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November 1995

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The creator speaks

Sega's **Yu Suzuki** breaks his silence

on *Virtua Fighter 3*, *Daytona 2*, and

Sega's future coin-op plans. Page 6

Artificial Intelligence

"That stupid videogame!" Actually, it's probably smarter than you...

Power Players

We name the 75 most powerful people in the game industry

volume one

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She'll break your heart, then kick your butt. Cool

Covergirl Sarah Bryant. Yu Suzuki's *Virtua Fighter*, *Virtua Racing*, and Daytona *USA* have conquered the world. Without these [illegible], Sega would lose its main weapon against [illegible]. But how much more has Yu Suzuki got to give?

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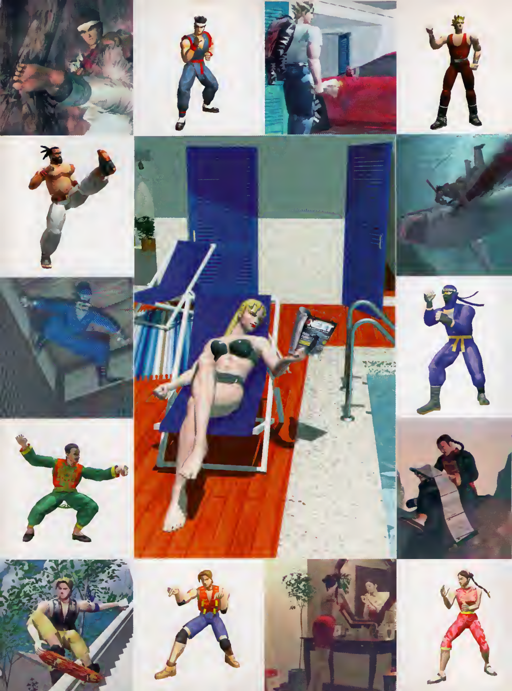

The Art of Virtua Fighter

Without Yu Suzuki, Sega would be dead. As head of R&D for Sega's Amusement Division, Yu Suzuki is to Sega what Shigeru Miyamoto (the creator of *Mario* and *Donkey Kong*) is to Nintendo. Put simply, he creates the lifeblood of the company — and he is indispensable. Without the trickle down of Suzuki's coin-op classics from the arcades to Saturn, Sega would lack its killer weapons with which to battle Sony's PlayStation.

Yu Suzuki's list of credits as head of Sega's AM2 team reads like a rundown of arcade gaming's greatest hits. From 1985's pioneering trio of *Hang On*, *Space Harrier*, and *Out Run*, through the evolution of 1987's *After Burner* into 1990's *G-LOC* and *R-360*, Suzuki's AM2 team has blazed a trail that others only did their best to follow.

Then in 1992, he changed gaming forever with *Virtua Racing*. Overnight, "polygons" became the buzz-word of an industry, and *VF*'s successor, *Daytona USA*, still provides the best wheel-spin the gaming world has to offer.

But Suzuki and AM2 will be best remembered for the creation of the *Virtua Fighter* series in 1993. An instant classic, *Virtua Fighter* is arguably the most significant game of the 1990s. It epitomizes Suzuki's skill of finding the perfect blend of state-of-the-art technology with solid gameplay (a trick perhaps only learned in the development of games for the cut-throat world of arcades). *Virtua Fighter* is the biggest game in Japan since *Super Mario World*. It's fast. It's beautiful. And yes, it's probably art.

In November of 1995, Yu Suzuki's Saturn conversion of *Virtua Fighter 2* will near its completion, *Virtua Striker* and *Virtua Cop 2* await their arcade debuts and, perhaps most importantly, *Virtua Fighter 3* looms in the near future. Never before has Suzuki's output been so prolific. And never before has the future of Sega weighed so heavily on his shoulders.

But important though Suzuki is, there are others like him. Others that run the games industry from behind the scenes. In an exclusive exposé, **NEXT Generation** names the Top 75 movers and shakers in the business. Some may surprise you. Some may annoy you. All have influenced you.

Power Players starts on page 48.

NEXT GENERATION

November 1995

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Produced in the United States of America.

NEXT Generation shares editorial with a UK magazine, **EDGE**. Good luck Francis! Thanks to "the suits." And last but not least — this one's for Stubby. P.S. Not even our moms read this far down the masthead

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Nothing compares to Yu

Yu Suzuki, director of Sega's AM2 arcade division, is responsible for keeping Sega on the cutting edge. It's no easy task, but from 1985's *Hang On* to 1994's *Virtua Fighter 2*, he has triumphed. In this rare and exclusive interview, he gives his vision of the future

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Mind games: the rise and rise of artificial intelligence

Did you realize that *making computers play stupid* is one of the biggest problems facing game developers? If not, then read on. Graphics make games look pretty, but it's artificial intelligence that makes them interesting to play. A **NEXT Generation** report

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75 Power players

Have you ever wondered who *really* runs the game industry? Meet the top 75 movers and shakers, from game designers to money men, via venture capitalists and politicians. It's controversial, it's bound to get **NEXT Generation** into trouble, and it starts on p 48

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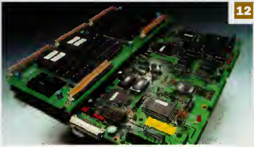

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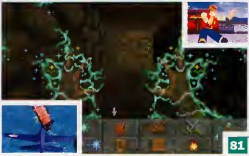

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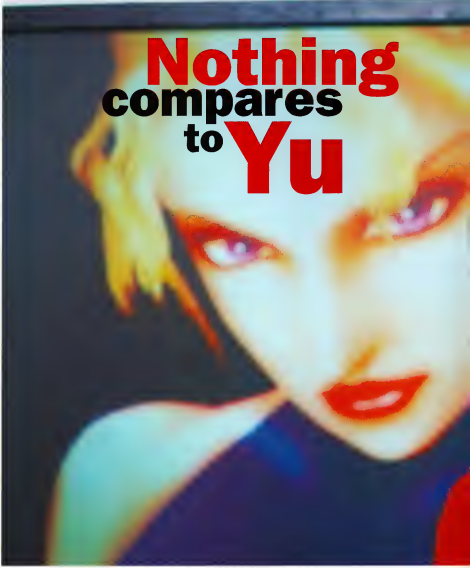
PlayStation

Sega's AM2 Arcade division has been responsible for the longest uninterrupted string of arcade hits in history. Yu Suzuki is head of AM2, and without his games, Sega's battle against Sony's PlayStation would already be lost. NEXT Generation tracked down Suzuki-san in Tokyo to talk about his games, his visions on the future, and to find out why...

Nothing compares to Yu



"No competitor strikes me as a particular threat, but in the domestic consumer market, Sony is doing very well, considering that this is the company's first time entering the game business"

Photo Hiroki Izumi

A year ago, Yu Suzuki's comments about the difficulties programmers experienced in taking advantage of the Saturn's dual CPUs sounded the first warning sign that Sega's latest 32-bit gaming system might not be the revolutionary breakthrough for which people had hoped. For many American gamers, this was their first introduction to Mr. Suzuki.

Although intimately familiar with Mr. Suzuki's games, from *Space Harrier* to *Hang On* to *Virtua Racing* to *Virtua Fighter 2*, he remains fairly anonymous in the United States, a far cry from Japan, where he holds celebrity status on par with any rock star or other pop hero. While Mr. Suzuki has been the subject of extensive media coverage in Japan, this interview may be the first chance for American gamers to get a look inside the mind of Sega's resident genius.

AM2's games

NG: Why is it that you have produced so many driving games in your career?

Mr. Suzuki: Sports cars are extremely popular not only among gamers, but among most men in general. Thus, developing realistic driving games is the best way to satisfy that large audience. That's the reason we develop so many racing games.

NG: Which AM2 game are you most proud of?

Mr. Suzuki: Of all my games, my favorite is *Virtua Fighter 2*. First of all, I think the 3D computer graphics were well received as a new medium of expression. Put another way, I think this added a sense of reality to each punch and kick that wasn't there in previous games.

As well as expressing human motion, it also made it possible to feel the weight of each movement. Also, an element that I personally like is the counter moves. Up until now, the player simply held the guard button and couldn't attack during that time. But in *VF2*, skillful use of the guard button enables you to go on the offensive with a counterattack, and this adds significantly to the depth of the game.

NG: Are you always proud of your games?

Mr. Suzuki: Of course. The development of each game holds many memories, and while I don't like to use the word "proud," I'm very happy with each of my games.

NG: Which of your games do you think was the most impressive at its time of launch?

Mr. Suzuki: *Hang On*, developed in July 1985. It was a project I started shortly after joining the company, and it helped to revolutionize the table-type videogames of that period.

And obviously, I was happy that some of our new ideas were received well.

NG: Can you explain the differences and

Yu Suzuki is treated with rock star status in Japan, where his trips to arcades are mobbed

relationships between AM2 and the other AM divisions?

Mr. Suzuki: At Sega, AM1 through AM3 make videogames. Each department's unique characteristics can be seen in their games. In the case of AM2 the result is a large number of realtime, 3D computer graphic arcade games oriented toward high-end machines. There is an aggressive effort to share technology between the departments, but these departments communicate and behave in a way that the uniqueness of each is preserved quite well.

NG: How much freedom does Sega give AM2 in terms of financial and creative freedom?

Mr. Suzuki: All departments are treated the same.

NG: How important is AM2 to Sega's success?

Mr. Suzuki: Please interview someone besides me for this question!

Virtua Fighter 3

NG: What can we expect from *VF3*?

Mr. Suzuki: *Virtua Fighter 3* will be a game in which the fighting is closer to actual martial arts, with character motions that are more realistic than either *VF1* or *VF2*. We are obviously proceeding with the aim of surpassing *VF2*. And we're investigating the specifics now, but unless it surpasses *VF2*, we can't call it *3*. I can't comment further, except to say that we will make a game that lives up to users' expectations.

NG: In *Virtua Fighter 2* and *3*, the characters are modeled in 3D and the camera angles are 3D as well, but the action that the user controls takes place along a 2D plane.

You can't, for example, attack from the side — like in *Toshinden*. Will this change in *Virtua Fighter 3*?

Mr. Suzuki: The fact that the game is 2D from the player's perspective probably won't change in *VF3*. If the viewpoint changes rapidly during gameplay, the player can't concentrate on the game, and it's difficult to keep up with the situation your character is in, as in the game you've mentioned. I can't say anything for certain because the final decision hasn't been made, but I think *VF3* will remain 2D in the sense that *VF2* is. During replays, however, we would like to use many effective 3D viewpoints to recreate the action.

Sega Japan's HQ in Tokyo, home to Yu Suzuki and the world's hottest arcade team

NG: Will all the characters from *VF2* be in *VF3*?

Mr. Suzuki: All of the characters from *VF2* will appear in *VF3*. We are also considering adding some new characters, although I can't specify how many yet or who they are. The characters' moves are also confidential at this point. But we will definitely include new moves.

NG: Will *Virtua Fighter 3* remain a three-button game, or will the addition of new moves require a move to a four or six button configuration?

Mr. Suzuki: I don't think this will change. The button count on the game pads should remain a three-button, eight-directional system.

If we consider ease-of-play as the most important aspect, I think the fewer buttons the better. I believe one of the basic tenets for arcade games is that people of any age can play and enjoy them to a certain extent. Therefore, I think we will stick with the current three-button system.

NG: *VF 1* was set in Japan, *VF2* had a more Chinese feel, where will *VF3* be set?

Mr. Suzuki: This is a good question. The setting is actually not decided at this point, but it will certainly be at least as beautiful and as smooth as *VF2*'s backgrounds and scenery.

AM R&D DEPT.#2

Personal

NG: You must own a cool set of wheels. What kind of car do you drive?

Mr. Suzuki: I drive a Lamborghini Diablo. I also have a Mazda MX-7.

NG: What do you like best about making games?

Mr. Suzuki: One of the things I like best about this industry is that what I create is evaluated by players. There is a direct link with the user, and I like the feeling of tension that gives the creators. I also place great hope in the emergence of the next generation of creators, with their various talents.

NG: Do you prefer programming or playing games?

Mr. Suzuki: I enjoy programming more. And I can't think of any particular reason why. In my case, I enjoy creating the game, but my level of interest drops once the game is completed.

NG: Do you play videogames in your spare time?

Mr. Suzuki: I rarely play videogames in my spare time. Rather than videogames, I am interested in movies and theme parks. Movies by Disney and Spielberg, for example, and attractions such as Disney's "Tower of Terror," and "Alien Encounter."

NG: Why do you like movies and theme parks more than videogames?

Mr. Suzuki: Theme parks and movies provide different perspectives for me, and I can absorb energy from the different genres. My favorite theme park is Disney World in Florida.

NG: Have you ever tried to integrate elements from theme parks and videogames together?

Mr. Suzuki: *Afterburner* and *Hang On* are two games we developed in the past in which the machines themselves moved.

NG: Do you still work on programming and design yourself, or is your job mainly management?

Mr. Suzuki: My role is mostly management, but I check on the programming and design all the time, and sometimes do some myself.

NG: Are you, personally, more important to Sega than Shigeru Miyamoto is to Nintendo?

Mr. Suzuki: I do not know.

Game Design

NG: Can you create games on 32-bit platforms that can't be done on 16-bit. Not just graphically, but in terms of how the gameplay works?

Mr. Suzuki: A game is not wholly dependent on the specifications of the hardware. If the basic concept is solid, whether the hardware is 16- or 32-bit shouldn't matter.

NG: Do you think that as hardware power increases, it enables programmers to be less efficient in their coding? Are today's programmers as talented as those of 10 years ago?

Mr. Suzuki: It is true that the increased power of the hardware does make it easier to program in a certain respect. But the efficiency and structure of the final program are both largely dependent on the abilities of the individual programmer. So while it has become easier in certain ways, the reality of the process is still highly dependent on manpower. The comparison with programmers of 10 years ago is difficult because of the change in hardware power, but I don't think there has been a dramatic change in the quality of developers.

NG: What are the biggest difficulties when making games based on real life?

Mr. Suzuki: When making a simulation game, we always face limitations because of the gap between the hardware's abilities and reality. There are many things that are technically impossible to duplicate in a game.

But if we don't concern ourselves with reality (and by reality, I mean things like the expression of Gs of acceleration on the body, or the "feel" of worn tires when driving), almost any game can be made. To express those elements would be very difficult. My personal policy is to do the best we can under those circumstances, and that policy has not changed with the shift to 3D computer graphics.

The artwork featured on NG's cover is part of a larger collection released on a Saturn CD in Japan

Yu Suzuki is notoriously difficult to gain access to. Luckily he reads NG...

Beginning with *Hang On*, I have have been working on simulation-type games now for 10 years, but my policy has not changed in that time.

NG: Do you believe in the pursuit of realism in games for realism's own sake?

Mr Suzuki: No. It's extremely easy to make a simulator. The real key to success is building in strong gameplay elements. But overall, the way the objects and characters move in a game are equally important and necessary.

NG: What do you concentrate on first when creating a game?

Mr Suzuki: In general I emphasize the gameplay elements. Once peak efficiency at that stage has been reached, we move on to the graphic elements. But ultimately, the balance between the two is important to success.

NG: When is it constructive to give personalities to game characters (i.e. *Virtua Fighter*), and when is it best to leave games without any "human touch" (i.e. *Daytona USA*)?

Mr Suzuki: We did try to include a human touch with *Daytona*. For example, the inclusion of the pit crew added a touch of reality to the game.

> **"If it's possible to link the user's brainwave responses to the game character's movements, the character would become the ultimate second self"**

Working with Saturn

NG: Back in '94, during the creation of *Daytona* for Saturn, you said that "Trying to program two CPUs has its problems. The two CPUs start at the same time but there's a delay when one has to wait for the other to catch up. One very fast central processor would be preferable."

Do you still stick by this statement?

Mr. Suzuki: This comment itself is inaccurate, but what I said was that it is more difficult to create effective programs and operating systems for a multi-CPU system. It is possible for some talented programmers to draw out the full potential power of two CPUs, but it is not an ideal environment for the average programmer.

I think the ideal system would be a single CPU producing the power of multiple CPUs.

NG: How difficult do you think it is for third party developers to work with Saturn?

Mr. Suzuki: The newest version of the operating

"I never really think about it," said Suzuki on rivalry between Sega and Namco

talking

The influence of Yu Suzuki's 1985 *OutRun* can still be seen in today's driving games. The open roads and branching paths of Nintendo's *Cruis'n' USA* were invented by AM2 10 years ago

"I enjoy creating games, but my level of interest drops once the game is completed"

The AM2 team is not only responsible for arcade development, but for the Saturn conversions, too

system and development support system [Sega Graphics Library] that Sega will release is very powerful and it should make it easier than ever before to make games for the Saturn.

NG: From a technology perspective, what is the Saturn's edge in the hardware wars?

Mr. Suzuki: I feel that the most important function in a game is realtime image processing. The Saturn hardware is strong in terms of interactively performing that kind of processing.

NG: Do you believe that so far we have seen only a fraction of Saturn's potential power?

Mr. Suzuki: Yes, I think so.

The competition

NG: Which of Sega's and AM2's competitors do you watch most closely?

Mr. Suzuki: No competitor strikes me as a particular threat, but in the domestic consumer market, sales for both the Saturn and PlayStation are doing very well. Sony is doing very well, considering that this is the company's first time entering the game business.

NG: What do you think of competitors' games like *Tekken* and *Toshinden*?

Mr. Suzuki: Each game has its own unique characteristics, and seem like good games. The whole genre of fighting games is a very rewarding one, and I would like to continue trying various approaches to it.

NG: Are you looking forward to the release of Ultra 64 with fear or anticipation?

Mr. Suzuki: I'm tired of waiting, and I hope Nintendo releases it soon.

NG: How intense is the rivalry between Namco and Sega's arcade divisions?

Mr. Suzuki: I've never really thought about it, so I can't comment.

The future

NG: What is the future for Virtual Reality?

Mr. Suzuki: I think virtual reality technology will become widespread in theme parks and suburban attractions. After that, it will spread to amusement facilities. And finally, it will reach consumer businesses. But I don't think virtual reality automatically means an HMD [head-mounted display]. I think HMDs will make it into the home, but attractions that use large, curved screen displays and high-quality motion capture systems will arrive sooner and then spread out from suburban attractions.

NG: What do you think the future holds for arcade games, over the next 10 years?

Mr. Suzuki: Ten years is too far in the future for me to comment on, but in the next two years I think hardware will continue to evolve. This may take the form of higher image quality to the point of approaching reality, or more advanced interfaces — there are many things to be done.

But while the evolution of hardware is important, it's meaningless unless the software keeps up with it. The software must therefore evolve as well.

NG: What is the next technological step beyond yet more complex 3D graphics?

Mr. Suzuki: Personally, I would like to explore the unknown possibilities of interface systems. Currently, most games are built around three buttons and a lever. But in the future, if it becomes possible to link the user's brainwave responses to the game character's movements, the character would become the ultimate second self.

NG: What future projects are you working on?

Mr. Suzuki: *Virtua Cop 2* for the arcade; *Virtua Cop* and *VF2* on Saturn; *VF 3* for the arcade, and a fighting game called *Fighting Vipers* for the arcade.

NG: How does *Fighting Vipers* compare to *VF2*?

Mr. Suzuki: *FV* is characterized by a fighting style without ring-outs. We received comments about the ring-outs in *VF* indicating different changes, and so for *FV* the fighting can continue mercilessly.

NG: Are you glad to be working for Sega as videogames continue to evolve and to grow into the 21st Century?

Mr. Suzuki: Yes.

Posing with Sarah Bryant, NG's cover star, Suzuki refuses to confirm if she is based on a real person

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What's new in the world of computer and video gaming

US defense corp holds key to Sega plans

The world's largest military contractor is proving crucial to Sega's strategy

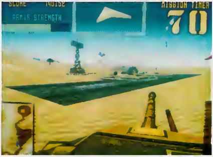
Amidst the furor surrounding the launch of the Saturn in the Western hemisphere, **NEXT Generation** has uncovered details of a follow-up machine under development at one of Sega's affiliate companies.

Florida-based defense and NASA contractor Lockheed Martin — pioneer of the graphics technology used in Sega's Model 1 and Model 2 arcade boards — has been working on technology for a higher-specification Saturn system since last September. It's believed that this second generation machine will be made available to developers late next year.

It's not unusual for a company in the business of selling videogames hardware to begin work on a successor system before the release of its market-ready hardware. However, in the case of the Saturn, the tide of disappointment that swelled from developers and internal staff over the machine's fundamental shortfalls and architectural untidiness has forced Sega to adopt a strategy that may result in the original machine (which is still well under a year old) being prematurely upgraded or perhaps even phased out altogether.

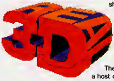
The original Saturn was subject to a host of development hiccups. Shortly after Sony's announcement of the PlayStation back in November 1994, Sega scrambled to complete a redesign, working with Hitachi to increase the specification of the Saturn it had planned (which included just a single SH-2 and was closer to what eventually became the 32X). The resulting hardware was a concoction of silicon that has failed to endear Sega to its developers. When Sega got its first glimpse of what Sony had in store, it immediately looked for a way out.

The decision to procure the expertise of graphics specialist Lockheed Martin was based on the company's previous achievements,

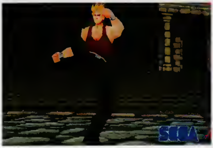


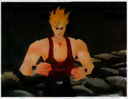
After developing the Model 2 board (*Desert Tank*, above) and the imminent Model 3 board for Sega, Lockheed Marietta is now working on Saturn 2

LOCKHEED MARTIN



Saturn 2 will use Lockheed Martin's R3D/100 chipset for its advanced 3D abilities





Although Sega is making great efforts to improve the quality of the Saturn's 3D (latest *VF2* shots, left, and above), the system may find it tough going in 1996

Lockheed Martin has been working with Sega on technology for a higher-specification Saturn system since last year

including the co-development of the Model 1 (*Virtua Racing*) and Model 2 (*Daytona USA*) boards and its range of Real3D polygon chips. Sega initially approached Lockheed Martin in the fall of 1994 to design a new gamebox that would replace the Saturn — which was due to ship two months later in Japan — but due to the strong relationship between Sega and Hitachi (which enjoys support from many of Sega of Japan's VPs) it never happened.

Now Sega has conceded internally that Saturn will face tough competition from the PlayStation and will not be able to match the onslaught from the Ultra 64 in 1996. Lockheed Martin has therefore been given the go-ahead to start work on Saturn 2, although it's not yet known exactly what form it will take. The current understanding is that the system will be a standalone console, but it's possible that Sega could save money by using the existing Saturn as an I/O device, CD drive, and power supply.

As with Sega's coin-op IG boards, Lockheed Martin will be concentrating on the graphics side of Saturn 2, providing a R3D/100 graphics chip which includes both a geometry processor and a graphics processor. It's quite possible that Hitachi will supply the front end (possibly PowerPC-based) — it was rumored that Yu Suzuki and other Sega coin-op honchos had wanted Lockheed Martin to handle the whole project, but this was vetoed internally because of delays with LMC's development of the Model 3 IG board.

The division of Lockheed Martin Corporation responsible for Saturn 2 and other IG (image generation) hardware is the Information Systems group, headquartered in Orlando, Fla. This group was originally part of General Electric Aerospace and was located in Daytona Beach, Fla (across the street from the Daytona International Speedway). After the completion of the Model 1 arcade board, GE Aerospace was bought out by Martin Marietta and was integrated into the Orlando Information Systems group. Martin Marietta merged with aerospace giant Lockheed last April.

LMC's involvement

with Sega dates back to General Electric's co-development of the Model 1 board first used in *Virtua Racing*. When Sega's own engineers failed to make significant progress toward an advanced texture-mapping version of their leading IG board (which would

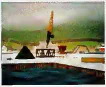
Who is it?

This USC graduate directed three films before devoting his time to his eponymous company, which leads the world in special FX and sound post-production and is a major force in the gaming industry

Hasbro kills $59m VR set

Hasbro's plans for a home virtual reality game machine (see NG 7) have been scrapped, with the company stating that chip costs were too high to enable a mass-market price. Based on Argonaut's *BRender* software, the VR project has cost Hasbro an estimated $59 million since development started in 1992 — $36 million in 1995 alone.

These images were taken from a single-frame renderer, register compatible with the R3D/PRO-1000, running on a Sun workstation. The final Model 3 board will offer unrivaled low-cost 3D performance

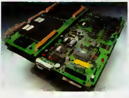


it is...

George Lucas, who prospered under the auspices of Francis Ford Coppola before turning Industrial Light And Magic, LucasFilm, and its computer game arm LucasArts, into the most respected names in their respective fields

Model 3

In most IG (image generation) hardware there are two parts: a "host" that basically runs the game (in the case of Sega's Model 3 board this is a Hitachi-designed PowerPC front end), and a graphics part that draws the scene. The host runs the 3D world, performing the collision and telling the graphics hardware (which does the rendering, texture, lighting, etc.) where to put the polygons. Lockheed Martin's R3D/PRO-1000 chip is expected to be arranged in parallel in the Model 3 board, with each chip capable of rendering 750,000 textured, shaded, fogged, and anti-aliased polygons every second. Roll on, *Virtua Fighter 3*...



***Daytona USA* (top left) and *Sega Rally* (above) are examples of the quality of textured 3D that can be achieved on Martin Marietta's Model 2 board (far left). Namco's System Super 22 (*Rave Racer*, left) is the leading coin-op IG**

become Model 2), the US company was called in to lend assistance, and Model 2 appeared in early 1994. At the time, it was known that Yu Suzuki was eager to give the whole project to Lockheed Martin, not just the IG side.

As well as the development of Saturn 2, LMC has been central to the work on Model 3 — Sega's hugely delayed successor to the technology behind *Daytona USA* and *Sega Rally*. This ultra high-end board was supposed to be ready in time for three Model 3 games due for release this year. As well as *Virtua Fighter 3*, **NEXT Generation** has learned that the watered-down *Indy 500* (see page 136) was originally targeted for Model 3, but delays in the board's progress meant it was coded up for Model 2 instead. It is also understood that Lockheed Martin is still working on Model 3 prototypes, with testing still some way off.

Whereas Model 2 was a combination of Sega's Model 1 polygon engine technology and a Martin Marietta-designed texture-mapping board, Model 3 has little in common with its forerunner. It is based on LMC's high-end R3D/PRO-1000 — a high-specification chip designed for low-cost, high-end visual simulations and capable of delivering 750,000 textured polygons on screen — which is unrelated to the R3D/100 destined for inclusion in Saturn 2. It also uses a Hitachi-designed PowerPC host board.

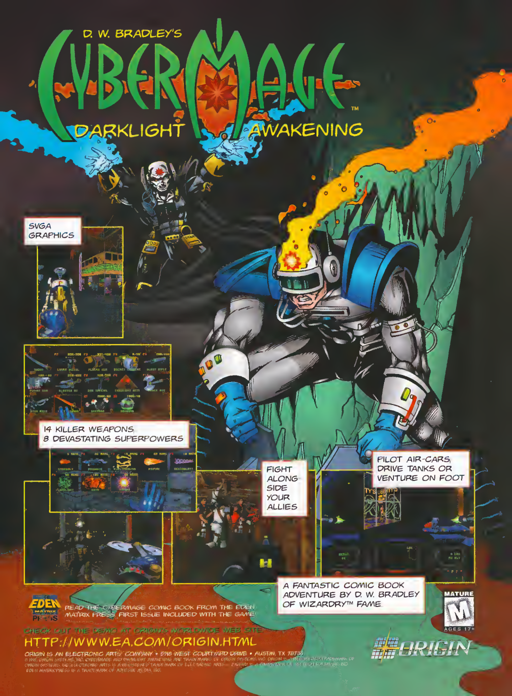
There appears to be little doubt that, when it finally appears, Model 3 will be the most powerful low-cost IG board in existence, despite the ground gained by home entertainment systems currently in development. One expert close to the project commented: "Model 3 was created for one thing, and one thing only — to push lots of textured polygons for as few dollars as possible. Nothing compares to it on those terms."

