enemy's head, like a puppet, and squeezes fireballs out its eyes

Weapons include a crossbow, grenades, a ring-laser rifle, and a barrage of others

George Broussard, president and project guru over at 3D Realms, says, "We're surprised that 90% of all 3D action games aren't any good." He shouldn't be — 3D Realms hasn't had any problem licensing its *Duke Nukem* engine out to struggling competitors (such as Capstone) looking for a leg up. "But I guess they're just getting started," Broussard concedes, "whereas our next games (*Shadow Warrior* and *Blood*), are second generations of the engine, and are going to be finished fairly soon."

Shadow Warrior is the first 3D, first-person action game from 3D Realms since the overwhelmingly successful *Duke Nukem 3D*, and it looks to be a major step forward. The backstory hasn't been fully developed, but the game is set in the far east, and offers plenty of Asian flavor. A Samurai sword is among the 10 possible weapons, and a Pachinko parlor is one of the environments. Also, the player's character is not going to be the young stud-jock that Duke was, but he'll still have some characteristic one-liners all the same. "This guy is very different from Duke," Broussard says. "He's older, he's Asian, we don't think his English will be that good, so there'll be some humor based around that."

While *Duke Nukem 3D* was a huge success for Broussard, he isn't wasting any time thinking about it, he's just thinking how to top it. He specifically mentions how the engine can now handle true-rooms-above-rooms, as in *Quake*. "If a room has beams," he says, "you'll be able to get up and walk on those beams to enter other rooms, or use them to walk around the top."

Players are given the ability to leap into tanks, boats, forklifts, and bulldozers and use them accordingly

Graphically, some tweaks to the engine have been made, and the pick-up items in *Shadow* will be 3D-voxelized sprites, which Broussard says will be more detailed than polygonal models. But quite possibly the biggest advancement with *Shadow* will be the 3D vehicle support. Players can leap into tanks, boats, forklifts, and bulldozers and use them to explore the 3D environment.

Broussard describes how the vehicles

When designing the enemies, 3D Realms first sketched them (top) then rendered models (above)

As in *Duke*, underwater gameplay adds depth and cool visuals to the game

ng alphas

Shadow Warrior features lots of exterior environments and offers the player a greater degree of mobility than was found in _Duke Nukem 3D_

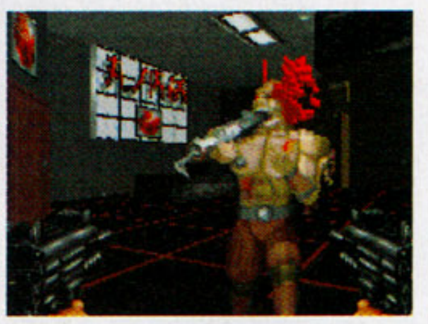
are weapons you can use them to run down opponents. You need some vehicles, like the forklift, to solve puzzles. He also mentions a battleship area where the player can climb into the gun turrets and fire at the opposition.

Shadow Warrior also takes into account feedback on multi-player action. "We're adding team play," Broussard proudly says, "and we're looking to incorporate a capture-the-flag game players have asked for." Broussard also mentions a new scoring system for deathmatches, in which a player earn more points for killing someone with a weak weapon than for easily dusting them with a rocket. As for Internet play, TEN and 3D Realms are already hard at work on the Internet code, doing what they can to work around the perennial latency problem.

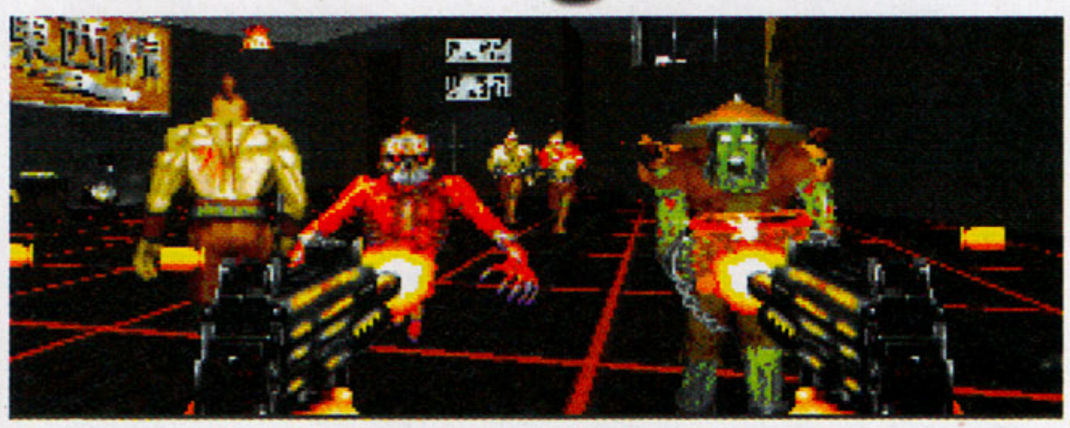
Shadow Warrior makes no use of MMX and will not be enhanced by any of the 3D accelerator cards, as Broussard thinks they are not popular enough yet. "A P90 with 16MB RAM will run the game fine," he says. The game will also ship with a level editor, but when asked about a release date, Broussard is hesitant. "We're planning for March, or early April" he says, which suggests Apogee/GTI would like to have the game out before the end of the fiscal year, but Broussard says he sees too many products rushed to market.

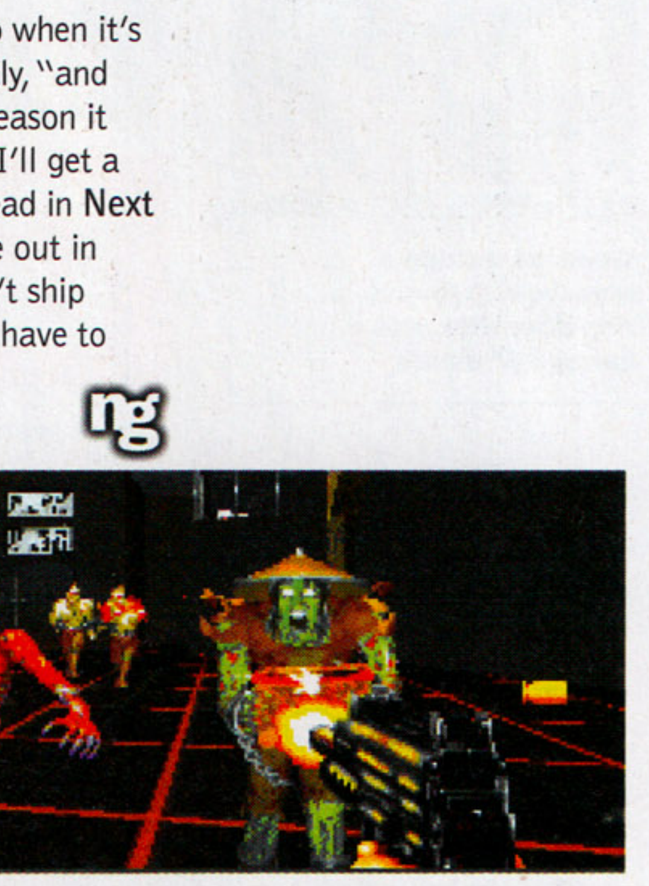
"The game will ship when it's done," he concludes adamantly, "and not before then. If for some reason it goes out a little later, I know I'll get a lot of feedback stating, 'we read in **Next Generation** it was going to be out in March,' but it absolutely won't ship until we feel it's finished. You have to put that in for me."

Okay George, you got it. ng



In this sequence, the enemy commits suicide with his own gun — we don't know why. But it looks cool





Of course, there'll be some big monsters (left) with other enemies ranging from the bloody undead to the somewhat humanoid

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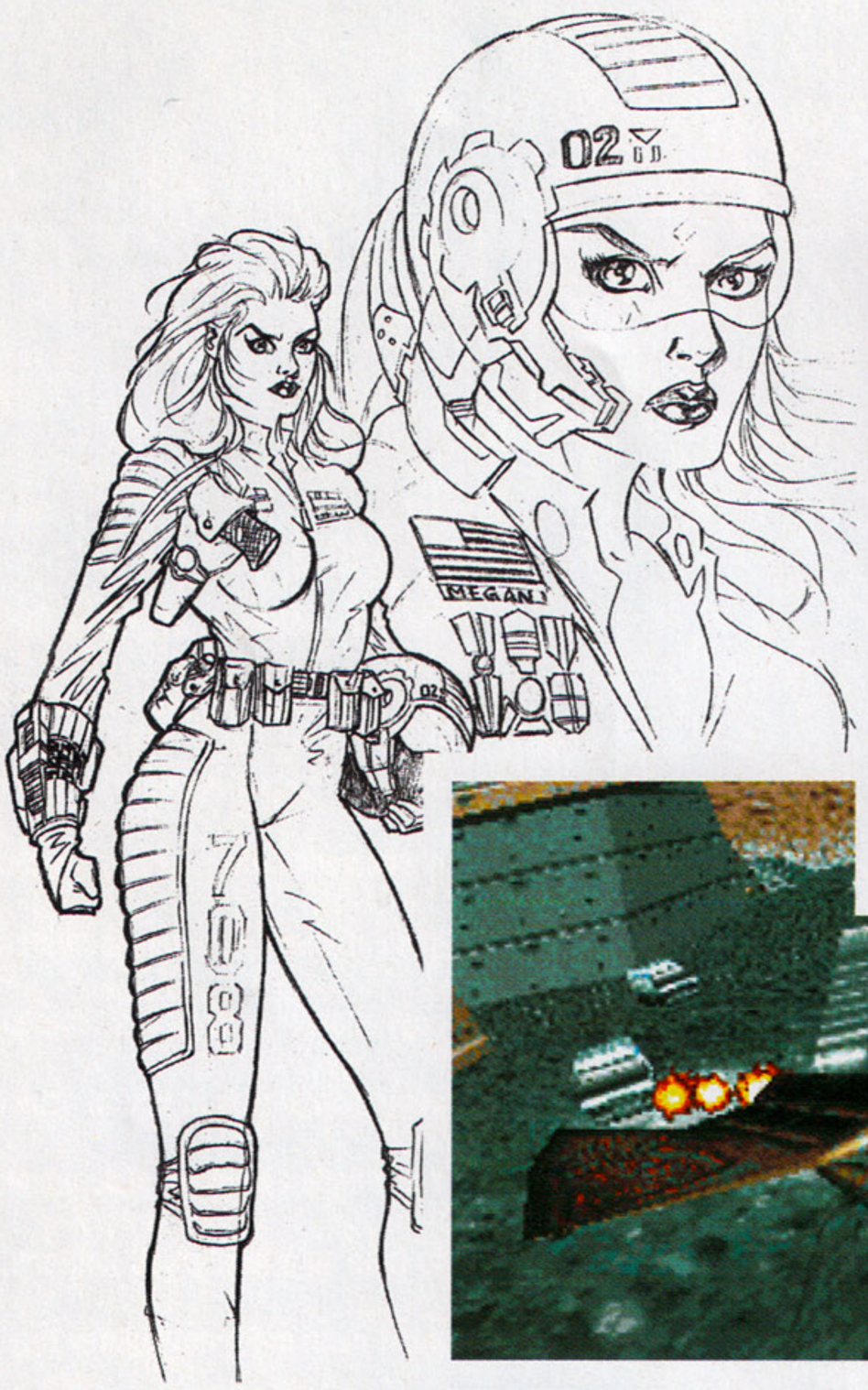
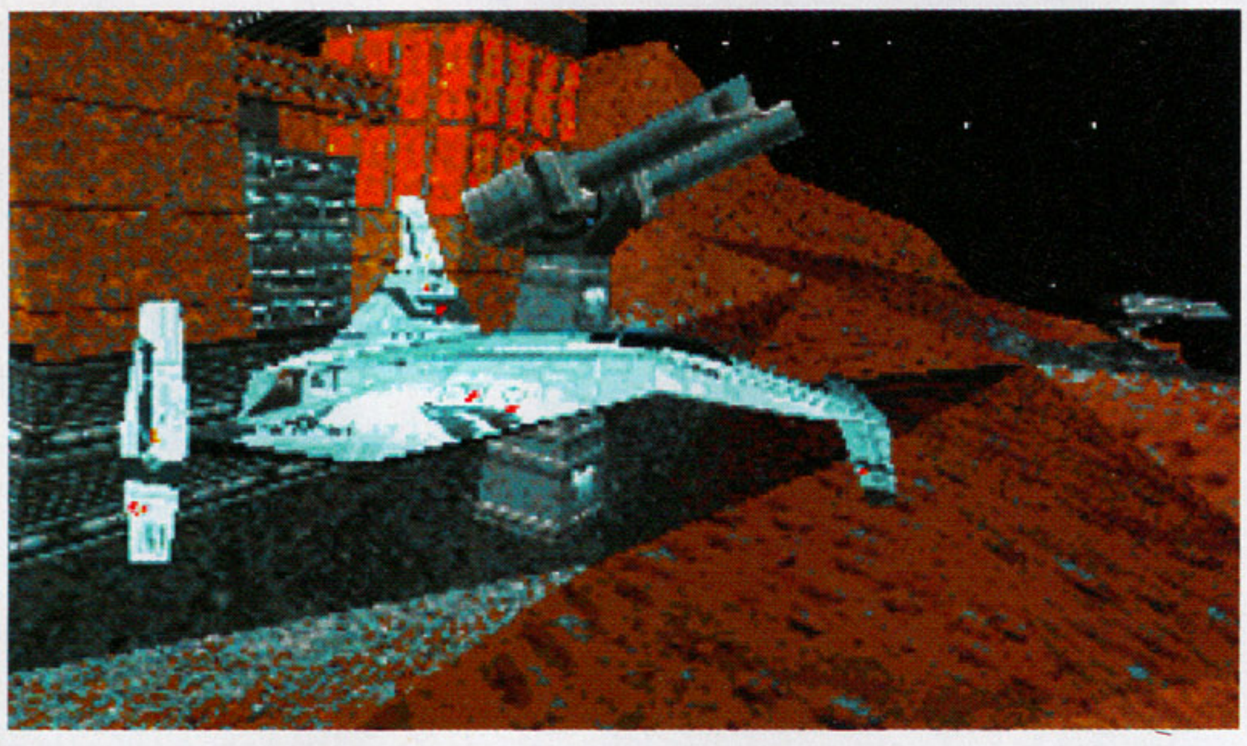
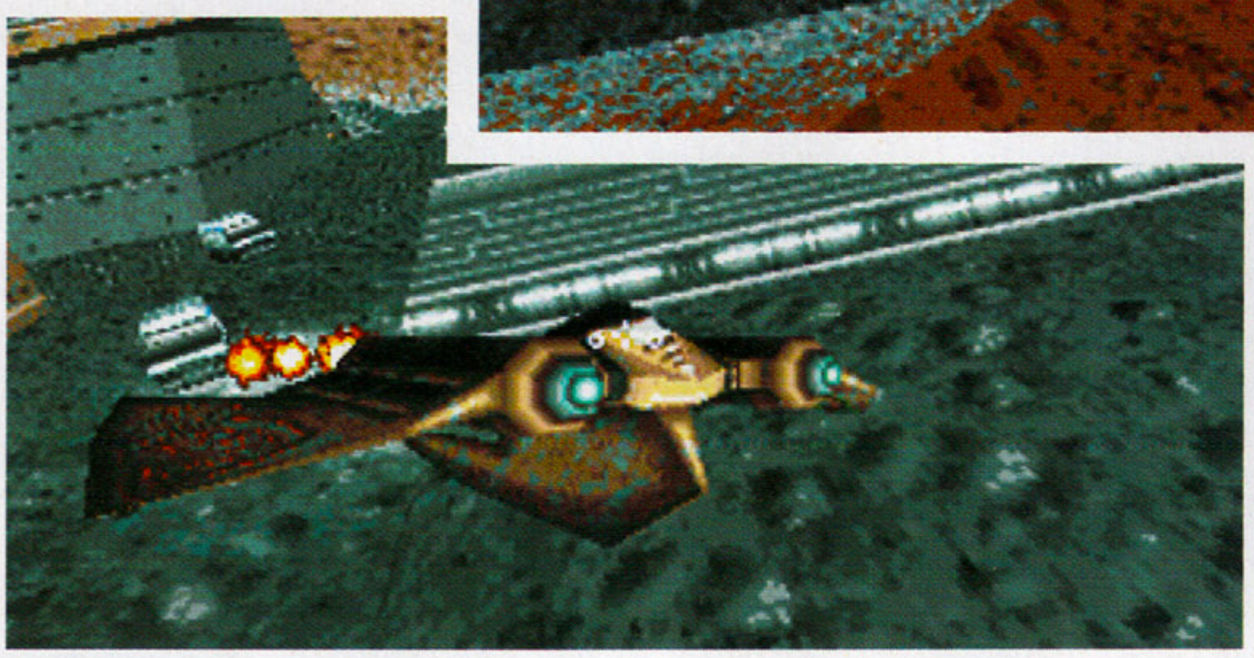
10th Planet

Bethesda, the small but powerful design house that brought you *Daggerfall* and *SkyNET*, may have the coolest space combat sim since *TIE Fighter*







Beautiful, sophisticated, real-time, and very fast (we're talking about the space ships)

"Some of the delays have been directly related to Centroplis being up to its eyes in work for *ID4*"

Bruce Nesmith, Producer

So how does a company like Bethesda follow up the back-to-back release of the most eagerly awaited PC RPG of last year, *Daggerfall*, and the best first-person shooter released so far this year, *Terminator: SkyNET*? Simple, start work on what could very well be the best space combat sim of the season, *10th Planet*.