Where Model 3 will leave new high-tech rivals such as 3DO's M2 for dust is in the amount of RAM available. **NEXT Generation**'s contact points out: "You can build a box that can pump three million polygons only if you have enough RAM to store 300 million polygons' worth of models. It doesn't mean anything for a machine to be able to MIP-map textures if you don't have enough VRAM to store multiple copies of each map at different resolutions."

Since Model 3 is now unlikely to appear until the 1996 JAMMA show in Tokyo (and with Model 4 already being specced up), it seems likely that Sega's arch-rival Namco could get a considerable head start in the entertainment IG arena with its rumored System 23 board. More details on this will probably surface at JAMMA '95. Expect a full report in next month's **NEXT Generation**, on sale November 21st. ng

VF 2.1

Just released in Japan is the first official update of the phenomenally successful *Virtua Fighter 2* coin-op. Sporting slightly different graphics and even more balanced characters, it seems to be intended as nothing more than a curiosity for the *VF2*-mad Japanese market. Don't be too surprised if this version never makes it to your local arcade.



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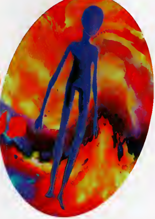

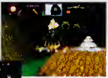

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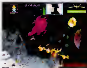

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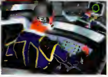

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ECTS: Sony and Sega battle in **Europe**

The European Computer Trade Show is the fall's biggest game exhibition. So who showed out best?

London is the center of the European game industry, and ECTS is the European equivalent of LA's E^3 show in May

The European game industry's bi-annual trade bash took place in mid-September at Olympia in London and gave the industry its first proper taste of what's to come from Sega, Sony, 3DO, Nintendo, and the other major players over the crucial months to the holiday season.

As with the spring event, Sony's PlayStation dominated with an enormous stand covering one end of the hall, and the full range of UK PAL PlayStation games on display amounting to 45 from Sony alone (the UK lags the US in number of titles, due to the necessary conversion to UK TV standards).

A particular point of interest was the debut of the PlayStation version of Id's *Doom*, which looked faster than the original PC versions. Jay Wilbur from Id was also on hand to demonstrate the company's new title, *Quake* for the PC.

The ECTS is used by game developers to show off product and build hype. Everything is on show, and for sale

Sega once again shunned the show proper and laid on a bus to their nearby European Headquarters, where the emphasis of its efforts was firmly on the impressive-looking *Virtua Fighter 2* and *Sega Rally* for the Saturn.

Acclaim looked happy to remain a big fish in an ever-shrinking 16-bit pond as its line-up included *Batman Forever* and *Mortal Kombat 3*. It did emphasize its commitment to PlayStation and Saturn as well, with *Alien Trilogy* available for both platforms around December.

After a recent tricky trading period, Virgin was looking to bounce back with an innovative cinema-inspired stand and a game catalog (including some titles picked up from US developers) including *Cyberia 2*, *Heart of Darkness*, and LucasArts' *Rebel Assault 2* on CD-ROM. The 16-bit consoles saw Shiny's *Earthworm Jim 2* and *Cool Spot 3* while the PlayStation has Black-Op's' *Agile Warrior* to look forward to.

Electronic Arts had a strong line-up with *FIFA 96* (all formats) plus PlayStation conversions of *Madden 96*, *Wing Commander III*, *Theme Park*, *Hi-Octane*, and *PGA Tour 96*. EA's eagerly-awaited $10 million development of *Wing Commander IV* received a great deal of interest as did *Crusader: No Remorse*, both Origin titles for the PC CD-ROM.

The 3DO Company, looking in danger of being squeezed by Sega and Sony, looked to reassure with its message, "Don't sell a dodo, sell 3DO." Emphasizing 3DO's upgradability with M2 seems like one of the few options the firm has at the moment. Rumors continue to circulate around possible 3DO buy-outs or licensing moves involving the likes of Sega and Matsushita. All parties remained quiet.

Nintendo relied purely on *Killer Instinct* and *Diddy's Kong Quest*, both for the Super NES, to draw in the crowds. Ultra 64 was not on show.

Probably the biggest exhibitor of the show was Ocean's demonstration stand (and bar), which helped attract people to the likes of *Worms* (all formats), the highly anticipated *TFX: EF2000* combat sim, the almost-hazardous result of the *Waterworld* license, and *Doom* for the Super NES.

Perhaps the real message from this ECTS is that the en masse corporate takeover of the game industry is nearly complete. Most smaller publishing houses have now been swallowed up or have cut exclusive deals with larger ones. The next generation appears to have marked more than just a shift from 16- to 32-bit.

Philips Media

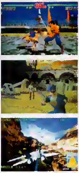
After ECTS, the gaming world looks to Tokyo's Shoshinkai show in November

JAMMA Show

Meanwhile, in Chiba, Japan, JAMMA (the Japanese Amusement Machine Manufacturers Association) held its own annual trade show. The show provided a further battleground for Namco and Sega's increasing rivalry, with Namco previewing a *Virtua Cop*-style shooter and Sega promoting *Sky Target*, its *Afterburner*-ish answer to Namco's *Air Combat*.

No sign of Ultra 64 or *Virtua Fighter 3*. Shame.

Expect the complete show report next month. But in the meanwhile, here are some highlights.



Namco's *Soul Edge* for the PlayStation/System 11 (top) and *Time Crisis* (middle). Sega's boring *Sky Target* (above)

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Electronic giants battle on

It looks like peace may break out in the big battle for the next generation CD-ROM format

Both of the new CD-ROM formats offer huge leaps in performance

The two bitterly opposing camps of the ongoing Digital Video Disc format wars now seem ready to talk to each other. The main players are Philips and Sony, the inventors of the CD on one side with a system called Multimedia CD (MMCD) and Time Warner, Toshiba, and Matsushita (the world's largest electronics company, best known for its Panasonic brand) with Super Density CD (SD) on the other. MMCD has a capacity of 3.7 GB and SD a capacity of 5 GB. Both offer double layered discs with around double the capacity. Both are promising recordable technologies in the future. SD uses two thin discs bonded together while MMCD uses more conventional technology. MMCD says SD will be more expensive, and the other side says it will not. The arguments continue.

And while the technologies were originally very much aimed at the living room, as a replacement for the prerecorded video cassette, it is the computer industry that seems to be the one that's banging some sense into the companies' heads.

The biggest aspect that has changed is that the computing community has said both formats are great but the one thing they cannot have is a format war in the CD-ROM marketplace — that will kill the market stone dead.

In April five computer companies — IBM, Apple, Compaq, Hewlett Packard, and Microsoft — formed an ad-hoc group to make requirements for the computer industry and on August 14 issued a press release saying that both technologies met almost all of their requirements, with a few exceptions.

"But since there are still two formats instead of a single unified proposal," the press release reads, "the first of the experts' recommendations — that there be only one format — remains unfulfilled."

Overall the two systems have more similarities than differences, but up until now neither side has been willing to compromise. That was until the big International Funk Ausstellung consumer electronics show in Berlin in August. There for the first time Philips said it had written to the SD camp suggesting discussions. Henk Bodt, executive vice president of Philips Electronics, said everything was up for negotiation. For the SD camp, Warren Lieberfarb, president of Warner Home Video — when asked what was the most important part of the SD technology — answered that he wanted to preserve in negotiations "a single format." But the biggest dilemma is how exactly to reach an agreement in time.

The SD camp has been adamant that it wants to launch in the middle of next year. MMCD say it wants to launch before the winter holiday, although there are now rumors that it plans to launch first in Japan in late 1996 and the rest of the world in 1997. In any case, there are some very serious negotiations still to be done and a single format is likely to take months to arrive.

If the discussions carry on in the good humor with which they started, it is just possible that the SD group will hit its launch deadline. But the engineering lead time for such a new and sophisticated product is considerable.

Good Humor

Philips' Gerry Wirtz was in good form at the Berlin show. NEXT Generation warned him that if two engineers went into a meeting with two different ideas, they usually came out with five new ones. Without a change of expression he said, "That is simply not true. Philips' engineers are much more creative than that. They will come out with at least 20."

The industry is keen to avoid a format war similar to the VHS versus Betamax conflict that placed a drag on the growth of the video business

Data stream

Lockheed Martin Corporation's research investment in computer graphics: **$200 million**

Sega Saturn additional disc abilities: **Digital Karaoke, EBook, Video CD, Photo CD**

3DO's M2 bus bandwidth: **128 MB/sec**

Cost of PlayStation developer system PC cards: **$18,000**

PC processor performance in the past 17 years: **750-fold increase**

Projected worldwide revenue from CD-ROM drive sales in 1995: **$3.5 billion**

Total number of bytes of Dynamic RAM shipped worldwide for the PC in 1995 (est): **556,000,000,000,000**

Ankle injuries to **NEXT Generation** staff in the past month: **3**

Proportion of all videogames sold as "edutainment": **1.2%**

Kids' allowance for videogame expenses in 1994: **$19 million**

Projected speed of a high-end PC by the year 2008: **100,000 MHz**

Global retail sales of licensed movie merchandise in 1994: **$102 billion**

Growth in the home computer market during the second quarter of 1995: **30%**

IBM's turnover during Q2 1995: **$17.5 billion**

Apple's turnover during Q2 1995: **$2.5 billion**

Rooms in Buckingham Palace: **602**

Number of people who died as a result of World World II: **55 million**

Maximum altitude at which a bird can fly: **25,000 feet**

Number of breaths taken by the average human adult during a single day: **23,000**

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SEGA® PC

The first **Windows 95** games arrive

But why are there so few at launch? And where are all the rest? A NEXT Generation report

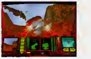
For years, the PC has occupied a curious place in gaming. On one hand, the PC's versatile power and the wider control options of the keyboard have enabled more complete and complex games than the consoles. At the same time, the difficulty of actually getting PC games to run has kept it from achieving mainstream gaming success.

Microsoft Launch 95

Windows 95 adds new ease of use to the traditionally complicated PC interface

Now, with the introduction of Microsoft's Mac-like Windows 95, all that has changed. Win 95 features new easy installation procedures for software and hardware, and, more significantly for game developers (and players), a new games SDK (Software Development Kit).

The SDK consists of five application program interfaces: DirectDraw, RealityLab, DirectSound, DirectInput, and DirectPlay (rumor has it the Direct metaphor at Microsoft's Game SDK development group has carried over into other names, too — DirectCafeteria, DirectParking Lot, etc). DirectDraw enables writing directly to the VRAM, inside a window. RealityLab is a 3D polygon rendering engine. DirectSound offers reduced latency (under 50 milliseconds) and an excellent mixer. DirectInput, perhaps the greatest advance, finally enables PCs to support digital joysticks. No longer will accessory manufacturers have to cajole companies into writing drivers for their products — as long as they include a Win95 DirectInput driver, their devices will work with Win95 games. Finally, DirectPlay offers easy network support, over LANs, modems and the Internet.



Reality Bytes' Havoc is one of the first Windows 95 titles that takes advantage of the DirectPlay API's TCP/IP protocols

The APIs should eventually let $3000 PCs play games as well as $300 console systems, but Microsoft is "not looking too closely" at the first crop of games bearing the Win95 logo. According to one developer, "If you're NT compatible or use WinG, you can get the [Win95] logo [displayed on your product packaging]. So a lot of the early games are not going to be taking advantage of the next step stuff the SDK can do, like heavy network support." He continues, "The large software publishers shied away from touching the [advanced elements of the SDK], because when you get into bed with Microsoft and this stuff, you're taking a risk with ship cycles."

Reaction among developers has been mixed. "Our game couldn't have been written under Windows 3.1," said one developer. "We couldn't get the performance we needed. We took advantage of DirectDraw, DirectSound, and DirectInput APIs." Others are not so sure. "I know a lot of people who don't want to bother programming Windows because of all the overhead of the system and the SDK. They're all going to move to consoles, where you can access every bit of the machine," said another developer. "As a game programmer, personally, I like to access everything, know how every bit works. Now we're going to have to put our stuff into a 'black box.' It's kind of disconcerting to have that control taken away from you. I've never used an SDK before, and I wish there wasn't a monopoly on this, I wish there were other options."

Others are concerned about the high system requirements needed to take advantage of Win95 games "They say it's optimized for high powered systems. That's kind of a joke," said one long time games programmer.

But overall, Win95 promises to solve a lot of problems that have plagued the PC since the beginnings of DOS. Gamers should simply expect a host of sub-par games along with the gems as developers move their years of coding experience over to a new platform. ng

Namco has signed a deal with Microsoft to port PlayStation titles to Win95

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Macworld 95

he 1995 Macworld Expo was not the place to go if you're looking for hot new computer games. Held in Boston, MA, the focus was on productivity software and new hardware, not games.

Still, the most innovative game on show was *Galapagos*, by Anark. In this third-person perspective game players train Mendel (a spider-like artificial life form) how to cross through vast and dangerous 3-D landscapes. It's a lengthy process that involves treats and punishments.

Parsoft demonstrated *A-10 Attack!*, a very attractive flight simulator featuring the ugliest of all aircraft, the A-10 "Tank Buster" Warthog.

Meanwhile Cyberflix has an intriguing new 3-D adventure game called *Titanic: A Journey Out of Time*, set on the ill-fated cruise ship. In this game, players must interview passengers and solve puzzles and uncover secret plans to win.

***Doom* knockoffs played a big part at Macworld. *Havoc*, which looks similar to *Descent*, is a *Doom*-alike that's both VR and network compatible. The game comes with a duplicate CD so that opponents can clash right out of the box. Cool.**

Siggraph looks to graphic future

Siggraph 95 shows off the new graphics technology for games of the future

SIGGRAPH 95

Siggraph demonstrates the graphics tools of the future. The video games industry widely regards it as one of the most important events each year

International attendance rose 40% to 6,000 from last year, indicative of computer graphics increasing accessibility

For five days in August the Los Angeles Convention Center plays host to Siggraph, a celebration of computer graphics.

Silicon Graphics (SGI) predictably had the largest stand of all. Its corporate presence has risen dramatically since the merger with what is now Alias/Wavefront. At Siggraph, it announced its vision of the future: Project Maya. In what will be one of the major initiatives of the next few years, SGI's aim is to re-invent computer art. The crux of this initiative is to integrate all the disparate standards and return artists to a natural environment conducive to work. Rather than struggle with interfaces and mice, the artist will be enabled to draw naturally and use the computer as an accessory. Key to this quest will be Alias/Wavefront, and the latest incarnation of *PowerAnimator* software was on display with a reel of footage demonstrating its power.

Nintendo, SGI's Ultra 64 partner, was also there by proxy. A completed Ultra 64 motherboard running a smooth flight sim graphic demo was on display at NEC's booth. NEC's involvement is linked to the Rambus memory subsystem used by U64.

High end arcade companies fought it out to win the title of the best IG. Digital's new AlphaStation was operating with Evans & Sutherland's Freedom Series IG's to great effect. The large tiered stand enabled people to play and race together although it's unlikely that you'll ever see one in your local arcade. More realistic a proposition is VWE's *BattleTech* multiplayer game.

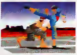
Motion Capture was one of the fastest growing exhibitor fields [**NG 10**], with Motion Analysis' optical system given a public work out every half hour. The technology is already relatively mainstream and quality lowish cost magnetic systems like Ascension's *Flock of Birds* can only accelerate this trend.

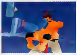
But perhaps the biggest new entrant to Siggraph was the PC. Autodesk unveiled its latest version of 3DStudio, and since the takeover by Microsoft, SoftImage's rendering products have been migrating to the PC. Its superb animation software could theoretically soon grace household PCs. But in case you can't draw or don't have the time Viewpoint DataLabs specializes in modeling objects for clients. Its database now stretches to thousands of objects ranging from flies to buildings. During **NEXT Generation**'s visit one programmer from Origin was shopping for a new spaceship.

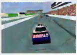
But the highlight of the show was the Electronic Theater, a collection of 75 pre-rendered animation cels ranging from the bizarre to the awe-inspiring. Those who said computer graphics could never compete with cel art were forced to eat their words. In just 10 years electronic visualization has progressed from crude sprites to entire films made from 0s and 1s. Where will it be in another 10? ng

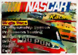
Sega's PC games arrive

As reported in NG 10, Sega has set up its own PC publishing division. It has also cut a deal with NVidia, a multimedia accelerator chip manufacturer, to include versions of *VF Remix* and *Panzer Dragoon* with hardware containing its chips, such as Diamond's EDGE 3D. Here are some of the first screenshots.

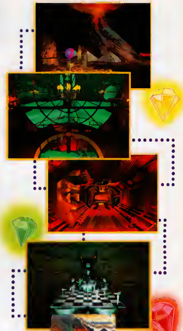








As well as *Daytona USA* and *VF Remix*, Papyrus' *NASCAR Racing* is also getting the NVidia treatment (above)



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"ONE BONEHEAD CALL AND THIS GODDESS GETS A MILLENNIUM IN SOLITARY."

An Experience from the REAL 3DO Zone™, Johnny "Torso", FL

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movers & shakers

A monthly look at **business news** affecting the **gaming world**

by **Christopher V. Sherman**

Christopher V. Sherman is the publisher of MMWIRE, the leading daily news service on the business of interactive entertainment. MMWIRE ONLINE can be found at http://www.mmwire.com

IS SEGA SWEATING OVER SONY?

NEWSLINE: As Sony launches the PlayStation, rumors continue that Sega and 300 are talking about some kind of deal.

BOTTOMLINE: NEXT Generation has confirmation that senior level officials at 300 and Sega Enterprises are indeed talking about some kind of deal (as reported in NG 9), though it is unknown as to what shape it might take. Sources say the deal is not imminent and a range of possibilities are being evaluated. At the time of going to press, well-placed sources say Sega has sold only 60,000 Saturns in the US (Sega officially claims 120,000 units). Sony sold over 100,000 PlayStations on day one.

ROCKET SCIENCE ADDS NEW FUEL

NEWSLINE: Rocket Science Games has formed a new publishing division, StarHill Productions, with the distinct charter to publish third party products.

BOTTOMLINE: The darling marriage of Hollywood and Silicon Valley has had a tough go of it. StarHill makes sense because it leverages Rocket's established distribution channels and reaches a demographic beyond the type of players that enjoy Rocket's action games.

CREATIVE DRAWS 3D LINE IN THE SAND

NEWSLINE: On November 1, Creative Labs Inc. introduced the 3D Blaster ($349 PC), a graphics display card with hardware accelerated 3D rasterization, which is based upon the GLINT 3D processor from 3Dlabs Inc. This 30 Blaster delivers 640x480 resolution by 16-bit color at 30 frames per second (fps) and Creative has licensed Criterion's RenderWare device driver for 3D Blaster.

BOTTOMLINE: It's do or die time for Creative. The creator of the Sound Blaster audio line has seen earnings shrink in recent quarters as the upgrade kit market dries up and newcomers such as Diamond Multimedia grab market share. The business plan calls for one million units sold worldwide in the first year. Officials say 20 to 35 titles are scheduled to be on shelves for the holiday season. An initial six games will be bundled with the card at launch.

VIACOM PULLS OUT ITS WALLET

NEWSLINE: Viacom New Media has taken a minority equity investment in Looking Glass Technologies Inc. Additionally, Viacom says it will sell Spelling Entertainment Group Inc. but will acquire Spelling's interest in Virgin Interactive Entertainment Ltd, the multimedia software unit that Spelling acquired in the fall of 1994.

BOTTOMLINE: Viacom was one of the early investors in interactive entertainment with its acquisition of ICOM Simulations several years ago. The Looking Glass investment is the first direct interactive investment Viacom since the ICOM days. The key Looking Glass asset? Its 30 capabilities. Don't expect to see Viacom doling out many more videogame licenses to its properties with this kind of production power in-house. Looking Glass already has dibs on the "Star Trek: Voyager" property.

ARISTO JOINS THE GAME

NEWSLINE: Aristo International Corp., an investment group with ambitions to become a "player" in the videogame industry, has completed the purchase of videogame development house Borta Inc. for $10 million in cash and Aristo common stock.

BOTTOMLINE: Aristo has got millions more in its pockets and is currently shopping around for additional investments. A closer look at the Borta acquisition reveals that Atari founder Nolan Bushnell resides on Borta's board of directors. He's there for a reason, too. Borta is developing several products for Bushnell's new company which are expected to be released later this fall. And who is looking at backing Nolan's new company? Aristo, of course.

The great Ultra 64 giveaway

The revelation that the finished Ultra 64 will be on display at the Famicom Space World (Shoshinkai) show on November 25-26 is as good an indication of Nintendo's intentions as anything that has emerged from the Nintendo camp since the 64bit saga began. Promising that 100 playable machines will be on display with ten playable games means that the machine is now all but certain to be launched in Japan in December – as Hiroshi Yamauchi hinted to the Japanese business press in early May.

Nintendo has also announced it will give delegates the chance to win 100 Ultra Famicom units and 300 games on completion of a questionnaire at the show. This implies that there will be three games ready to coincide with the launch in Japan. No details have yet emerged about which games they are, but everything should become clear soon. *Ultra Mario*, anyone...

"ONE BALLZY MOVE AND

SUDDENLY I'M SUCKING SIDEWALK."

An Experience from the REAL 3DO Zone,™ Tony "Two-House", IL

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ballz The Director's Cut

"OK, I was desperate. On my knees. Beggin' and pleadin' for mercy. Hey, I'm no wuss, but that neanderthal Kronk is tee-ing off on my skull. But now I gear it up and bust into my aerial attack and super-cool morph moves. Next up, Boomer. But now this clown is doin' the grovelin'. This is arena combat. Rude, nasty and in-your-face. And this director's cut left nothin' out. You get it all. I'm outta here. Peace."

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Arcadia

Inside news analysis from the coin-op scene

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

by **Marcus Webb**

***Tekken 2* aims to build on the original's success at the arcades and at home**

Sega's *Indy 500* burns rubber, but the Saturn conversion won't be easy

Wrestling games are perennial arcade favorites with "the kids"

Saturn Gets a **Moon**

At the AMOA (Amusement Machine Operators Association) Expo in New Orleans (Sept. 21-23), American arcade owners got their first look at the long promised "Titan" system. It's the sister unit (or more accurately, a coin-op satellite) of Sega's "Saturn" home videogame system. Titan has already been out for several months in Japan, reportedly enjoyed success there. both Saturn and Titan use the same basic hardware platform, so Sega will be able to give prior arcade runs to certain home games (many will feature polygon graphics with texture-mapped surfaces). These are titles which might otherwise have been exclusively for the home. Basically, SNK's Neo Geo system has proved the existence of a die-hard market for lower-cost videogames in arcades and Sega decided to grab a piece of it.

At first glance, it appeared Sega could move 100% of its coin-op titles through a series of configurations: super-deluxe for Sega's Japanese theme parks; then regular deluxe for US. arcades; then software for Titan; and (finally) software for Saturn. However, that strategy could hurt resale values of their trademark big simulators for the arcade market, so don't look for (say) *Indy 500* to turn up on Titan. Early US. titles for Titan are expected to include *Virtua Fighter Remix*, *Final Arch* (a baseball game), and *Golden Axe: the Duel* (sequel to a previous arcade hit, featuring mythic characters in combat adventure).

Checking on **Tekken 2**

Namco America is out with its *Tekken 2* sequel, another system 11 game which continues the storyline where the original left off. (Turns out the bad guy, Heihachi, survived that final swan dive off a cliff). The sequel boasts some major upgrades and ingenious features. Our favorite twist: "time-release characters." A month after installation, the game will start introducing new selectable sub-boss character at the rate of one per week. Three weeks after the last sub-boss is released, the "Main Boss" will become selectable. A quantum leap in realistic, vivid graphics for backgrounds and character alike is achieved via better proportions, a combination of flat and glow shading for superior 3D impact, and all-new backgrounds (in one setting the "main stage" is darkened while characters are followed by two moving spotlights at all times).

Another Checkered **Flag for Sega!**

Sega's new deluxe driving simulator is called *Indy 500* (see page 136), duplicating the famed Formula One racing event under license from the Indianapolis Motor Speedway. An upgraded "CG model 2B" graphics board is combined with a wide-vision monitor of more peripheral vision (exclusively developed for Sega). Achieving a sort of "forced-perspective effect" via wide-angle graphics, *Indy 500* enables you to see other cars coming up on the side, jockeying for position, competing for strategic openings. Texture-mapping photorealism, overlaid on 3D polygon objects, really puts you onto the Indy 500 raceway (you can choose two other tracks for variety). Graphics features include Sega's familiar "zoom lens" option and "viewport": at the touch of a button, players may jump back and forth among several different perspectives on the action at any time during gameplay. A brand-new interactive steering program lets players feel the pulls of the tires as their cars scream around those turns. The emphasis really is on realistic driving skills, too, because players don't select from among a variety of cars. Instead, all players start with automobiles of identical performance capability. This gives them a chance to precisely compare driving skills.

Midway Body **Slams it**

Some time back, execs at Williams/Bally-Midway saw some demographic profiles suggesting that the World Wrestling Federation's pay-per-view TV matches pulled a (mostly young, mostly male) audience, of whom 85% are also videogame players. Lightbulb time! Midway's *WWF Wrestlemania* (see page 191) is the result, featuring nine real-life stars of the professional wrestling world.

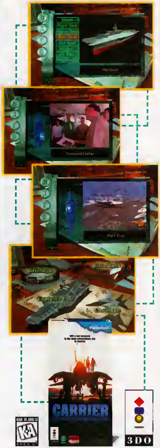
"We decided to walk the fine line of a game where you whack on the buttons and have cool moves happen for young audience, combined with swirls and complex moves for the older fighting game fan," said project leader Mark Turmell. "Our game includes exaggerated fantasy and comedy action, and the now-typical hidden characters, secret moves and other ploys which have proved so successful in the fighting genre. But at the same time, *Wrestlemania* has got a whole new feel from what's typically been done in a fighting game." Lead artist/game designer Sal Divita worked hand-in-bicep with the professional wrestlers, doing pile-driver moves and falls on the mat in the factory's new digitalization studio. (Takes courage, considering that Bam Bam Bigelow weighs in at more than 400 pound). With fewer backgrounds designers could devote more computer memory to smooth, fluid character motion.

Game graphics bear a striking resemblance to watching a WWF match on TV, at least until Doink the Clown suddenly grows a hand 10 times lifesize and begins slapping around his opponent with it. Other characters include the Executioner, Yokzuna, Bret "Hit Man" Hart, the Undertaker, Razor Ramon, Lex Luger and Shawn Michaels, all portrayed with their real- life specialty moves, holds and antics. One feature players will love: racking up enough power on the "combo meter" allows you to execute a almost endless string of combination special moves for a shattering climax.

"I LOVE THE SMELL OF

JET FUEL IN THE MORNING."

An Experience from the REAL 3DO Zone™, Eddie "Ah-Choo", NH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Data Bank
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K-A
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"I'm pullin' 30 days sea duty on the Carl Vinson nuclear aircraft carrier. I can check out the aircraft, listen to the crew, sit behind the controls. Really see what makes this thing tick. 3D graphics, realistic sound, and incredible film clips are all under my thumbs. I can even try landin' an F-14 on this thing. You try bringing down a screaming Tomcat on a postage stamp doin' the hula. Hey, it's not just a CD. It's an adventure."