This kind of diversity might at first seem a shocking hurdle to overcome — modestly sized development houses that try to be all things to all gamers usually wind up meaning little to any of them — but Bethesda has an ace in the hole. As Bruce Nesmith, *10th Planet*'s Producer, explains, "The thing that

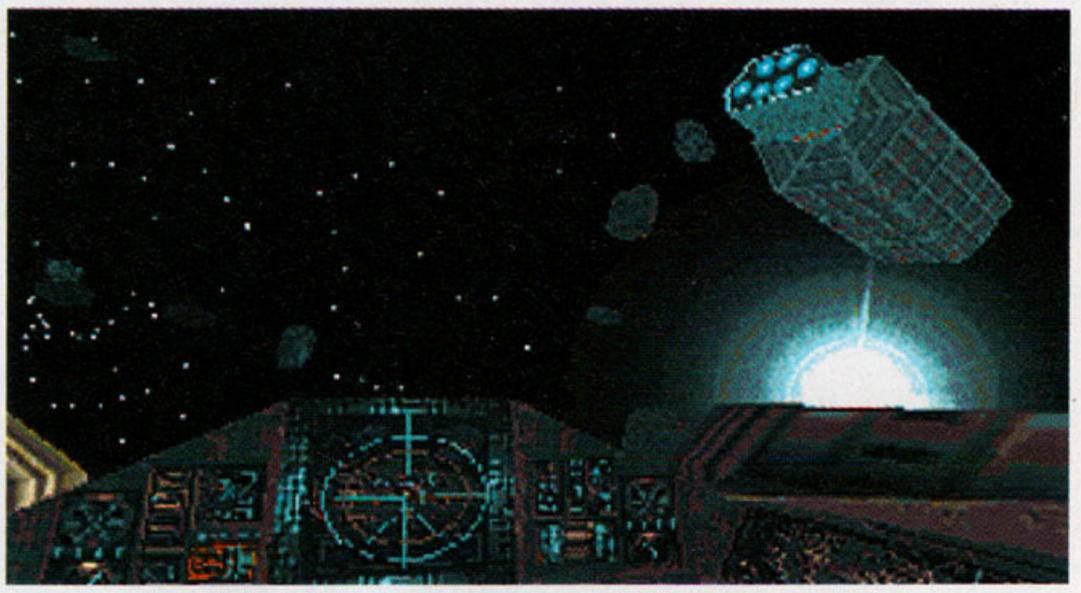
Format:	**PC CD-ROM**
Publisher:	**Bethesda**
Developer:	**Bethesda**
Release Date:	**November 1997**
Origin:	**U.S.**

Bethesda has right now that's definitely our best asset is our 'X-Engine' technology."

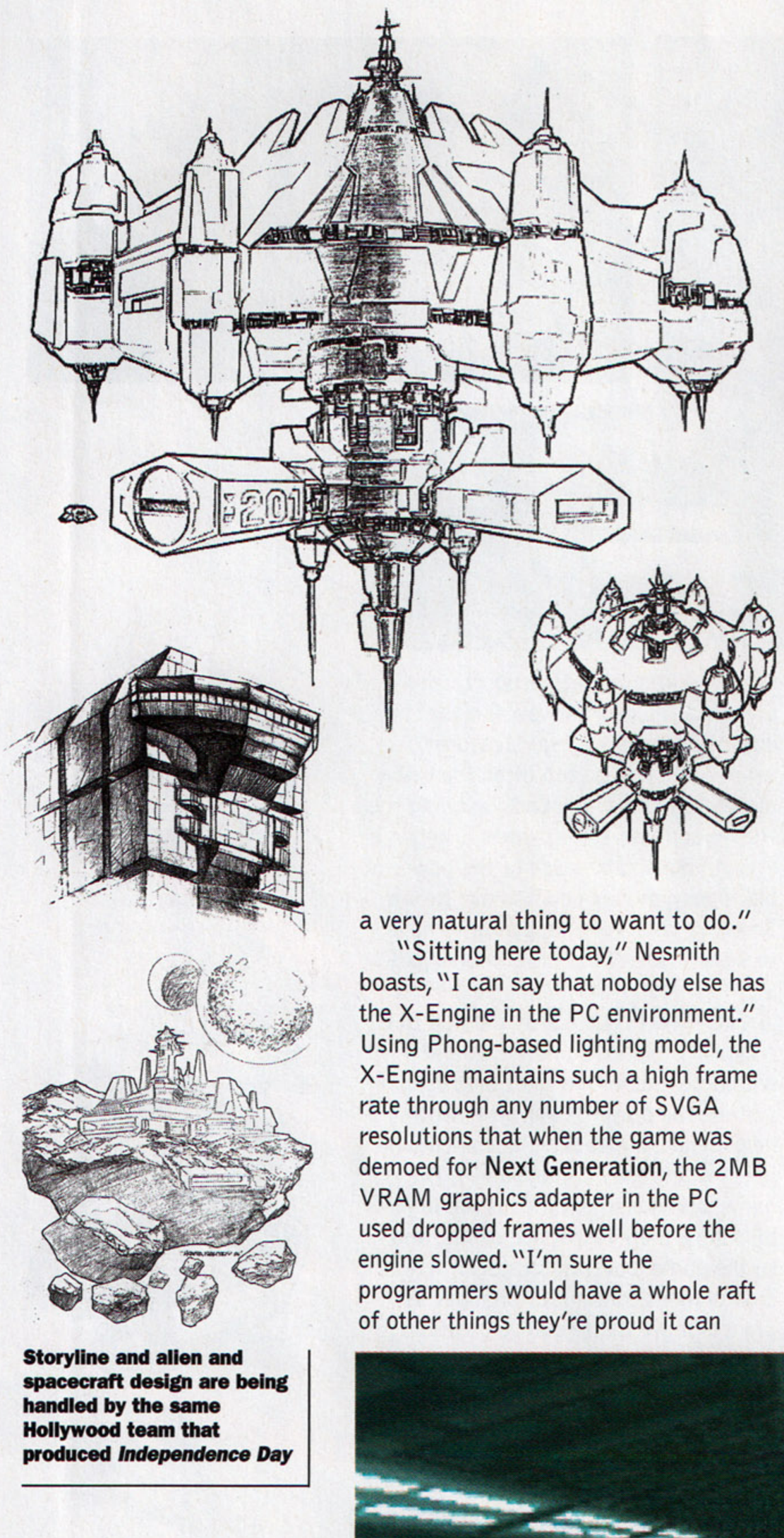
X-Engine is a real-time rendering engine of such considerable flexibility that it can construct virtually any sort of environment, for any purpose. "There are many different ways we can use it," Nesmith boasts. "We built *Daggerfall* around it, we have an experimental car racing game, *X-Car* (see NG 22) — we're looking for all kinds of exciting ways to exploit this technology and make really, really cool games. A space combat simulator was

The main conceit is that players have to figure out where the aliens are from

ng alphas



With its real-time, Phong shading 3D engine, *10th Planet* is shaping up to be one of the best — if not *the* best — space combat sims coming



Storyline and alien and spacecraft design are being handled by the same Hollywood team that produced *Independence Day*

a very natural thing to want to do."

"Sitting here today," Nesmith boasts, "I can say that nobody else has the X-Engine in the PC environment." Using Phong-based lighting model, the X-Engine maintains such a high frame rate through any number of SVGA resolutions that when the game was demoed for **Next Generation**, the 2MB VRAM graphics adapter in the PC used dropped frames well before the engine slowed. "I'm sure the programmers would have a whole raft of other things they're proud it can do," Nesmith continues, "but these are the cool things for me. These features let me design things like *10th Planet*."

The game is being developed as a co-venture of Bethesda Softworks and the Hollywood production company Centropolis, probably best known for last summer's blockbuster, *Independence Day*. "Since I've been here, about a year and a half, Centropolis has been linked with *10th Planet*," Nesmith explains, "The producer there, Dean Devlin, has been excited for a long time about getting his hands dirty in our environment and doing a computer game. He recognizes that he doesn't have the setup or necessarily the game knowledge to create his own, but he does know how to tell stories and he does know how to recognize good special effects and use them. So he's taking care of his end and we're taking care of ours."

"The folks at Centropolis [the company behind *ID4*] understand the idea isn't to make a film and put it on the PC, but to make a PC game"

Bruce Nesmith, Producer

Delays in the project occurred, however, as Bethesda began shifting

The game's hard-edged action is offset by subtle strategy elements. Players manage resources and personnel to fight off invading aliens. In essence, players must run a war that spans the entire solar system

Just looking over these still screens doesn't do Bethesda's X-Engine justice — the speed and fluidity of the motion is simply amazing

The X-Engine is so fast, the graphics adapter in the PC dropped frames before the engine slowed

more and more resources into getting *Daggerfall* out the door, and Centropolis became equally caught up in its own little project.

"Well, Devlin's a busy guy," Nesmith admits, "and some of the delays in *10th Planet* have been directly related to the fact that for a while Centropolis was up to its eyeballs in work for *ID4*. And maybe we didn't like that, but there wasn't much we could do about it. The fact that these guys were going to earn $100 million on this movie meant that Bethesda, well, we kind of weren't in the driver seat on that," he laughs.

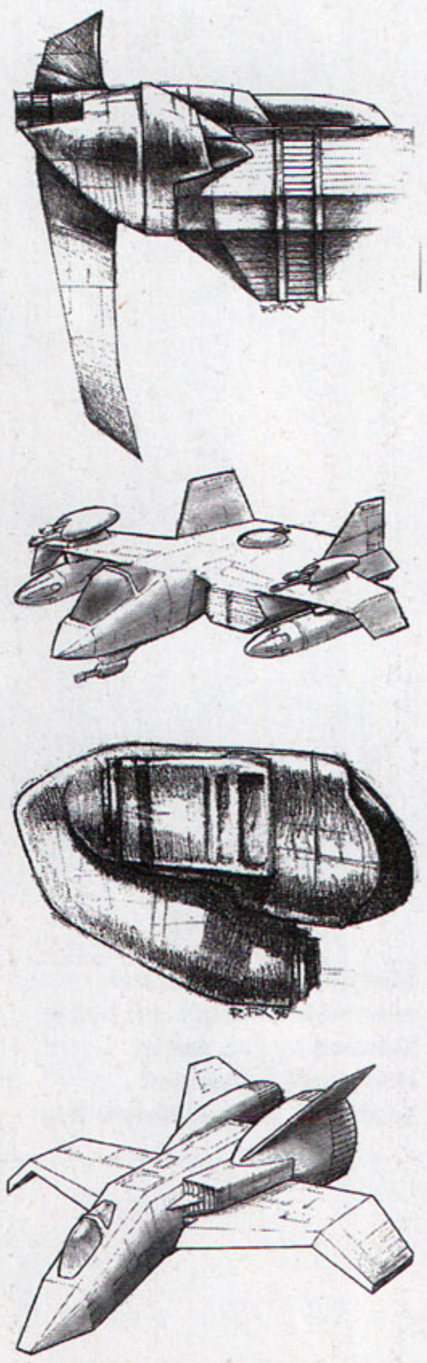
Bethesda is in complete control of modifying the X-Engine, designing the game's mechanics, and keeping the interactive elements to a maximum, while Centropolis develops the story, characters, and handles ship and alien design. The arrangement has so far been a productive one. "Largely the folks at Centropolis, and in particular Devlin, have the understanding that the idea isn't to take a film and put it on the PC, the idea is to make a PC game."

"Devlin understands there are things he knows that we don't, and there are things that we know that he doesn't. And he's a real pleasure to work with because too often the heavy money, which usually ends up being the Hollywood interest, assumes it knows everything, and because of the power of big money, money gets to have its way. So we're very, very happy not to have to work in that kind of relationship."

The game is shaping up to be a hybrid of space combat sim and wargame. Set within the Earth's solar system, the player is privateer who helps fend off attacking aliens (wanna guess where they come from?). The game's time element means the planets all follow their respective orbits, and so the game's overall strategic environment continually changes as planets move their relative position.

Nesmith concludes, "If everything turns out perfect — and I recognize that if I even get half of this I'll be in hog heaven — then I'll have access to some really cool technologies that nobody else does. There's a high probability that we can have fractal landscapes, for example, which means we can have players fly over the surface of any moon or any planet, and we won't have to manually create the data beforehand to make it look good and realistic. We also have some interesting tricks we can use to put a lot of ships in the sky, and I don't know how many 'a lot' is right now, because we're going to measure it by the frame rate we can get. But I'm confident we can put in two to three times as many as anyone else."

And in conclusion? "It's going to be very, very cool." ng



Still quite early in its design, *10th Planet* could be the sim to beat in '97

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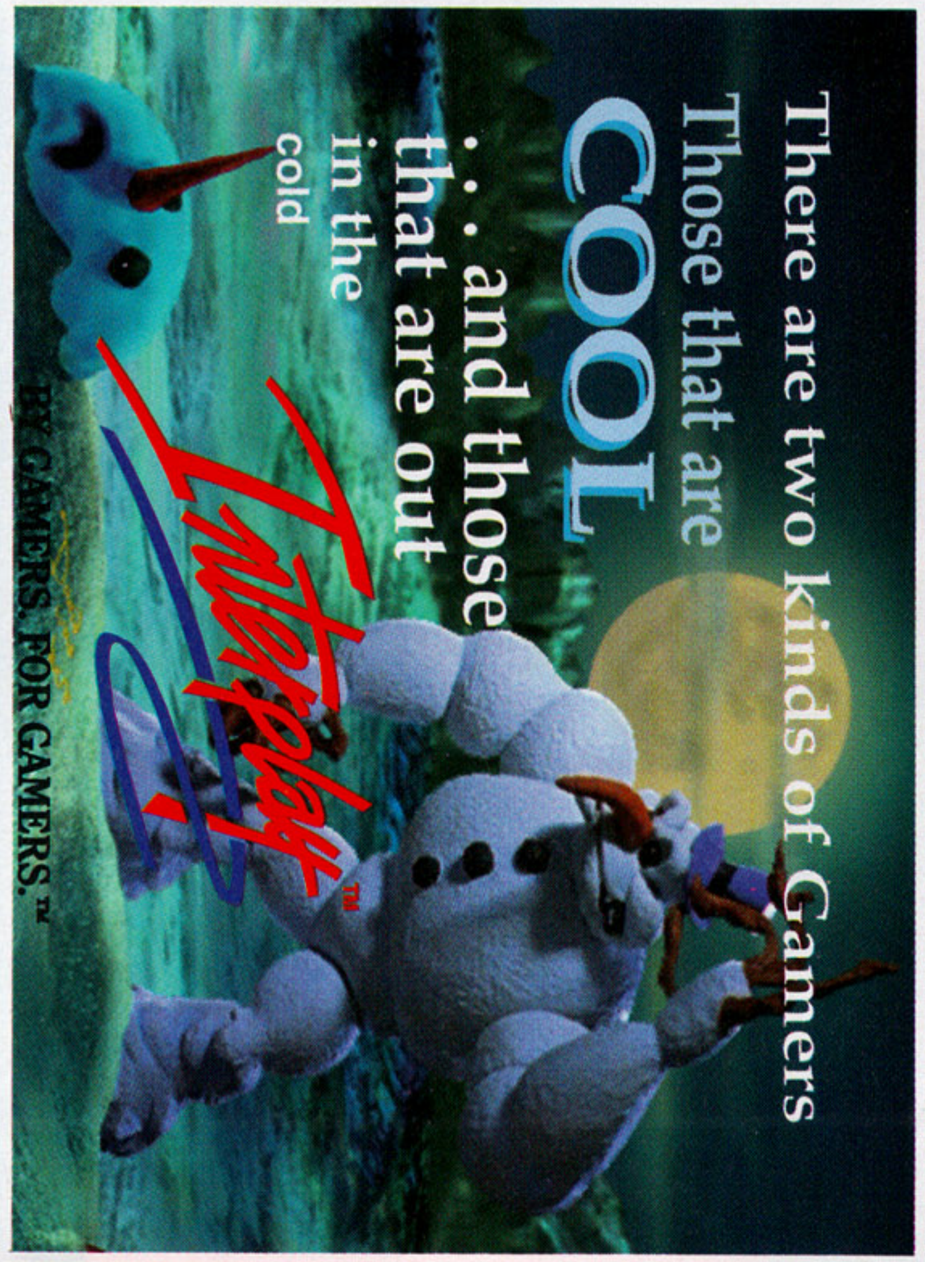
There are two kinds of Gamers
Those that are
COOL
. . . and those that are out in the cold



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Killer Instinct Gold Nintendo 64 **FIFA '97** PlayStation **Machinehead** Saturn **Cruisin' USA** Nintendo 64
Terminator: SkyNET PC **In the Zone 2** PlayStation **Mummy, Tomb of the Pharaoh** Mac **RAMA** PC

finals

Game reviews (including three guaranteed to piss off Nintendo)

120 Nintendo 64
121 PlayStation
128 Saturn
130 PC
134 Macintosh
135 3DO
135 Genesis
135 Virtual Boy
135 Neo-Geo
135 Super NES
135 Arcade

It's a tough job, but the **Next Generation** staff wants to help you out. We play the new games endlessly, then review and rate them so you know what to play. Our explication of each game is in the text, but refer to the following star guide to understand our rating system.

★★★★★ **Revolutionary**
Brilliantly conceived and flawlessly executed; a new high-water mark.

★★★★ **Excellent**
A high-quality and inventive new game. Either a step forward for an existing genre, or a successful attempt at creating a new one.

★★★ **Good**
A solid and competitive example of an established game style.

★★ **Average**
Perhaps competent; certainly uninspired.

★ **Bad**
Crucially flawed in design or application.

Nintendo 64

Cruisin' USA
Publisher: Nintendo
Developer: Williams/Nintendo

This game began life as the brainchild of legendary game designer Eugene Jarvis (of *Defender* fame) and was turned into a somewhat successful arcade title (it's actually done more business than *Daytona USA* in U.S. arcades). But from the very beginning, *Cruisin'* was destined for Nintendo 64 (or "Ultra 64" as it was known at the time), and it is possibly for this reason that we are so disappointed in the result of more than two years in development.

Highly successful as a coin-op, *Cruisin' USA* fails to inspire when converted for the home

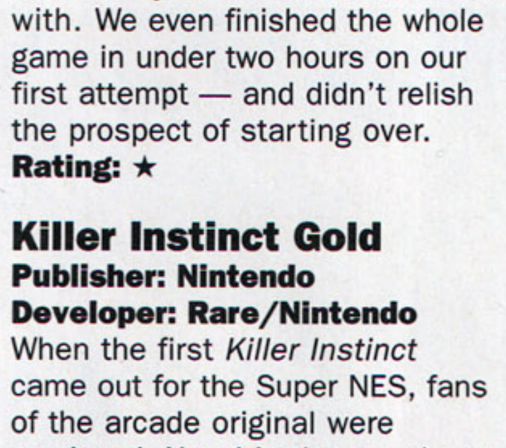
At its essence, *Cruisin' USA* is a race across America in which, along the way, you are briefly exposed to various U.S. landmarks. It's a simple and good enough premise for a racing game, sure enough, but the N64 version of is inexcusably poor. The graphics rarely exceed an unforgivably low 20 frames per second, which results in a slow, choppy game experience that isn't even compensated for by graphical lushness. Given the simple geometry of *Cruisn' USA*'s cars and a lack of any geometry in the background (and given that *WaveRace* was so impressive), it's difficult to imagine what Williams thinks it's doing. Even the backgrounds are essentially just a couple of layers of parallax, which is disappointing, given the capabilities of the 64-bit system.

Control within the game is helped slightly by the analog stick, but it's still not as slick as it should be. A much-needed sensation of speed simply isn't apparent, and is even further diminished in the two-player, split-screen mode. Furthermore, the incredibly cheap/ridiculous collision detection does little to add to the fun factor of the game. But the most glaring problem with the game is the music, which ranges from poorly composed country twang to a somewhat more appropriate, but still poorly composed, lightweight techno. If ever there was a soundtrack that would drive you insane, this is it. Thankfully, the developers were courteous enough to include an option to turn the music off.

Overall, this half-hearted, rough-shod conversion is exactly what Nintendo 64 doesn't need — and adds weight to the growing gripe among third parties that the system is a bitch to work with. We even finished the whole game in under two hours on our first attempt — and didn't relish the prospect of starting over.
Rating: ★

Killer Instinct Gold
Publisher: Nintendo
Developer: Rare/Nintendo

When the first *Killer Instinct* came out for the Super NES, fans of the arcade original were overjoyed. Now it's time to please these fans once again — but it's unlikely that many other Nintendo 64 owners will be laughing. Sure, *KI Gold* hits home with a solid arcade conversion of the combo-intensive "memorize the formula" gameplay that enjoyed its 15 minutes of arcade fame a couple of years ago, but boy — does this one wilt quickly under the harsh lights of home. It's just not much fun, and who wants games to be merely a memory test? (Well, aside from *Myst* fans...)



Large comedy breasts fail to help N64's *Killer Intinct Gold* compete with *VF2* or *Tekken 2*

Still, for fans of this particular breed of gameplay, all the popular characters are back from *Killer Instinct 2*, with perhaps some hidden ones (Nintendo ain't talkin') thrown in for good measure. Control of the game is fluid, but Nintendo 64's joypad wasn't designed for 2D fighters and does require some getting used to. Its six button configuration (the same as for *Street Fighter II*, with three buttons for punches and the others for kicking attacks) is almost as clumsy here as it was on the Super NES.

Due to the limitations of the cartridge format, some frames of animation found in the arcade original's have been left out (the same is true with *Mortal Kombat*) as have all the FMV sequences. The backgrounds have all made the conversion, however, and have even been refined to increase the detail. The soundtrack is also fully intact, and boasts cleaner sound effects and music. Nintendo has also improved upon the practice mode, enabling gamers to work on specific areas of interest. Want to perfect a counter move or combo breaker? No problem. Just follow the appropriate tutorial and, in no time, you'll be a master. Other options include team and tournament modes, which enable gamers to compete against each other with their favorite group of different characters.

Ultimately, Nintendo 64 users desperate for a fighting game will probably snatch this up, but they may quickly regret it — the arcade version of *Killer Instinct* was showing signs of age pretty much within days of its launch, and this is almost arcade perfect. Still, it did manage to muster a devout following that remains faithful to this day. Either way, whether you like it or not (and our opinion is pretty clear) this ain't no *Tekken 2*, and — as sure as Orchid's breasts are fake — it ain't no *Virtua Fighter 2* either.
Rating: ★★

Shadows of the Empire
Publisher: Nintendo
Developer: LucasArts

Easily classified as one of the most anticipated third-party

DINOSAUR HUNTING SEASON OPENS MARCH '97

MATURE M AGES 17+ CONTENT RATED BY ESRB

NINTENDO 64

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rating playstation

Unfortunately, the force wasn't with LucasArts during the development of *Shadows*

titles for Nintendo 64, *Shadows of the Empire* is a game that ultimately will rely more on its movie license than any innovative or entertaining gameplay. Considering the high expectations associated with Nintendo 64 games, *Shadows* must be considered somewhat of a disappointment (especially when you think of what it could have been!) but there's no doubt that it will sell extraordinarily well.

So what's wrong with it? Technically, *Shadows of the Empire* seems to look and sound great — especially on initial inspection. But closer examination reveals that the graphics and sound tire quickly and that 64 Mbit cartridges are — in today's day and age — far too small for this kind of game: The sequence in the sewers of the Imperial City are particularly sad with the water/sludge being one big unmoving plane of texture; the main character of Dash Rendar looks as if he is stuck in a solid floor as he moves through the liquid without even causing a ripple; the looping of the background in the Mos Eisley race sequence also screams of space limitations. As for music and sound, they're lifted directly from the film soundtrack so they are authentic and satisfying — but once again cartridge restraints force a lot of looping. (Again — imagine what this could have been with the full John Williams' score.)

Aesthetics aside, the three-in-one gameplay in *Shadows* can best be described as uninspired. The majority of the game is a shooter that can be played from either a first-person or third-person perspective. All these levels lack sparkle, however, and there are plenty of *Doom*-clones that are faster, smoother, and more compelling first-person shooters — even the environments of the third-person perspective *Tomb Raider* dwarfs Shadows in terms of size and exploratory freedom.

The best levels in *Shadows of the Empire* are the AT-AT battles on the ice planet of Hoth at the beginning of the game — and these really are quite fun. Piloting a snowspeeder is every *Star Wars* fans' dream, and zooming through a pack of the Empire's armored behemoths is exhilarating. But even here, there are irritating restrictions on gameplay. The speeder can only move up, down, left, or right (forget about any acrobatic spins and rolls), and forget about flying over the mountains to explore the '3D' world — the gameplay in *Shadows* is for the most part restricted to a single arena or a particular pathway.

Levels like a asteroid field TIE fighter attack, a race through Mos Eisley on hover bikes, a final space battle shoot-out, and a mine cart level (shudder) add variety to the gameplay but none of it is new, or for that matter particularly exciting. In fact, it may be that this vast variety of game-types is the ultimate downfall of *Shadows of the Empire.* A well–implemented, detailed, snowspeeder flight sim with an expansive 3D environment would've been an intriguing, better focused game. So would a solid first-person shooter such as *Dark Forces.* Instead, by being a student of all genres, *Shadows of the Empire* is ultimately the master of none.
Rating: ★★

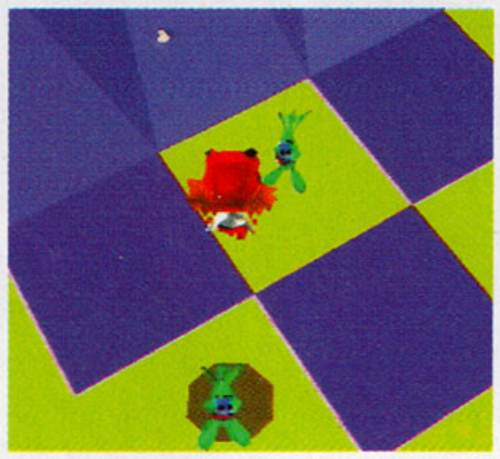
PlayStation

The Adventures of Lomax
Publisher: Psygnosis
Developer: Psygnosis
Cute character + theme setting + funky bad guys = side-scrolling adventure game. This formula has been done to death, and releasing a game for a 32-bit system seems an awful waste, especially since there's little that can be put into such a game that hasn't already been covered by *Mario* or *Sonic* years ago. *The Adventures of Lomax* is a fair try, most closely resembling *Sonic*, but the poor lemming misses the mark.

A mascot character has to be charismatic, quirky, and it helps a whole lot if he's cute, too. Lomax has his quirks, and he's pretty darn cute, but alas, he seems to have been out to lunch when they were handing out charisma. Little about him or his story sparks the imagination. Lomax is out to rescue his pals from some guy named Evil Ed and must battle the typical enemies from above and below, as well as work through obstacles.

As far as gameplay goes, *The Adventures of Lomax* isn't all bad for a side-scroller. There are a few fairly challenging stretches that require some skill, and Lomax manages a couple of tricks along the way — one of the objects of the game is to pick up different hats Lomax can use to do things like build temporary bridges or firebomb enemies. Not entertainment of the highest order, but hey, we can't all be Mario.
Rating: ★★

Bubsy 3D
Publisher: Accolade
Developer: Eidetic
The developers at Eidetic consciously decided to go for a



The only third-party mascot to make it to the 32-bit platform, *Bubsy* again falls just short

very barren, Warner Bros. look in *Bubsy 3D*, with simple colored polygons and no detailed texture maps. The down side is that the backgrounds are simplistic, with overly bright colors, much like a 16-bit game. However, on the up side, because there aren't any detailed texture maps *Bubsy 3D* is able to run in high-res mode, giving it a clear, crisp look. One of the few other game that runs in PlayStation's high-res mode is Square's *Tobal No. 1*, and both games show that simple graphics aren't always bad.

In fact, the real problem with *Bubsy 3D* has nothing to do with graphics. The control is less than impressive. In order to navigate Bubsy through his 3D world, players have to go through a lot of trouble to get him moving in the right direction. Despite the fully 3D environment, the control is similar to *Resident Evil*; you turn Bubsy around until he's facing the right direction, then press forward to make him move. In a relatively slow-paced game like *Resident Evil* this is rarely a problem, but a platform game requires precise, intuitive control, and that just isn't here.

It's possible to get used to this, but more often than not, failing to accomplish something and dying occur because of control problems or poor camera positioning — and nothing is more frustrating than blowing it purely because the character didn't do you what you wanted him to.

With plenty of levels and a nifty two-player game, the game isn't without value, but like its 16-bit predecessors, *Bubsy 3D* is several platforms short of the top floor.
Rating: ★★

Dark Forces
Publisher: LucasArts
Developer: LucasArts
The *Star Wars*-meets-*Doom* formula worked pretty well for *Dark Forces* a year ago on the PC, but now, a year later on PlayStation, this once flashy game looks like the aging port it is. From a first-person perspective, the player becomes mercenary Kyle Katarn, working for the Rebel Alliance. In 14 levels, Kyle must uncover and stop the production of a new

See the stormtroopers, shoot the stormtroopers — *Dark Forces* is "like *Doom*, except" gameplay all over again

shred the learning curve

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cybernetic stormtrooper, the mysterious Dark Trooper — a mission that inevitably boils down to blasting the hell out of numerous recognizable Empire baddies, including that nasty sewer creature from the first film's trash compactor scene. While there are only 14 levels, they vary greatly in design and environment, offer some interesting puzzles, and can be extremely challenging.

While the gameplay is good, *Dark Forces* fails on some technical levels as a port. The overall speed feels slower than most *Doom*-style PlayStation games, and the control is somewhat stiff, even if it's among the first PlayStation titles in which the player can raise or lower the aim of the gun. Also, after playing *Disruptor*, the visuals in *Dark Forces* come off as mediocre. While the light-sourcing from the PC version translates well, the textures aren't as defined, and the characters pixelate something awful up close.

While the graphics may be lacking, for those who care the audio remains nearly perfect. All the symphonic *Star Wars* music, blaster sounds, and random shouts from imperial guards such as, "There he is! Stop him!" add to the authentic atmosphere.

Not quite as intense as *Doom* or *Disruptor*, but surely better than crap like *Kileak*, *Dark Forces* will certainly satisfy *Star Wars* fans looking for their own little touch of the force.

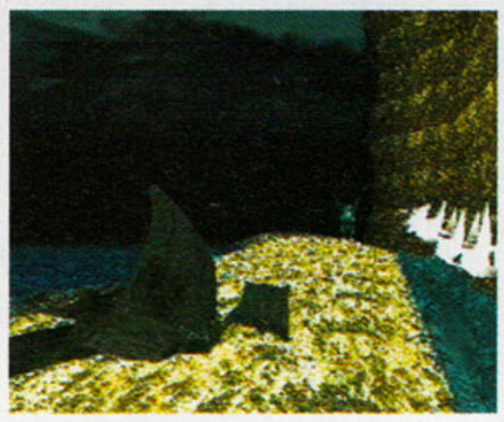
Rating: ★★★

King's Field II

Publisher: ASCII Entertainment
Developer: From Software

When the original *King's Field* (actually *King's Field II* in Japan) arrived last year it showcased real-time, 360-degree 3D like we'd never seen on PlayStation. Now, with *King's Field II* (actually *King's Field III* in Japan), the developers at From Software are attempting to make an even more involved action/RPG.

The inherent problem with this hybrid game is that the action can't compare with the likes of *Doom*, and the RPG is never as involved as, say, *Final Fantasy* titles. Therefore, you end up with two diluted genres in one package. Last year, as diluted as the RPG elements in *KF* were, it was still the closest thing to an RPG available for PlayStation. However, this year there's a lot more competition, which makes the flaws in *KFII* glaringly evident. To start with, the first-person 3D engine is very slow and the battles are predictable and



The magic spells and their special effects are one of the solid additions to *KFII*

monotonous. Second, the shallow RPG element of the game is every bit as dull as the action.

If you can overlook pace, *King's Field II* is a big game, with a lot of areas to explore. It also takes a couple of weeks to finish — sadly, that's still pretty rare for PlayStation games.

Rating: ★★★

Motor Toon Grand Prix

Publisher: SCEA
Developer: Poly's

What do you get when you cross Saturday morning cartoons with *The Need for Speed*? Simple, you get *Motor Toon Grand Prix*. The original *Motor Toon* was one of PlayStation's earliest titles in Japan, but it never saw a release on this side of the Pacific. Thankfully, SCEA has seen fit to release the sequel stateside.

Don't let the title fool you — this isn't just for kids. Sure, all the snazzy sets of wheels you can choose look a little strange and come complete with a resident cartoon character, but don't worry, every vehicle goes plenty fast enough.