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JOYRIDING

Gaming on the Internet

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

by Bernard Yee

I was going to write about X-Band, the multiplayer (actually, head to head) game service for Super NES and Sega Genesis systems, but I've been doing a lot of research into the online gaming market and I thought I should share with you what I've found.

It's the next big thing. Really it is. Everyone's getting involved,from smaller software developers like Papyrus and Domark (which you've read about here), new startups (like DWANGO) to huge media companies like Time Warner.

What does this mean? Well, prepare for an onslaught of games that can be played over a network — and if it can be played over a network, it can be played over new on-line services like DWANGO, M Path and Total Entertainment Network. (More on M Path and TEN later). So it should come as no surprise that games like *Terminal Velocity* and *Doom* are popping up on these dedicated game services.

Just how big is online gaming becoming? Well, it's not huge now, not by console or even PC entertainment/multimedia market standards, but everyone's looking this way. Cyberspace is the final frontier for making money on computer games, a vast unexplored territory filled with millions of 'Net denizens — each and every one a potential customer.

I write this on the eve on the Sony Playstation roll out at the Sony Building in New York City, after having played a little *Virtua Fighter* on my Sega Saturn and the question that strikes me is, where do console games fit into the on-line gaming explosion?

I'm not sure that they do, yet; not in their present form. Nintendo has been playing with satellite and telephone line link ups of its 8-bit and 16-bit hardware for years, but only over limited Japanese networks. My Sega has a port that looks suspiciously like I might be able to hook up a modem there someday (and Sega has recently announced that such a device will be available in Japan early next year); Atari's Jaguar supposedly has a modem in the works and 3DO had once planned a modem but now has more important things to worry about (like M2 and trying to keep its tenuous foothold in the exploding 32 bit games market).

How do X-Band users, without keyboards, communicate? Very, very slowly — and tediously. Keyboard's are vital, and perhaps key to the whole online question. They are so important that X-Band plans on selling a cheap one, along with its 2400 bps (slow — but ultra low latency delays) modem.

Communication is where it's at for on-line gaming, and all on-line surfers to begin with. So that makes existing console setups pretty crippled when it comes to getting on-line (communicating online with a joypad is comparable to trying to wall-paper a house through the mail slot). No matter how many polygons your Playstation can push, a lowly 286 (or 8086) machine can type a letter a helluve lot faster than you can. Which brings me to the point that may get me lots of flak from my fellow editors at **NEXT Generation** and maybe some of you.

> **Communicating online with a joypad is comparable to trying to wall-paper a house through the mail slot**

I've gotten some e-mail asking me what I thought was the ultimate on-line gaming platform. Ready? The IBM PC compatible — or maybe I should call it the Intel x86 compatible. Why? It's a question of hardware. First, let's start with the 28.8k v.34 modem, Just about the fastest speed an analog telephone line can support. Sure, the TV has cable, with much greater throughput, but don't expect your cable network to be upgraded to two way communication anytime soon. The PC platform is maxxed out right now with the Pentium 133 Mhz, but look out for Cyrix's M1, the first real competition to the Intel super CPU to arrive. (AMD will follow too, but NexGen's 586 was a bust). PCs are getting faster at a dizzying pace. Sound? Try listening to a wavetable Roland, mated to a SoundBlaster 16. Great digital sound and music. I'd take an NEC six-speed CD-ROM drive over the double speed units in the Playstation, 3DO and Saturn any day. Gobs of hard drive storage and system memory. The only area consoles have it over the PC is graphics, but with the new 3D hardware graphics accelerators (Matrox and Diamond will be first to market) that won't last either.

Why is any of this important to on-line gaming? You want to move data back and forth and create compelling environments for us to play in. The hardware lets us do it, and the modem lets us talk. The PC is great for creating a complex environment for us to play in, you and I. Hell, *Virtua Fighter* and *Toshinden* are great, great games, but their multiplayer aspect is best exercised by a friend in the same room.

Sid Meier's *Civilization*, or Activision's *MechWarrior 2*? Now we're getting somewhere. Rumor has it that Meier's working on a space game that will allow hundreds of players. Origin has the next generation of *Ultimas*, *Multimas* (guess what that stands for). Bullfrog's working on an RPG that will learn how you play your character — when you log off, the computer will continue playing in your style! Imagine, life in a world where you're not sure who's real and who's computer AI. EA says in a year its games will be multiplayer ready.

These are sophisticated environments, and they aren't running on a Saturn. Heck, even Simutronics and Time Warner's joint project Modus Operandi, a murder mystery game, is fully text-driven. And that requires a keyboard.

As Jerry Garcia might have said, what a long, strange trip it will be. Don't let it pass you by.

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75300.3625@compuserve.com
QuestBuster@geis.genie.com

"THE LUCKY

ONES ARE DEAD."

An Experience from the REAL 3DO Zone™, Dave "Bungee Boy", PA

"Laura's not so lucky—she's got to live the nightmare. And I'm living it with her. We have to find out why her father went berserk and blew away a hospital full of patients. Or how to escape the moving wall of spikes that's poised an eyelash away from her face. The lifeless bodies littering this place aren't giving any answers. Graphics and sound so terrifying I got my back to the wall and the doors propped shut. No sleep tonight. See you on the other side."

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TEEN

3DO

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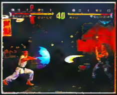
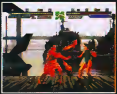
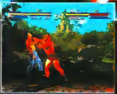


ONLY THE BEST ARE GRANTED SUPER POWER MOVES!

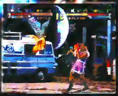
IT'S THE FIGHT OF YOUR LIFE!



E. HONDA'S HUNDRED HAND SLAP—LIKE YOU'VE NEVER SEEN BEFORE!

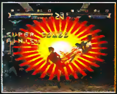


SAWADA, ALL-NEW CHARACTER FROM THE MOVIE!



JEAN-CLAUDE VAN DAMME IS COLONEL GUILE!!!

STREET FIGHTER THE MOVIE™



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Kiss your butt good-bye when you take to the streets in the toughest street fighting game ever! Featuring never-before-possible attack and super combo moves, plus full motion video and digitized characters straight from the movie. *Street Fighter: The Movie.*™ The ultimate street fight begins!

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Generator

by **Mark James Ramshaw**

As the hand-held market attempts to catch a second wind, we take our monthly freefall into the ever evolving world of the development community

It's been a long time since portable videogame systems were the center of attention, but with the ballyhoo over Nintendo's Virtual Boy and announcement of the sub $200 Genesis-compatible Nomad hand-held from Sega, it seems a revival may be in order. The question is do we, the 32-bit super console fixated consumers, really care? Is pocket-power really an issue in a game world where arcade-perfect games are played at home?

Chrissie Kremer at Sega certainly thinks so. "We're definitely still behind the hand-helds, there's definitely a portable consumer base — it's very strong and very dedicated. If you look at the market there's a whole range of technology out there, from the Game Boy on, and it just keeps on selling. It's not a segment we feel is going to go away, and it's one which the Nomad will push further, offering 16-bit Genesis hand-held gaming to users."

Approximately the same size as the Game Gear, Nomad uses a rather impressive high resolution 3.25-inch LED display, and gives a battery life of around three hours — almost the same as Sega's Game Gear. It also has facilities for multiplayer hook-up, and includes six buttons.

"We're not, however, dropping the Game Gear," stresses Kremer. "We believe the two can co-exist, and with Nomad's Genesis compatibility, it helps existing users by working with their library of games, while non-Genesis owners can buy the Nomad as a dual role machine."

And what of the Nomad's rival, the Virtual Boy? "It's an interesting technology and a different type of gaming experience," admits Kremer. "But whether people will be willing to pay ["under $200"] for it remains to be seen. I'll be interested to see whether it catches on beyond the initial buyers who'll get simply because it's new. It does seem rather unfair to market it as a portable, when it's designed to be played on a tabletop."

But, though the Nomad boasts full Genesis compatibility and connections for TV and an extra joypad (effectively making it a Genesis AND a hand-held in one), the expected retail price means it'll practically go head-to-head with the new consoles. As Sony's Caroline Stokes points out, "If you're paying around $200 for a Nomad, then you may as well pay a little more and buy yourself a Playstation." And as to Nintendo's efforts? "Sorry, no, the Virtual Boy is just too painful on the eyes."

The harsh red 3D display of the Virtual Boy is a cause of concern for many. It's rumored that Nintendo pumped money into developing the static 3D display rather than a VR system because of fears over litigation from accidents caused while wearing headsets. But as Gary Penn, an industry veteran who now works at BMG Interactive says, "The Virtual Boy's display is something I'm wary of, there's the potential for people to sue for damage if it's found to be harmful."

So does Gary see hand-helds as a fad? "To a certain extent, yeah. With the Game Gear the real problem was a negligible battery life. Game Boys were far more usable , but I must admit to not really seeing anybody use them anymore."

So, if users deem Sega's system too, and Nintendo's Virtual Boy just too unfriendly, could that spell the end for the hand-held? Gary again: "I do think hand-helds have got a place, but really only for certain styles of game - the ones that are arguably actually better to play, that don't really on visual trickery. You don't really need a Playstation to play something like *Tetris*, do you?" He's got a point.

Mark Ramshaw is an occasional software producer, designer and consultant. He can be e-mailed at mark@hoops.demon.co.uk

Datebook

October

Autodesk University, October 29 to November 2; San Francisco at the Moscone Convention Center. Open to public, this conference provides classes on multimedia topics, a broad range of CAD tools, and techniques enabled by AutoCAD and its related applications. Special events includes the first annual "Planet Studio" Multimedia Awards and Electronic Festival. For more information call: (415) 905-4994.

Fall Internet World on October 30 to November 2 at Boston, MA. This show is open to the public and is set up for individuals seeking to take advantage of the global commercial info infrastructure. Exhibitors will include software developers, game developers, network administrators, information designers, webmasters, and many others. For information call 1 (800) 632-5537.

November

Fall VR World is from November 28 to December 1 at Boston, MA, at the World Trade Center. This show is open to the public and is the largest exhibition devoted exclusively to VR products and services. More than 80 leading VR software, hardware, and marketing companies will be available to demonstrate their products aimed at the arcade, entertainment center, amusement parks, home, architectural, medical, and design industries. Call 1 (203) 226-6967.

December

Home & Family Computing Supershow appears from December 8 to 10 at the Dallas Convention Center and December 15 to 17 at the Moscone Center in San Francisco. Open to the public, this show is designed to provide an easy way for families to learn about computer and other high-tech products that emphasize education and entertainment. For more information call: 1 (713) 974-5252.

January

Winter Consumer Electronics Show (Winter CES), on January 5 to 8 at Las Vegas Convention Center. This exhibit is not open to the public. Winter CES serves as a showcase dedicated solely to consumer electronic products that is the starting point for a portion of each year's industry business. Approximately, 1,800 exhibitors of industry manufacturers, retailers, wholesalers, importers/exporters, distributors, press representatives, and other industry members. For information call 1 (703) 907-7624.

Internet World Canada '96 on January 9 to 12, 1996 at Toronto, Canada. This show is open to the public and is set up for individuals seeking to take full advantage of the global commercial information infrastructure. Exhibitors will include software developers, game developers, network administrators, information designers, webmasters, and many others. For info call 1 (800) 632-5537.

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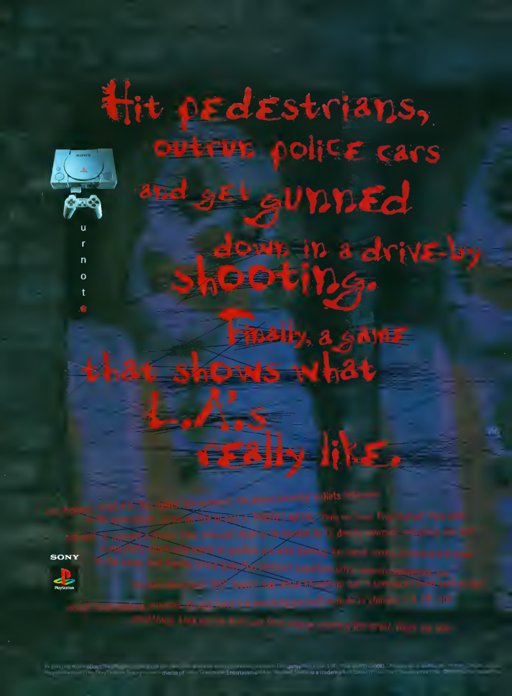

Hit pedestrians, outrun police cars and get gunned down in a drive-by shooting.

Finally, a game that shows what L.A.'s really like.

Los Angeles, 2010 A.D. The lights, the glamour, the armor-piercing bullets. Welcome to the apocalypse. Strap in. We like to call it, TWISTED METAL™. Only on Sony PlayStation™. Play with yourself, or against a friend. Your mission? Hunt or be hunted by 12 deadly vehicles, including one with a psychotic clown who wants to splatter you with flaming ice cream cones. Suburbia will never be the same. And thanks to the Sony PlayStation's superfast, ultra realistic gameplay, you can use impressive 360° moves, say, while shredding turf in someone's front yard as you dodge heat-seeking missiles. Or just have fun watching yourself explode in glorious 3-D. Oh, one more thing: look out for that cute little doggie crossing the street. Oops, too late.

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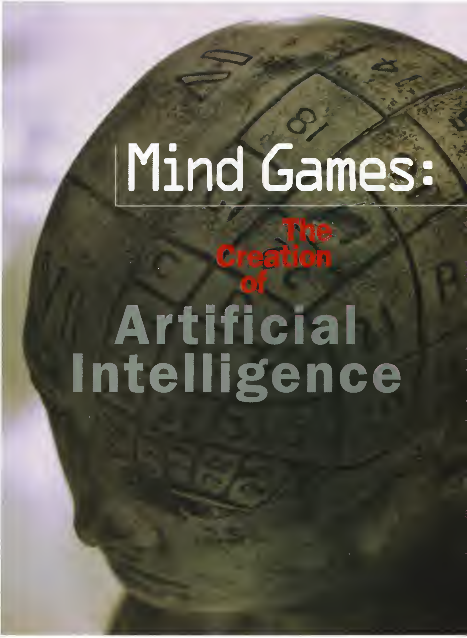


Mind Games:

The Creation of Artificial Intelligence

Photo: K. Whitmore Tony Stone Images

Whereas game graphics and sound continually improve, the ways computers actually *play* against humans have changed very little. **NEXT Generation** talks to developers about pushing game AI to its limits, and how the real trick is teaching computers to play dumb

What is Artificial Intelligence (AI)? The term may conjure up images of Arthur C. Clarke's HAL or William Gibson's Wintermute, but the reality is quite different. Marvin Minsky of MIT provides the best definition in Margaret Boden's book *Artificial Intelligence and Natural Man*, calling it "the science of making machines do things that would require intelligence if done by men." If you have ever played a one- player game involving the defeat of enemies, you've faced an AI, however rudimentary.

The origins of AI

closely parallel the development of the digital computer itself. Names like Alan Turing and John von Neumann, early computer pioneers, also developed early theories of AI. It was Turing who developed what is considered the seminal test for a true artificial intelligence. Basically, the Turing Test involves a human conversing via teletype with a computer and a human. If he or she cannot tell which is the computer and which is the human, we can say that the computer is, for all practical purposes, truly intelligent. Researchers have laid foot on many avenues in the quest to build an intelligent machine. Some favor simulating a neural

CHECK MATES:
Chess Games

Chess games have been the central focus of AI researchers' interests for decades and started programmers on the quest to create better algorithms for the purpose of gaming. Early chess (mid-1950s) programs were created by traditional AI scholars as basic projects and played relatively poorly. Once functional AI had been attempted, many began to work on the problem in earnest.

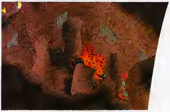
In 1967 an MIT programmer named Richard Greenblat created *MacHack*, a program that enables the computer to choose its moves from a select list of moves that look successful in particular situations. The program was far superior to anything that had been attempted previously, and it introduced the concept of chess computers to a whole new group of enthusiasts.

In the early '70s, the Association of Computing Machinery (ACM) added a tournament between chess programs to the group's yearly gatherings. From here on in, rewards for innovative chess programs became mostly financial. In 1968, David Levy issued the first major computer chess challenge, betting that no computer could beat him in chess for the next 10 years. No challenger even came close to defeating Levy. Companies entered the act, too, with their own rewards. Edward Fredkin, a MIT professor, offered a series of three different prizes, one worth as much as $100,000. Two out of the three prizes were awarded to Belle, a chess computer capable of processing 150,000 chess positions per second, in 1983; and to Deep Thought, which interprets 700,000 moves per second.

Chang-ki Wei-ch'i Educational Foundation has offered $1.6 million to the first AI program to defeat a master of Go, another traditional strategy game. This shift in focus could spell a whole new way of interpreting the human mind, and may affect similar games in the future.

Today's home chess games use algorithms that are far superior to the mainframe-based powerhouses of 15 years ago (above)

network on a computer. Others have tried creating programs that approach intelligence symbolically or by following a simple set of premade rules. Despite big promises (researchers in the 1950s predicted a machine that would pass the Turing Test by 1960), the quest for AI has made, at best, limited progress toward the ultimate goal of creating a true, thinking machine.



Bullfrog's *Dungeon Keeper* is one of the most advanced examples of artificial life available for home computers

Consider the difficulty inherent in a computer understanding something as simple for a human as the different connotations of the word "Take." The code needed for a computer to understand the differences between the phrases "take a bath, take a hike, take a dollar," and "don't take that from him," is not trivial, to say nothing of the many other ambiguous words and phrases in the English language. In order to make computers seem intelligent to an average observer, massive amounts of data are needed — and even data entry can be a problem. Structural decisions need to be made. Should you just introduce information into the program, or should you design the computer to learn facts for itself?

AI's greatest successes are not in attempting to make a computer intelligence that can function in the real world, but rather in total domination of a single problem, whether it's alphanumeric character recognition — without AI, we'd have no OCR (optical character recognition); a-rules based "expert system" that can answer questions or solve problems involving a specific topic, like how to diagnose and treat a blood disease or fix a car; or total domination of a limited virtual world with pre-set boundaries, like, for example, a game.

Turing developed a chess-playing algorithm that, typically, he used without a computer; and chess has, subsequently continued to be a benchmark AI exercise (see sidebar, pg. 37). But the first purely electronic game that most people associate with AI is *Adventure*, and it's more famous progeny, *Zork*. Although the AI of the game wasn't incredibly advanced, "we knew our environment and created our environment instead of trying to do something really complicated like teaching a robot to climb stairs," says co-author Dave Lebling. The game's sentence parser, which enabled the user to interact with the game in plain English sentences instead of two-word commands, literally stunned the world. Here was a game that interacted with you nearly as well as a human.

Covered prominently in the popular press, *Zork* brought electronic gaming out of university campuses and into the public consciousness. In fact, games are one of the few means by which AI has made it out of the lab at all. "It's probably been the

AI GENESIS:

God Games

It's one thing to create a set of opponents who only have to emulate human behavior within the confines of a board game, but to create a believable universe in which human-like characters walk around, react to circumstances around them, and, in a sense, have purpose, is much more difficult.

Most "god games," like *Populous*, *Sim City*, and *Megalomania*, enable players to interact with a computer world that carries on by its own rules whether or not the player actually does anything. "What we're trying to simulate is what a player would do without making it seem so esoteric as for you not to be able to predict what would happen," says Peter Molyneux, founder of Bullfrog. "For example, in *Dungeon Keeper*, each character now has the major senses that a player would have. So each of these AI characters can see, hear, and even smell. They can realize when they are in danger and threat, and they can feel frightened. By combining those attributes you can watch a character move and walk around the dungeon and you can say 'Yeah, I know why he took that left turn there because this right hand corridor is dark, and he's just been beaten up and he's afraid to get beaten up again.' So that's the sort of artificial intelligence we're putting in now — something that you, as a person, can appreciate and understand as the problems that this character has throughout the game."

Peter Molyneux of Bullfrog (which was recently bought by EA) is devoted to producing games that give players the sense of dealing with intelligent living opponents

This will make a huge difference in the way human players interact with future games, and in some ways these games may eventually be realistic enough in their response that to some degree they will appear to pass the Turing test. If, as a gamer, you can't tell whether the nonplayer characters in a game are played by humans or by the computer, then one of the biggest goals of videogaming, the suspension of disbelief, will have been met, not through the use of more realistic graphics, sound, or control, but through the creation of more realistic personalities and lifeforms. Molyneux continues to recruit the best and brightest students from top universities in England to make sure that Bullfrog paves the road forward in gaming artificial intelligence.

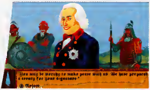
most lucrative use for AI," says Lebling. "But I don't think what is being done in games is anywhere the state-of-the-art in AI. Developers have taken the state-of-the-art and pared it down to what you can do rapidly in a game and what you can do feasibly in a real environment. Videogames are kind of the domestication of academic AI."

As with any other form of computer logic, AI breaks down to a series of mathematical computations in the end. Each decision the computer makes is based on the current value of a given set of registers. The tricky part comes in deciding how and when to look at those registers, how they interact with each other, what happens when they reach a certain value, and keeping track of the entire mess while still running the rest of the program (all of the video, sound, and input devices) without ruining or altering the performance of the overall product.

In strategy games or RPGs, registers take the form of different human-like characteristics, like fear, a value that will determine how likely the foe is to run from a battle; aggression, how likely a foe is to attack without provocation; and even loyalty, how likely an ally is to put him or herself into danger for the sake of another. Some RPGs also need to keep track of how a given NPC (nonplaying character) feels about the player, which is also handled by a set of registers that mathematically represent how likely that character is to help out, based on past interaction with the character. When the player angers the character in question, a specific value for reaction is lowered by the amount appropriate for the negative action — a few points for being overly curious, many points for killing his mother.

The next time the player comes in contact with this character, the base percentage chance that the computer will help the player out is modified by the reaction value, and a decision is made. In this way, the computer is still able to represent the somewhat random actions of humans while maintaining a tie with actions of the past — a character you have made angry may still help you, but is less likely to do so than if you had been kind.

Lifelike personalities can be emulated by careful determination of what actions cause what changes in value — a gruff old man may appreciate you being belligerent to him, whereas being overly kind may make him think of you as a sycophant. The more values there are to be checked, the more lifelike and three-dimensional an artificial lifeform can be simulated. Unfortunately, continually checking all of these values can slow gameplay to a crawl, not to mention the amount of time it takes in development. Unlike AI projects in research centers and universities, the goal of these game AIs is not to fool people into thinking that they are



"You may be worthy to make peace with us. We have prepared a treaty for your signature."

Sid Meier's *Civilization* pits you against various personalities ranging from trustworthy and peaceful to vindictive and warlike

CIVILIZED AI:
Strategy Games

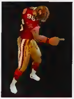
Arcade and strategy games use very different kinds of AI. Unlike the fast-action decisions necessary for an arcade game or a flight simulator, most strategy titles offer plenty of time for the computer to think about each of its moves. Unfortunately, all of the time in the world won't help a "stupid" game beat its human adversary. To create a useful challenge, the game programmer needs to create an AI algorithm smart enough to understand every nuance of the game or a flexible set of rules that will give the computer an advantage over its human opponents.

Famous for games like *Civilization* and *Railroad Tycoon* (two games considered to be among the best in AI), strategy veteran Sid Meier explains how he creates computer opponents worth playing against. "In *Civilization* players face a bunch of other groups who compete directly. The game designer starts playing the game by himself, then moves on to figure out what works — and what works best — and then program those things into the AI; it's kind of an evolutionary process." In other words, most strategy game designers have to use the same process of first figuring out a strategy on their own (on paper) that works well for a human player. They must then figure out an algorithm that will enable the computer to emulate that winning playing style. In a game where you must play against other AI-controlled teams, the programmer must also figure out a way to make this whole process seem human-like in its execution.

"The game *Civilization* is somewhat unique in that it creates a peer situation," explains Meier. "You have a civilization which you're in control of, and the computer has control of other civilizations that have essentially the same abilities and resources that you do. It's kind of like playing a multiplayer game, only the computer has taken over some of the other positions of the game. To set the difficulty level, we can handicap the AI where it requires more production points to create structures than the player, or on the higher levels, we can set it to where it takes less. In this way, we can take one AI routine and make it more or less effective, depending on what the player wants."

Sid Meier has made a career out of creating unique strategy games that offer entertaining play against smart computer opponents

dealing with a real person, but to create a more realistic set of characters with which players can interact.



While still void of fully independent decisions, football AI is advancing

Arcade games like *Doom* use a much simpler system of intelligence, but one that also attempts to mirror human response. Monsters that have the character in their field of view will rush forward (taking the shortest path available between them and their opponent) and attack using whatever weapons they have available. To keep this from breaking down into a large mass of demons flooding through the caverns following you wherever you go, the programmers have given the beasts the equivalent of sight and hearing. If you move into an area from behind the field of view of the monsters contained therein, the registers that determine whether or not the creatures are currently attack remain off. In terms of enemies' hearing capabilities, the game determines the distance a given beast can hear, and any gunshots or screams that take place within that field will force the creature into attack mode. AI in *Descent* offers a few more tricks, like enemies that are smart enough to run when they've taken too much damage, and opponents who are smart enough to hide around corners to set up ambushes.

Military sims, such as flight simulators or tank combat games use sophisticated systems to prevent the computer from knowing too much, and from being too predictable. If the computer knows the absolute best strategy to win every given conflict, and it follows out that strategy flawlessly, human players will at first find that the computer is impossible to beat (this is not fun) and will eventually find the counter strategy to the computer's tactics and will be able to win every time (this is also not fun). The answer is to create an AI that is limited in its decision making to information that lies directly around it, just like a human opponent. Even though the computer knows that you are hiding around the next hill, the AI for an individual tank must not be allowed to acknowledge your presence until you are within visual range, show up on radar, or make some sort of signal that you are there. After this, the computer must have some sort of random movement and combat choices thrown in.

***Master of Orion* requires players to engage in subtle diplomacy with alien races capable of becoming amiable or hateful toward players**

The thing that makes humans so hard to beat in long runs of any game (including war) is that they are capable of making decisions that aren't

ARTIFICIAL TURF:

Sports Games

Unlike creating attack patterns for a troll, intelligence for an alien, or troop movement for a Babylonian army, sports game developers must deal with an audience which knows exactly how the players in the game should respond in a given situation. Furthermore, most sports games require the computer to make decisions in realtime, while interacting with stimuli from several other onscreen AI players.

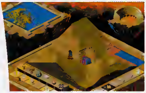
"In order to make a game realistic, we tailor each team to a real NFL franchise," explains Marsh Gardiner, assistant producer on *John Madden Football '96*. "The Bills have to be likely to call a hurry-up offense, certain teams will pass more, certain teams will run more, and some teams will run a 4-3 defense while some are more likely to choose 3-4," he added.

"Individual AI players follow a basic playbook. When you call a play, you're actually calling up a set of moves for each player to follow. It's tricky because there's so many situations you have to be ready for. During the play, the defense reacts to whether the ball is pitched or not, and then certain players will pursue as is appropriate for that play. Receivers run routes, and if they haven't already received a pass, they will move about randomly trying to get open. It all works like the real thing. "Our latest and greatest innovation is to have the computer learn. Actually this is proving a little difficult because the computer can learn pretty fast and pretty well, so I think we're going to have to worry about the game being too hard. My ultimate dream is to have the game look just like the sport. I find myself going to football games and thinking 'Wow! Ours looks just like that,' or, 'Hmm there's something we're going to have to change.'"