The characters are an odd lot, including the saucy Princess Jean in her jalopy, the Penguin Brothers in their mobster cruiser, and (one of the better choices) Vanity on her Harley. But that's not all, folks: *Motor Toon* also sports a weird set of power-ups players can purchase right in the middle of the race with coins picked up along the tracks. The power-ups let you do nasty things like blast the other toon racers with bombs, or drop 32-ton weights on unsuspecting opponents, not to mention slowing them down by unleashing the trippy visuals of Pandora's Box.

***Motor Toon Grand Prix*: a good use for your PlayStation**

Being toon-based, the tracks need not be anywhere near realistic, and the eye-catching graphics make it tempting to slow down and admire the passing scenery. One track is even set in a toy store complete with big piano keys (which tinkle with notes as you drive across) and boulder-sized billiard balls. The game also smartly enables you to leave the beaten path and even admire the race from a distance.

Motor Toon is fast, gorgeous, and very different from anything else seen in the U.S. (besides gray market copies of the original *Motor Toon*, of course). What more could you want?

Rating: ★★★★

Power Move Wrestling

Publisher: Activision
Developer: Tomy

For anyone who thought wrestling was a sport long gone from the videogame market, think again. *Power Move Wrestling* from Activision is a U.S. port of the Japanese hit *Toukon Retsuden* (**NG 14**), which was a guilty pleasure if ever there was one. The game takes the once popular videogame sport and puts a contemporary twist on the formula with fully polygonal characters in a true 3D ring. A bit on the slow side, *Power Move* does boast some extremely smooth animation — the wrestlers even breathe — and a long list of "real" wrestling moves. Unlike its Japanese counterpart, which featured some of the more flamboyant wrestlers on the Japanese circuit, the U.S. *Power Move* doesn't offer real wrestlers of any kind, which takes away from the overall personality of the game. All the generic wrestling personas are covered, such as the "death" character named Zombie and a "pretty boy" called Malibu Mike, but all are completely fictional.

***Power Move Wrestling* brings the familiar 16-bit formula for wrestling games into the 32-bit arena with 3D rings and polygonal wrestlers**

For those who don't care about the authenticity of the characters, *Power Move* does a pretty good job of taking the standard wrestling game of the 16-bit days and bringing it up to a 32-bit level. With multiple camera views, a lot of unique moves, and detailed polygonal characters, this game offers everything that a fan of the genre might hope for. There are some problems with the one-player game, which is a bit on the easy side, but the two-player mode really lets players take advantage of the game's variety.

Overall, the impact is somewhat less than what we'd hoped for from a U.S. port, but *Power Move Wrestling* is still a solid game and an enjoyable distraction.

Rating: ★★★

Pro Pinball

Publisher: Interplay
Developer: Empire

It's impossible to cram the feeling of playing a life-size pinball machine into a tiny control pad, and most attempts to bring pinball to a television screen have been poor. While many developers have tried to wow gamers with multiple tables, Empire went the other way — giving the player one table, but doing it right.

The sharp, pre-rendered table, called "The Web," is graphically superb. The ball is appropriately shiny, and excellent light-sourcing adds realism to the flashers. The table design is rather nice as well, with three flippers and plenty of ramps and holes to shoot for. The

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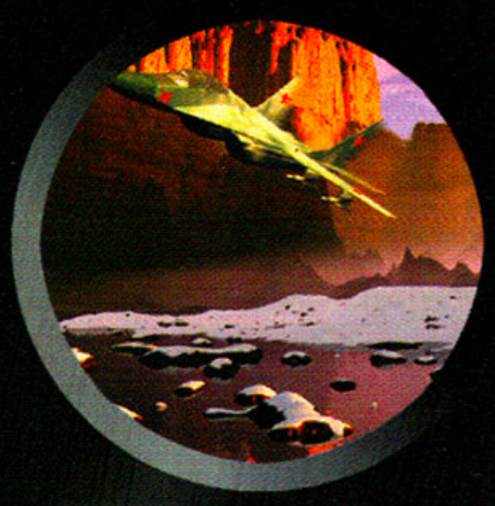

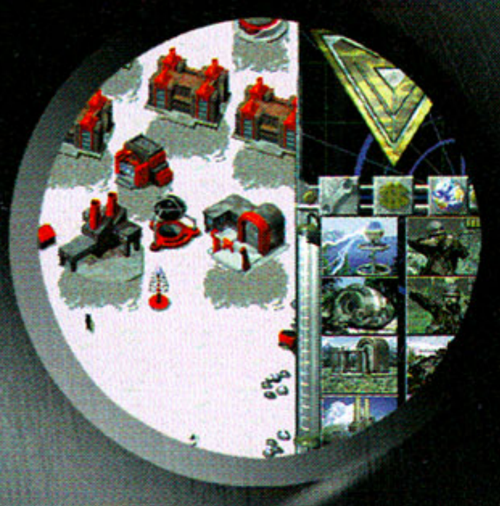

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game has several optional views which offer only minor differences in perspective, but players always have a complete view of the table. As with most modern pinball machines, there's a separate LED video screen on the backglass, which presents the player with standard challenges, such as bonus jackpots and the always crazy multi-ball. The LED screen is also used for a flipper-controlled mini-game.

While the visuals are impressive, the best part of *Pro Pinball* is its true physics. Unlike so many other pinball wannabes,

***Rebel Assault 2* is just like the original: lots of FMV shooting sequences and boring as hell**

one is a later level where players take an X-Wing up against a swarm of Tie Fighters, and with the game's polygonal enhancements, it (like certain parts of the N64 game *Shadows of the Empire*) comes close to fooling you into thinking you're actually playing a flight sim. But too many levels in which the player dodges FMV obstacles in a pre-determined flight path (some such levels don't even require any shooting) make the game tedious at best.

The soundtrack and audio effects are traditionally superb, with the same compelling John Williams music that never seems to get old. The actors who play the rebel pilots, however, are a truly sad lot, giving unconvincing performances in the cut scenes.

While not completely terrible, the design of this series is archaic compared to what players expect of 32-bit gameplay. As a port of a not-so-great PC game, this title swayed a little toward the dark side from the start. Hopefully the *Rebel Assault* series will either evolve or die from this point on.
Rating: ★★

***Pro Pinball* may only have one table, but it's a pretty good table**

there's never a second when the ball takes on any weird floating properties or does anything else to destroy the illusion of actually playing the genuine article.

Of course, the game does have some problems, including some cheesy voice samples. But if you can overlook the idea that playing pinball on a 32-bit game machine is kind of like using a Ferrari for a paperweight — yeah, it works really well, but what's the point? — flipper connoisseurs will appreciate *Pro Pinball*'s finer points.
Rating: ★★★

Rebel Assault 2
Publisher: LucasArts
Developer: Factor 5

The original *Rebel Assault* for 3DO wasn't quite up to snuff as a PC port, and, as an FMV-based shooter on rails, wasn't all that great to begin with. Now *Rebel 2* appears as a PC port for PlayStation, and while it trades in the PC version's digitized sprites for polygonal spacecraft, alas it's still the same mundane game.

For those who played the original, the gameplay will seem nearly identical. Players again assume the role of rebel pilot Rookie One and continuously cross paths with the Empire in a variety of battles. While the game mainly provides a chase-view perspective, there are some levels, like the asteroid field and opening B-wing battle, that offer an optional cockpit view. The missions are varied in style and goals, but never seem to get interesting. The best

Slam Scape
Publisher: Viacom
Developer: Viacom

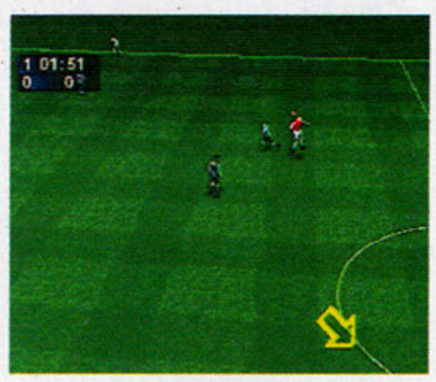
The perfect example of designers

PlayStation

RELEGATED

FIFA '97
Publisher: Electronic Arts
Developer: Electronic Arts

Every single version of *FIFA* has been the hands-down best soccer game around — until now. *FIFA '97* ignores its own respected tradition of fast, realistic game mechanics and instead offers polygonal players and slow, boring play. Much like EA's other recent sports titles, *NBA Live '97* and *NHL '97*, *FIFA '97* is the first time for the series to feature polygonal players, and out of the three only one, *NHL '97*, is even remotely successful. If you just look at still screens, *FIFA '97* does look amazing, with realistic uniforms and detailed players, but once the game starts moving, it all goes downhill. *Worldwide Soccer '97* may have raised the bar for soccer games, but *FIFA '97* can't even compete with the original *FIFA* for 3DO, much less last year's *FIFA '96*.



Don't let these nice looking screens fool you, FIFA '97 is not up to EA's standards.

What *FIFA '97* does right is what EA Sports titles always do right: an incredible presentation, with a smooth front end, the players' license, stats, leagues, and more options than you'll know what to do with. But once the players take the field, *FIFA '97* falls apart. The most glaring problem is the pace, which is so slow players may need a good five minutes to run from one end of the pitch to the other. EA Sports probably wishes that was the only thing wrong with *FIFA '97*, but we can't overlook the choppy frame rate, miserable ball physics, sloppy control, and the rest of the long list of the game's manifold shortcomings.

The simple, sad fact is *FIFA '97* is the most disappointing EA Sports game in years.
Rating: ★

Not only is the ball the size of a beach ball, it also bounces once and then stops, as opposed to rolling like a real one. Also, be glad for once these are still screens — the animation is pathetic

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INTERGRAPH

PlayStation

SLAMMING THE COMPETITION

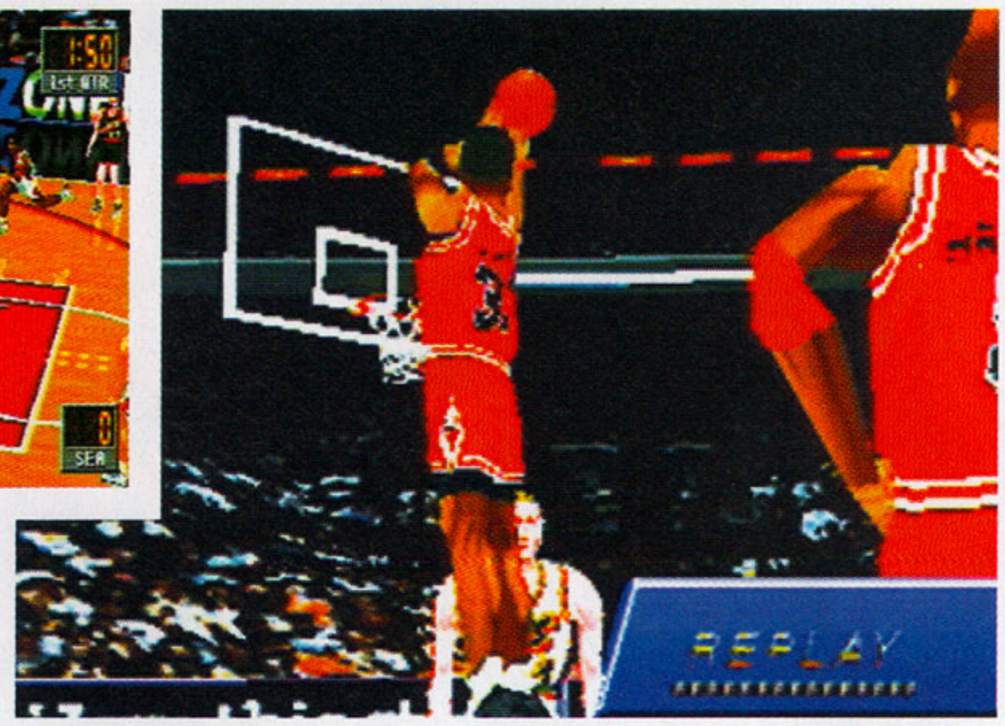
In the Zone 2

Publisher: Konami
Developer: Konami

Last year's *In the Zone* was a disappointment. It looked gorgeous but lacked full rosters or even a season mode, and so little attention was given to defense it played like a highlight reel. This year — wow.

In The Zone 2 gives the player complete control, offensively and defensively, over the most realistic looking NBA teams in videogame history. The polygon replicas of the NBA's finest are nearly perfection, right down to Patrick Ewing's knee pads and Horace Grant's goggles. Even more impressive is the totally smooth motion. Watching a player perform a fade-away, three-pointer, lay-up, swat, or two-handed jam is a beautiful sight. In fact, if you step back and squint a little you'd swear you were watching a televised broadcast.

The fade-away, the slam dunk, and all the motions in the game are things of beauty



The Jordan in *In The Zone 2* is the most like Mike of any videogame basketball sim, and man, can he can get up high and put it down

Get that stuff outta my face! *ITZ2* actually makes defense fun

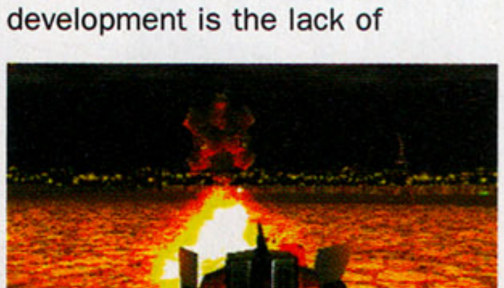
ITZ2 is easily the best-looking basketball game ever, but what makes the game so exceptional is the impeccable control. The player has more weapons at his disposal than ever before. The arsenal of offensive moves includes everything from hook shots to alley-oops to cross-over dribbles. Defensively, the game has been given a major overhaul: the steal, block, box-out, and even the way you plant your feet have been integrated perfectly into the gameplay.

In The Zone 2 also adds a number of simulation features missing in last year's effort. This time around, the game offers season, exhibition, and playoff modes along with full rosters, stat-tracking, set plays, trading players, and creating players. The latter enables fans to put superstars like Michael Jordan, Charles Barkley, and Shaquille O'Neal on the court — players who have their own licenses and rarely show up in an NBA videogame, but who are a must for any complete sim.

ITZ2 still has a very arcade-style feel, and still has a tendency to look like a highlight reel, but with its intuitive control, sharp graphics, and deep gameplay, it's the best basketball game on the planet.

Rating: ★★★★★

mistaking a game engine for an actual game, Viacom/MTV's *Slam Scape* is an amateurish attempt all around. The idea is simple: glide around in a wide open arena looking for hidden orbs while enemy creatures accidentally get in your way. Achieving this same goal level after level grows tiresome in a hurry because the arenas are generally bland and the enemies uninspired. Another testament to the general lack of ambition shown in the title's development is the lack of options. This means no control over difficulty level, music volume, stage select, and so on. Instead of anything useful, the player is treated to three music videos from a band called God Lives Underwater. If you happen to be a fan of the band, it's probably a nice extra, but gamers paying $50-plus for this "game" were likely hoping for a little more focus on traditional gameplay elements.



Equipped with a prominent MTV license, *Slam Scape* has plenty of flashy extras but practically no substance

Even with all the title's shortcomings, it would still be untrue to say there's nothing good at all in *Slam Scape*. In fact, the game does offer nice control and good-looking special effects, but real gamers know this just isn't enough to carry a game. It's exactly these occasional successes, in fact, that highlight what *Slam Scape* is missing: an overall commitment to quality and planning. What's offered instead is a number of promising elements all thrown together in a slick, MTV-style package.

Definitely not for hardcore gamers, this title is for those who don't know any better.

Rating: ★

TNN Hardcore 4X4

Publisher: ASC
Developer: ASC

Hardcore seemingly has all the right elements to make it an "A" title. There are five trucks to choose from, a variety of courses, three different play modes, severe weather, crisp graphics, real physics, and a good frame rate. Yet the game never makes an impression. *Hardcore 4x4* is the quintessential "average" game.

The highlight of the game is the the way the truck handles — it actually feels like you're racing a 4x4. However, the races lack speed and excitement due in a large part to the narrow pathways your truck is confined to. They're so narrow they even affect the outcome of the race; if you get in first place, you can block the path and never let anyone else get by.

Besides the gameplay

***Hardcore 4x4* has the look, but not the feel of off-road racing**

problems, it's just plain annoying that an off-road racing game doesn't actually allow you to go off-road. This should be the very essence of the game, yet here you are confined to the track. *Hardcore 4x4* is the first of many 4x4 racers that are popping up lately, and while the core game engine shows promise — and makes us interested in seeing what an improved *4x4 II* might look like — in the end, it's simply no better than average.