Marsh Gardiner works on neural networks, a big advance in home AI

In the new *John Madden* release for Saturn, PlayStation, and PC, EA's designers have tried to create a play-calling system that will closely emulate that of actual NFL coaches

necessarily wise. By adding these flights of fancy to a simulation, computers are more fun to play against for beginners because they are capable of making mistakes, and more fun for veterans because they are harder to predict. In AI, the beginnings of simulating human behavior is always adding the random element.



Populous is an example of great AI used for solid gameplay. Walkers wander, reproduce, and die while you watch on as a benevolent god

The sports sim uses an interesting set of conditionals, or statements, that let the computer choose from a list of different actions depending on outside stimulus. In football, for example, the computer must first decide what play to call. If it's third down and long, the computer will almost certainly call for a passing play. If it's first and goal, it knows to attempt, for instance, the short run. On a very basic level, all the computer is doing here is running through an extremely long set of "if-then" statements tailored to make the same sort of decisions as the coach of that particular team. Once on the field, each of the computer players begins by following the basic pattern in the play that was called, with additional instructions to react to circumstances around them as they arise. A receiver will run out his pattern, and then begin trying to stay open by avoiding any defenders. A safety will stay back and try to stop long runs, but may not be willing to come in to stop a short one. As in role-playing games, several statistic registers are often used to determine how tough a player is, how fast they can get through holes, and how aggressive they are on defense.

Artificial intelligence is also capable of creating new game genres that players have never had experience with before. Where better and faster video brought us the interactive movie, a class of game that offers up fantastic images with very little emphasis on gameplay, AI has the potential to be used in a manner that will create games that are not only fully interactive with the player, but also mold themselves to that person's wants and needs. One example of research being done in this direction is TechMagic's *Dogz: Your Computer Pet*. *Dogz* gives the user a pet that acts and responds just as real animal would, within the confines of a computer world. As with an RPG, *Dogz* is actually using a complex set of registers to compute how the dog will react in any given situation, combined with a random factor that ensures that the animal doesn't follow static patterns. There's more here than just standard screen saver behavior though, the development team has given the user the ability to reward the virtual pet with treats. The dog will eventually make connections between doing certain tricks and getting certain treats, and becomes more likely to perform those acts it knows its master appreciates. Andrew Mayer, the director on the

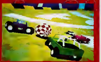
I.Q. TEST:
Action Games

In most action games, basic opponent movement is relatively easy to handle. The computer has a set of rules and boundaries that it must stay within. But even though the basic algorithms may be easier to create than those in a role-playing game, developers must spend hundreds of hours achieving a solid play-engine to deliver competition that is neither too easy nor too difficult.

Joanna Alexander the cofounder of Zombie, explains the problem: "It's really the balance that's tricky. The actual decisions of how to program the artificial intelligence players is not all that difficult. You handle that by play-testing a lot. This is something that you'll find is missing in a lot of both AI games and standard games where there are divisions of speed and reactions. Personally, I don't think there's enough time put into games at the play-testing level and it shows in the end result of many companies' final products. You can have the greatest idea in the world, but if you don't have the timing down right, your idea can be completely lost."

Joanna Alexander, cofounder of Zombie, depends on plenty of human testing hands to determine the effectiveness of a potential algorithms

Game balance is a huge problem with action game AI. Unlike a chess or an RPG title, there is no absolute quick way of testing out whether or not the AI will provide a solid challenge for players without being so good that the game is frustrating. Other than looking for bugs, this is the main job of the playtester. They log in huge hour counts playing games, looking to see if computer opponents are too easy to beat, too difficult to beat, or if they have certain repeated patterns that can be figured out by players.



Zombie's new game *Locus*

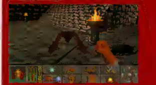
When the testers have found a problem, they return to the programmers and minor adjustments are made to the game algorithm to fix it. Now that computer game releases are starting to cost in the millions of dollars, the job of playtester will become increasingly important as the final success of the product hangs on how well the artificial intelligence has been balanced for human interaction.

BRAVE NEW WORLDS:
Role-Playing Games

Creating artificial intelligence for a role-playing world is a unique development problem. This is due to the huge number of different locations, people, and objects that can be encountered during a play session. In Bethesda's new RPG, *Daggerfall* (p. 92) for example, the computer must keep track not only of the location of hundreds of nonplayer characters (NPCs), but also their attitude toward the player — a value that changes constantly, not only as the player interacts with them, but also as they interact with friends, enemies, and coworkers of the NPC.

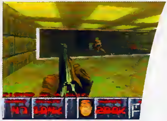
"Just getting the critters to move intelligently through a completely 3D world can make for tough problems," says Ted Peterson, *Daggerfall's* producer. "In a shooter or action game, you start by making a list of all the possible opponents because that's all you're likely to face. You figure out their philosophy of movement, as far as how smart they are in finding opponents, tracking them down, moving in for the attack, and reacting to being attacked. The AI may have to worry about whether the enemy flees or begs for his life, but the possibility of an enemy spreading lies about you to your friends, or going back to college, or working to become King of Spoleto, is not there because this is an action game.

"In an RPG like *Daggerfall*, we started macrocosmically. Combat is certainly a part of the RPG experience, but our first priority was to create a dynamic world that changed, grew, and developed, and that the player could influence with his or her own actions. We created a political faction system and set up the rules by which it operated, as well as the effects these inevitable changes would have in the game world. Then we moved down to the individual people and designed their AI characters more similarly to a shooter — only with some additional options and rules, because RPG opponents are supposed to be more multidimensional than shooter opponents. In shooters, you can assume that every opponent has a ferocity of 100%. In RPGs you can't."



In order to create a realistic world for players to explore, Bethesda's designers have worked hard to create life-like conversation systems in their newest title *Daggerfall* (see p. 82)

project, explains: "It's real AI. If you quit giving treats for certain tricks, then the dog will start trying to do other things to get tricks." The game will also include mood swings for the dogs, which will make them more or less likely to want to play certain games on certain days.



Though it seems simplistic, *Doom* uses basic AI routines to determine when enemies are aware of the player's presence

"There are waveforms in the programming that we poll to get moods... the dog can be happy one day, grumpy the next day, and is affected, in part, by events around them." While this is not a game in the traditional sense, the basic idea behind the program opens up all sorts of possibilities for new game-like titles. Imagine a version of *SimCity* where each individual in the city works out a daily life, affected by poor work conditions to be more likely to riot or commit crimes or has an urge to personally run for mayor, or even competes with others for contracts on public buildings. The possibilities for the future seem nearly endless.

So where's it all headed? In spite of terrific advances in processor speed, graphics, and sound in the past few years, game AI seems, for the most part, locked in place. Bullfrog's Peter Molyneux explains part of the problem. "It's an incredibly tricky area. If you look at all of the developments in the computer game industry in the last three to five years, they've been mainly in the graphic area. We've got some amazing texture-mapping routines and some awesome Gouraud shading and they're extremely fast and that's great, but what are we going to fill those detailed worlds with?"

Molyneux adds: "We can now create cities that you can fly around, we can create worlds that you can fly over, we can create offices and houses that you walk through. But if we're just going to have cardboard cutout characters that you are choreographed around — in this world that you have complete freedom of movement — they're essentially going to be boring."

Molyneux does, however, offer a solution. "So it's the advancement of artificial intelligence that is going to be the issue in the next three to five years. That is a huge problem, much more than vectors and 3D stuff. With those things, you've got a flagpole that you're going to head for and you can say, 'OK, we want this resolution of graphics running at this frame rate,' but with AI there's no flagpole. There's no ultimate objective to head for. You need to get people believing that they're walking through a real world, or suspend their disbelief. Most of AI's challenge is making people believe that these are real characters like a kid believes in cartoon characters, and that is extremely hard to do."

To this end, many companies including Bullfrog are investing heavily in game AI research in order to deliver

what may very well be the next great age of computer gaming. "The area that will take a lot more work, and really is most interesting, is good intelligent opponents and collaborators in a game," says Dave Lebling. "If you're playing a *BattleTech* type of game in which you've got a bunch of 'mechs going after somebody, it's all very good if you've got a bunch of friends who can play the 'mechs on your team and the other team. But what would be even better is if you could play as the leader of the group and give orders, and have computer teammates carry them out in a reasonably intelligent way."

Even as online services offer games that are faster and cheaper to play, there must come the realization that there will always be times when players will be alone with their computers. If no one has spent any time trying to create opponents that will give them a believable challenge, then all of the forward progress in creating more realistic worlds will have been wasted. There is an entirely new "species" of game waiting for computers to be able to perform human-like functions that have been previously thought to be impossible. Imagine an RPG where all NPCs converse so realistically that you cannot tell them from real humans; space combat opponents who feel anger, sadness, and fear at the loss of a comrade; a sports game in which all of the players think and react exactly like the human players they represent; games that can tailor themselves to be more entertaining just by monitoring your style of play. This is where the future of gaming lies: in creating new worlds where the player is only one of many intelligences, not the greatest by any means.

THE WRITTEN WORD:

Books on A.I.

Artificial Intelligence: The Very Idea
John Haugeland
The MIT Press

For the beginner who wants a comprehensive guide to the origins, theories, and mechanics of artificial intelligence, there are very few books that can offer an easier introduction to such a complex subject. Haugeland starts off by guiding readers through the beginnings of AI, including several chapters on pioneers in psychology and philosophy whose ideas shaped modern AI design. Afterward, the author explains the basics of AI design, semantics, and actual construction. The books finishes with a chapter on concepts in human-like AI, a set of pages that will have most readers chomping at the bit to go out and start designing their own AI personalities.

AI: The Tumultuous History of the Search for Artificial Intelligence
Daniel Grevier
Basic Books

An excellent overview of the history (and politics) of the quest for artificial intelligence. Starting with Alan Turing and ending at the present day, the real strength of this book lies in Grevier's interviews with AI pioneers at MIT, Carnegie-Mellon, University of Michigan and Stanford University. Although the book is not as in-depth about some specific projects as it could be, the anecdotes alone are worth the cover price. And while not as nuts-and-bolts as *Artificial Intelligence: The Very Idea*, it provides an excellent jumping-off point for anyone eager to learn more about the field.

AUTOPILOTS:

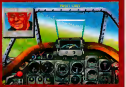
Flight Sim Games

In flight simulations, developers must create enemies who fight back against humans as if they were real people. Essentially, this means developers must spend a great deal of time learning how humans fly, how they fight, and what forces they can withstand and still be able to perform their basic maneuvers. For example, if a computer plane is in a dogfight, and the quickest way for it to attack the player is by dropping into an inverted 9G turn, the artificial intelligence needs to know that this movement will disable the pilot, even if the aircraft itself is capable of the motion.

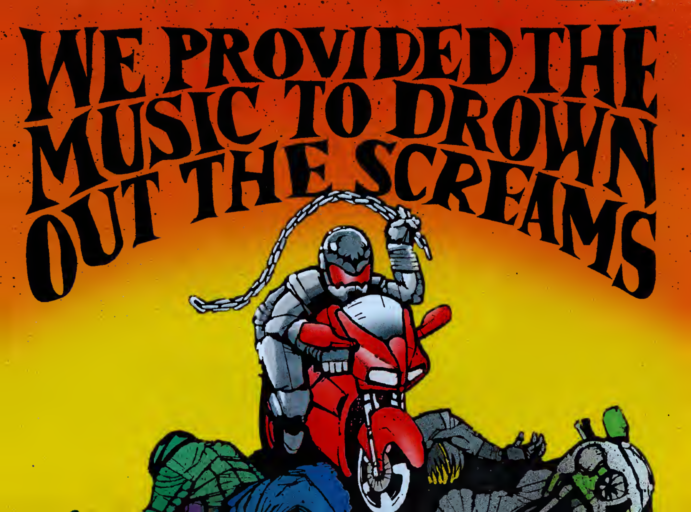
Chris Tector, producer of Interactive Magic's *Star Rangers*, explains: "The way we started was by reading some books on flight and tactics, since we're mostly doing a flight-oriented game. We tried to create some notation and some sort of language to figure out what the bad guys should do and what the good guys should do." Once a basic language has been created to give easy instructions to the craft, designers try to determine exactly how a given spacecraft would use its armament and speed to its advantage in real combat situations.

Oftentimes, in the case of more realistic flight simulators, actual military pilots are called in to explain to programmers the flight tactics used by fighters in combat. In *Chuck Yeager's Air Combat* by EA, the celebrated air warrior actually detailed entire missions that he had flown earlier in life, and the design team had the enemies fly and react just as those craft did. By using set patterns of AI like this, the team was able to create flight experiences that would mirror Yeager's own if the player reacted just like the pilot, but would offer a realistic fight even if the player tried to do something different.

Combat simulators receive more research attention than any other form of game AI, due mostly to huge projects run by governmental agencies in an attempt to create more realistic pilot training situations. There have been several like Yeager who started in the military and who have left to start their own companies or who have joined other companies: Bryan Walker, once a helicopter pilot, recently worked with Domark on its new networkable copter title, *Confirmed Kill*; and "Wild" Bill Stealy, formerly a military pilot, now running Interactive Magic, which just released a new PC-CD copter title, *Apache*.



***Chuck Yeager's Air Combat*, by EA, followed actual details from real flights Yeager himself took**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THE MEEK SHALL
INHERIT
HELL.

75 PO
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10
19

We name the 75 most important people in the games industry of 1995

They're all here: the most powerful money men, the most inspired creative geniuses, the most ferocious of boardroom tigers — the 75 most important and influential players in the business of making videogames

It's always a business doing pleasure with you." Thus spoke Miss Mona in *The Best Little Whorehouse In Texas*. The same can be said of the (albeit more sober — and legal) gaming business. While we all enjoy the challenge and recreation of playing videogames, behind the scenes is a $16 billion industry — bigger than the movie industry, bigger than the music industry, and growing at an astounding rate. So who really pulls the strings? Who really shapes videogaming's future?

In compiling the following list, **NEXT Generation**'s editors have endeavored to paint an accurate representation of "Who's Who?" as it stands today. In doing this, we have followed a few guidelines. First, we have only included those who dramatically shaped videogaming's past, who also have an active involvement today (for example, it would be inappropriate to honor Eugene Jarvis for the creation of *Defender* and not the creator of, say *Pac-Man*, were Jarvis still not actively involved with the creation of arcade games). Second, we erred on the side of creative talent, as opposed to more business-oriented savvy. Third, we tended to credit those who have pushed the gaming world in a new direction, at the sacrifice of those who may have done examplary work in established fields and genres.

Inevitably, however, by such a list's very nature, many of the people highlighted here are merely representatives of a larger team, and many stand on the shoulders of others. It's also inevitable that the list is incomplete — we look forward to hearing your views on whom we have cruelly neglected to credit. But enough qualifications. Ultimately the buck has to stop somewhere, and what follows is the complete picture, as **NEXT Generation** humbly sees it.

THAT CREATIVE SPARK

David Braben

Founder & Managing Director
Frontier Developments
Cambridge, England

Career Highlights:
Elite (1982)

What's the big deal?:
In 1982 games were either shoot-em-ups or, frankly, primitive text adventures. David Braben's *Elite* changed all that for good. It was one of the very first games to feature 3D graphics, but more importantly it challenged the definition of what a computer game was. *Elite* was a sprawling epic involving strategy, thought, space-trading, but relatively little shooting and very little text. It was a complete universe built in an 8-bit world There are at least two members of NEXT Generation's editorial staff who believe Elite is still possibly the greatest computer game ever.

At the time, however, many software houses found it too challenging. It was turned down more than once because there were no lives to be lost, no score, and no obvious start, middle, or end. But come its eventual release for the BBC Micro, it was critically acclaimed from day one. It's since been released on 16-bit platforms (not as good as the original) and there have been two follow-ups, *Frontier* and *First Encounters*. Braben has now abandoned his arduous one-man-band approach to development and his team of 10 at Frontier have several projects in the pipeline for PC CD-ROM, PlayStation, and Sega's Saturn.

Least likely career move:
A platform game.

Most likely career move:
More games, more from the *Elite* series, more (if only cult) success

Rich Hilleman

VP Product Development
Electronic Arts
San Mateo, CA, US

Career Highlights:
John Madden Football (1991)

What's the big deal?:
From an unlikely background at the government's Nevada Test Site, Hilleman joined EA in the mid-'80s and made his name with *Chuck Yeager's Flight Trainer* It was only when Hilleman switched to sports sims, however, that he established himself as one of the key figures in EA's phenomenal in-house team. He designed and produced the first console versions of *John Madden Football* and *NHL Hockey*. Both of them brought a new sense of realism and excitement to 16-bit consoles, making sports sims possibly the most popular category in the global games market.

Least likely career move:
Head back to Nevada.

Most likely career move:
Hilleman's on "a mission to make interactive movies a major software category." Good luck to him.

The most inspired creative genius in the world of computer and video gaming? It's hard to deny it. Shigeru Miyamoto is the brains behind the world's most popular and enduring games

THE WIZARD

Shigeru Miyamoto

Head of Software R&D
Nintendo Corporate Ltd.
Kyoto, Japan

Career Highlights:
Creator of *Mario*, *Zelda*, and *Donkey Kong* Creative force behind *PilotWings*, *F-Zero*, *Super Mario Kart*. *Mario* games have sold more than 115 million units worldwide

What's the big deal?:
He's the most successful game developer in history He has a unique and brilliant mind as well as an unparalleled grasp of what gamers want to play In *Mario* he has created one of the most popular children's characters ever He joined Nintendo in 1977 and designed his first arcade game, *Donkey Kong*, in 1980 In 1984 he was esked to design a game for the NES He went back to *DK* and pulled out the unlikely hero, a short fat mustached plumber called Mario, to star (with newly created brother Luigi) in *Super Mario Bros*. It was what the NES was invented for and helped establish the system es the most popular console in the world. *Super Mario Bros* games have so far sold 115 million units around the world. Miyamoto's other series, *The Legend of Zelda*, is also hugely popular. His latest Super NES game, *Yoshi's Island Super Mario World 2* could well be his best ever and he's already working on Ultra 64 *Mario* and *Zelda* games that will hopefully be ready for the console's launch

Miyamoto is arguably Nintendo's most vital employee, and it's certainly safe to say that the firm's success would never have hit such stratospheric levels without his input. A popular analogy is to describe him es the Steven Spielberg of gaming, combining unprecedented mass market appeal with almost unwavering critical acclaim.

Least likely career move:
Bye bye *Mario*.

Most likely career move:
Yoshi's Island emerges as a glorious last hurrah on Super NES, *Mario* and *Zelda* then leap into the next generation to try and do for the Ultra 64 what they did for the NES and Super NES·i.e sell it.

Eugene Jarvis

Game Director
Williams
Chicago, IL, US

Career Highlights:
Defender (1980), *Cruis'n' USA* (1994)

What's the big deal?:
Having designed pinball tables for Atari in the mid-'70s, Eugene moved to Williams, got bitten by the *Space Invaders* bug and designed *Defender*, the firm's first-ever videogame If he had done nothing else, he would still have warranted a place in any list of videogame notables — a claim that will only be validated come the inevitable renewal of *Defender*

fever on Jaguar this holiday season. Jarvis reckons that in its time, it has probably gobbled more than $1 billion, and it remains one of the most playable games ever to hit an arcade.

Last year, however, Jarvis added to his legacy with the launch of *Cruis'n' USA* — arguably neck-and-neck with *Daytona USA* as the most popular driving game of 1994. He's currently overseeing the development of an Ultra 64 game by Williams' San Diego team, a game that is destined to become one of the key titles for Nintendo at launch. Jarvis is also currently working on a sequel to *Cruis'n'* which will hit arcades next summer (and probably the Ultra 64 next holiday season '96). He has no plans to move over to home videogame development but his designs and concepts will no doubt be translated into some of the hottest games of the next generation.

Least likely career move:
Jarvis is dead against any sort of position that includes overseeing, or a hands-off role.

Most likely career move:
Blow *Cruis'n' USA* away with a superb sequel, continue to produce arcade classics that drip through onto home consoles.

Al Lowe

Game Designer
Sierra On-Line
Coaresgold, CA, US

Career Highlights:
The *Leisure Suit Larry* series.

What's the big deal?:
Yes, *Leisure Suit Larry*. Don't laugh. It's widely believed that Larry (Leisure Suit and all) is the most widely played computer game character ever, thanks to the game's early introduction, its multitude of sequels, and good old-fashioned piracy. So where did *Larry* come from?

Al Lowe joined Sierra in 1982 and during his first few years at the company put in some solid work on titles such as *The Black Cauldron* and Roberta Williams' *Kings Quest III*. In 1987, however, his first solo project, *Leisure Suit Larry in the Land of the Lounge Lizards*, made him a star in his own right. The game introduced the concept of "adult software," though it was neither shocking nor sophisticated it was set in an obviously adult world and dealt with adult themes — getting laid, mainly. It won the SPA (Software Publishers' Association) award for Best Adventure Game of the Year. The series is now up to *VI: Shape Up or Slip Out* (1994) and has notched up sales of around $1 million.

Least likely career move:
Take life, or anything, too seriously.

Most likely career move:
A new game, *Torin's Passage*, is due in November and *Larry* will reappear in 1996

Sid Meier

VP Development
Microprose
Hunt Valley, MD, USA

Career Highlights:
F-15 Strike Eagle (1985), *Railroad Tycoon* (1990), *Civilization* (1991), *Pirates* (1983)

What's the big deal?:
Meier was an original co-founder of MicroProse back in 1982, but has never made the move upstairs to corporate-ville. Instead, he remains a prolific developer of some of the best games in this veteran publisher's catalog. His first hit project was *F-15 Strike Eagle* (the first in a series which has now gone through the $1 million sales barrier). His finest achievement was probably the release of build-your-own-empire title *Civilization* in 1991. A sequel *Colonization* in 1994 was also successful and *Civilization for Networks* arrived on shelves in September 1994.

Least likely career move:
Move upstairs to corporate-ville.

Most likely career move:
Apparently he's mulling over a civil war game.

Sid Meier earns his place in computer gaming's hall of fame almost on the back of just one game, *Civilization*

Jeff Minter

Founder
Llamasoft
Santa Clara, CA, USA

Career Highlights:
Tempest 2000 and *Defender 2000* (Jaguar)

What's the big deal?:
Minter is one of the more bizarre characters involved in game development. Huge commercial success has always eluded him but then it's never been his number one goal. He has, however, built a reputation as an inspired creator of rather odd but always playable cult classics — many of which reflect his dubious obsession with llamas and camels.

He began writing games in the early '80s during the English home computer boom and had a number of hits on his own label, Llamasoft. His profile dipped a bit in the late '80s and early '90s when he worked in the shareware arena, but when Atari launched the Jaguar, Minter re-emerged as the platform's leading developer with *Tempest 2000* and *Defender 2000*. The trappings of Minter games aren't for all, but the gameplay at their heart is spot on.

Least likely career move:
A haircut.

Most likely career move:
Minter will always do his own thing and it will usually involve camels, llamas, gameplay and, for the time being, Jaguars.

Jeff Minter is one of the few developers to have truly supported Atari's Jaguar. His reworkings of old classics are must buys

Peter Molyneux

Founder and Managing Director
Bullfrog Productions
Guildford, England

Career Highlights:
Populous, *Theme Park*, *Magic Carpet*, *Syndicate*, and *High Octane*

What's the big deal?:
Since its formation in 1987 Peter Molyneux's Bullfrog has earned a reputation as one of the most consistently innovative and imaginative development teams in the world. Its first title, *Populous*, created a whole new genre, the "God" game. Standards have hardly slipped since.

Theme Park was many critics' Game of the Year in 1994. All of its titles have been published by Electronic Arts so far, and earlier this year the ties between the two were made permanent when the publisher bought the developer in a deal thought to be worth around $40 million. Peter Molyneux

Peter Molyneux, interviewed in NG 6, has consistently pushed AI and graphics further than any other PC or console developer

remains, however, very much the man at the helm.

Least likely career move:
Movie licenses and sports sims don't loom large.

Most likely career move:
Originality, imagination, and increasingly better AI remain the watch words as Molyneux makes himself as at home on the next generation of consoles as he is in the PC CD-ROM environment.

Alexei Pajitnov

Game Designer
Spectrum Holobyte
Alameda, CA, US

Career Highlights:
Tetris (1988)

What's the big deal?:
For many people, *Tetris* is the most playable game ever created. One famous businessman flying from London to New York looked out of his window as the plane approached the famous Manhattan skyline and started imagining the right shapes to drop into the gaps. That's the sort of grip *Tetris* has had on otherwise sane individuals since it was first released on home computers in 1988 and on NES and Gameboy a year later.

Its roots can be traced back to the mid-'80s and to behind the Iron Curtain — when it was still firmly closed. Working at the Computer Center of the Moscow Academy of Science, Pajitnov became interested in Pentominoes — geometric puzzles featuring interlocking T and L shapes. He set about creating a computer version and called it T and L shapes. He distributed it amongst all his colleagues and it became massively popular throughout the Academy and, soon, in offices all over Moscow. Word spread to the West and it sparked the most desperate and protracted scramble for the rights to any game ever produced.

Nintendo, perhaps inevitably, won the day. *Tetris* has since become the most popular Gameboy title of all time and undoubtedly helped the hand held achieve its incredible popularity. Pajitnov now lives and works in the United States where he is contracted to Spectrum Holobyte.

Most likely career move:
Move back to the U.S.S.R.

Most likely career move:
Presumably he'd like to do something that stops him being known as "that *Tetris* dude."

John Romero

Co-founder and Game Designer, Id software
Mesquite, TX, US

Career Highlights:
Doom (1993)

What's the big deal?:
As the designer of Id's *Doom*, Romero has arguably done more than anyone to establish the PC as a truly all-around game machine: not just a home for worthy flight sims or adventure games but a platform for real blood-thunder-action games with the emphasis on blood. It was written around a breakthrough 3D graphics engine and, using first person perspective, it placed players in as action-packed a combat game as has graced any console. It's impossible to calculate how many people have played *Doom* as it was available exclusively on shareware long before it came to retail and is almost certainly the most pirated game of all time.

Retail versions are available on Jaguar, Super NES, Mac, and 32X. Ultra 64, 3DO, PlayStation and Saturn versions are currently in development. Back on the PC there's already been *Doom 2* (1994) released at retail and a third and similar game in the series, *Heretic*, available through shareware and shops. But the real excitement is building up for next year's release, *Quake*, which will introduce an all-new Id engine. Universal is currently planning a *Doom* movie.

Least Likely Career Move:
Disney beckons? We don't think so.

Most Likely Career Move:
Quake will be both bloody and brilliant. Bloody brilliant, in fact.

Tim Schafer

Project Leader, LucasArts
San Rafael, CA, US

Career Highlights:
Secret of Monkey Island, *Secret of Monkey Island II*, *Day of the Tentacle*, and *Full Throttle*

What's the big deal?:
You want an interactive movie? Tim Schafer's been

Shiny Entertainment's Dave Perry (left) gets to grips with some poor unfortunate loser. The gaming world should look to Shiny's forthcoming 32-bit and 64-bit releases for some good ol' fashioned fun gameplay

GOLDEN BOY

Dave Perry

President & Lead Programmer
Shiny Entertainment
Laguna Beach, CA, US

Career Highlights:
Earthworm Jim, *Aladdin*, *Cool Spot*, *Global Gladiators*

What's the big deal?:
An all-around nice guy single-handedly responsible for some of the 16-bit platform's finest hours, the rise of Virgin, and the renaissance of Disney's fortunes (well, almost). Gearing up for an assault on the 32-bit world, he has gathered around him some of the most top-notch game creators the world has to offer (when he can get them off the beach). Recently sold out to Interplay for loads of cash.

Perry often seems to benefit and suffer from a game press who seemingly can't hype him or his products enough. Is all the hype justified? Well, probably not. But that's not the point, the fact is that the press and gamers love him. **NEXT Generation**'s opinion as to Perry's PR secrets? Always return phone calls, don't make promises you can't keep, and show a genuine interest in whomever you're talking to. Sounds easy? So how come hardly any actual PR people (let alone presidents and lead programmers) in the industry do the same?

Least Likely career move:
Surfs into the sunset and is never seen again

Most likely career move:
Shifting seamlessly into the 32-bit age, he will take the platform game where platform games have never been before

MR. BIG SHOT

Chris Roberts

Executive Producer,
Origin
Austin, TX, US

Career Highlights:
Wing Commander series (original published 1989)

What's the big deal?:
Flight sims are a large slice of the staple diet of most PC gamers. For most people it's a *Wing Commander* game that remains the benchmark. *Wing Commander* first appeared in 1989, and to date, more than 2 million *Wing Commander* games have been sold worldwide. The latest version, *Wing Commander III Heart of the Tiger* has already chipped in with more than 500,000 since its release just before year's end '94.

Roberts remains very much at the head of all *Wing Commander* development, and therefore in charge of one of the largest development budgets in the gaming world. *Wing Commander IV* is due out this December and it's a safe bet that it will be another top notch addition to one of the most enduring and respected self-created franchises in the gaming industry.

Least likely career move:
Stray too far from flight sims.

Most likely career move:
Carry on "Winging it."

Many people talk about the merging of Hollywood and Silicon Valley, but Chris Roberts is one of the few to actually *do* it

making them for years. Except that his are compelling, funny, addictive, challenging, and (get this) interactive. And they cost 10 times less to make than the majority of FMV crap churned out this year.

Schafer got his break when LucasArts needed creative minds to work with *SCUM*, the proprietary language in which LucasArts graphic adventure games are written. Tim Schafer, who had recently graduated from college, was selected as a "*SCUM*-let" (i.e. one who works with *SCUM*).

He began as an assistant designer working on *The Secret of Monkey Island*. Two projects later, Schafer and Dave Grossman (another programmer) were allowed to build their own game. They created *Day of the Tentacle*; Schafer was responsible for writing and design. Tim's first solo piece — "I did it all on my own with about 30 other people" — was *Full Throttle*. He both designed the game and wrote all of the dialogue.

Least Likely Career Move:
Becomes a pioneer of FMV.

Most Likely Career Move:
Will continue to find new ways to develop game characters and humor.

Tim & Chris Stamper

Joint founders & Managing Directors
Rare
Warwickshire, England

Career Highlights:
Killer Instinct, *Donkey Kong Country*, *Knight Lore* (1983), *JetPac* (1981)

What's the big deal?:
Rare is perhaps the only company in the world who could claim to be vital to the mighty Nintendo (Silicon Graphics might — only might — be able to claim the honor, too). So vital, in fact, that Nintendo forked out millions of dollars to buy a 25% share in the developer earlier this year, ensuring continued support for all its formats.

When the Stamper brothers first entered the game business in the early '80s, it was as a publisher called Ultimate Play the Game, developing titles for 8-bit home computers. When the NES started taking off, the switched-on Stampers set up a new division, Rare, to reverse engineer the hardware and produce carts for it — even though they didn't have a license. Nintendo initially frowned on such rogue activity but when it saw the end product it was impressed enough to make Rare the first western company with an official developer's license. The Stampers abandoned publishing, concentrated on development, ditched the Ultimate name, and Rare was established as the whole company.

It's since produced more than 90 NES, Gameboy or Super NES titles including *Battletoads* and *WWF Wrestlemania*. There's no doubt, however, that Rare reached a new level of success in developing *Donkey Kong Country* for the Super NES. It was a massive leap forward for 16-bit gaming and has become the fastest selling videogame of all time. Global sales currently stand somewhere North of 7.5 million units. This year *Donkey Kong Land* has already hit the Gameboy and *Diddy Kong's Quest* (*DKC2*) is lined up for the Super NES this November.

Rare has also completed a Super NES version of its No 1 arcade hit *Killer Instinct* which is due in October and should set new 16-bit standards. Rare was the first development team signed up by Nintendo for its Ultra 64 "Dream Team." A new version of *Killer Instinct* should be ready for the 64-bit system at launch.

Least likely career move:
To apply for a job at Atari.

Most likely career move:
A couple more big bangs on Super NES and then lead the way on Ultra 64. A Rareware label is also on the way as the Stampers finally move back to publishing.

J.W. "Wild Bill" Stealey

Chairman
Interactive Magic
Raleigh, NC, US

Career Highlights:
Co-founder and former Chairman of MicroProse, and fighter pilot (really)

What's the big deal?:
Software salesman extraordinaire who wallpapered software stores with MicroProse games and has most recently sold several hundred thousand copies of *Apache* — the first game from Interactive Magic.

A challenge over a videogame transformed General Instrument sales man/National Guard fighter pilot Stealey into a software entrepreneur. Stealey played videogames with fellow GI employee Sid Meier, and on one occasion, Stealey bet Meier a quarter he could beat him at *Red Baron*. He lost. "Fighter pilots," of course, "don't like to be out-bragged," says Stealey, so when Meier said *Red Baron* wasn't really a great game, Stealey challenged him to make a better one. Meier created *Hellcat Ace* and the two men quit their jobs to form MicroProse.

A fan of flight, golf, and racing simulations, Stealey insists all his games feature 3D graphics. Does he want to dabble in RPGs and adventure games? "Bite me, kick me, throw me from an airplane," he says he'd prefer. "There are other big companies that do those games perfectly well."

Least Likely Career Move:
Arcade games.

Most Likely Career Move:
Will drive Interactive Magic to new levels of realism in military simulations.

Roberta Williams

Co-founder & Game Designer
Sierra On-Line
Coaresgold, CA, US

Career Highlights:
Founded Sierra in 1980. First *King's Quest* game published in 1984.

What's the big deal?:
With husband Ken, Roberta Williams founded On Line Systems (Sierra was added and Systems dropped a couple of years later) in 1980 with the release of *Mystery House*, one of the first computer games ever to combine graphics and text. In 1984 she designed *King's Quest I: Quest for the Crown* which became perhaps the most renowned innovative of 3D adventures as we know them today. So far the series has reached seven (*The Princeless Bride*) and has notched up worldwide sales of more than 3 million.

SPEED DEMON

Nobody has pushed arcade gaming as far as Yu Suzuki, and Suzuki just keeps on pushing. *Virtua Fighter 3* is easily the most anticipated game of 1996 — bigger, faster, more...

Yu Suzuki

Chief Manager, R&D Amusement Division
Sega Japan
Tokyo, Japan

Career Highlights:

Hang On (1985), *Space Harrier* (1985), *Outrun* (1986), *After Burner* (1987), *Power Drift* (1988), *G-LOC* (1990), *R-360* (1990), *Virtua Racing* (1992), *Virtua Fighter* (1993), *Daytona USA* (1994), *Virtua Cop* (1994), *Virtua Fighter 2* (1994), *Virtua Striker* (1995), *Virtua Cop 2* (1995)

What's the big deal?:

Check out the list of credits. Yu Suzuki and (most notably) his AM2 team are responsible for some of arcade gaming's finest hours. Although it was the likes of Namco, Capcom, and Atari who started the arcade phenomena, it is without question that Sega takes the credit for keeping it exciting since

Suzuki is treated like a rock star in Japan, and rivals Nintendo's Shigeru Miyamoto in terms of following He drives a red Ferrari, and enjoys the lifestyle that his success has earned him. Often outspoken, Suzuki is never one to unnecessarily tow the corporate line ("Trying to program two CPU's has its problems," he groaned back in 1994, during the Saturn conversion of *Daytona USA* "The two CPUs start at the same time but there's a delay when one has to wait for the other to catch up. One very fast central processor would be preferable")

But his track record enables him the freedom to say and do as he wishes. And luckily for Sega, this has resulted in a lifeblood of consistently killer titles *Virtua Fighter* redefined the fighting game. *Virtua Racing* offers arguably the best arcade drive to this day. *Virtua Fighter 2* is the most graphically sophisticated arcade game in history. And Suzuki-san shows no sign of slowing down An interview with Yu Suzuki begins on page 6.

Least likely career move:

Platform games and shooters

Most likely career move:

Virtua Fighter 3 lives up to hopes Which is no small ambition

---

Williams latest project is *Phantasmagoria*, a massive 3D horror game on seven separate CDs

Least likely career move:

Produce an Ultra 64 game. (Nintendo has decreed that all games must be 8 MB or less)

Most likely career move:

The Quest continues.

Will Wright

Living Legend
Maxis
Drinda, CA, US

Career Highlights:

SimCity and *Raid on Bungling Bay*

What's the big deal?:

Will Wright was building robots as a "serious hobby" and going to school on and off when a friend sold him an Apple II His first game was *Raid on Bungling Bay*, a game in which players flew over islands and dropped bombs

"I had developed this editor to make the islands, and I found that I was having a lot more fun creating the islands than playing the games themselves," remembers Will This led to more sophisticated editors which led to an interest in city planning He set up a program to test his city planning ideas, "a guinea pig, which later became the precursor to *SimCity*," says Wright.

It's been said that there have only ever been two novels ever written, and that every thing else is just a rewrite. The same maxim has been applied to videogames, and Will Wright's *SimCity* has to be regarded as one of the originals

Least Likely Career Move:

Gives up designing and becomes a full-time suit.

Most Likely Career Move:

Continues to experiment with other genres of gaming, but eventually realizes that his interest is in creating complex simulations.

Hirokazu Yasuhara

Game Designer
Sega Technical Institute
San Mateo, CA, US

Career Highlights:

Sonic the Hedgehog (1991)

What's the big deal?:

Five years ago, before Tom Kalinske joined Sega, a young programmer named Hirokazu Yasuhara decided to make a game for Sega that could compete with *Mario*, Nintendo's popular mascot.

"*Super Mario Bros.* was a two-button game, so I wanted to make a one-button game, a simple game," argued Yasuhara. And that is exactly what he did.

Yasuhara took a character created by Masato Oshima and incorporated a new ultra-fast data processing scheme called "blast processing," (the marketing guys loved it — they didn't have the faintest idea what it was, exactly, but *boy* did it sound cool) to create *Sonic the Hedgehog*. *Sonic* not only became Sega's mascot, he personified the company's new image brash, young, arrogant — and fast on its feet. Playing off the blue rodent's speed, attitude, and popularity, *Sonic* was Sega's main weapon in the 16-bit war. Sega's success is now videogame history

Sure, the game was no *Super Mario Bros* underneath the surface, there were few hidden tricks or bonuses, and playing the game a second time rarely revealed anything new. But it is impossible to deny the fun of speeding Sonic over the ramps and loops that made up each level — and fun's what videogaming's all about, right? At least, it should be

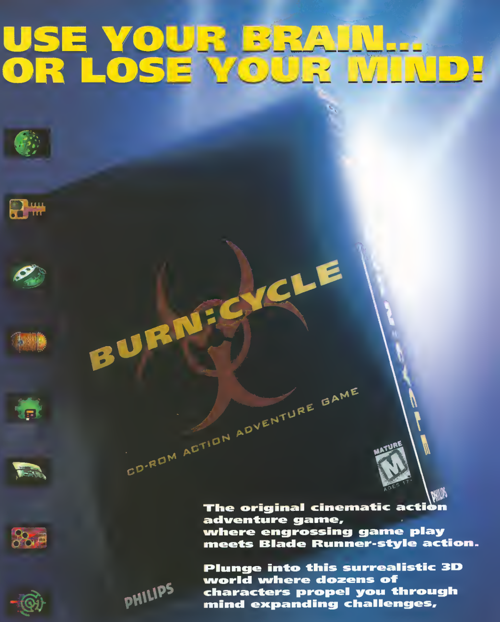
Sonic's personal success (or should that be the success of Masato Oshima and Hirokazu Yasuhara?) came in 1993 when the US "Q" ratings, which indicate the popularity of movie stars, politicians, and other public figures, indicated that while Nintendo's *Mario* was still more popular than Mickey Mouse, *Sonic The Hedgehog* topped them both

Least Likely Career Move:

Slow-moving games

Most Likely Career Move:

Yet more and more bizarre side-kicks (a two-tailed fox? An echidna?) to accompany Sonic on his continued battles with the evil Dr Robotnik.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THE GENERALS

Hisashi Kaneko

President
NEC Corporation
Tokyo, Japan

Career Highlights:

PC Engine, NEC FX, a $43 billion global enterprise, employs 148,000 people worldwide.

What's the big deal?:

What's $1 billion? The difference in size between Sony and NEC, that's what. NEC is a huge, huge corporation maintaining a network of 88 consolidate subsidiaries, 63 manufacturing plants, and 370 sales offices. The company manufactures and markets more than 15,000 different products in more than 150 countries. In terms of its global sales, this company ranks among the highest: second in semiconductors, third in computers, and seventh in communication equipment. Nothing to scoff at.

NEC produced the PC Engine game system — a console which still enjoys a small, but consistently fanatical following in the US and Japan. The 32-bit NEC FX enjoys small success in Japan, seemingly lacking NEC's full support. But NEC's influence stretches far above and beyond its immediate videogame products. As a leading semiconductor manufacturer, the company's influence is there from the cradle to the grave of every aspect of computing.

A company the size of NEC influences the game industry in many ways, from chip manufacturing to videogame system design

Least likely career move:

Makes moves to trouble Sony, Sega, and Nintendo in the videogame market.

Most likely career move:

Remains a powerful, behind-the-scenes influence. In the words of NEC's own corporate literature, "NEC will continue to build on its vast experience, global vision, and cutting-edge technologies to lead the world community into the 21st century and beyond."

Marty Kitizawa

President
SNK Corporation
Tokyo, Japan

Career Highlights:

Formed SNK Corporation (1988); Neo-Geo (1990).

What's the big deal?:

In 1990, SNK launched two Neo-Geo systems, the arcade Multi-Video System (MVS) and the Neo-Geo home system (HS). Dismissing a similar Nintendo product as unsuccessful, Neo-Geo spokespeople claim that the MVS was the first successful multigame system to hit the arcades. Though the first Neo-Geo Home System saw limited sales, SNK released a CD-based unit this fall which retails at $399.

Least Likely Career Move:

Return to cartridges.

Most Likely Career Move:

Very scrappy but poorly funded and distributed, SNK will continue publishing to the core audience of Neo-Geo fanatics who can't get enough 2D fighters.

THE EVANGELIST

Perhaps the best known face in the industry, Hawkins is also regarded by many as owner of one of the sharpest minds

Trip Hawkins

President & CEO
The 300 Company
Redwood City, CA, US

Career Highlights:

Founded Electronic Arts (1982). Founded The 3DO Company (1992).

What's the big deal?:

Hawkins is one of the game market's visionaries. In 1982 he founded Electronic Arts and through faultless handling of the most creative people in the industry produced a string of quality products that put EA at the top of the computer game business. The trouble was, the computer game business was tiny compared to the console market. Hawkins had made a poor call, he'd seen Nintendo as a rinky-dinky little fad and chosen not to develop on carts. He also hated the strict terms and conditions that the console companies imposed on third party publishers. But by 1990, the sheer size of the business he was shunning forced him to change his mind. The firm adapted brilliantly to the demands of the console audience and titles such as *John Madden Football* and *Desert Strike* established EA as one of the biggest videogame publishers in the world.

In 1991, however, Hawkins unveiled a new vision: 3DO. The grand idea was to establish a global standard for CD-based interactive entertainment. Hawkins also insisted it would be an open platform for all developers and publishers, free from the restrictive licensing agreements that had irked him so much at EA. The 3DO game system was launched in 1992, but despite incredible hype and huge ambition, it has failed to grasp a mass market. Global sales stand at around 750,000, with 300,000 sold in the US. A new 64-bit 3DO machine, M2, is due next year.

Least likely career move:

Create a global standard for interactive entertainment.

Most likely career move:

Seek cash investment from a new hardware "partner," then hype the hell out of M2.

THE AMERICAN

Tom Kalinske's Sega may face tough times today, and Knuckles may be yesterday's rodent. But 1990, Kalinske and a blue hedgehog had the videogaming world on the run

Tom Kalinske

President
Sega of America
Redwood City, CA, US

Career Highlights:

Took on Nintendo and won — sort of.

What's the big deal?:

When Kalinske joined Sega in 1990, he was said to have the best job in the industry. His job was to try and beat Nintendo. If he failed, well of course, he failed; no one beats Nintendo. If he succeeded, he'd have pulled off one of the great business coups of the '80s. He succeeded.

And he did it by getting in first, being ultra competitive on price, offering upgrade paths, dragging videogaming (kicking and screaming) through the doors of some cool ad agencies and introducing the world to *Sonic the Hedgehog*. Kalinske's Sega is generally considered to have taken a larger slice of the 16-bit market than Nintendo at a time when the 16-bit market went ballistic (late '80s/early '90s) More than that, under Kalinske, Sega proved that the gaming market ain't a one-horse town.

Least likely career move:

Extol the virtues of cartridges.

Most likely career move:

Concentrate exclusively on 32-bit, making the most of a head start over Nintendo and relying on greater gaming experience (and arcade hits) to combat Sony. Oh, and let's not forget Sega's steadily increasing interest in theme parks…

THE FAMILY

Sam & Jack Tramiel

President (Sam) and Chairman of the Board (Jack), Atari Corp., Sunnyvale, CA, US

Career Highlights:

Took over Atari (1984) Launched Jaguar (1993) Successfully negotiated a large legal settlement from Nintendo (early '90s). Successfully negotiated a large legal settlement from Sega (1994)

What's the big deal?:

When Jack Tramiel bought Atari in 1984 from the Time Warner group the videogame bubble had burst and the firm was hemorrhaging money He steered the company from videogaming to home computing with the launch of the ST, a respected 16-bit machine that enjoyed considerable success in Europe and, globally, in the professional music market. In the early '90s, with Jack ensconced in a more backseat role and his son Sam in control, the firm stepped back into the console market with the 64-bit (ish) cart-based Jaguar It is Atari's attempt to take on Nintendo, Sega (both of whom it has fought in legal battles over copyrights and alleged monopolistic business practices), and Sony in the next generation marketplace While being slightly held back by smaller financial muscles and a lack of immediate third party software support, the Jaguar has nevertheless sold more than 150,000 machines worldwide and Atari is confident of hitting 500,000 by the end of the year.

The price has recently been slashed from $250 to $150 A Mark 2 Jag with a built-in CD drive is due later in the year After nearly 25 years in the business, Atari remains a contender

Least likely career move:

Fire the company lawyer

"We're tough negotiators. Sure, we strike a hard bargain," conceded Sam Tramiel in NG 7. Now Atari is fighting for its life in the 32-bit age

Most likely career move:

Keep playing the price card and hope that Mark 2 brings a whole new wave of interest to gamers

THE HEAVYWEIGHT

Olaf Olafsson recently moved from Sony Computer Entertainment where he oversaw the US launch of PlayStation

Olaf Olafsson

President, Sony Interactive Entertainment
New York, NY, US

Career Highlights:
Oversaw the launch of PlayStation in the US and Europe (1995)

What's the big deal?:
Management of the $44 billion Sony Corporation goes all the way to the top, and then keeps on going (rumors that President Bill Clinton is applying to Sony for a promotion, however, are unsubstantiated). You have to stop somewhere, though, and in immediate charge of all PlayStation and Sony software development activities in the US and Europe is Olaf Olafsson.

Working out of New York, Olafsson reports to Mickey Schulhof, the president & CEO of Sony Corporation of America. Whomever permanently replaces Steve Race as the president of Sony Computer Entertainment of America will report to Olaf. Anything beyond this simple chain of command becomes impossible to figure, lost in the web of Sony's plethora of divisions, sub-divisions, and disparate territories.

Although suffering from a major cash hemorrhage as the result of its abortive venture into movie production, Sony still has huge muscles. Olafsson gets to flex them. If Sony is a castle, then Olafsson is in charge of the game room. It was Olafsson who oversaw the $48 million acquisition of game developers Psygnosis (responsible for *WipeOut* and *Destruction Derby*), set up the US PlayStation operation and (not least importantly) arranged for Michael Jackson to attend the PlayStation party at the Electronics Entertainment Exposition (E^3) in LA last May

Least likely career move:
Runs out of cash

Most likely career move:
Olafsson is in the perfect position to guide Sony forward into every aspect of emerging technologies and interactive entertainment, even if he's off the PlayStation project.

Howard Lincoln & Minoru Arakawa

Chairman (Lincoln) & President (Arakawa)
Nintendo of America
Seattle, WA, US

Career Highlights:
More than a third of all US homes have a Nintendo machine. (Bizarre fact: In 1954 Howard Lincoln was the model for a Norman Rockwell painting)

What's the big deal?:
In 1985 when Nintendo entered the US home videogame market, there was no home videogame market, just the spectacular boom-and-bust remnants of an industry that had left everyone wary. With Arakawa and Lincoln at the helm and the odds stacked against them, Nintendo of America brilliantly laid the foundations for the sprawling, multifaceted beast that now likes to be known as the interactive entertainment business. Yes, Sega worked wonders on 16-bit and, sure, Sony's looking hot, but it all began with Arakawa, Lincoln, and Nintendo.

Least likely career move:
Succumb to Sega or Sony

Most likely career move:
Keep the Super NES hot this Christmas and then really turn up the heat with Ultra 64 next year. Arakawa is expected to eventually take over as President of Nintendo in Japan.

Howard Lincoln and Minoru Arakawa are possibly still the two most powerful men in the US game industry, but their influence is under threat from Sony. Lincoln (above) is interviewed in NG 8

Hayao Nakayama

President
Sega of Japan
Tokyo, Japan

Career Highlights:
Overall head of Sega.

What's the big deal?:
Although Sega's biggest successes have been outside of Japan, both the US and European Sega operations ultimately report back to the Sega Enterprises HQ in Tokyo. It's in Japan where the majority of Sega's hardware development, cartridge manufacturing, and, perhaps most importantly, key software development takes place. Sega's arcade division is very much the creative engine room of Sega's success, and it's a little known fact that the blue hedgehog who took the US 16-bit world by storm originally spoke in Japanese.

Mr Nakayama still takes a very active role in Sega's day-to-day activities. It's rumored that he personally stormed to the consumer research and development departments to chastise his team after first hearing of the power of Sony's PlayStation. And despite the success of Kalinske's US operation and the similar success enjoyed by Sega Europe under Nick Alexander, Sega remains a company with its roots very firmly in Japan.

Least likely career move:
Yields control to Sega's Euro' and US subsidiaries

Teruhisa Tokunaka, the man who oversaw what is arguably Sony's most successful Japanese launch since the Walkman

Most likely career move:
It's long been rumored that Sega's long-term plan is to move out of the home hardware business, and instead fall back on its strength of software creation and the arcade industry. As part of this trend, look for Sega's location-based entertainment center business to grow. A deal with 3DO has also been rumored for a long time, possibly regarding M2 technology for Saturn 2. Conjecture aside, however, one thing's for sure. Hayao Nakayama will be very much at the center of Sega's business

THE EMPEROR

The most feared and respected man in the videogame industry. Hiroshi Yamauchi, the head of Nintendo and the most powerful player of them all

Hiroshi Yamauchi

President of Nintendo Corporate Ltd.
Kyoto, Japan

Career Highlights:
Nintendo has sold close to 150 million game machines around the world.

What's the big deal?:
When Yamauchi took over Nintendo in 1949 it was just a Japanese playing card manufacturer selling to its domestic market. He transformed it into a global videogame giant with revenues of ¥416 billion (year ending March 31, 1995). His company single-handedly rescued the videogame business from the wreckage of the mid-'80s crash (when Atari was at the wheel). Its taking of America was nothing short of genius. Yamauchi has been the mastermind behind every important move and, at 68, remains very much in charge. When the time eventually comes, replacing him will be on of Nintendo's toughest challenges.

Least likely career move:
Going back to making playing cards.

Most likely career move:
Making 1996 the year of the Ultra 64 through low cost hardware and stunning software.

Teruhisa "Terry" Tokunaka

President
Sony Computer Entertainment
Tokyo, Japan

Career Highlights:
Masterminded Japanese launch of PlayStation

What's the big deal?:
From a standing start, Terry Tokunaka has managed to race to the front of the pack in the toughest videogaming market in the world, that of Japan. The PlayStation is currently neck-and-neck with Saturn (actually, both machines are winning — depending on whom you talk to) with installed bases of well over a million units and climbing fast.

It was Tokunaka who announced to the world the release details of PlayStation in October of last year, revealing that PlayStation would launch within a week of Saturn, and at a significantly lower price. It was Tokunaka who installed the innovative system of bypassing Sony's traditional distribution channels in Japan and selling PlayStations direct to retailers — thus cutting the grey import business to a minimum. And it is Tokunaka who has continued to steer the progress of what many industry analysts regard as Sony's most successful launch since the Walkman.

Least likely career move:
Goes down to Sega without a struggle

Most likely career move:
Will continue to fight tooth and nail with Sega for Japanese market share

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THE OUTSIDERS

Robert Allen

Chairman
AT&T
New Jersey, NJ, US

Career Highlights:

Chairman of the largest telecommunications company in the world (1988 - present)

What's the big deal?:

A year or so ago AT&T seemed to be cooling toward games. It abandoned plans to fund a modem device to work with Sega's Genesis and sold its stake in The 3DO Company (scrapping its prototype multiplayer in the process). The firm remains, however, with 90 million online customers and most certainly will be the key player in the field of interactive entertainment during the next decade

If a publisher wants to deliver direct to homes, it wants to talk to AT&T, the biggest cable company in the world. On top of that, the firm has a joint venture with Silicon Graphics called Integrated Digital Solutions, which aims to provide hardware and software for interactive online multimedia systems in the home. It is also the owner of the ImagiNation Network with more than 50,000 subscribers able to access games and information as well as form online "communities of interest" — which almost certainly isn't as sinister as it sounds, and it has set up AT&T WorldNet Services to give its customers a helping hand onto the Net.

AT&T's head Robert Allen's influence on the game industry will only increase as online gaming and the Internet continues to grow

Oh, and it owns a small share in Spectrum Holobyte. Its revenues in 1994 topped $75 billion. That's, like, a lot of cash.

Least likely career move:

Free telephone calls any time, any where!

Most likely career move:

To pick and choose the content providers which will inevitably gain access to the awesome AT&T communications infrastructure.

Frank J. Biondi

President & CEO
Viacom
New York, NY, US

Career Highlights:

Viacom completed acquisition of Paramount Communications in July 1994, creating one of the world's largest entertainment companies.

What's the big deal?:

Viacom owns MTV networks, Showtime networks, Simon & Schuster Publishers, Paramount Communications, Paramount Parks, movie screens in 11 countries, cable systems serving 1.1 million customers, 12 television stations, and (obviously) Viacom Interactive Media. It also owns Blockbuster. And Blockbuster owns Virgin Interactive Entertainment and happens to be a major investor in Catapult Entertainment.