Rating: ★★

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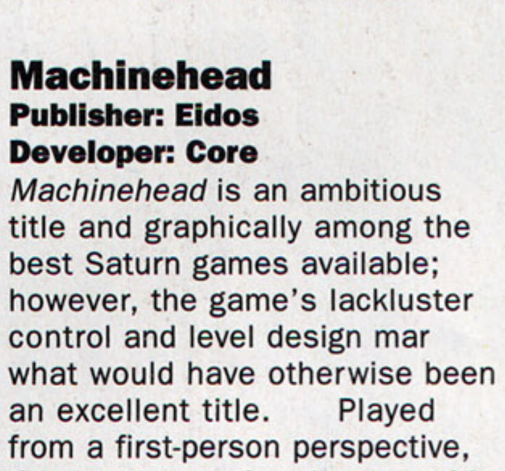
Saturn

Machinehead
Publisher: Eidos
Developer: Core

Machinehead is an ambitious title and graphically among the best Saturn games available; however, the game's lackluster control and level design mar what would have otherwise been an excellent title. Played from a first-person perspective, the game puts the player astride a flying bomb, which also happens to be equipped with the serious weapons, such as machine guns, missiles, flame throwers, and so on. At its heart, the game is a shooter (with multiple objectives), with missions that vary greatly in complexity and depth.



***Machinehead* looks great and has a lot of variety, but the total package never adds up to much**

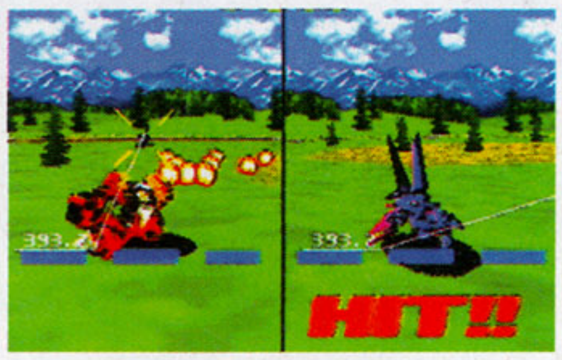
Graphically, the game is stunning, easily boasting the best lighting effects seen on Saturn to date. The textures in it are much more high res than those in most in Saturn titles, and the transparency effects show none of the typical dithering usually associated with the alpha channel on Saturn. The techno soundtrack is also nicely executed, and the sound effects (especially those of missiles and explosions) are excellent and add greatly to the dark atmosphere of the game.

The major problem lies with the sluggish and confusing control, which in general is not responsive. Also, the controller configurations available from the options menu leave a lot to be desired. Every button on the controller is used, and without the ability to completely customize the controller layout, it takes a long time to become proficient with it.

Overall, the game has some high points and is an excellent title to show off Saturn's graphics capabilities. However, the control could have been tweaked better, and it needs additional options.
Rating: ★★★

Saturn

RIGHT ON



A variety of attacks (above) helps to open up the strategy potential of each match. The two-player mode (right) is a bit cramped, but adds a lot to the lifespan of the game

Virtual On
Publisher: Sega
Developer: Sega

One of those games people either enjoy or don't, *Virtual On* is loved by its fans and dismissed by others. Appearing first in the arcades, this state-of-the-art 'mech fighting game features several varied 'mechs with a variety of dazzling attacks. Set up very much like a traditional fighting game, each round pits the player against one opponent in a wide open arena. Each of the arenas actually features small differences in the form of 3D blocks, trees, or hills, but for most part they can each be described as a very large and flat battleground. The set-up facilitates the long range, projectile-based fighting that makes up most of the action in *Virtual On*, while also offering just enough variety to give the player an opportunity to develop sophisticated strategies.

While fans of the arcade version will certainly be glad to see the game running at a very generous frame rate, with real 3D explosions and accurately recreated 'mechs and backgrounds, there are some control issues. *Virtual On* was simply not made to comply to the standard Saturn controller, and therefore is an uncomfortable fit on anything less than the dual-stick controller of the arcade. In an effort to battle this unfortunate situation, the game's designers have offered a large number of controller configurations to try to suit everyone's preferences. It is also possible to purchase an optional dual-stick controller made specifically for Saturn's version of the game (an expensive solution, considering this is likely the only game that will ever use it), but after spending a few minutes with a standard controller, most players can get used to it.

When considering*Virtual On* for Saturn, it's important to remember just a few things. First, it's a very nontraditional action/fighting game, which means it won't instantly appeal to everyone. Second, those who do like this game tend to like it a lot, and for good reason. Third, the two-player game adds a tremendous amount of replay value. Finally, this could very well be the most accurate arcade to Saturn translation yet, and if you're an AM Division fan, that really means something.
Rating: ★★★★

Accurate depictions of the 'mechs and arenas, combined with ultra smooth gameplay make this one of the best arcade to Saturn conversions of any AM division

Sega's fast moving mech fighting game, *Virtual On* challenges players to learn a new gameplay formula

Blazing Dragons
Publisher: Mindscape
Developer: Crystal Dynamics

This title was originally scheduled to be released around the time of PlayStation's launch, but not until over a year later was the game finally complete. In that time, the developers have managed to put in over 40 wacky characters, 50 different scenes, several puzzles, and even some occasional humor. Terry Jones, of Monty Python fame, created the characters, and for the most part the game is enjoyable. Some of the highlights in *Blazing Dragons* are the voices of Cheech Marin and Harry Shearer of "The Simpsons." Beyond the good voice-acting, *Blazing Dragons* has a decent amount of puzzles, but the constant loading and slow play really don't suit consoles. But, if it's a graphic adventure you want, then *Blazing Dragons* is pretty much your only choice.
Rating: ★★

The voices of Terry Jones, Cheech Marin, and Harry Shearer *almost* make Blazing Dragons fun

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Designed for Microsoft Windows 95

TEEN T AGES 13+ CONTENT RATED BY ESRB

PC

PC

TOON OUT

Toonstruck
Publisher: Virgin
Developer: Burst

Arriving amid the hype of one of the biggest pre-release media blitzes in recent memory, Virgin's big "AA" PC game for Christmas — and the first product of the company's much-vaunted new development studio Burst — is elaborate as all the brouhaha would suggest, but still a disappointment.

We've seen live-action heroes caught up in a world of cartoon characters plenty of times before on the movie screen, but this is the first serious attempt to make the concept work in an interactive medium. Not to put too fine a point on it, the game wants to be the PC equivalent of *Who Framed Roger Rabbit?* It even has one of the movie's principal actors, Christopher Lloyd, in the lead role here as a cartoonist (called Drew Blanc... geddit?) sucked into the world of his own creation.

Accompanied by his wise-cracking cartoon chum Flux Wildly, Drew's task is to save the land of Cutopia from an evil Count who wants to "malevolate" the landscape and rule forever in an evil genius kind of way. And so begins a point-and-click object-gathering, puzzle-solving adventure in the LucasArts and Sierra tradition. Drew interacts with characters, solves sub-games, and extricates himself from no end of cartoon-style perilous situations in order to free Cutopia and return to the real world.

At the heart of *Toonstruck* there's a lean, satisfying game; the problem is all the fat and gristle surrounding it. The designers have tried desperately hard to make the game zany, wacky, crazy, twisted, madcap, and side-splittingly hilarious — but it just isn't. The dialog, slapstick humor, and relentless "comedy" situations are tired and mostly ripped off from past and present cartoon creations. You've seen most of these jokes before, and done better 40 years ago.

You can't fault *Toonstruck*'s production quality — it looks worth every cent of the six million dollars it reportedly cost. But as Hollywood movie-makers know, without a decent script all the technical savvy in the world is for nought. If Burst is going to continue in this vein, they'd be well advised to pick up a LucasArts adventure compilation for an object lesson in how to do interactive humor that can actually make you laugh.

Rating: ★★★

A $6 million budget doesn't seem to have helped *Toonstruck* break any new ground in either game mechanics or concept — and worst of all, often it's just not funny

Bedlam
Publisher: GT Interactive
Developer: Mirage Technologies

If you threw three heavily armed, building-sized remote assault tanks (RATs) into a city filled with dangerous, mutated monsters called Biomex, you might expect a little chaos. In fact, you'd be right. If you turned that into a game, it would be called *Bedlam*, GT's new action title.

Viewed from an isometric perspective, the action is fast and continuous. The graphics are a bit murky on the PC, but they are interesting, with admirable artwork, and it's pretty odd walking around in the huge RATs, with tiny dead bodies scattered at your cybernetic feet.

Prior to each mission, players spend earned credits arming and equipping the RATs. More money is earned for completing a mission, and by collecting the power-ups found on the map, which give shields, more ammo, and the like. *Bedlam* has an elegant, intuitive control system, reminiscent of *Abuse*, but it works even better with this game's isometric view. Units are directed with the mouse, left-clicking to move, right-clicking to fire. It's easy and it's fast, something players will certainly

You've got a squad of three robots to run in GT's *Bedlam*

appreciate during the game's hectic firefights.

But while the controls are easy, the missions are not. The game has numerous, sprawling levels which take many hours to complete, primarily because it forces players to stroll from one end of the map to the other looking for the activation fences which let them into new areas of the level. After a while, the monsters simply regenerate, forcing you to waste ammo to wipe them out again and again. Furthermore, actual gameplay becomes tiresome after a while — shoot the monsters, look for the end of the level, go to the next level, shoot some more monsters. However, in small doses it's fun enough for long enough to be worth giving it a shot.

Rating: ★★★

Monster Truck Madness
Publisher: Microsoft
Developer: Microsoft

With as many games in development for Windows 95 as Microsoft has, it's surprising that the one title that really seems to take full advantage of the operating system is none other than a monster truck game.

Even without graphics acceleration, the frame rates

You'll be bumpin' trucks in mid-air in Microsoft's *Monster Truck Madness*, starring such off-road talent as Bigfoot itself

under Windows 95 are impressive. During the rally races, the feeling of speed and movement as you hit a jump is undeniable. However, this is just where the game falls a bit short: real world physics it ain't got. In fact, at times the physical model just doesn't make sense. For example, at one point we watched a truck fly nearly 100 feet through the air before hitting the ground on the other side of a hill. Don't ask us to repeat it, but trust us, it happened.

The game has numerous optional variables so it's easy to customize it to suit just about any skill level. The easiest settings are far too easy, but holding your truck in a sharp corner at the highest setting is quite a challenge.

If you're looking for a good, fun, simple racing game and you don't mind some interspersed full-motion video of actual monster trucks — and a slightly out-of-touch sense of physical mechanics — then it's definitely worth a look.

Rating: ★★★★

NBA Full Court Press
Publisher: Microsoft
Developer: Microsoft

There aren't a whole lot of basketball games available for PCs nowadays. However, Microsoft's contribution to the narrow market hardly beats out the already strong presence of EA's *NBA Live '96*. Although Microsoft carries off the NBA license suitably well, with full rosters of all the current players, the gameplay simply isn't as precise, or even as fun as in other basketball titles.

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PC

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You can drive a jeep as well as fly an H/K in *SkyNET*. It takes some getting used to, but these vehicles cause a lot of damage (left). Missions take place inside and outside. Don't get caught too close to this bot, or you'll be hurt in the blast (above)

Terminator: SkyNET

Publisher: Bethesda Softworks
Developer: Bethesda Softworks

About a year ago, Bethesda Softworks came out with *Terminator: Future Shock*. It was a revolutionary first-person shooter, using the mouse in combination with the keyboard for control. Although it didn't receive much acclaim, it was ahead of its time in terms of control, size of the game maps, and pushing the style of the genre in a new direction. All it was missing was an SVGA mode and multi-player support.

Well, guess what *Terminator: SkyNET* has. Using Bethesda's revolutionary X-engine as its core, *SkyNET* takes *Future Shock* and adds new high-res SVGA graphics — you can even play *Future Shock* in high-res by installing *SkyNET* — and some incredible multiplayer options. Not only can you choose from four different characters in multi-player, but the death match maps aren't simply level maps pulled from the single player game but are a completely different set built specifically around the idea of multiple people trying to kill one another.

Briefings are done in full-motion video. This guy isn't too bad (he plays John Connor) but the other actors are horrible

The sheer number of items to find and weapons to use rivals even *Duke Nukem 3D*. Single-player missions follow a storyline, which makes it almost feel like a roleplaying game. Each mission tells more of what's going on in the game world, and each mission could change drastically from the briefing (done in full-motion video with some really bad actors — will we ever get a chance to stop saying that?). The ability to drive a jeep and fly a Hunter Killer fighter (H/K) adds many new experiences to the game and makes the multiplayer games interesting, to say the least.

As soon as you adjust to the interface and get used to using the mouse in combination with the keyboard, you won't want to go back. The sheer beauty of the game, combined with the incredible amount of flexibility of the engine, means *Terminator: SkyNET* could be the best first-person shooter of the new year. You owe it to yourself to buy this one.

Rating: ★★★★★

H/Ks will fly overhead and nail you before you know what hit you. Keep your ears open

for instance. Sure, the locked view shows nearly the whole court at once, but it hardly gives an in-depth look at the action. The tiny players tend to group tightly together near the basket, which makes trying to set up any sort of coherent play difficult in the extreme.

However, Microsoft has done a good job animating the players. Slam dunks, lay-ups, and even three-pointers are modeled perfectly. The players may be a pixelated mess during the setup of a play, but executing moves is a smooth delight. With about 100 predefined plays, there's at least the opportunity to form strategy and build a win off the computer's AI. Even the commentary, by the voice of Seattle Sonic Kevin Calabro, is entertaining and fits the action from moment to moment. But given that EA is soon to release *NBA Live '97* for PC (and Win95), purchasing *Full Court Press* just doesn't make any sense.

Rating: ★★

***NBA Full Court Press* tries to be a great basketball game, and ends up being only adequate**

RAMA

Publisher: Sierra
Developer: Dynamix

While all too *Myst*-like in design, Dynamix's *RAMA* manages to push past some of the inherent confines of its genre and provide players with some fairly balanced puzzles and an decently entertaining storyline. *RAMA* is based on Arthur C. Clarke's book of the same name and tells the story of an immense alien starship that has suddenly appeared in our solar system. As part of the *RAMA* team, the player's mission is to explore the huge ship, which contains five distinctly unique cities and even a large, frozen cylindrical sea.

There are quite a number of puzzles in *RAMA*, and while not terribly innovative, they do actually add to the storyline instead of just being there to slow down the player's progress. Learning alien number systems and defusing a nuclear bomb are but two of the challenges.

With some wonderful alien designs, such as the high flying Avians, and an effectively moody musical score, the designers of *RAMA* have tried hard to please.

Your journey through *RAMA* will include meeting exotic aliens

In all fairness, a few interesting puzzles and better than average quality FMV elevate the game slightly above many *Myst* clones. However, the lack of original gameplay (or even a good ending) will bore experienced gamers, and at the end of the day, it's still just a *Myst* clone.

Rating: ★★

And hey, it's networkable.

You're sitting at your desk. And you're bored. Bored, bored, bored. Now imagine you're sitting at your desk taking hairpin turns through dirt and mud. Massive bumps send you flying into orbit. And you better anticipate the next curve or you're gonna get to know the side of a mountain a little too well. Ahhh... there's nothing quite like the off-road racing experience of Sega Rally Championship for the PC. There's even head-to-head network play. So, c'mon, you get a little time off for lunch - go find some buddies and let them eat your dust.

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K-A
CONTENT RATED BY ESRB

SEGA Entertainment

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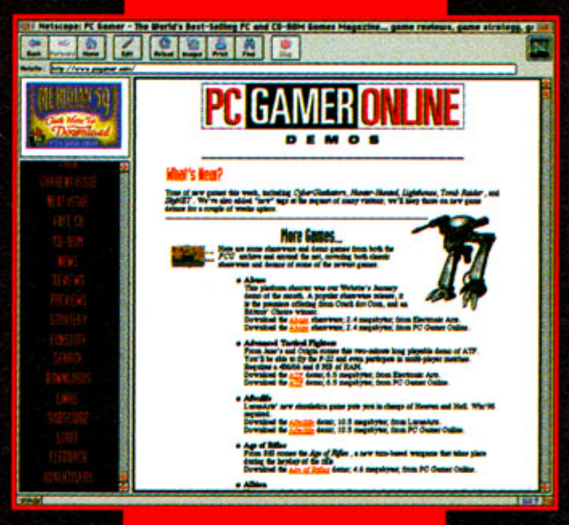

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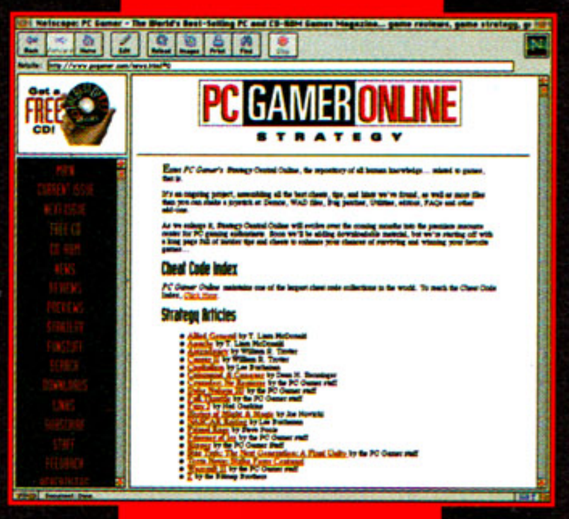

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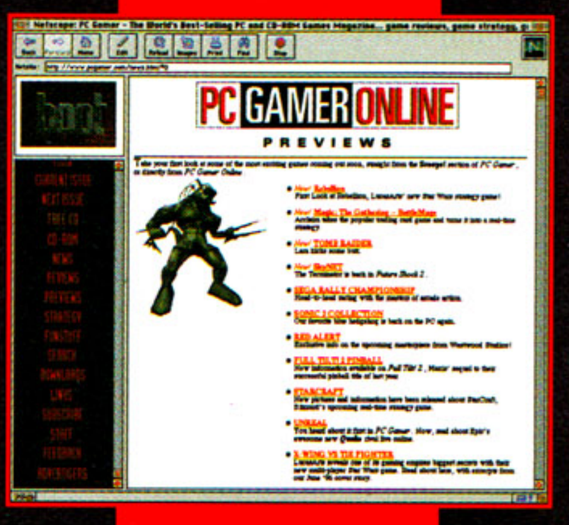

Previews

Your first look at the future's hottest titles before they hit the shelves.