Just like Sony, the Viacom empire just keeps on growing. And pulling the strings at the top is Frank Biondi. (Actually, Viacom itself is a wholly owned subsidiary of National Amusements, Inc — but we won't go into this right now). Viacom's influence on the interactive entertainment industry — both actual and potential — is huge. And as communications plays a larger and larger part of people's lives, its influence just has to strengthen.

Viacom's influence continues to grow as a result of both acquisitions and the game industry's move into mainstream media

Least likely career move:

Fails to capitalize on the communications boom.

Most likely career move:

Remains largely invisible, but continues to exert a growing influence over all aspects of the interactive entertainment industry.

Steve Case

President
America On-Line (AOL)
Vienna, VA, US

Career Highlights:

Three million subscribers and climbing. Fast.

What's the big deal?:

America On-Line is the fastest growing, single largest online community in the US. Earlier this year, it extended its domain to include the Internet, resulting in a flood of "newbies" cascading onto the World Wide Web. Internet snobs may hate it, but AOL's subscriber base just keeps on growing. If the online world continues to expand (as most experts predict it will), then AOL is sitting on a gold mine. In any new industry, it's the rush for early marketshare and mindshare that secures ultimate success. And right now AOL is king of the hill, perfectly positioned to provide the virtual playing fields for whatever online gaming phenomenon eventually emerges.

Other than the giant Compuserve (still bigger on a world scale, but not growing as fast), AOL's main competition is currently taking two forms. First, the Microsoft Network (MSN) is set to take off in true Microsoft style as a result of its bundling with Windows 95 (at the time of going to press, an "unfair competition" court case is pending). Second, Web browsers such as NetScape and Mosaic are enabling increasingly easy Web access — the ease of use factor being AOL's main appeal.

Least likely career move:

Surrenders without a serious fight to Microsoft.

Most likely career move:

AOL's recently launched Games Channel proves to be just the tip of the iceberg. Online gaming has a massive future, and AOL — if only by sheer brute force — very well could be the organization to bring it to mass market.

Tom A. Jermoluk

President & COO
Silicon Graphics Industries
Mountain View, CA, US

Career Highlights:

Signed deal with Nintendo in 1993 to develop internal technology for Ultra 64. Is industry's pre-eminent provider of development hardware.

What's the big deal?:

When Tom Jermoluk joined Silicon Graphics in 1986, he probably didn't expect to make game systems. With an MS in computer science from Virginia Tech, Jermoluk's first project was to help design a new CPU and bus architecture for workstation class hardware. Jermoluk's foray into electronic games began in 1992, with the development of the Reality

Silicon Graphics' President Tom Jermoluk, seen demonstrating the Ultra 64 chipset at the Consumer Electronics Show in January of 1995

BIG BROTHER

Bill Gates

President
Microsoft
Redmond, WA, US

Career Highlights:
Launched MS-DOS operating system in 1981. It is now installed in more than 120 million PCs. He launched Windows in 1983. It is now used on more than 50 million PCs. Oh, and sometime around 1994 he became the richest man in the world.

What's the big deal?
Gates founded Microsoft in 1975 and has built it into the biggest software company in the world, as integral a part of the PC market as it is possible to be.

Windows 95 was launched in August and the firm expects to sell more than 50 million copies in the first year. More significantly, the launch of Windows 95 also sees the firm focusing on games like never before. The new environment has been created with game developers and players specifically in mind and all the major PC leisure publishers in the world are planning Windows 95 versions of old and new games.

Microsoft itself is bringing out genuine arcade-style games such as *Hover Havoc* and *Fury*. It's also created a new division called Gamebank dedicated to developing and publishing Windows 95 games. The very best firms in the Japanese arcade industry (Namco, Capcom, Taito, SNK, and others) have already agreed to license on their next batch of titles. Generally, Gates realizes that games aren't just a slice of the PC pie, they're global growth.

He wants in.

Least Likely Career Move:
Sticks to flight sims.

Most Likely Career Move:
World domination. Don't rule it out.

The launch of Windows 95, complete with dedicated game Software Development Kit (SDK), has increased Microsoft's influence in the game world considerably. Whereas Windows 3.1 held games back, Win 95 looks destined to accelerate the PC's growth as a game machien

Engine, a version of which would later become the heart of the Nintendo's Ultra 64. The partnership with Nintendo was inked in early 1993 (it's no secret that Silicon Graphics' technology had been presented to a number of other game hardware manufacturers) and the deal became public that August.

Ultra 64 (for the moment at least, however) is simply the tip of the iceberg. Silicon Graphics provides the best development tools for the world's interactive entertainment, special effects, and CAD industries. The company is now also an active game developer working in conjunction with Rocket Science, among others.

Least Likely Career Move:
Gives up on the combination development and administrative position and confines himself to product development.

Most Likely Career Move:
Silicon Graphics is crammed to the roof with smart (very smart) people. And they actually make cool stuff (as opposed to simply being very good at manufacturing, marketing, and distributing — like, for instance, Acclaim).

Jermoluk is in the perfect position to lead SGI to yet further greatness.

Gordon Moore & Andrew Grove

Chairman (Moore) & President (Grove)
Intel
Santa Clara, CA, US

Career Highlights:
Having jointly founded Intel in 1968, they developed the chips that have driven the PC industry ever since.

What's the big deal?:
Intel inside, basically. It's not just an ad tag line, in the

majority of cases it's also a fact. Intel chips have been, are, and presumably will be at the heart of the PC's continued growth.

Least likely career move:

Slow down.

Least likely career move:

P6 Faster, faster, faster…

Michael Spindler

President and CEO
Apple
Cupertino, CA, US

Career Highlights:

Apple is the second most popular computer format in the world

What's the big deal?:

Having begun with Apple Computers in 1980 as the marketing manager for European operations, Spindler has seen considerable international experience.

Apple spokespeople are quick to point out their computer's superiority is in multimedia, they do not think of their system as a game platform. Dataquest rates the Macintosh the number one multimedia development platform and ranks Apple as the leading personal computer vendor worldwide. However, the firm's Pippin "multimedia player" — a TV plug-in console based on a 66 MHz PowerPC 603 chip — will undoubtedly become a significant (if not PlayStation-troubling) game machine. The Pippin technology is set to debut in Bandai's Power Player, due for release early in 1996. And as shareware gaming continues to proliferate for the Mac platform (and some killer games like *PegLeg* and *Maelstrom* become more available), games are only becoming a more significant part of Apple's domain.

Least Likely Career Move:

Will force every Apple employee to where a suit.

Most Likely Career Move:

Will devote the coming years to redefine Apple's advantages in multimedia in light of advances made in Win 95. Will see what happens with Pippin…

Masayoshi Takemara

Japanese Finance Minister
Tokyo, Japan

Career Highlights:

Controls the most successful economy in the world.

What's the big deal?:

With Sega, Nintendo, and Sony manufacturing some, if not all, of their hardware and software in Japan, the yen is the most important currency in the global game market. When the yen is strong it costs other companies (including US divisions of Sega, Nintendo, and Sony) more money to buy goods and so prices can be forced to rise at retail. This also has a huge affect on release dates.

Earlier in the year the yen reached record levels and put great pressure on the pricing of the Saturn and PlayStation. Companies were paying higher and higher dollar prices for goods even though the yen price remained static. Takemara has subsequently introduced a number of measures designed to weaken the yen and so encourage trade with the US and Europe. He has had considerable success so far and the pressure is off pricing, for now, but the relationship between the dollar and the yen remains vital, and Takemara remains the man in charge.

Least likely career move:

Let the yen slip from its position as videogaming's chief currency.

Most likely career move:

To continue to make a lot of money. For his country, of course.

F.A. Maljers

Chairman
Philips
Eindhoven, Netherlands

Career Highlights:

CD-i (we use the word "highlight" loosely). Abortive deal with Nintendo to produce CD-ROM drive for Super NES. Consumer electronics giant.

What's the big deal?:

Philips, much as Sony did before the launch of PlayStation, has been stalking the game industry like a hungry predator — without much tangible success to date. CD-i started life as an ahead-of-its-time multimedia player, but ended up an under-powered game machine. The controversy surrounding the deal with Nintendo is legendary (both Sony and Philips announced that they had secured the lucrative deal to produce the add-on on the same day at CES in 1991). As it turned out, neither plan reached fruition, and both Philips' and Sony's ambitions to enter the home videogaming market remained unfulfilled.

Philips has to remain a major player in the home gaming industry however, simply by virtue of its size and muscle within the consumer electronics industry. The company's CD-ROM technology also leads the world with its disc compression technology.

Least likely career move:

Leaves the videogame arena for good.

Most likely career move:

Rumors have been circulating for a long time that Philips is eager to take another bite at the videogame pie — it has been suggested that it came close to purchasing The 3DO Company at one time. More likely for the company is a partnership with another existing player.

Yoichi Morishita

President
Matsushita
Osaka, Japan

Career Highlights:

Initial investor in The 3DO Company. Produces 3DO MultiPlayer. Owns MCA (which in turn owns a slice of Interplay).

What's the big deal?:

Matsushita (the parent company of Panasonic) is the biggest consumer electronics company in the world.

It is much more than a simple electronics manufacturer like Lucky Goldstar, Matsushita is also a prominent developer of technology and has fingers in all sorts of pies all over the world, creating an entertainment empire that has an often intangible affect on the interactive entertainment industry at all stages of software and hardware production.

One of the initial investors in The 3DO Company, Matsushita has plenty to gain by sticking with 3DO for the long term, and has to be regarded as the most likely producer of Hawkins & Co's M2 unit, if indeed it ever comes to market under the present 3DO setup.

Least likely career move:

Withdraws from the interactive entertainment industry completely.

Least likely career move:

Remains actively involved, if not with 3DO then with another hardware partner.

Nam K. Woo

President
Lucky Goldstar Corp
Seoul, Korea

Career Highlights:

Manufacturer of 3DO Interactive MultiPlayer. Consumer Electronics Giant.

What's the big deal?:

Epitomizing Korea's talent for producing ultra low-cost consumer electronics goods, Lucky Goldstar has to be considered a player in the world's interactive entertainment industry by virtue of its deal with 3DO to produce its Interactive MultiPlayer. Although the design, marketing, and evolution of the 3DO system remains very much under the watchful eye of Hawkins & Co. in San Mateo, CA, GoldStar has also run with the ball, to a certain extent, by establishing in Seoul (Korea's capital) a chain of 3DO-based amusement arcades.

Least likely career move:

Abandons 3DO in favor of its own, independently produced game system (Goldstar's strength lies in producing existing technology at low cost).

Most likely career move:

Continues to be the price-leader in 3DO hardware manufacturing. Has announced plans to size up its own software publishing division.

Michael Goldstein

CEO
Toys R Us
Paramus, NJ, US

Career Highlights:

The US' biggest toy and game retailer (1995)

What's the big deal?:

Toys R Us may not be purely a videogame store, but the sheer volume of goods that pass through its doors each year (and especially the month between Thanksgiving and Christmas) give it muscle enough to spare for the videogame industry. Ironically, this lack of specialization even earns it a few extra points. Because Toys R Us offers no support for PC-based systems, and is generally regarded as a toys store, it manages to attract the game buyers that are toughest to reach by the marketing men back at Videogame Corp HQ.

Most of videogame sales go to the "silent majority" of buyers who don't read videogame magazines, don't register their software, and don't go to the places that "traditional" gamers do. Instead, their purchasing decisions are based more heavily on word of mouth and (here's Toys R Us' trump card) whatever it is that is displayed most prominently, demonstrated most readily, and recommended most heartily by the store itself.

Least likely career move:

Replaces its videogame stock with Pogs.

Most likely career move:

Ensures that the 32-bit videogame war is fought on the shelves of Toys R Us stores.

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Westwood STUDIOS

Virgin INTERACTIVE ENTERTAINMENT

PARKER BROTHERS

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THE INSIDERS

Stuart Dinsey

Editor-in-Chief
Computer Trade Weekly
Hitchin, UK

Career Highlights:

Joined *CTW* 1986. Appointed Editor-in-Chief 1988

What's the big deal?:

Based just outside of London, *CTW* (as it is universally known) is regarded by many as the interactive entertainment industry's bible. It is the only trade title circulated throughout all major territories and so acts as a sort of global gauge for the market, both setting and reflecting the tone. Its position of prominence is maintained not only by the quality of the editorial but by the quality of its readership — it is taken at the head offices of all the major players around the world.

Least likely career move:

Advertorials.

Most likely career move:

Continue to inform, impress, amuse, and annoy (and in many cases, all four) the entire game market.

Jeffrey Griffiths

Senior VP Merchandising & Distribution
Electronics Boutique
West Chester, PA, US

Career Highlights:

More than 400 stores across the US and Canada.

What's the big deal?:

Jeffrey Griffiths is ultimately responsible for Electronic Boutique's buying decisions. He decides what systems and games his stores will carry, which in turn has a direct affect on the fates and fortunes of the game manufacturers.

Electronics Boutique is the US' premiere specialist game store — covering all formats and systems. And if Jeffrey Griffiths don't like ya, ya ain't gettin' in, baby…

Least likely career move:

Abandons game systems from its store lineup.

Most likely career move:

Continues to be the mainstream store-of-choice for game enthusiasts.

Lee S. Isgur

Managing Director
Jefferies & Company
San Francisco, CA, US

Career Highlights:

Analyst to the industry.

What's the big deal?:

Information is power. It follows, then, that those who provide information hold considerable power.

Except, of course, that there are plenty of people willing to sell you information, market research, sales figures, trend predictions, and so on, and so on. The trick is finding the most accurate source.

There are many analysts and market research companies out there, and many different people swear by many different people. Jeffries & Company is one of the more widely respected organizations, and is here representing the business of providing information.

This information is used for product development, sales, marketing efforts, business analysis, and — last but not least — as a means of finding out what the competition is up to. The game industry couldn't function without it, and as the financial stakes get higher, the analyst becomes yet more important.

Least likely career move:

Analysts are always wary of going out on a limb…

Most likely career move:

.. but predicting a major trend far in advance is how these guys make a living.

Michael Katz

President
Katz & Associates
San Francisco, CA, US

Career Highlights:

Headhunter (or should that be "recruiter"?) to the videogaming world's rich and famous.

What's the big deal?:

A company can only ever be as good as the people it employs. So how does one go about hiring the right

THE EXILE

Crawford puts a brave face on his exit from 1995's Computer Game Developers' Conference

Chris Crawford

Free-lance Game Developer
Santa Clara, CA, US

Career Highlights:

Founder of Computer Gaming Conference

What's the big deal?:

Everybody in the game development community knows who Chris Crawford is, although it's a near certainty that you won't find his name on the credits of many games you own. Crawford has been lurking on the fringes of the game community for a number of years, and he is regarded as a genius, has-been, or savior of gaming, depending on whom you talk to. Everybody has an opinion.

Crawford first made his name as a programmer of 14 titles starting from back in the early 1980s (such as 1985's *Eastern Front* for the Atari-800) and the author of four important books on game development. Back in these early days of game development he started an informal get together in his home for a group of his game-developing friends, an annual meeting of minds and seminars that grew into the Computer Game Developers Conference. For a various political reasons, Crawford has slowly been ousted from the Conference's Board of Directors, and made his final (official, at least) appearance at the meeting this last year.

Crawford is often outspoken, he usually holds an opinion contrary to the mainstream, and is pretty much always a thorn in the side of any big business game company seeking to wow an audience with its hot new technology. Dismissing the majority of interactive software currently on release as "airy foam" at this year's CGDC, Crawford is a good old fashioned game man. He believes in gameplay, not in graphics. And — surprising as it may seem — he is one of the few people in the industry to shout about it, and is never afraid of being branded a Luddite.

Unfortunately for Crawford, his beliefs are also perhaps at the heart his professional problems. Previously a text-book example of the one-man programming team, Crawford has found it hard to apply his considerable talents to being part of a team structure. But as the days of the one-man programming team fade into history, let's hope Chris Crawford stays alive and kicking.

Least likely career move:

Heads up a development team to churn out cookie cutter platform games for Acclaim.

Most likely career move:

Remains the computer game development community's conscience. At least, to those who will listen.

FOUNDING FATHER

Nolan Bushnell, waiting for lightning to strike a third time. Interviewed in NG 4, Bushnell claims he has discovered how to get women interested in videogames. Stay tuned...

Nolan Bushnell

Founder
Atari
Sunnyvale, CA, US

Career Highlights:

Invented arcade gaming with *Pong* (1972), launched 2600 home console in 1978. It sold more than 20 million units.

What's the big deal?:

Bushnell invented the videogame business the first time around. *Pong* (1972) was the first hit arcade game and the 2600 was the machine that led the late '70s home-game boom. He founded Atari in 1972 for $500 and sold it to Time Warner in 1977 for $28 million. A year later, however, he left Atari (with pay-off and noncompetition clause), unable to cope with the corporate constraints of such a large company. For the next three years, while the 2600 was at the heart of what became a multibillion dollar industry, Bushnell watched as an outsider and built up the 278-strong Chuck E. Cheese pizza restaurant chain (it later went bust). He continued to watch as the game business in general (and Atari in particular) self-destructed, producing ridiculous amounts of crappy games. In 1983 Atari was responsible for Warner losing $283.4 million in one quarter. Bushnell later re-emerged unconvincingly as an evangelist for Commodore's ill-fated CDTV.

This fall he will open the first E2000 Entertainment Center in Sunnyvale, CA. Covering nearly 40,000 square feet, it will feature myriad interactive attractions. For instance, dozens of aircraft can battle it out in the same virtual sky. There will also be Future Sports, combining elements of videogames and athletics.

Bushnell also, incidentally, turned down the chance to be a partner in Apple when it was just two kids (Jobs and Wozniak) designing prototypes in their garage.

Least likely career move:

Chuck E. Cheese 2: The Anchovy's Revenge.

Most likely career move:

The plan is for hundreds of E2000s all over the world, but if that fails, well hey, how many consumer electronics industries have you invented lately?

people? By consulting **NEXT Generation**'s Now Hiring section of course, or by utilizing the services of a headhunter such as Michael Katz.

A headhunter is basically a high-powered, proactive recruiter. He or she will listen to your employment needs, and then do his or her best to meet them for you, recruiting staff from an existing pool of those looking for work, or contacting those who may be interested in a change of position. In an industry as fast moving as that of the game industry, quick staff turnover is generally considered a fact of life — five years with the same organization is regarded as somewhat of a long stretch.

Katz operates at the highest level of the game industry, specializing in executive level appointments.

Least likely career move:

Finds himself without a job.

Most likely career move:

Continues to grease the wheels of the interactive entertainment industry.

Kleiner, Perkins, Coffhil & Beyers

Silicon Valley Venture Capitalists
Palo Alto, CA, US

Career Highlights:

Initial investor in The 3DO Company.

What's the big deal?:

Venture Capitalists help make things happen. They provide the start-up capital for companies that have a great idea, but no way of bringing the idea to market without outside help. It's a risky business, of course, and picking the right people to back is never easy.

For every Nolan Bushnell (he had to search far and wide before he could convince friends, family, and his bank to support *Pong*) or Steve Jobs and Steve Wozniak (Apple suffered from a similar lack of initial support until The Byte Shop agreed to take an order of 50 Apple Is), there are ledger books full of investments that never came close to paying off. The skill of being a venture capitalist is being able to tell the difference between the two at an early stage.

THE WATCHER

Senator Joseph Lieberman, D-Conn

Chairman
Democratic Leadership Council
Connecticut, US

Career Highlights:

Pushed the videogame industry into establishing a ratings system (1994)

What's the big deal?:

Senator Lieberman was the main political force behind the establishment of a ratings system for videogames by the IDSA (Interactive Digital Software Association) last year. "We're here today to talk about the nightmare before Christmas. Not the movie, but — unfortunately — the violent videogames. ..," declared the heroic Senator, kicking off the Congressional Intervention Ball rolling on December 1, 1993 at a senate press conference. "Outraged" by *Night Trap* and *Mortal Kombat*, he stated. "I really wish that we could ban them constitutionally," but in the end had to settle for the imposition of a ratings system.

Although the Senator is subsequently moved onto fresh challenges — he single-handedly exposed government waste in the form of federal contracts that paid 67 cents a page for photocopying services and highway noise barrier projects that were built along stretches of road where nobody lived to hear the noise — who knows when his attention will next be turned toward the evil that is videogaming..

Least likely career move:

Stars in the sequel to *Mortal Kombat: The Movie*

Most likely career move:

Continues to laugh in the face of government waste and tweak the nose of Congressional inefficiencies.

Joe Lieberman, the man who became the lightning rod of 1994's outcry against videogame violence

Kleiner, Perkins, Coffhil & Beyers were one of the initial investors in The 3DO Company, and as a result, they made a lot of money. They are in this Top 75 to represent venture capitalists the world over. Long may they thrive — it's their nurturing of the creative spark that keeps the business on its toes.

Least likely career move:

Figures that there's nothing left to discover in the world of videogames and retires.

Most likely career move:

Someone, somewhere out there (and in all probability, the place will be a garage) is working on a prototype of The Next Big Thing. It's simply the venture Capitalists' job to find it..

Doug Lowenstein

President
IDSA (Interactive Digital Software Association)
Washington DC, US

Career Highlights:

Co-hosted Electronics Entertainment Exposition (E^3), Los Angeles, May 1995.

What's the big deal?:

In the words of Lowenstein himself, the IDSA "Provides a voice for a tremendously important but previously unrepresented segment of the entertainment industry in the US." Similar in function to the SPA (Software Publishers Association), the IDSA has typically represented the cartridge-oriented side of the interactive entertainment industry — and as such has occasionally been accused of being merely a tool for the collective will of Sega and Nintendo.

These charges are largely unfounded, and even critics cannot deny the success of the IDSA in co-hosting the spectacularly successful Electronics Entertainment Exposition (E^3) in LA last May.

Often an individual game publisher or hardware manufacturer will not have the muscle or resources to campaign for itself, and often it is best for the entire game industry to speak as one voice. This is where the IDSA comes in. It played a central role in the establishment of videogame ratings in 1994, and has successfully represented the industry as a whole on Capitol Hill. It plans for an annual E^3 to become as essential to the game industry as the CES (Consumer Electronics Show) was in the past. So far, it looks as if it has every chance of succeeding.

Least likely career move:

An IDSA press release entitled "It's true! Videogames *really do* screw you up!"

Most likely career move:

The E^3 show becomes the game industry's most high-profile annual gathering.

Ken Wasch

Chairman
SPA (Software Publishers Association)
Washington DC, US

Career Highlights:

More than 1,150 members, and climbing (1995)

What's the big deal?:

There are two major trade organizations that encompass the computer and videogaming world. One is the IDSA (Interactive Digital Software Association), the other is the SPA (Software Publishers' Association). Whereas the IDSA traditionally has tended to represent what was the cartridge industry, the SPA caters for the more computer-oriented publishers, developers, distributors, and retailers.

Now in its 10th year, the SPA includes software companies involved in the publishing of not only games, but also business and education software. It is actively involved in the ongoing wer against piracy, and is heavily involved in lobbying efforts on Capitol Hill concerning issues such as competitiveness, game ratings, cryptography, copyright legislation, as well as domestic and international intellectual property protection, among other notable items.

Probably the most high-profile and tangible involvement of the SPA (at least to the gamers on the street) came in 1994 with the introduction of game "ratings." With the imposition of ratings came a chance to cooperate with the IDSA in creating an industry-standard system of classification. Unfortunately, this didn't happen. As Ken Wausch, executive director of the SPA explains, "[the IDSA system] . . .would give the established and powerful videogame companies the ability to control access and retail channels. [Members of Congress] ... never understood that or chose to ignore our [the smaller, computer game-oriented publishers] argument that we could not be grouped with the videogame industry."

The SPA's system of ratings proved to take the more mature approach. Instead of simply bowing before the knee-jerk reactions of Senator Lieberman et al and slapping "age restrictions" on game boxes (thereby admitting that games were indeed dangerous — something that has yet to be proved [see related article in **NG 10**] — and simply plucking numbers from the air), they instead came up with a system that simply explained the contents of each game, enabling purchasers to make their own, informed buying decisions.

Least likely career move:

Appoints Howard Lincoln or Tom Kalinske as Chairman of the SPA.

Most likely career move:

Continues to support, represent, and monitor the PC game scene.

ng special

THE PLAYERS

Martin Alper

President
Virgin Interactive Entertainment
Orange County, CA, US

Career Highlights:

Founded VIE 1983, sold 90% stake to Blockbuster group for $165 million in 1994.

What's the big deal?:

In 1983 Alper and friend Frank Herman (later to be Sega's European boss) set up a company called Mastertronic, which banged out two or three £1.99 cassette-loading games a week to a British market of machines such as the C64 and Sinclair Spectrum. Alper's now boss of one of the most successful and critically acclaimed software publishers in the world — and VIE looks to have made all the right moves to guarantee a place among the 32-bit elite.

Along the way Mastertronic sold out to Richard Branson's Virgin group, and Alper moved to the States to set up the US office, which (along with a London-based European HQ) has driven VIE to rise from the ranks of the also-rans to stand alongside EA as one of the most successful game publishers in the world. Most recently Blockbuster bought a 90% share in the company, providing a massive cash injection as well as affiliation with the movie and TV divisions within the entertainment giant's Spelling group. The wholly owned, Las Vegas, NV-based development division Westwood Studios is also a prize asset.

Least likely career move:

Let's hope "Beverly Hills 90210" Interactive isn't on the Spelling agenda.

Most likely career move:

There used to be "better" jobs than being boss of Virgin Interactive Entertainment, but now Alper can argue a good case for being at the top of his profession. He's staying put.

Jonathan Ellis & Ian Hetherington

Joint Managing Directors
Sony Interactive
Liverpool, England

Career Highlights:

Lemmings (1991), sold out to Sony in 1993; *Wipeout*, and *Destruction Derby* (1995).

What's the big deal?:

The company formerly known as Psygnosis made its name in Europe in the mid-'80s as one of the most imaginative and adventurous software houses publishing for home computers such as Atari's ST and Commodore's Amiga. *Shadow of the Beast*, released in 1988, was hailed by critics as a landmark and cemented the firm's reputation as a publisher that operated at the cutting edge.

That all changed, however, with the release of *Lemmings* in 1991. It wasn't a breakthrough in technological terms, but the gameplay was stunningly original and amazingly addictive. So far, the original and subsequent sequels have sold more than 4 million units around the world. In 1993 Ellis and Hetherington sold out to Sony, making Psygnosis a part of the Sony Electronic Publishing division, and have been involved in formulating the strategy behind the European launch of PlayStation. They remain, however, very much in charge of game development. In August the company changed its name to Sony Interactive. It will undoubtedly emerge as one of the most prolific and innovative supporters of PlayStation — they promise that there's plenty more where *Destruction Derby* and *Wipeout* came from.

Least likely career move:

Strong Saturn support.

Most likely career move:

Strong PlayStation support.

Brian Fargo

Founder & CED
Interplay
Orange County, CA, US

Career Highlights:

Founded Interplay in 1983. *Battlechess* (1987). Sold minority stake to the MCA/Universal group in 1994.

What's the big deal?:

Fargo is possibly the only CEO of a major game software house who writes games. His latest project, *Stonekeep*, has taken up the last four years of his life and is finally due for release on CD-ROM this November. Within the company it is referred to as "Brian's baby." His devotion to gaming and struggle for perfection permeates the whole company and, it has to be said, pushes details such as release dates wall down Interplay's agenda. More often than not, however, players and reviewers agree that the product is worth the wait. The giant MCA/Universal corporation was impressed enough to take buy a stake in 1994. No financial details of what was surely a multimillion dollar deal were ever disclosed other than the fact that Fargo kept the majority interest. He certainly continues to set the tone.