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The highs, lows, and scores for EVERY game we've ever reviewed.

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Shattered Steel
Publisher: Interplay
Developer: BioWare

Shattered Steel is a stripped down 'mech sim, along the lines of *EarthSiege II* or *MechWarrior 2*, but without the complexity. It settles for pure action from the minute players climb into their giant robots and blast off for the planet Pixel. The controls are simpler than those of most 'mech games (which tend to be as elaborate as flight sims), although it still requires turret control, energy settings and has several weapons to watch, so the action isn't quite as brain dead as in a *Doom* clone. Overall, *Shattered Steel* is on about the same level of complexity as *TIE Fighter*, although in this case it's played with a keyboard and mouse.

***Shattered Steel* from Interplay: not breaking any new ground, but not losing any either**

The graphics are a cut above average, if you've got a machine that's fast enough to run them. The textures on the alien robots are sharp, and the designers even used a form of voxel technology, similar to that found in NovaLogic's sims, to render the terrain. But as in a lot of action titles, when you get close to the polygon creatures, legs disappear, things overlap, and it starts to look a little sloppy.

Most of the missions are straight-ahead, shoot-'em-up romps without a lot of strategy, but there are plenty of missions to keep you busy. Weapons progress nicely from some piddling lasers to a tactical nuke. It supports modem and network play, and comes with 15 multiplayer missions, so it's solid on that end as well.

Overall, *Shattered Steel* is a fun little arcade 'mech game, not breaking any new ground, but at least offering a simpler, less demanding version of the combat robot sim, which should especially appeal to those of us who just like to blow things up.
Rating: ★★★

Virtua Squad
Publisher: Sega Entertainment
Developer: Sega

This is actually AM2's *Virtua Cop* (the name was changed to avoid legal entanglements), and one of three AM2 games Sega is porting to PC. As ports go this isn't bad, featuring the full game, plus the extra modes found in the Saturn version. It still boasts the same John Woo-style flying bodies, exploding barrels, and tightly constructed 3D levels.

Unfortunately, it's also less exciting. It's noticeably slower on the majority of PCs than in the arcade or on Saturn, running at speed only on the most high-end Pentiums. Worse, played without a light gun using only the mouse, the game loses a major part of its appeal, effectively dropping to the level of other rail-based shooters like *Rebel Assault 2* or *Chaos Control*. Plus, the single complaint that can be leveled at any version of the game remains true here: it's really short — three levels and it's over.

Sega Entertainment got off to a good start with *Virtua Fighter*, one of the few 3D fighting games available for PC. *Daytona USA* also probably deserves to find a niche among PC racing titles, but *Virtua Cop* (or rather *Squad* — whatever) is out of its element. Sega should choose its future releases a bit more carefully.
Rating: ★★

Macintosh

Mummy, Tomb of the Pharaoh
Publisher: MacPlay
Developer: Amazing Media

In *Mummy, Tomb of the Pharaoh*, the player gets a chance to star in a classic B-movie adventure about vengeful Egyptian spirits, a greedy corporation, buried tombs, and a mysterious hieroglyphic box. As Michael Cameron, National Mining Company's star trouble shooter, players need to uncover the truth about the Pharaoh's tomb and get out alive.

The setup has all the makings of a great adventure game, but if you've played *Phantasmagoria* or any other of the recent horror-based adventures, you've already played *Mummy*. Gameplay mostly consists of watching expository videos and solving the odd puzzle. The puzzles may present a challenge for the novice gamer, but experienced adventurers will cruise right through.

As with most adventures of this type, you spend a considerable amount of time exploring different scenes, but the developers did manage to create some exciting moments, and the video quality is quite

***Mummy, Tomb of the Pharoah* is yet another FMV-based graphic adventure — if you like this sort of thing, go for it**

good. Malcolm McDowell is the star name, and even though he seems to be popping up in more games than John "Multimedia Whore" Rhys Davies, at least he's still entertaining to watch.

There are times when *Mummy* shows potential, so it's a shame it plays more like a retread than a genre-defining adventure. New adventurers and fans of classic horror might enjoy it, but others should definitely avoid the "Mummy."

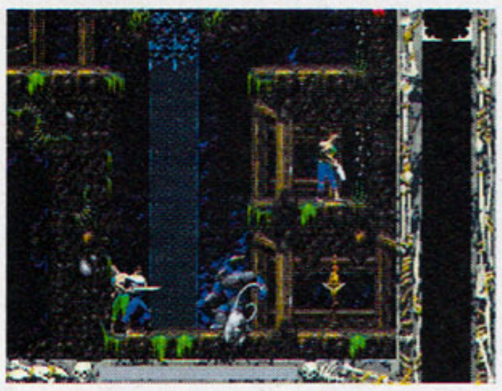
Rating ★★

Blackthorne

Publisher: MacPlay
Developer: Blizzard

Jonesing for a new side scrolling adventure? Well, how about an old side-scrolling adventure? MacPlay has revived *Blackthorne*, a three-year-old, adrenaline-pumping action game from Blizzard Entertainment.

You play Kyle Blackthorne, an exiled prince of an other-



***Blackthorne* is still one of the better side-scrollers available**

worldly dimension. With your wits and a shotgun, you fight through level after level of traps, goblins, and mutant beasts. When not killing enemies, Kyle has to maneuver around waterfalls, past ledges, and through trap-laden corridors. Think of it as *Prince of Persia* with firearms. As an added bonus, there's also an intriguing plotline hanging around behind all the action.

Three years ago, a pair of 16-bit versions of *Blackthorne* used rotoscoped sprites, but Blizzard has improved the original model for this version by using prerendered, motion-captured sprites. Actually, this version is identical to an aborted version of *Blackthorne* slated for release on 32X, but this time it's been done right. Eerie music and highly detailed graphics heighten the dread and anticipation, while the animation is incredibly smooth and the control is dead-on.

Blackthorne was one of the better *Flashback*-style games of its time, and if you've never played this kind of side scroller, you're in for a real treat. At the very least, *Blackthorne* is one of the best — and only — action games to come out for the Macintosh in the last year.

Rating: ★★★★

SORRY!

No new games were made available for review this month on the following systems

3DO

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- AREA 51™

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RANGE: 5-7 FEET
SIZE: 8 INCHES FROM NOSE TO BUTT

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NEWS STRATEGIES REVIEWS

NEXT GENERATION

Next Generation gamers guide

Every new "next-generation" game, rated for your perusal

The following list is a round-up of all the final review scores given to next generation console games. Titles with the suffix (Japan) are not available in the U.S. Happy hunting...

Nintendo 64

Title	Publisher	NG Rating
Cruis'n USA	Nintendo	★
Killer Instinct Gold	Nintendo	★★★
Mortal Kombat Trilogy	Williams	★★★
Pilotwings	Nintendo	★★★★
Shadows of the Empire	Nintendo	★★★
Shoji Chess	Nintendo	★★
Super Mario 64	Nintendo	★★★★★
Waverace 64	Nintendo	★★★★★

PlayStation

Title	Publisher	NG Rating
Adidas Power Soccer	Psygnosis	★★★
Agile Warrior	Virgin	★★
Air Combat	Namco	★★★
Alien Trilogy	Acclaim	★★★★
Allied General	SSI	★★★★
Alone in the Dark 2	Kokopeli	★★
Aquanaut's Holiday	Sony	★★
Arc the Lad	Sony	★★
Assault Rigs	Sony	★★
A-Train	Maxis	★★★
Bases Loaded	Jaleco	★
Battle Arena Toshinden	PlayMates	★★★
Battle Arena Tohshinden 2	Sony	★★★
Beyond the Beyond	Sony	★★
Black Dawn	Virgin	★★★★
Blood Omen: Legacy of Kain	Activision	★★★★
Bogey Dead 6	Sony	★★★
Bottom of the Ninth	Konami	★★★★
Boxer's Road	New Corp (Japan)	★★★
Braindead-13	ReadySoft	★★
Bubble Bobble	Acclaim	★★★
Bust-A-Move 2	Acclaim	★★★★
Casper	Interplay	★★★
Chessmaster 3D	Mindscape	★★★★
College Slam	Acclaim	★★
Cosmic Race	Neorex (Japan)	★
Crash Bandicoot	Sony	★★★
Crime Crackers	Sony (Japan)	★
Criticom	Vic Tokai	★
Cyberia	Interplay	★★
CyberSled	Namco	★★
Cyberspeed	Mindscape	★★
Cyber War	Coco Nuts	★
D	Acclaim	★★★
Dark Stalkers	Capcom	★★★
Deception	Tecmo	★★★
Defcon 5	Data East	★★★
Descent	Interplay	★★★★
Destruction Derby	Psygnosis	★★★
Discworld	Psygnosis	★★★
Die Hard Trilogy	Fox	★★★★
Disruptor	Universal	★★★★
Doom	Williams	★★★★★
Dragon Ball Z	Bandai (Japan)	★★
ESPN Extreme Games	Sony	★★★
Fade to Black	Electronic Arts	★★★★
FIFA Soccer	EA Sports	★★★★
Final Doom	Williams	★★★
The Final Round	Konami	★★
Formula 1	Psygnosis	★★★★★
Geom Cube	American Technos	★★
Gex	Crystal Dynamics	★★★
Goal Storm	Konami	★★★★
Gridrunner	Virgin	★★★
Gunner's Heaven	Media Vision	★★★★
Gunship	Microprose	★★
Hardball 5	Accolade	★★
Hi Octane	EA	★★
The Hive	Trimark	★★
Horned Owl	Sony	★★★
Impact Racing	Acclaim	★★★
International Track & Field	Konami	★★★★
In the Hunt	THQ	★
In the Zone	Konami	★★★
Iron & Blood	Acclaim	★★
Johnny Bazookatone	US Gold	★★
Jumping Flash!	Sony	★★★★
Jumping Flash 2	Sony	★★★★
Jupiter Strike	Acclaim	★
Kileak the Blood 2	Sony	★
Kileak:The DNA Imperative	Sony	★★
Killing Zone	Acclaim	★
King's Field (Japan)	From Software	★★
King's Field 2	Asciiware	★★★★
King of Fighters '95	Sony	★★
Krazy Ivan	Psygnosis	★★★
Loaded	Interplay	★★★
Magic Carpet	EA	★★★
Madden '97	EA	★★★★
Mobile Suit Gundam	Bandai (Japan)	★★
Mortal Kombat 3	Williams	★★
Motor Toon Grand Prix	Sony (Japan)	★★
Myst	Psygnosis	★★
Namco Museum, Vol. 1	Namco	★★★★
Namco's Museum, Vol. 2	Namco	★★
NASCAR Racing	Sierra	★★
NBA Jam TE	Acclaim	★★★★
NBA Shoot Out	Sony	★★★
NBA In the Zone	Konami	★★
NCAA Gamebreaker	Sony	★★★★
Need for Speed	EA	★★★★
NFL Full Contact	Konami	★★
NFL GameDay	Sony	★★★★
NHL Face Off	Sony	★★★★
NHL Powerplay '96	Virgin	★★★★
Novastorm	Psygnosis	★
Off-World Interceptor Extr.	Crystal Dynamics	★★
Olympic Soccer	US Gold	★★★
Olympic Summer Games	US Gold	★★★
Panzer General	SSI	★★★★
Perfect Weapon	ASC	★★
PGA Tour Invitational '96	EA	★★★
Philosoma	Sony	★★
PO'ed	Accolade	★★★
Power Baseball	Konami (Japan)	★
Power Serve 3D Tennis	Ocean	★★
Primal Rage	Time-Warner	★★
Project Overkill	Konami	★★★
Psychic Detective	EA	★
Raiden Project	Sony	★★
Rayman	UbiSoft	★★★★
Resident Evil	Capcom	★★★★★
Resurrection: Rise 2	Time-Warner	★
Return Fire	Time Warner	★★★★
Revolution X	Acclaim	★
Ridge Racer	Namco	★★★
Ridge Racer Revolution	Namco	★★★
Road Rash	EA	★★
Robo Pit	THQ	★★★
Romance of 3 Kingdoms IV	Koei	★★★
Shellshock	US Gold	★★★
Shockwave Assault	EA Studios	★★
Silverload	Vic Tokai	★★★★
SimCity 2000	Maxis	★★★
Skeleton Warriors	Playmates	★★★
Slam 'n' Jam	Crystal Dynamics	★★★
Soviet Strike	EA	★★★★
Space Griffon	Atlus	★
Space Hulk	Electronic Arts	★★★
Spot Goes to	Virgin	★
Starblade Alpha	Namco	★
Starfighter	Acclaim	★★★
Star Gladiator	Capcom	★★★
StarWinder	Mindscape	★★★
Steel Harbinger	Mindscape	★★★
Street Fighter Alpha	Capcom	★★★
Street Fighter:The Movie	Capcom	★★
Street Racer	UBI Soft	★★★
Striker	Acclaim	★
Tecmo Super Bowl	Tecmo	★
Tecmo World Golf	Tecmo	★
Tekken	Namco	★★★★
Tekken 2	Namco	★★★★★
Tempest X	Interplay	★★★★

rating

Title	Publisher	NG Rating
Tetris Plus	Jaleco	★★★
Theme Park	EA	★★★
Thunderstrike 2	US Gold	★★★★
Time Commando	Activision	★★★
Tobal No. 1	Sony	★★★★
Tokyo Highway Battle	Jaleco	★★★
Top Gun: Fire at Will	Spectrum Holobyte	★★
Total Eclipse Turbo	Crystal Dynamics	★★
Triple Play '97	EA Sports	★★★★
Twisted Metal	Sony	★★★
Viewpoint	EA	★
VR Soccer	Interplay	★★★
V-Tennis	Acclaim	★★
Warhawk	Sony	★★★★
WipeOut	Psygnosis	★★★★★
Williams Arcade Great. Hits	Williams	★★★★
Wing Commander III	EA	★★★
World Cup Golf	US Gold	★★★
Worms	Ocean	★★★★
WWF Wrestlemania	Acclaim	★★★
X-Com UFO Defense	Microprose	★★★★★
Zero Divide	Time Warner	★★
Zoop	Viacom	★★★