Earlier this year the firm acquired Shiny Entertainment, the development group set up by Dave Perry (of Virgin/Disney's *Aladdin* fame) which scored a huge hit with its first title, *Earthworm Jim*. Shiny's presence looks set to add a keenly commercial edge to the Interplay group and help make the publisher as big a deal on consoles as it already is on PC.

Least likely career move:

Suits, spreadsheets, boardroom, boredom.

Most likely career move:

Stonekeep 2 — but don't hold your breath.

Greg Fischbach

Chairman & CEO
Acclaim Entertainment
New York, NY, US

Career Highlights:

NBA Jam and *Mortal Kombat* series.

What's the big deal?:

Acclaim is probably the most successful (financially, at least) publisher of videogames in the world. Add PC into the mix and the crown slips, but on consoles Acclaim has been the Hit Factory of gaming for the past few years.

Fischbach founded the company in 1987 publishing NES games. It has traditionally been a slavish follower of the mass market formats rather than a chaser of technology. Its speciality is big, brash, overtly commercial and highly successful videogames and it's never far away from the most wanted licenses (historically, *WWF*, *The Simpsons*, *Terminator 2*. Most recently, *Batman Forever* and *Judge Dredd*). It's also been adept at taking the hottest hits from arcades into homes, *Mortal Kombat 1 & 2* (more than 10 million sales between them) and the *NBA Jam* serias stand out.

Acclaim will publish *Mortal Kombat III* on Super NES and Genesis this fall. Williams, the company behind *Jam* and *Kombat*, recently announced that it will be developing and publishing its own home versions of its arcade games for the next generation itself, a move Acclaim countered by beefing up its own in-house development capabilities and its own motion-capture and blue-screen studios. It is also branching out onto CD-ROM and gearing itself up for a heavyweight assault on PlayStation and Saturn. It recently set up a joint venture with cable giant Tele-Communications Inc. (TCI) and so is wall-placed in the race to the forefront of electronic distribution. Its most recent full year financial figures (ending August 31, 1994) showed a turnover of $481 million — a figure that nearly has been surpassed in the first nine months of its current year.

Least likely career move:

Produce an innovetive game.

Most likely career move:

Produce a bad selling game.

Kelly Flock

President
Sony Interactive Studios America
Foster City, CA, US

Career Highlights:

Marketing of *Sam & Max* and *Rebel Assault*. Designed *Shanghai 2*. Now heads up Sony's game development.

What's the big deal?:

Few people have seen more sides of the computer game industry than Kelly Flock. While working at Activision, he worked on the marketing of *Mechwarrior* and later designed *Shanghai 2*. He later moved to LucasFilm, later called LucasArts, to work in product development and marketing. In 1992, he took over the marketing division.

Now Flock's working at Sony where he has the challenging job of improving the reputation of the company-formerly-known-as-Imagesoft. He says the industry is in a state of change. "I see myself focusing more on product. The industry's headed toward massive productions and more internal synergy. I see myself running Sony Development for a few more years then taking off on my own."

Least Likely Career Move:

Sony-badged games get any worse.

Most Likely Career Move:

Improves Sony Development for a few more years then takes off on his own.

Richard Garriott

Founder & Director of Development
Origin Systems
Austin, TX, US

Career Highlights:

The *Ultima* series

What's the big deal?:

Garriott is something of a character in the development community. He likes to be known as

Lord British, holds haunted house days in his Texas mansion, and will apparently don medieval garb at the drop of a helmet.

He founded Origin in 1979 and catapulted the firm to global success with the *Ultima* series which has become a smash hit in every major gameplaying country in the world, particularly Japan where there are *Ultima* cartoons, comic books, and even pop songs. The series is now up to eight with episode nine due for the holiday season next year ('96). Garriott sold Origin to Electronic Arts and now has a say in a wide variety of EA's development projects but remains ultimately committed to the Origin label and the *Ultima* series.

Least likely career move:
Lord British turns up wearing a woven cloak and carrying a short, wooden sword.

Most likely career move:
The *Ultima* series is one of the most lucrative product lines in the history of gaming. It certainly won't stop at nine.

Bing Gordon, the larger-than-life head of EA's development effort, poses for an NG photo shoot to accompany his interview in NG 9

Bing Gordon

Executive VP EA Studio
Electronic Arts
San Mateo, CA, US

Career Highlights:
Co-founded EA (1982), Head of EA Studio (1982-present day).

What's the big deal?:
As the worldwide head honcho of EA Studios, Gordon is in charge of the most prolific and consistently brilliant development resource in gaming. He has taken the firm from pioneering on the PC to massive commercial and critical success on consoles and now onto CD-ROM and into the next generation. He is still a huge influence on EA's output, working closely with the producers of each and every title. EA's reputation for being not just the biggest but the best game publisher in the world can be attributed to Gordon's presence from day one

Least likely career move:
Narny's Beach Babe-o-Rama 2 (Hey, we've all got skeletons in the closet)

Most likely career move:
Will lead Electronic Arts to yet greater glory in the 32-bit arena (and will finally learn how to juggle)

Joel Hochberg

President
RARE & Coin It Co.
Miami, FL, US

Career Highlights:
Powerful arcade owner. First non-Japanese recipient of investment from Nintendo. Created more than 60 8-bit NES games. Sold over 7 million 16-bit cartridges in 1994.

What's the big deal?:
Having been involved with coin-operated entertainment long before the birth of the videogame industry, Joel Hochberg has seen every phase of the business. A young Nolan Bushnell contacted Hochberg in the early '70s for advice after launching a game called *Pong*.

Chris and Tim Stamper began working with Hochberg in 1979, converting *Space Invader* arcade boards for the English market. Together, Hochberg and the Stampers formed RARE Limited, a firm which created popular titles for the 8-bit Sinclair Spectrum. In the '80s, Hochberg approached Nintendo's Minoru Arakawa about creating games for the NES. Rare went on to create more than 60 games for the 8-bit NES and five games for the Super NES including: *Donkey Kong Country*, *Killer Instinct*, and *Diddy's Kong Quest*. Rare sold more than 7 million game cartridges last year and is expected to sell more than 9 million this year.

Least Likely Career Move:
Saturn conversions.

Most Likely Career Move:
As one of Nintendo's two most favored partners (only Silicon Graphics is closer) Hochberg and Company will create drive games for the Ultra 64 and Virtual Boy systems.

Kagemasa Kozuki

President & CEO
Konami
Kobe, Japan

Career Highlights:
Frogger, *Scramble*, *Double Dragon*. Was Nintendo's biggest NES licensee in 1991 following success of *Teenage Mutant Ninja Turtles*.

What's the big deal?:
Konami was founded back in 1973, and is one of the few and the proud who can lay claim to having "been there from the beginning." Early Konami arcade hits like *Scramble* and *Frogger* are every bit as classic as Namco's *Pac-Man*, Williams' *Defender*, and Taito's *Space Invaders*. And the company's steady success on the home platforms has resulted in a sense of pedigree that few other console-only companies can equal. Konami was one of Hiroshi Yamauchi's original Nintendo licensees, and the company benefitted enormously. Konami's earnings exploded from $10 million in 1987 to $300 million in 1991, culminating with the runaway success of *Teenage Mutant Ninja Turtles*. Its success briefly elevated Konami to eighth in the ranking of largest software producers in the US (Microsoft remained number one).

Kagemasa Kozuki has been with the company from the beginning, having been appointed CEO of Konami Kogyo in 1974. The company's US office reports back to Kobe, and Kozuki remains very much at the head of Konami's operations. The establishment of a US development resource (geared up for the production of sports games), and the promise of no fewer than 12 PlayStation games in development, would indicate that Konami's glory days aren't necessarily all behind it.

Konami must work hard to build its status as a major player. Games like *Teenage Mutant Ninja Turtles* don't come along every day

Least likely career move:
Frogger 2 (shame!).

Most likely career move:
Solid, competitive (although probably not too cutting-edge) 32-bit arcade style games.

Gilman Louie

Founder
Spectrum HoloByte
Alameda, CA, US

Career Highlights:
Along with founding Spectrum, Louie created several flight simulations (including the *Falcon* series) and designed *Super Tetris*.

What's the big deal?:
When he was growing up, Louie's parents had the philosophy that instead of buying games they should make them. It seems that Gilman was a chip off of the old block.

Always known for simulations, Spectrum HoloByte's first product was a submarine simulation. The company later licensed the infamous puzzle game *Tetris*. Spectrum HoloByte recently merged with MicroProse to become one of the biggest companies in the game business.

"I think the biggest opportunity in the future will be online gaming. Virtual worlds and communities will become very important. Games are a great way for individuals to become acquainted with each other," comments Gilman.

Least Likely Career Move:
Gets hired as president of Sony.

Most Likely Career Move:
Settles back into the role as spiritual leader of Spectrum HoloByte.

Dracula
X
Castlevania
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Fergus McGovern

Managing Director
Probe Software
London, England

Career Highlights:
Produced more than 450 games

What's the big deal?:
Despite never having written a line of code in his life, Fergus McGovern heads the largest independent game development resource in the world. His talent is attracting and keeping some of the finest talents in the industry and working strictly to publishers' deadlines — a rarity in the game business.

Probe's speciality is turning big name licenses into quality titles. It has done excellent work over the years for its clients, notably Acclaim, Sega, and Virgin. In the last 10 years Probe has produced 450 games which between them have generated $1.7 billion at retail around the world.

Least likely career move:
Publishing

Most likely career move:
Probe's last 16-bit cart (*FIFA '96* on Super NES) has just been completed, but Probe is already working on 32-bit games that will, in all probability, be as successful as its 16-bit output.

Masaya Nakamura

Chairman & Founder
Namco
Tokyo, Japan

Career Highlights:
Pac-Man, *Galaxians*, *Dig Dug*, *Ridge Racer*, and *Tekken*

What's the big deal?:
According to Namco founder and chairman Masaya Nakamura (Namco is actually an acronym of NAkamura's Manufacturing COmpany) "Play is culture." If this is so, then Namco has spread a lot of culture, in the forms of *Pac-Man*, *Galaxians*, et al.

Namco was founded in 1955 as the manufacturer of coin-operated children's rides, but it was in the 1970s that a little yellow dot named *Pac-Man* changed Namco for good. It's now part of videogaming folklore that the engineer responsible for producing what is arguably the most popular videogame of all time was rewarded just $3,500 for his efforts by Nakamura. The engineer left the company in disgust.

Namco's feud with Nintendo is almost as legendary. It started in 1981, when Nakamura learned that it would lose its favorable developer status from Nintendo. Now Namco is firmly allied with Sony. Go figure.

Least Likely Career Move:
Grovel to Nintendo for a U64 developer's license.

Most Likely Career Move:
Uses the PlayStation as a vehicle to re-establish Namco's position as a gaming powerhouse.

Larry Probst

President & CEO
Electronic Arts
San Mateo, CA, US

Career Highlights:
Joined EA in 1984 as VP of sales and distribution. Promoted to top slot in 1991.

What's the big deal?:
Simply, Probst is the boss of the biggest publisher of interactive entertainment in the world. He took over as president when the firm's founder Trip Hawkins decided to go and chase the dream with 3DO. The worry was that with Hawkins would go the creative urge and entrepreneurial spirit that defined the company. Four years later EA is still at the top of the tree. Probst may not be as colorful a character as his predecessor, but he does seem adept at combining the freedom and daring of creativity with the restraints and common sense of a commercial operation.

Least likely career move:
Try and establish a global standard interactive entertainment platform.

Most likely career move:
Why move?

Tom Zito

President
Digital Pictures
San Mateo, CA, US

Career Highlights:
The most controversial game of all time *Night Trap* (1992). Best-selling entertainment CD-ROM of its time *Sewer Shark* (1991). Producer of 20 FMV-based games released so far and counting...

What's the big deal?:
It's a sure bet that Tom Zito's Digital Pictures will outgrow the dubious honor bestowed upon *Night Trap*, and the hollowness of *Sewer Shark*'s success (the game was remarkably poor). But notoriety and skeletons in the closet are simply the price of pioneering, Zito would no doubt say, and these two titles are a long way back in Digital Pictures' past.

Love or hate most FMV-based games (and — it has to be said — most gamers hate them), it's impossible to deny their salability. The genre has continually struggled to justify itself through fair weather (the whole "merging of Hollywood and Silicon Valley" hype) and foul weather (the first fruits of this ill-advised marriage). But survived it certainly has, with many game developers just now beginning to start scaling a learning curve that Digital Pictures embarked upon five years ago.

Least likely career move:
Night Trap 2

Most likely career move:
Interactive TV (if and when it ever happens).

Digital Pictures' President and founder Tom Zito, the industry's major pioneer and evangelist for FMV in games

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BACK AT THE LAB...

Ken Kutaragi

Director R&D Division
Sony Computer Entertainment
Tokyo, Japan

Career Highlights:

Designed the PlayStation chipset.

What's the big deal?:

Ken Kutagari has been with Sony for more than 20 years, and he first dipped his toe into the world of videogames when he designed the abortive Sony CD-ROM add-on for the Super NES. The PS-X PlayStation project gave him his second chance to create the ultimate game machine, however, and many people around the world would say without doubt that he has succeeded.

"The objective was a high-performance, low-price videogame system which also had a design that was easy to write games for," reveals Kutaragi. "The technology came from an original idea to create a synthesizer for graphics; something that takes a basic graphic and then adds various effects to it quickly and easily."

Work on the project didn't entirely go without schedule-induced incident, however. "At the peak we stayed up all night for several nights in a row. We couldn't stop working because our work was so interesting. The only problem was that our office in Alasaka didn't have a bath in it. One of our employees didn't wash for more that two weeks!"

Life on the cutting edge, ladies and gentlemen.

Least likely career move:

A 32-bit, "portable," "Virtual Reality," um, "thing."

Most likely career move:

In answer to "What new features would you like to see in PlayStation 2?," Kutaragi replies, "Two things. One is higher performance in computer graphics, which benefit from faster and more compact integration of Silicon. Within 10 years we will see vivid computer graphics on a TV screen which are generated by 0.25 micron silicon. This enables us to have CG rendering power of 10 million polygons a second. That is equivalent to a movie-quality image. But the most important thing is that during the next few years there will be widespread use of high-bandwidth communications, which would be a feature of future versions of PlayStation technology."

Ken Kutaragi, whose PlayStation is currently regarded as the most complete and well-designed games machine ever assembled

RJ Mical & David Needle

Vice Presidents & Fellows
The 3DO Company
Redwood City, CA, US

Career Highlights:

Inventors of the Amiga, Lynx, and 3DO.

What's the big deal?:

It's true that of the machines that Mical and Needle have created, only the Amiga has been a true global mass market hit along the lines of the NES or Genesis. But it's only fair to put forward the argument that this is down to the marketing of the machines rather than the quality of the product. Take the Lynx, technically the best hand-held console seen to far, but trashed by Nintendo's Gameboy through pricing, marketing, and software support. And 3DO, when it was first seen four years ago, was a giant step forward — it only started stumbling when the men in suits got hold of it.

Least likely career move:

Become men in suits

Most likely career move:

Recognition at retail for consistent brilliance in R&D would be nice.

Gumpei Yokoi & Masayuki Uemara

Heads of R&D
Nintendo
Kyoto, Japan

Career Highlights:

Invented Game & Watch, GameBoy, and Virtual Boy (Yokoi). Created NES and Super NES (Uemara).

What's the big deal?:

Yokoi and Uemara were the R&D chiefs that took Nintendo into the age of interactive entertainment — and dragged the rest of the world with them. They made their name in the domestic market with gimmicky toys such as The Ultra Hand (simply a mechanical gripping device) and The Love Tester (a couple held hands while their free hands gripped the handle of the Tester which measured how much "love" was passing between them).

In the early '80s, however, inspired by machines such as Atari's 2600, the two turned to videogames. They headed up two separate teams. Yokoi's division (R&D 1) came up with the Gameboy and many of Nintendo's biggest software hits. Uemara's team (R&D 2, surprisingly enough) brought the NES and Super NES to life. The NES remains the biggest selling game machine in history. More recently Yokoi has been behind Virtual Boy (and some say blots have been introduced to copybooks for the first time). Neither two were involved with the development of the the (hopefully) upcoming Ultra 64.

It is rumored that Gumpei Yokoi's reputation helped him steamroll Virtual Boy through Nintendo's various objections

Least likely career move:

Produce a flawed, gimmicky, and ultimately unsuccessful hardware platform, um, like...

Most likely career move:

...Virtual Boy. The next big thing?

Sim Wong Hoo

Chairman & CEO
Creative Technology Ltd
Singapore City, Singapore

Career Highlights:

Creative Labs' SoundBlaster, launched in 1990, has now sold in excess of 15 million units worldwide.

What's the big deal?:

The flexible, upgradeable nature of the PC has enabled the growth of more than just a few billion dollar spin-off companies. One of the single most successful of these is Creative Technologies, the Singapore-based parent company of Creative Labs, the outfit responsible for the SoundBlaster range of PC sound cards.

Founded by Sim Wong Hoo in 1981 with just $6,000, in 1994 Creative had its first $1 billion year and now employs 2,100 people worldwide. Soundblaster accounts for seven out of 10 sound card sales — a market dominance and penetration that few other companies in any industry can come close to matching (Mr. Gates & Co excepted). Mr Sim was named Singapore's Businessman of the Year, and in 1993 was presented with the ASEAN Achievement Award for his accomplishments in information technology. But Creative's biggest success may still be to come. The graphics accelerator card based on a derivative of the highly acclaimed Glint chip, 3D Blaster is set to launch later this fall. If Creative can achieve the same level of success with 3D Blaster as with Sound Blaster, then this success story is far from finished yet.

Least likely career move:

Creative's marketing, distribution, brand awareness, and sales momentum fails to make the upcoming 3D Blaster a success.

Most likely career move:

Mr. Wong Hoo has to buy a larger house to accommodate yet more awards

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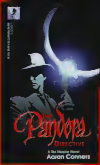
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Dean DeBiase

President & CEO
The ImagiNation Network
Burlingame, CA, US

Career Highlights:
More than 60,000 gamers were signed up on the INN as of July 1, 1995.

What's the big deal?:
The ImagiNation Network is the world's first game-only online environment. It was launched on May 6, 1991 as the Sierra Network, and subsequently changed its name as the result of a deal with AT&T (which took sole possession of the network on November 15, 1994). Now (although 60,000 subscribers represent only 2% of America On-Line's 3 million subscribers) its 167 employees have an unrivaled experose in the field of online gaming, a field that has to be seen as a high growth area.

Quite how ambitious Dean DeBiase and The ImagiNation Network's challenge will be in the face of a dedicated "Games Channel" from AOL and whatever gaming applications Bill Gates may have dreamed up for his Microsoft Network, is a question for the money men at AT&T.

Least likely career move:
Dean Debiase and The ImagiNation Network disappear without a trace

Most likely career move:
The Network continues to expand as online gaming continues to grow.

David Guldbrandsen

Head of technological development,
Scavenger
Los Angeles, CA, US

Career Highlights:
Sub-Terrania (1993) and *Red Zone* (1994)

What's the big deal?:
One of the fastest up-'n'-comers in the game industry is Scavenger, an LA-based games producer with only two real hits (and especially the excellent *Thrust*-clone *Sub-Terrania* for the Genesis) to date. But further success is almost much guaranteed, looking at the company's line-up of forthcoming 32-bit releases (for more details see page 161).

David Guldbrandsen, Scavenger's head of technological development, plans to take the Saturn places no one's ever taken it before

Daniel Small is president of Scavenger, and leads a selection of talent from all over the world. Many of the demo coders of the early 1980's Amiga scene (a prolific strain of the hacker gene) are now employed as graphic specialists. One of these Europeans is David Guldbrandsen, who heads up the technological development for the entire range of Scavenger's titles. As head of this creative melting pot, Guldbrandsen is responsible for some of 1995's most exciting software — software that not only looks great, but actually

CONNECTED

One of the most innovative videogame products of the 1990's was Catapult's X-Band modem for the Genesis and Super NES. President Adam Grosser is geared up to go

Adam Grosser

President
Catapult Entertainment
Cupertino, CA, US

Career Highlights:
Launch of XBand modem for Genesis and Super NES (1995).

What's the big deal?:
One of the single most exciting advances in home videogaming came in the form of Catapult Entertainment's XBand modem earlier this year. Available for Genesis and Super NES, the XBand enables 16-bit gamers the chance to enter a realtime online environment (with e-mail Internet access) and be matched in games against other XBand owners across the country. The modem technology itself is nothing revolutionary (although its ultra-low latency is the key to its successful handling of realtime videogaming), but at just $19.99 (with subsequent pay-per-play charging), it's no surprise that support has grown to more than 60,000 calls per day.

Adam Grosser heads up Catapult Entertainment. formerly having been senior VP of New Media at Sony Pictures and having served time at both LucasArts and Apple. Catapult Entertainment is part of the ever-growing Blockbuster empire, and looks set to move into the mainstream of 32-bit gaming with XBand networks planned for both PlayStation and Saturn.

Least likely career move:
Misses the 32-bit explosion and launches its PlayStation network in 1998.

Most likely career move:
Proves to be one of the few true killer apps for the whole "online" experience. Redefines the shape, size, and scope of home gaming. Gets award from AT&T and MCI.

(get this) plays great, too. *Into The Shadows*, an SVGA fighting game for PC, *Vertigo* and *Amok* for Saturn, plus a couple of 32X titles ("The 32X is a great machine, but it just didn't happen," argues Small) completes Scavenger's 1994 line-up.

"There are people in this office for 24 hours a day, seven days a week," explains Small. "It's a lifestyle. This isn't a job. You don't do this kind of work if it's not your life." But just looking at the quality of games seen so far, it would seem that Guldbrandsen's dedication is paying off.

Most likely career move:
Generic movie tie-ins.

Most likely career move:
A force to be reckoned with in the 32-bit age

Scott Miller

President
Apogee Software Productions
Texas, CA, US

Career Highlights:
Castle Wolfenstein, *Blakestone*, *Commander Keen*, and *Rise of the Triad*

What's the big deal?:
Despite the commercial success of Apogee titles like *Commander Keen* and *Castle Wolfenstein*, Scott Miller's here for another reason. Miller's biggest accomplishment is in marketing, as he takes credit for starting the "Apogee model of marketing." He believes you should "tantalize customers with 10 free levels, than reel them in with two additional episodes." Yes, it's the derivative of the shareware system of software distribution that helped make Id Software the success it is today.

Along with a growing line of successful shareware titles, Apogee recently created the powerful Build Engine, which it licensed to Capstone for the game *Tekwar*.

Least Likely Career Move:
In light of *Castle Wolfenstein*'s dismal performance on the Atari Jaguar and Nintendo's Super NES, Miller seems very unlikely to devote much time to developing any cartridge games.

Most Likely Career Move:
Will expand his foray in game engine design. Continue to exploit the "free" distribution that the Internet and disk-swapping enables

Jerry Wolosenko

Vice President, Sales and Marketing
Looking Glass Technology
Cambridge, MA, US

Career Highlights:
Developer of *Chuck Yeager's Advanced Flight Trainer*, *Ultima Underworld I* and *II*, *Links Pro*. Publisher of *System Shock* and *Flight Unlimited*.

What's the big deal?:
Looking Glass isn't just another new multimedia/game company. It's earned the honor of being dubbed by many as the "next big thing," having developed highly successful games for Electronic Arts and Origin (to name just two). Although founded by Paul Neurath and Edward Lerner, it is Jerry Wolosenko who perhaps best represents the company in 1995, as vice president of sales and marketing.

Looking Glass Technologies published its first game, *Flight Unlimited*, earlier this year and its safe to say that (as long as you have the system power — 486 won't cut it) there's never been a better flight simulator created for home use. *Terra Nova*, the company's second game is hotly anticipated and news that Looking Glass was working with Viacom to produce a "Star Trek: Voyager" game was greeted with joy from both game fans (the end product could actually be quite good) and "Star Trek" fans (the end product could, ahem, actually be quite good) alike.

The company's commitment to quality, and an idealism born of seeing its aims published (to varying degrees of success) by other people for so long, places Looking Glass well set to become a major player in the 32-bit world.

Least likely career move:
The company returns to being a no-name developer of games for other people's publishing labels.

Most likely career move:
Success in the 32-bit world and beyond, and very possibly a few new flying games

THE PIONEERS

Taking the concept of virtual reality and turning it into marketable, playable games — that's the aim of Zombie Entertainment's Alexander and Long

Mark Long & Joanna Alexander

Co-founders & VPs
Zombie Virtual Reality Entertainment
Redmond, WA, US

Career Highlights:
Former members of VPL (Jaron Lanier's pioneering VR group). Founded Synthetic Environments Group at Sarnoff Research Center.

What's the big deal?:
Alexander and Long decided to try their hand publishing virtual reality games while working for the Synthetic Environments Group at the Sarnoff Research Center. They had already worked on the biggest videogames of them all, debriefing Naval fighter pilots and Army aviators after piloting simulated sortie runs.

Drawing on their technical backgrounds, Alexander and Long set up Zombie, one of the bright new stars of computer gaming. Locus, its flagship VR product, is slated for glory come its release this fall. Long and Alexander have also developed VR equipment for other entertainment companies.

In the emerging field of software for home VR, Zombie is definitely in the perfect position to become a dominant force

Least Likely Career Move:
Endorses Virtual Boy.

Most Likely Career Move:
Creates the killer software for the future home VR system that Virtual Boy should have been

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PlayStation

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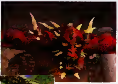
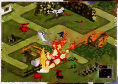
And they will come.
Then you can kill them.



Critically acclaimed by everyone and their grandmother. Maybe it's the cool 3D characters or texture-mapped backgrounds. Maybe not.



You're overrun by mobs of ravenous Hordlings, each blessed with huge, colon-blasting appetites.

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(Game Pro 3DO™ review)

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Daggerfall **PC** Sega Rally **Saturn** S.T.O.R.M. **Saturn/PS-X/PC** Chronomaster **PC** Virtua Fighter 2 **Saturn**
Wings Arms **Saturn** Undermountain **PC** Indy 500 **Arcade** Virtua Cop 2 **Arcade** Virtua Cop 2 **Arcade**

alphas

NEXT Generation's biggest-ever previews section

This month's massive alphas section is extremely varied, packing limit-pushing RPGs, three baseball games, driving games, and more. Some hopeful conversions may see the pre-holiday shelves, including Sega's *Virtua Fighter 2*, *Virtua Cop 2*, and *Sega Rally*. For reviews of games currently available be sure to check finals on page 168.

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The first great step by RPG developers toward a realistic virtual world

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Sega's follow-up to *Daytona* adds off-road excitement to the field of polygonal racing

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A.S.C.'s new title seeks to take the side-scrolling action adventure into the next generation

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The classic 16-bit racing game heads out on the highway for its second 32-bit appearance

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Attack helicopter-powered arcade action based on the successful 16-bit *Strike* series

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Sega's triumph brought home: More fighters, moves, and polygons, polygons, polygons

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Interplay's sequel adds ghouls *and* gravity to its already successful engine

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New cars and tracks on Sega's Model 2 board may not be enough to beat the competition

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Powered by all new hardware, Sega's sequel laser shooter may be too close to the original

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It's fast, it's easy, and it's fun. Could this be 3DO's cult classic waiting to happen?