Saturn

Title	Publisher	NG Rating
Alien Trilogy	Acclaim	★★★★
Alone in the Dark	T•HQ	★★★
Astal	Sega	★★★
Baku Baku Animals	Sega	★★★★
Bases Loaded '96: DoubleHeader	Jaleco	★
Battle Arena Toshinden Remix	Takara	★★★
Battle Monsters	Naxat Soft	★★
Blackfire	Sega	★★★
Bubble Bobble w/ Rainbow Islands	Acclaim	★★★
Bug!	Sega	★★
Bust-a-Move 2: Arcade Ed.	Acclaim	★★★
Casper: The Movie	Interplay	★★★
Center Ring Boxing	JVC	★★
Clockwork Knight	Sega	★★
Clockwork Knight 2	Sega	★★★
College Slam	Acclaim	★★
Congo The Movie: The Lost City of Zinj	Sega	★★
Corpse Killer: Graveyard Ed.	Digital Pictures	★
Creature Shock: Special Ed.	Data East	★
Criticom	Vic Tokai	★
Cyberia	Interplay	★★
Cyberspeed	Mindscape	★★
D	Acclaim	★★★
Darius Gaiden	Acclaim	★★
Dark Legends	Data East	★★
Daytona USA	Sega	★★★★
Daedalus	Sega	★★★
Decathlete	Sega	★★★★
Defcon 5	Data East	★★★
Double Switch	Digital Pictures	★★
Earthworm Jim 2	Playmates	★★★
FIFA '96	Electronic Arts	★★★★★
Fighting Vipers	Sega	★★★★★
F1 Challenge	Virgin	★★★
F1 Live Information	Sega (Japan)	★★★
Frank Thomas Big Hurt Baseball	Acclaim	★★★
Galactic Attack	Acclaim	★★★
Galaxy Fight	Acclaim	★★
Gex	Crystal Dynamics	★★★
Ghen War	Sega	★★★
Golden Axe: The Duel	Sega	★★
Gotha	Sega	★★★
Gran Chaser	Sega	★★★
Greatest 9Baseball	Sega (Japan)	★★★★
Guardian	Sega	★★★
Gun Griffon	Sega	★★★
Hang-On GP '95	Sega	★★★
Hi-Octane	EA	★★
High Velocity	Atlus	★★★
The Horde	Crystal Dynamics	★★
Impact Racing	Acclaim	★★
In the Hunt	T•HQ	★
Iron Storm	Working Designs	★★★★
Johnny Bazookatone	US Gold	★★
Krazy Ivan	Sega	★★
Last Gladiators	Kaze Co	★★★★
Legend of Oasis	Sega	★★★★
Loaded	Interplay	★★★
Magic Carpet	EA	★★★★
Mansion of Hidden Souls	Sega	★★★
Minnesota Fats: Pool Legend	Data East	★
Mortal Kombat II	Acclaim	★★★
Myst	SunSoft	★★
NBA Action '96	Sega	★★
NBA Jam TE	Acclaim	★★★
The Need For Speed	EA	★★★★
NFL Quarterback Club '96	Acclaim	★★
NFL Quarterback Club '97	Acclaim	★★★
NHL All-Star Hockey	Sega	★★
NHL Powerplay '96	Virgin	★★★★★
Nights	Sega	★★★★★
Night Warriors: Dark Stalkers' Revenge	Capcom	★★★
Off-World Interceptor	Crystal Dynamics	★★★
Olympic Soccer	U.S. Gold	★★★
Panzer Dragoon	Sega	★★★★
Panzer Dragoon II Zwei	Sega	★★★★
Pebble Beach Golf Links	Sega	★★★
Primal Rage	TWI	★★
Quarterback Attack	Digital Pictures	★★★
Quarterback Club '97	Acclaim	★★★
Rayman	Ubi Soft	★★★
Revolution X	Acclaim	★
Riglord Saga	Sega	★★★
Rise 2: Resurrection	Acclaim	★
Road Rash	EA	★★
Robo-Pit	Kokopelli	★★★
Robotica	Acclaim	★
Romance of the Three Kingdoms IV: Wall of Fire	Koei	★★★
Saturn Bomberman	Hudson	★★★★
Sega Rally Championship	Sega	★★★★★
Shanghai: Triple Threat	Activision	★★★
Shellshock	US Gold	★★★
Shining Wisdom	Working Designs	★★★
Shin Shinobi Den	Sega	★★★
Shockwave Assault	EA	★★
SimCity 2000	Maxis	★★★
Skeleton Warriors	Playmates	★★★
Slam 'N' Jam 96	Crystal Dynamics	★★★
Solar Eclipse	Crystal Dynamics	★★
Space Hulk: Vengeance of the Blood Angels	EA	★★★
Star Fighter	Acclaim	★★
SteamGear Mash	Takara	★★
Street Fighter: The Movie	Acclaim	★★★
Street Fighter Alpha	Capcom	★★★
Street Fighter Alpha II	Capcom	★★★★
Striker	Acclaim	★
Tama	Tengen	★★
Tetris Plus	Jaleco	★★★
Theme Park	EA	★★★
3D Baseball	Crystal Dynamics	★★★
Three Dirty Dwarves	Sega	★★★
True Pinball	Ocean	★★★
Thunderstrike 2	US Gold	★★★★
Torico (Gekkamugentan-Torico in Japan)	Sega	★★★★
Ultimate Mortal Kombat 3	Williams	★★★
Valora Valley Golf	Vic Tokai	★★
Virtual Hydlide	Atlus	★★
Virtual Volleyball	Imagineer	★
Virtua Cop	Sega	★★★★
Virtua Fighter	Sega	★★★
Virtua Fighter Kids	Sega	★★★★
Virtua Fighter Remix	Sega	★★★★
Virtua Fighter 2	Sega	★★★★★
Virtua Racing	Time Warner	★★★
Virtual Open Tennis	Acclaim	★★★
Wicked 18	Vic Tokai	★★★
Wing Arms	Sega	★★★
Winning Post	Koei	★★
Wipeout	Sega	★★★★
World Cup Golf: Pro Edition	US Gold	★★★
World Series Baseball	Sega	★★★★
World Series Baseball II	Sega	★★★★★
Worldwide Soccer	Sega	★★★
Worldwide Soccer 2	Sega	★★★★★
Worms	Ocean	★★★
WWF Wrestlemania: The Arcade Game	Acclaim	★★★
X-Men: Children of the Atom	Capcom	★★★

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★★★★ Excellent
★★★ Good
★★ Average
★ Bad

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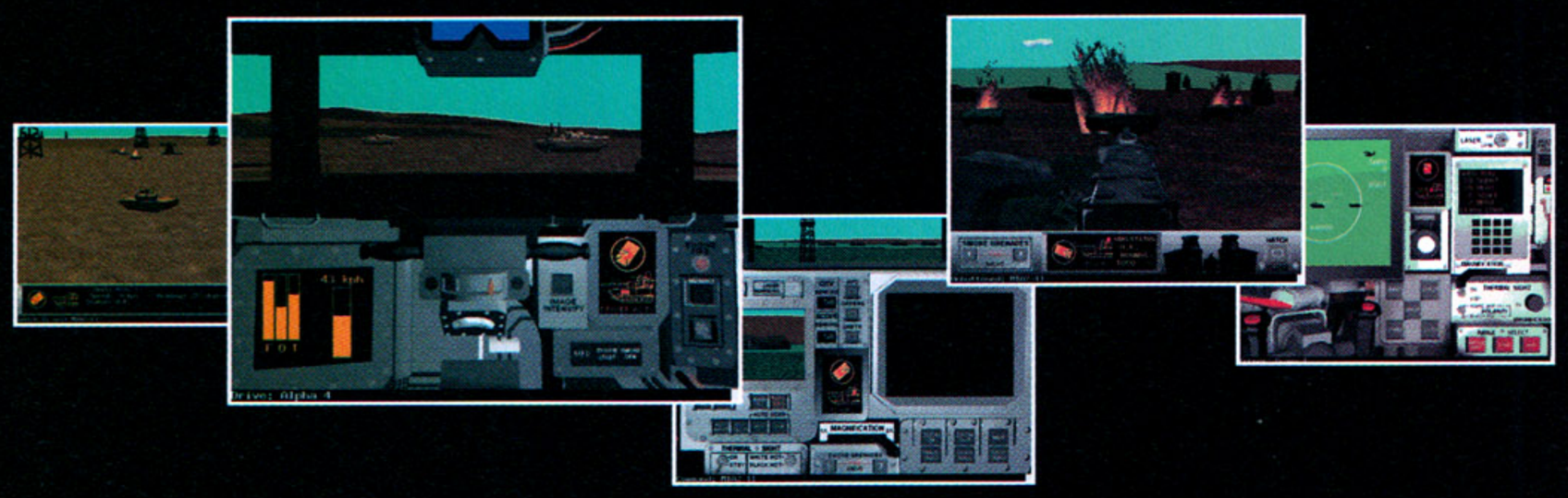

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(continued from **page 12**)

disk-based games; a little less than ten, right now. These projects include the system construction for *Mario Paint*, editing *Sim City* — and other similar titles — and, as I said earlier, I am working on the basic structure of self-growing games.

This new project will be due for release sometime in 1998, and it will be very unique, original and different. But because of that uniqueness most people are criticizing it saying that "This is not a game!" So I am kind of in trouble right now, whether or not what I am doing is right.

NG: Can you tell us any more about this project?

Mr. Miyamoto: I think it's important for us to have many ways to create games. We have the potential to offer a quantitative change with N64 hardware — not only by having more gorgeous titles with the same themes, but with many other applications. After all, what we are selling is a computer-like toy, and — as with all toys — if you are to fully utilize its functions then it shouldn't be used for just one thing. I believe that N64 hardware was designed to offer a variety of ways for consumers to enjoy themselves.

"Nintendo is in the 'plug and play' entertainment business; there is a long way to go until online multiplayer games are the main focus of this market"

NG: For the first time with N64, a home videogame system is perhaps powerful enough to support some kind of virtual reality. Is this a prospect that excites you, and would you support plans to introduce some kind of "VR" headset for N64?

Mr. Miyamoto: If it's for some very short attraction — say within two minutes or so — then I think such headsets are OK, but personally I am concerned about possible hazards to the human body if people are expected to wear the headset for long periods of time.

But because of the strong power of N64, it would be interesting to have some attraction for N64 — maybe we could show some kind of attraction with two disk drives....

NG: Are there any other accessories or peripherals that you would like to see introduced for N64?

Mr. Miyamoto: Nintendo has been and is a toy company and manufacturer. We are now showing the "Jumping Pad" and it is enjoyable — but also very simple and very cheap, and this is important. I can't say that there are any concrete plans, but it's always an interesting idea for Nintendo to release some kind of toy-like peripheral for N64, as long as it is affordable enough for the general public.

As for the VR-style headset that you mentioned, or anything like that, then sure, it is possible to release an affordable version, but the quality of headset that we would want to release would not be affordable.

NG: In the U.S. right now the biggest new paradigm of gaming is the emergence of online gaming, sometimes with many hundreds of players playing at the same time. Is this something that excites you, and have you though about trying to design such a game yourself?

Mr. Miyamoto: In the long run, I would be interested in this. But Nintendo is in the mainstream, "plug and play" entertainment business and there is a long way to go until the online multiplayer games are the main focus of the business in this specific market — it's just too difficult for consumers to get started. Although nowadays many people are buying CD-ROM games, they're still complaining that they have to wait a lot of time between switching on their machines and then playing the game. There are also many other things which we have to go through before we can establish some sort of mainstream entertainment market.

In Japan right now the miniature-type LCD *Tetris* games are making a huge market, and this is largely because they are very simple to play and when kids get tired of it, they can just throw it away — they only cost $10. I believe that this is the destiny of the videogame entertainment market, because if it is cheap, easy to try, and simple to play then people will tend to buy it.

"My basic policy of making games is to create some kind of 'miniature garden' — and this concept has remained the same with me"

But if it is rather complicated and troublesome to start something new, then it will be a long time before it will become a mainstream entertainment market.

So let me say that technically, I am interested in online gaming, but I am more interested in the videogame experience whereby four players can play the same game simultaneously in from of one TV set.

NG: Are you satisfied with N64's power to handle this, say in *Super Mario Kart 64*?

Mr. Miyamoto: I don't think that it's enough, but I think it's doing a fairly good job.

NG: Are there plans to introduce a Satellite system for N64, similar to the one in place for Super NES?

Mr. Miyamoto: Technically, it is OK. There is no reason why we couldn't send information via satellite to N64s. So if the disk drive system is sold then we can make some games applicable.

NG: What can we expect from Super Mario 64 2?

Mr. Miyamoto: [Laughs]. It may be cheaper, because it could be adapted for release on 64DD. But give me some time after I've finished with *Zelda* and I will think about *Super Mario 64* 2 some more!

NG: Is *Zelda 64* your number one priority right now?

Mr. Miyamoto: I think that I'm putting the same priority on *Zelda* and *StarFox*.

NG: What was your involvement with *SMK4*?

Mr. Miyamoto: I was the producer, but we had a very good director for that game so it was kind of an easy job for me. The director sometimes consulted with me, but largely I didn't have to do much.

NG: Are you interested in making more original games, or are you happy to continue making 64-bit updates of 8-bit and 16-bit Nintendo classics?

Mr. Miyamoto: Well, you can tell that *WaveRace 64* is a completely different game from the original GameBoy version. But yes, although we are sometimes opting to adapt old game titles, I am always looking for something very original.

2D or not 2D?

NG: Given that Nintendo 64 was designed primarily as a 3D game system, why the decision to make *Yoshi's Island 64* a 2D game?

Mr. Miyamoto: When we started software development for N64 we wanted to make a kind of "two and a half dimension" game, because this would be easier for the consumers to start playing with. Eventually we finally decided that this game would be *Yoshi's Island 64*.

The original *Yoshi's Island* for the Super NES used the FX chip because we wanted to do all sorts of things with the game, but still, there were many things we just couldn't do because of the limitations of the old hardware. So we really want to introduce these features — and realize our original concept — in a finished version of *Yoshi's Island* for N64.

3D graphics are fine, but for *Yoshi's Island* we really want to have more artistic graphics, so that the game is more like a moving picture, or something like that. And this means doing it in 2D.

NG: So did you experience frustration with the artistic limitations of polygon 3D while developing *SM64*?

Mr. Miyamoto: No, I'm not saying that. It's not a matter of the likes or dislikes of polygons. Polygons offer a kind of "solid" graphics, and if you like it that's alright, but texture-mapped graphics are always limited to set ways, and they will always look similar.

But when it comes to 2D graphics, you can paint the original pictures that are used in the game a variety

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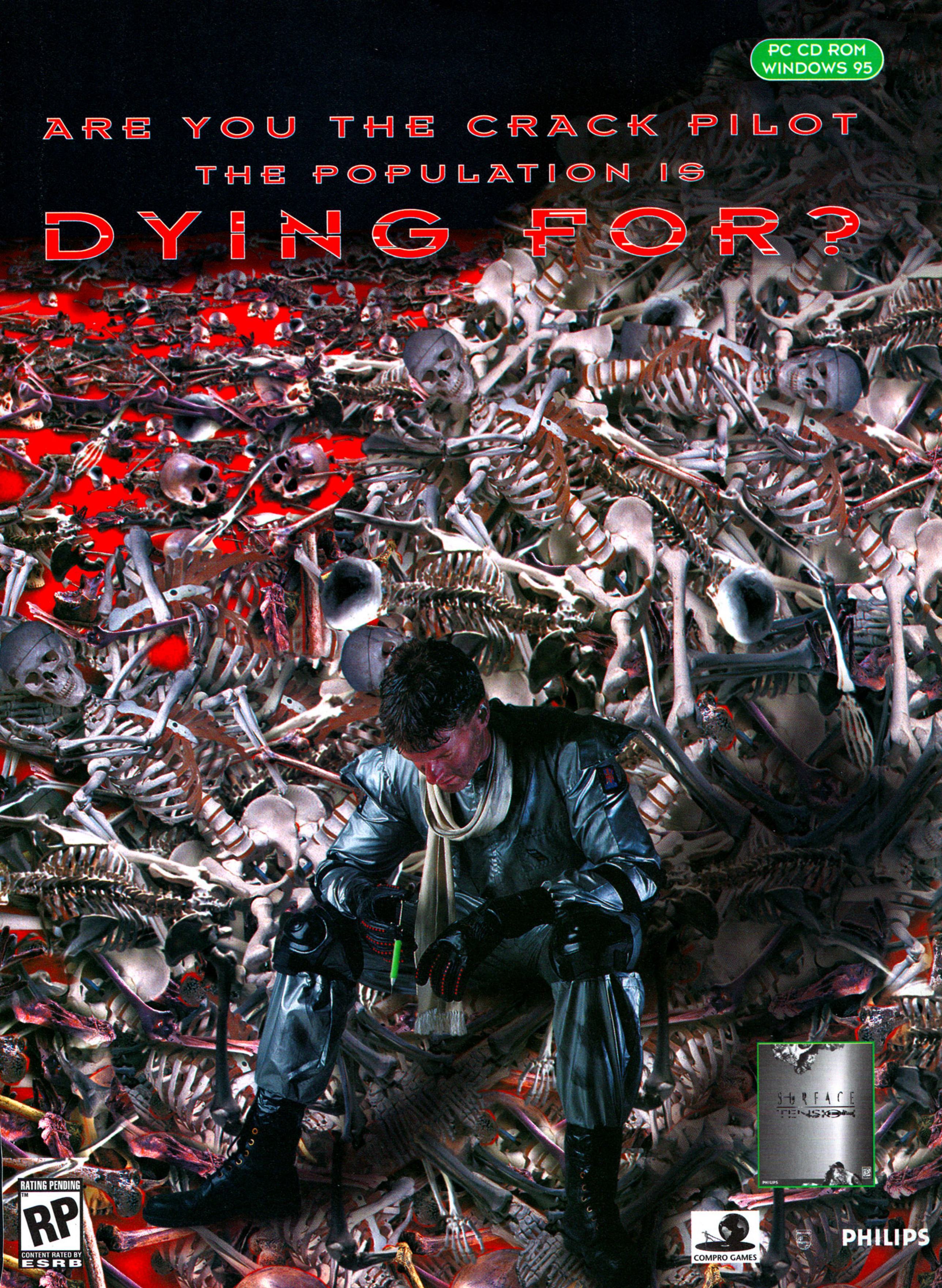

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talking

of ways — you could use air-brush, you could use pencil, you could use chalk, or many other ways — you can paint the pictures in any way you like.

As you can see in *Yoshi's Island 64* we have used what we call "cardboard art" — and it's only with a 2D game that we can have this kind of rich expression in the graphics.

NG: Nintendo's rivals have released "two-and-a-half dimension" games — the most obvious are *Crash Bandicoot* and *Nights*. What do you think of them?

Mr. Miyamoto: It may be one solution to the 3D game, and I think it may be easier for both consumers to play the game and maybe for game programmers to make their games in this way. But, with the games you mention, I think it is simply a matter of us and them aiming in different directions and having different goals.

Personally speaking...

NG: Just how hard do you work?

Mr. Miyamoto: I never sleep! [Laughs]

NG: Are you still as enthusiastic about making games as you were ten years ago?

Mr. Miyamoto: I have become very lazy [smiles]. But I think that on my own terms, I am doing my best — although it may only take 80% of the energy that I was spending ten years ago.

"My new game project is very unique — and most people are criticizing it saying 'This is not a game!' So I am kind of in trouble right now"

NG: Do you think that over the years you have become a better game creator?

Mr. Miyamoto: Sometime I have to realize that I am merely repeating what I did ten years ago.

NG: Do you think that games themselves have actually improved, or is it just that constantly improving graphics give the illusion that games are evolving?

Mr. Miyamoto: In general, the games are making progress. It's hard to say. My basic policy of making games is to create some kind of "miniature garden" — and this concept has remained the same with me. But despite how much technology improves, it will never catch up with my original concept.

NG: Why do you think that Japanese game development for N64 is so far ahead of American and Japanese development right now?

Mr. Miyamoto: Do you think that's the case?

NG: Certainly there's a difference between Nintendo's own games and everyone else's.

Mr. Miyamoto: That's because we are working very hard! [Smiles]

We have many second-parties working around the world and I think they are technically very good. I think that if they learn to tune-up the final and minute points of their videogame programs, then they could become very, very good. Actually, when it comes to the levels of the Japanese engineers for 3D computer technologies, they are way behind that of American and European engineers. This is probably because the tools were completed by non-Japanese people and the N64 development manuals were written in English and non-Japanese languages. But I think that within a year or so, Japanese 3D will be up to the standards of the rest of the world.

NG: Do you think that Japanese — or maybe just Nintendo — game designers have different priorities?

Mr. Miyamoto: I don't think so. It's not like the past when the most sophisticated and technically advanced games could only appear only on PCs [and hence typically in the U.S. and Europe], nowadays the home consoles are just as powerful and the market is just as large, so there is not so much difference in priorities.

NG: Thinking back to 1981 when you were completing the original *Donkey Kong*, did you have any idea that all this would happen?

Mr. Miyamoto: No, I wasn't thinking about this — and I had no idea that all this would happen. It was unthinkable in those days that the computer graphics made by Silicon Graphics or Alias would be available for home use.

NG: Nintendo has traditionally targeted kids as its main audience, and Nintendo 64 looks set to be no exception — you say yourself that Nintendo is a "toy company." So as you get older, are you finding it more difficult to stay in tune with what children want?

Mr. Miyamoto: I don't think so, because I still want to buy toys!

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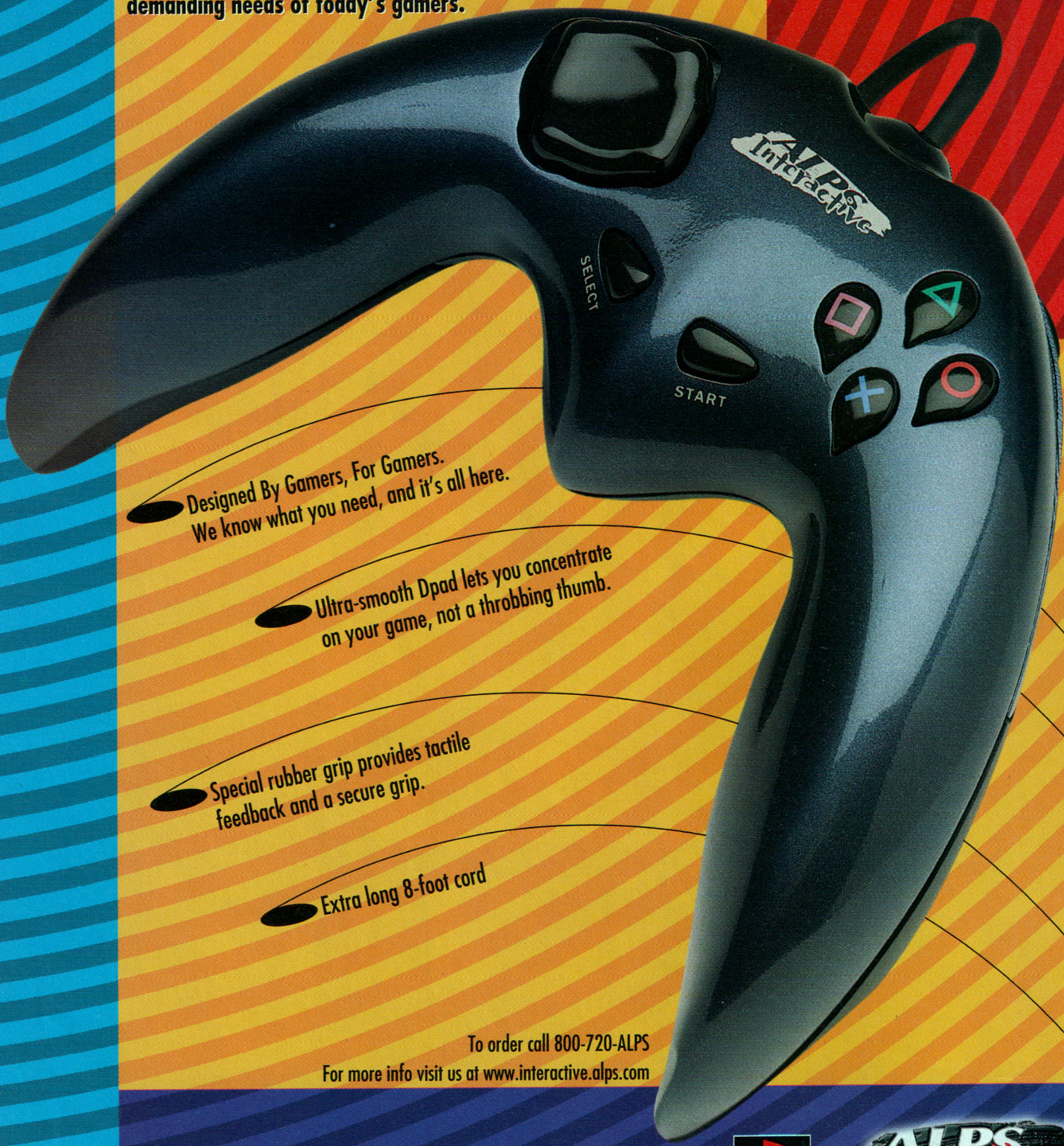

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Letter Be

I was somewhat surprised to hear the masses criticize in unison Capcom's *Resident Evil* for the voice acting clips in it, but **Next Generation** too (in **NG 21**)? Didn't people ever stop to ask themselves if there might be a reason why these clips might be so noticeably bad?

I'll take a stab. It is fairly common knowledge that Capcom is a Japanese company,

***Resident Evil*: what gives with the voice acting?**

and that *Resident Evil* was originally a Japanese game called *BioHazard*. Didn't it ever occur to anyone that just maybe the English spoken in the game needed to be clear enough so that the original audience — native Japanese — could understand it? Or would everyone have preferred that *Resident Evil* have all voice clips acted out in naturally spoken Japanese?

Joe Thomas
benjamin@ritz.mordor.com

Well, you definitely raise an interesting point. OK, except that the English-speaking voicetrack was recorded exclusively for English-speaking countries. The original *BioHazard* had its own Japanese voice acting. So there's really no excuse.

Dating to the early days of videogames, consoles used to come with two controllers and all the necessary TV hook-ups. The Atari 2600 came bundled with two joysticks, plus additional paddle controllers. Eight-bit systems such as the NES and Sega Master System came with two controllers. Even the 16-bit Super NES gave players two controllers, not to mention stereo AV plugs, and an RF switch.

Now as we enter the 32-bit and 64-bit era, we as consumers are forced to buy everything separately. We are forced to buy a second controller to challenge a friend. We are forced to buy an RF switch if our televisions are a little old. We are even forced to buy a game because most game companies do not pack in titles anymore.

Why are game companies getting greedy on peripherals that should be included in their game system packages anyway? When the Nintendo 128 comes out, are we going to have to buy the power adapter separate this time? Or will "Core Unit" package soon mean that not even controllers, RF switches, AV cables, and games are inside the box?

Michael J. Cabrera
Spydirman@juno.com

It kinda sucks, doesn't it? And as price becomes evermore important to the hardware manufacturers, you can be sure that they'll do whatever it takes to keep prices down.

On the other hand, it does mean that gamers don't have to pay for anything they don't need (Super NES owners aren't forced into buying a redundant set of s-video cables, for instance). But it also means that the real cost of a system setup may be much more than the initial $199.

One of the things I most respect about **NG** is how you treat videogames as art. By doing this, a valuable characteristic of quality games has been given powerful voice — originality. I applaud your love of originality, but it does create a problem.

In **NG 23**, the primary reason for *Crash Bandicoot's* three-star, ho-hum review was its subjective status as "the single most derivative game to ever hit a console." I admire your stance, but with the march of time, old gamers get older, and new gamers buy new systems. Right now, a 12-year-old who has never owned a home console is probably playing *Crash* for the first time and loving it for competently executed characteristics, even though they may be far from pioneering.

Keep up the way you treat games, but never fail to see and openly acknowledge why the uninspired are there.

Amos Parker
aparker@moose.uvm.edu

Your points are valid, except that **Next Generation** isn't aimed at 12-year-old, first-time gamers, but to a more experienced, older audience. And it is our opinion that for **Next Generation** readers, gamers who have already played *Sonic* and *Mario* to death, *Crash* just doesn't deliver enough that's new.

I hate to be a language critic, but in **NG 23**, you did an article, "The Great Video game Swindle?"

This was indeed a great article, but a noticeable error was definitely made. On page 215, in the quote from Nolan Bushnell he says, "It didn't take very long to figure out that I couldn't possibly screw things up more then these guys did."

"Then" was used instead of the correct word "than." "Then" refers to time and "than" refers to comparison. In this case, the word "than" should have been used. I could be wrong, the interviewer might be just directly quoting Nolan, and in that case Nolan would be wrong, but nevertheless, it was printed and it is a noticeable error.

Odie81@Juno.com

Sorry. We're really very, very — very — sorry.

OK, I've always loved all of **Next Generation**, but I was shocked (and pissed) to see that you rated *Crash Bandicoot* with three stars — because you compared it to *Mario 64*. That's the first game you compared it to — you said "Unlike *Mario 64*, players aren't free to roam just anywhere".

corresponding

Well, I can see that you don't like that, but *Crash Bandicoot* is a next-generation

***Crash* — is it good for the 12-year-old in all of us?**

platform game, and *Mario 64* is just a game of its own. You can't compare them because they're two different types of game. When you rate *NBA '97*, you're not gonna say, "I didn't like it because you can't shoot off zombie heads like in *Resident Evil*," you will compare it to another basketball game. You guys tend to compare every game to the best game out, and good games get lower ratings because of that.

modemkid@gate.net

Hey, look, we're not the only ones comparing *Crash Bandicoot* to *Mario* — Sony did exactly the same thing (what do you think all those Man-in-bandicoot-costume TV ads were all about?). And we think you'll have a hard time convincing anyone that "comparing every game to the best game out" is a flawed policy. How else is anyone meant to get a frame of reference?

I am amazed how people can come up with such wild theories for what Enos is! Thearrel W. McKinney's Bible story was bizarre when the answer is so obvious! Enos is printed (E)nos in Sony's adds. Look at (E)nos backwards: son(E). Son(e)? Sony? Get it?

It's so simple, and yet such a mystery.

John A. Latcovich, Jr
71170.3040@compuserve.com

Next!

I thought everyone knew that Enos is simply Son(e) spelled backwards. Son(e) Lives. Duh.

s.curena8102@mercury.ef.dcccd.edu

Next!

Enos — Enos backwards? SonE — "so-neee," Sony — Sony Lives. Has this really been a mystery all this time? What do I win for solving the mystery of the gaming universe?

Bob Nekic
bnekic@worldnet.att.net

Next!

First off, "Enos" is simply Sony spelled phonetically backwards. Result? "Sony Lives". That will put that to rest.

Patrick Sarnowski
sarnowsp@db.erau.edu

Next!

I was reading a letter in your latest issue (**NG 24**) that implied that you (and your readers) still haven't figured out Sony's motto Enos lives. Surely this must be a mistake. I *know* you have played *MK2*. Remember Noob Saibot? "Boon" and "Tobias" backwards — so try Enos bassackwards. SonE lives. "Son-E," i.e. Sony spelled phonetically. No prob, mystery solved.

Robert Buchanan
rbuchanan@inter-linc.com

So, is that finally it? Are we all agreed? Evidently not...

After my last letter (**NG 23**) responding to Thearrel W. McKinney Jr.'s theory about Sony's "Enos lives" campaign (**NG 20**), pointing out something that was wrong with his theory, it got me thinking: What does "Enos Lives" mean?

Here's my theory: I believe "Enos" is Sony, spelled backwards. Sure, there's an "E", not a "Y". But keep reading. Don't you think it would have been a little too easy to figure out if their ad campaign said Ynos lives? If you follow the "phonic rule": "A lone vowel followed by a single consonant and a single 'e' says its name." Enos spelled backwards would be sone (remember, the "O" says its name). And if you reverse "Enos", you get sonE. Or, son"E". Do you see what I'm getting at? So "Enos lives" could refer to the "birth" of the Sony PlayStation. Implying that Sony (sonE) "lives" in the "world" of console videogame systems.

There's also the theory that "Enos lives" doesn't mean anything! Maybe someone in the advertising department at Sony suggested the slogan because he/she saw an old movie where one of the characters said "Enos lives!"

XbandEG15@aol.com

Next, please.

Sometime last winter I stumbled upon the answer to the Enos puzzle. When the first wave of PlayStation ads was released, the phrase "Enos Lives" was used, along with the slogan "You are not ready." An alternate manifestation of the slogan was "You are not E" , with the E being in red type (red-e). Read the last two words. Not E. The E in Enos isn't an E at all.

It's probably reasonable to assume that the letter before "nos" is a vowel since otherwise it would be relatively unpronounceable. The vowels are A, E, I, O, U, and sometimes Y. So if it's "not E," why not use the Y? Enos becomes Ynos, or Sony backward.

To corroborate my theory, the pronunciation of Enos is Sony backward also.

Tom Kiesel
tkiesel@kensco.net

Ooh, there's an additional twist.

Next!

Regarding XbandEG15@aol. com's letter in **NG 23** which responds to Thearrel W. McKinney Jr.'s letter back in **NG 20** (what a mouthful), Enosh with an h is actually the Hebrew spelling of Enos, which is the Greek. Webster's New World Dictionary Second College Edition defines Enos, "E-nos (that's suppose to be an upside down 'e') [Gr. Enös < Heb. Enösh, lit., man] 1. A masculine name, 2. Bible a son of Seth: Gen. 4:26." So McKinney's theory might still be correct if the people at Sony were going with the Greek spelling of Enos.

Duane Crowe
crowe@io.org

There's another. Next!

Just to end the argument, enos should be read "Red e, N, O, S," or "Ready N.O.S." which stands for "Ready Ninth of September," the U.S. release date of PlayStation back in 1995. I won a T-shirt at a convention from the official Sony booth for answering that question correctly. If you don't believe me, call Sony.

Steve Bowler
monolithgrp@earthlink.net

We did. He's right. End of argument. We are never, never — never — going to print anything on this stupid subject again. Probably.

I was reading your mag the other day when I came upon the letter from Timothy Wojnar accusing you for using a cheap imitation asteroids screen shot. Definitely sacrilege! Anyway, I know where that screen shot is from (you should be shaking in horror right now!). That version of *Asteroids* is one of the cheesy samples that come with Borland Turbo C++ 4.5, how dare you!

Albert Mao
mao@erols.com

Well then, you better not look at the next page!

Next Month

Revival of the fittest

Why are more and more gamers evangelizing "retro" gaming? Why, in the midst of so many technological leaps forward, are more and more gamers demanding that gameplay take a step backwards? Is all this just dewey-eyed nostalgia? Or has gaming really forgotten its roots? Next month, **Next Generation** investigates...

Next Generation #27

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