151 VR Baseball SATURN
Interplay is pitching against some heavy hitters; does it have what it takes to win?

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Crystal Dynamics attempts to grab the sports crown with this graphics-heavy diamond-sim

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Say what? Yet another baseball game? Even the mighty Sega covets the sports crown

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RPG fans rejoice because Sega's about to bring "big-headed" adventures to Saturn

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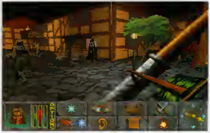
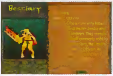
If you've got a game machine, it's likely that these guys have got the titles you've been looking for

Daggerfall

Almost two years after the release of *Arena*, Bethesda is preparing an epic sequel that has the potential to change the world of PC games forever

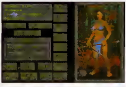
Format:	**PC**
Publisher:	**Bethesda**
Developer:	**Bethesda**
Release Date:	**November**
Origin:	**US**





As players buy new arms, they'll see accurate on-screen representations of the weapon they are currently carrying (top). The Bestiary can be used to pull up basic information (that would be known by just about everybody) on the strange inhabitants of the land (left)

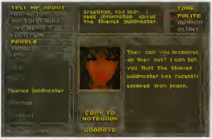
Role-playing games on the PC have seen a slow but steady evolution over the years. The kind of growth that's taken players from the basics of text-only environments through the wire-frame halls of dungeons to today's hybrid titles attempting to pull in new gamers by adding arcade action to the mix.



The new look of the character screens is a vast improvement over the paper-doll feel of its predecessor, *Arena*

All of that is about to change. In its upcoming epic, *Daggerfall*, Bethesda has done nothing short of creating another world, one with its own inhabitants, cultures, and diseases; one in which you are encouraged not so much to solve a quest, but to explore, to create, and in short, to live.

Daggerfall's plotline is much more complex than those in your average retrieve-the-sword or rescue-the-princess role-playing games. Basically, several stories go on simultaneously, and depending on what kind of character you are, and where and when you end up in given places, you determine the one in which you'll get wrapped up. In the city-state of Daggerfall, a king looking for vengeance returns from the grave with an army of undead; Wayrest, a mountainous, far-east land, is a town plagued by orcish border incursions and infighting among the wealthy; and in Sentinel, a queen attempts to bring peace to her war-torn land by arranging her daughter's wedding. Even with all of these events going on, it's easy to get so completely involved each town's local events that you may never even know they're happening.

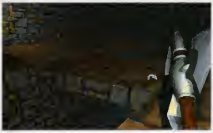


Greetings, fair lady. I seek information about the thieves guildmaster.

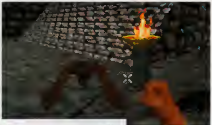
They call you Orcslayer, do they not? I can tell you that the thieves guildmaster has recently escaped from prison.

One of the biggest improvements in *Daggerfall* over its predecessor is its revolutionary handling of complex conversations with nonplayer characters

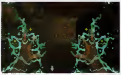
You will soon be wrapped up among the backstabbing dances of guild leaders, mages, faeries, temple leaders,



In addition to moving left and right, players can look up and down. This comes in handy when trying to traverse narrow bridges like this one



Life without the all-crucial weapon isn't too easy, but if the local fauna gets too close, you can still strike out with your bare hands (above)



The special effects displayed when casting spells can be quite distracting, but it's important to stay focused if you want to come out come out live

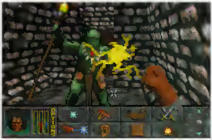
knights, nobles, and even secret societies, in which subtle political changes occur in each village. Your character will have a separate reaction score for each one of these groups, scores which change throughout the game as you befriend new people, anger others, or even make friends with another's enemy. Merely navigating the diplomatic labyrinths of each kingdom is a game in and of itself, and the changing reaction values insure that every game you play will be different after only a few hours. Variations in what kind of character you play, and how you personalize that alter-ego, will affect every other event from the very beginning of the story.

The first thing that is noticeably different about *Daggerfall* from its predecessor, *Arena*, is its improved character creation engine. As in the first game, players can choose from a list of individual classes that range from basic choices such as knight, mage, and thief; through the more exotic selections of acrobat, assassin, and sorcerer; to hybrid selections like nightblade and ranger. And for those who want a more personal creation, *Daggerfall* also includes a questionnaire providing players with a set of moral choices, and then chooses a character class for the player that best suits his or her temperament. If this still isn't enough, players are able to personalize their characters even further with the new class-creation system.

Daggerfall's class creation routines enable players to not only get a chance to build their characters exactly as they want them, but also to get a look at the complex inner workings of the game. If you want to take on the role of a nontraditional RPG character, the interface enables you to name your new class, select from a list of 38 different skills (including such diverse talents as medical, etiquette, disguise, back-stabbing, different colleges of magic, and different languages), and then choose disadvantages to balance out your new archetype. The system is both easy to use and completely open, so it's easy for players to jump in and create the kind of hero that they've always imagined in a fantasy realm.

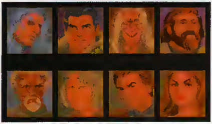
Once you've built your character, you're ready to go exploring in the mind-bogglingly massive world. Much like *Arena*, adventurers in *Daggerfall* can spend countless hours exploring a world

Some enemies take the form of mythological creatures, and they can make use of some rather (ahem) unconventional "attack" methods



Many of your foes will attack with powerful magic instead of engaging you in hand-to-hand combat. In many cases, you must survive on wit alone

Bethesda has done nothing short of creating another world, one with its own inhabitants, cultures, and diseases; in which you're encouraged to explore, create, and in short, to live

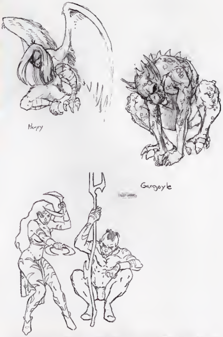


The people you meet on the street show a great deal of variety, not only in look, but also in attitude and helpfulness

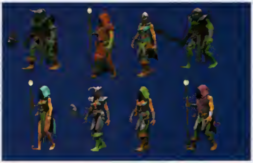
that seems big enough to be real. And quite unlike the earlier title, there are so many exquisite details placed into the game that it's as easy to get distracted from your true purpose as it would be in real life. If you wish, you can sit down by the bank of a river and just watch and listen as the sparkling water rushes by, or look up at the sky and see the patterns in the clouds.

Combat options show the same level of realism, providing options to learn the language of some of the land's 40 different creatures and become allies. The final touch of realism is the game's memory, which will enable the son of a nonplaying character, who you helped in the distant past, to remember your actions and to have a positive reaction to you upon your first meeting. There is as much to do and see as there would be in a real fantasy realm, and all of it is portrayed with the fantastic graphics and effects made capable by Bethesda's X-engine (which will also be utilized in the company's upcoming *Terminator: Future Shock* and *10th Planet* releases).

There are so many details placed into the game that it's as easy to get distracted from your true purpose as it would be in real life

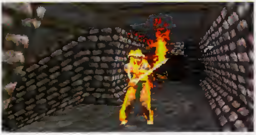


Early sketch work and monster concepts show some of the creative feel that the design team was aiming for during the early stages of development



Scores of different positions and weapon stances are used in each monster animation

If Bethesda manages to bring all of the parts of this title into a playable whole, then *Daggerfall* will be the best RPG ever made

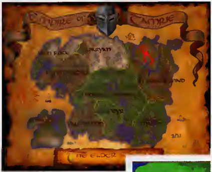


The three-dimensional feel and look of *Daggerfall's* dungeon levels can be somewhat disorienting, especially at first, but this effect adds a new level of realism to the game

If Bethesda manages to bring all of the parts of this title into a playable whole, then *Daggerfall* will be the best role-playing game ever made. The idea of a completely immersive world in which players have true control over the lives of their characters creates play opportunities that have never even been broached before. The main question left though is whether or not consumers will be willing to enter into the traditionally poor selling RPG market to experience the open-ended game form.

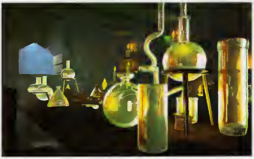
If so, then it's possible we may see future titles that will take players not only into new fantasy realms, but into adventures that take place all over time and space...

Hidden doors can lead to more treasure and knowledge, but they may also conceal some very nasty surprises

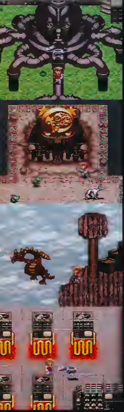


When traversing long distances, players can bring up a special travel map that will enable them to avoid the tedium of real-time voyages (above)

Made up of nine large provinces, the land of Tamriel is big enough that most adventurers will only see a fraction of its total area



Expanded magic rules will enable players to craft and cast their own spells from a huge list of effects, as well as having the capabilities to fashion their very own potions



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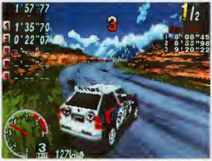
Sega Rally

The definitive arcade off-road racer is Saturn-bound. But will Sega's coders steer clear of the potholes that dented *Daytona USA*'s credibility?

Format: **Saturn**
Publisher: **Sega**
Developer: **Sega AM3**
Release date: **December**
Origin: **Japan**



Hopes are high that Saturn *Sega Rally*'s graphics will leave the disappointing *Daytona USA* conversion trailing

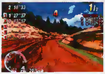
There's no denying that AM3 did a marvelous job on the *Sega Rally* coin-op. It's a prime example of what Sega does better than anyone else: design fast, stunning, and thoroughly engrossing arcade simulations which combine wonderful graphics and supreme playability.

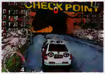
The Saturn conversion makes its debut at the end of the year, and is being coded with the help of AM2's improved 3D libraries to maximize the number of polygons on-screen and prevent the same degree of scenery "pop-up" which prompted criticism of the Saturn *Daytona USA* conversion. So far at least, it looks like it will be a more impressive driving experience.

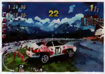
Although the graphics clearly have a long way to go to match the coin-op's detail-rich environments, there's still a lot more work to be done. But as with *Daytona USA*, the Japanese press is maintaining that the original game's primary strengths — its control and overall feel — have been admirably replicated. Quite how much the conversion will suffer from the lack of the coin-op's superb reactive steering wheel isn't yet known.

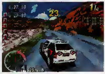
Expect a more thorough look at this keenly awaited racer in a future issue of **NEXT Generation**.

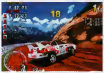
***Sega Rally* is an example of what Sega does best — design fast, stunning, and thoroughly engrossing arcade simulations**











The in-car perspective (top left) should provide the most exhilarating ride. The Lancia Delta (above right) and Toyota Celica GT-Four (left and above left) are retained for the home version. New features are presently being added to extend drivers' lifespan

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— Game Pro
"With WipeOut, the future really is now"
— Die Hard Game Fan

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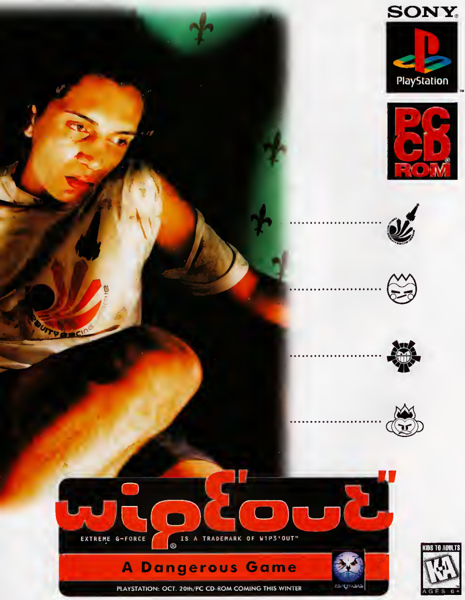
- 8 Anti-Gravity craft
- Multiple strategic weapons
- Link-up cable option
- Cool sounds & FX
- Totally killer graphics



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S.T.O.R.M.

Can Virtual Studio take the moribund side-scrolling action game into the next generation?

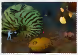
Format:	**PC CD-ROM** **PlayStation** **Saturn**
Publisher:	**American Softworks**
Developer:	**Virtual Studio**
Release Date:	**December '95**
Origin:	**France**

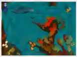
One of the most promising, if little hyped, games to come onto the scene in a while is American Softwork's *S.T.O.R.M.* On the surface, this three-CD opus looks to be a platform shooter with excellent graphics. In reality though, *S.T.O.R.M.* could be something significantly more.

Against a backdrop of an energy-starved and dismally polluted Earth, the plot puts you in control of the S.T.O.R.M., an experimental sub sent to investigate an explosion at a deep-sea station. From there you embark on an undersea quest that can dramatically alter the planet's future.

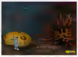
The gameplay elements vary. There are first-person exploration sequences aboard the S.T.O.R.M., and side-scrolling action sequences in which you play one of the three aquanauts aboard the sub. This isn't an Infocom or Sierra level adventure, but there are some definite puzzles, most of which aren't too difficult. Many obstacles across the 27 levels have multiple solutions, with some interesting consequences. For instance, in one area, you can choose to fight or avoid combat. Neither way is more correct in the game, but if you fight, the blood attracts sharks, with whom you must then deal.

Another likable element is that each of the three characters aboard the sub has different characteristics — who you send on a particular mission can dramatically alter the course of the game. You also have access to a sophisticated computer, Annessa, who offers advice before missions. You don't have to follow her advice, and, in fact, there are times when you shouldn't.

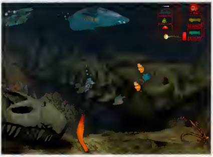


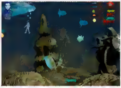


Some sequences take place in the S.T.O.R.M. (above), and in some you control an individual aquanaut (top)



Who you choose to send on a particular extra-vehicular mission can dramatically alter the course of the game

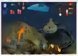




***S.T.O.R.M.* features multiple levels of parallax and true three-dimensional elements**

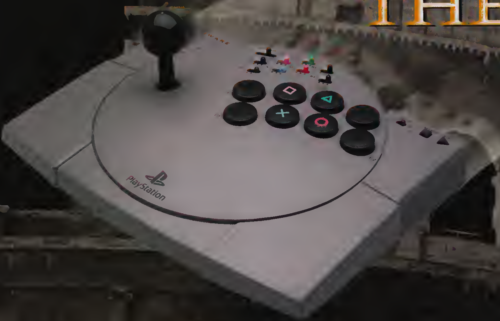
Virtual Studio's graphics are fantastic. The side-scrolling elements convey greater detail than a pure first-person game; enemies scale up from the background, and don't just enter on the left or right, a technique that's appeared in only a few games (like *Yoshi's Island*) up to this time.

In this melding of discreet types of gameplay, ASC attempts to make the total greater than the sum of its parts. It hopes to end up with a story-driven game both playable and fun. We won't know whether it has pulled it off until we see final product, but what we've seen so far looks very encouraging. Successful or not, it's efforts like these that will establish a new 32-bit gaming paradigm.



The game provides you with a wealth of information about the status of your character

WELCOME
THE



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Weapon I - Specialized Joystick

- Turbo speed feature heightens your ability to punish.
- Auto/Turbo feature designed to maximize firepower.
- Arcade control (microswitch technology) with 8 button layout.
- Rugged steel control stick and base.
- Slow motion feature and extra long cord.

PlayStation™

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TO ARENA

PlayStation

Your reputation is on the line. Let's face it — having your head handed to you in a contest with your 12-year old cousin is about as humiliating as getting caught staring lovingly at your shop teacher. Get medieval on 'em! And command the worship you deserve! These specialized controls give you the power to stomp not only your cousin, but any wannabe foolish enough to #%@! with an Immortal like you!

LEFT
L1
L2
PlayStation
R1
R2
RIGHT
SELECT
START
SLOW

PlayStation

YOUR WEAPONS WISELY

SPECIALIZED
JOYSTICK
PlayStation

Weapon II - Specialized Control Pad

Δ 360° control with directional disc.
Σ Ergonomically designed controller, molded from ABS plastic.
Ω Turbo switch with 30 shots-per-second firing power, configurable to all 8 action buttons.
Φ Auto/Turbo delivers infinite stream of intense firepower.
Ψ Slow motion switch and extra long cord.

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- ***A detailed galactic map helps you ID enemy strength and positions,*** *as well as navigate through the galaxy to engage the enemy in one heart-pounding battle after another. But in Star Rangers, you've got to shoot straight and think smart. The citizens are looking for a hero . . . could it be you?*

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Think smart . . .

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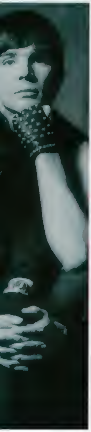
EA Studios

the 32-bit generation

A NEXT Generation presentation sponsored by Electronic Arts

Electronic Arts' 1982 line up of game producers. Counter-clockwise from top right: Bill Budge (*Pinball Construction Set*), Anne Westfall (*Archon*), Jon Freeman (*Murder on the Zinderneuf*), Dan Bunten (*M.U.L.E.*), Matt Alexander and Mike Abbott (*Hard Hat Mack*), John Field (*Axis Assassin* and *The Last Gladiator*), David Maynard (*Worms?*)

ELECTRONIC ARTS®



"We see farther."

The photograph you see on the left of this page was part of a revolutionary 1983 publicity and marketing campaign. Headlined with the slogan "We see farther", it was the first time a games advertisement had featured software designers. And it was one of the very first print advertisements from a small start-up company called Electronic Arts.

In 1982 W. M. (otherwise known as Trip) Hawkins identified a huge new market – that of game and entertainment software for personal computers. So Hawkins (then a marketing executive at Apple Computer) and a small group of associates started up Electronic Arts with just ten employees. Two years later, Electronic Arts' *Skyfox* title (designed for the Apple II computer) became a number-one bestseller. By 1986, the company had become the number one developer and supplier of interactive entertainment software in the U.S.

Making a key strategic decision, Electronic Arts established a direct sales force, thereby sidestepping the labyrinth of third-party distributors favored by competitors. That sales force helped track consumer trends, inventory, and demand — crucial indicators in a market considered both finicky and fast moving. With its finger on the pulse of the market, the company continued to grow and prosper. Taking advantage of fluxes in demand, it quickly developed titles that became commercial successes — titles like *John Madden Football* in sports, *Starflight* in adventure, *Chuck Yeager's Advanced Flight Trainer* in simulations, *Deluxe Paint* in creativity, and *Pinball Construction Set* in arcade.

In September 1989, Electronic Arts went public with a market capitalization of approximately $84 million. Expanding globally, Electronic Arts opened branches in Asia, Europe, Australia, and throughout North America. Aggressively seizing other opportunities, the company also acquired Distinctive Software (which became Electronic Arts Canada, the developers of *FIFA Soccer*), Origin Systems (the Texas-based developer of the *Ultima* and *Wing Commander* series) and Bullfrog Productions (Peter Molyneux's development company based in Surrey, England). In September 1992, Electronic Arts joined with JVC's subsidiary Victor Musical Industries Inc. of Japan to form EA Victor, to publish EA's games in Japan.

But the "software artists" featured in the original "We see farther" ad have now been superceded by game makers dedicated to the 32-bit age. And in this special section sponsored by EA Studios, their work is profiled for the first time.

That was then...

ELECTRONIC ARTS®
STUDIOS

This is now

ELECTRONIC ARTS®
STUDIOS

Today Electronic Arts and its Affiliated Label companies have sold more than 65 million units for personal computers and home entertainment systems. Over 248 titles have each generated more than $1 million in sales, and 69 titles have each generated more than $5 million in sales. Winning over 600 awards for creative and technological quality and market appeal and innovation, Electronic Arts is behind only Sega and Nintendo in its bid to become the world's leading provider of interactive entertainment software.

EA Studios is one of Electronic Arts' five publishing labels, the others being EA Sports, Jane's Combat Simulations, Origin and Bullfrog. EA Studios believes that its charge is to leverage its roots in EA to create technologically superior products for multiple platforms. In its own words, "The group is made up of talented and creative interactive entertainment professionals worldwide with long histories of creating innovative games. EA Studios is committed to building on these successes in the future."

The division is in a strong position to achieve its aims. Bing Gordon, EA's head of production explains, "For Peter Molyneux [Bullfrog], Don Mattrick [EA Canada], Richard Hilleman [originator of *John Madden Football*], Richard Gariott [Origin] and Scott Orr [EA Sports], to be able to get on the phone or video conference and talk over an issue and share technology — there's an advantage that no one else has and no one else is likely to get."

The games featured on the following pages are EA Studios' current portfolio of forthcoming releases, and the fruits of its quest for quality so far.

the 32-bit generation

102 rashing

Road Rash
The classic 16-bit racing game heads out on the highway for its second 32-bit appearance

104 shocking

Shockwave Assault & Shockwave 2
The 3DO hit gets a graphic and gameplay overhaul for its debut on multiple new platforms

106 striking

The Strike Series
Attack helicopter-powered arcade action based on the successful 16-bit *Strike* series

108 detecting

Psychic Detective
EA Studios' first attempt at creating an interactive movie, in collaboration with Colossal Pictures

110 shredding

Shredfest
Snowboarding action in a *Road Rash*-style racing game, starring pro boarders and pro music acts

Representing EA Studios' 32-bit generation: (Front row, left to right): Tim Learmont (Software Engineer, *Psychic Detective*), Jeff Smith (Art Director, *Road Rash*), David Stokes (Lead Programmer, *Road Rash*). (Middle row, left to right): Don Veca (Audio Engineer), Dan Geisler (Software Engineer), Philippe Tarbouriech (Senior Software Engineer, *Shockwave Assault*). (Back row, left to right): Brent Iverson (Senior Software Engineer), Jim Rushing (Director of Production Technology), John Manley (Senior Game Director, *Strike*)

Road Rash

The 16-bit and 3DO motorcycle-racing classic gets its motor running, and heads out on the 32-bit highway for a second time

Format:	**PlayStation & Saturn**
Publisher:	**EA Studios**
Developer:	**EA Studios**
Release Date:	**November (PlayStation)** **Winter (Saturn)**
Origin:	**US**

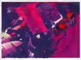
Representing Team *Road Rash*: Randy Dillon (Software Engineer), Jeff Smith (Art Director) and David Stokes (Lead Programmer)

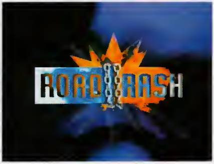
The *Road Rash* 32-bit team consists of a core group of 4 engineers, 4 artists, 4 course designers, 2 game designers, 3 audio engineers, a production team of 3, and a large group of "transient" members who would join the team for anything from a week to a couple of months to help out in specific areas. During video and photo shoots the ranks would swell with EA employees and friends who could take the day off and try their chance and get 15 minutes of videogame stardom

Of EA Studios' upcoming 32-bit releases, *Road Rash* and *Shockwave Assault* share the distinction of having already appeared in 32-bit form. But although both games have enjoyed success on the 3DO, *Road Rash* for PlayStation and Saturn will uniquely benefit from the additional heritage and pedigree of having been born of a bona fide 16-bit classic.

Road Rash was initially released for the Genesis in 1991 to tremendous critical acclaim. And EA Studios is planning for the same back-to-basics playability and concentration on gameplay that made the original such a hit to form the backbone of the game's two newest versions.

That's not to say that the two new titles won't make use of 32-bit technology. Higher frame rates, more intricately detailed courses and — of course — a complete graphic overhaul are planned. Real bikes, real riders, and real obstacles were taken to a studio to be blue-screen filmed, enabling digitized





One of the biggest differences between 16-bit and 32-bit *Road Rash* is the sophistication of the between-race sequences, featuring video and music

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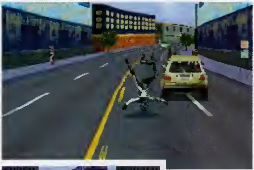
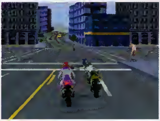
EA Studios is planning for the same back-to-basics playability and gameplay that made the original *Road Rash* such a hit to form the backbone of these two new 32-bit versions





A rider takes a spill in downtown San Francisco (top). It's this kind of business (punching, kicking and assault with a variety of deadly weapons) that makes the occasional crash inevitable (above)

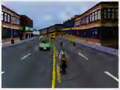
images of real-world objects and people to be incorporated into the gameplay.

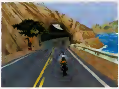
But perhaps the greatest difference will be found in the audio department. The potential for stereo, CD soundtracks that the 32-bit systems bring to the party is being exploited to the max. EA Studios has secured a deal with A&M Records to incorporate soundtracks and videos from some of its top acts into the game. The bands Paw, Swervedriver, Therapy?, Monster Magnet, and Hammerbox will each provide between one and three tracks, while Soundgarden will provide four. The bands' music and videos will play between races.

"The design challenge behind *Road Rash* was to merge the energy and presentation of music videos from alternative rock bands with the action of great videogames," claims Randy Breen, the producer of *Road Rash*. He believes that "The A&M Music bands chosen for *Road Rash* have a musical style and attitude very similar to the feel of *Road Rash*."

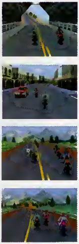
What's for sure is that racing through cities, canyon runs, and country backroads will never have felt as realistic. The 3DO version was a leap above 16-bit, and these two new games are better still.

"The classic *Road Rash* game for the Genesis proved to be the world's favorite motorcycle racing game," Breen remarks, "but the synergy of sight and sound found in *Road Rash* for the PlayStation and Saturn will create a style and standard of presentation second to none." ng





Experienced *Road Rash* players know the drill. The aim of the game is to complete a series of races in as high position as possible. This way, you earn cash with which to buy faster and better bikes

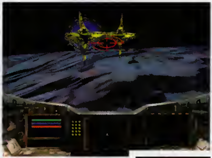


The 3DO version of *Road Rash* enabled a quantum leap in graphic sophistication over the 16-bit original. The Saturn and PlayStation versions promise even more

Shockwave 2 & Shockwave Assault

Format:	**PlayStation, Macintosh, 3DO & Win 95**
Publisher:	**EA Studios**
Developer:	**EA Studios**
Release Date:	**November (Macintosh PlayStation & Win 95)**
	December (3DO)
Origin:	**US**

The year is 2019 AD. Time for a heroic F-177 pilot to single-handedly save the world from an alien invasion force



Representing Team *Shockwave*: Erik Holdaa (3D Animator/Game Designer), Doa Woo (Art Director), Bob Rossman (Art Director), Philippe Tarbouriech (Senior Software Engineer), Laarent Benes (Senior Software Engineer) and Cyndi Hill (Project Manager)

More than 100 team members worldwide have joined efforts to create three versions of *Shockwave* in three languages on five platforms. The team has been working together for three years developing this franchise, and during various stages of development the game team has used services of: professional movie directors, professional actors, a best-selling novelist/script writer, industry-leading software engineers, award-winning audio composers, and top storyboard and computer graphic artists

Orbiting earth is the UNS Omaha, the world's first aircraft carrier in space. The experimental space platform has begun operational testing of the new F-177 space fighter prototypes. But someone is out there watching, and waiting ...

Thus begins the story behind *Shockwave*, the game that has enjoyed success on the 3DO and is currently preparing its PlayStation, Saturn, Mac, and Windows 95 debut (under the name of *Shockwave Assault*). A sequel for the 3DO is also planned. The four versions of *Shockwave Assault* will be enhancements of the original, and will also include the extra missions previously only available on *Operation JumpGate* — an add-on disc for the original 3DO version.

Essentially, *Shockwave Assault* is a first-person shooter, with the emphasis on arcade action rather than flight simulation. The release of the PC version marks EA Studios' first dedicated

***Shockwave Assault* offers a wide selection of terrains, featuring a large variety of alien enemies**

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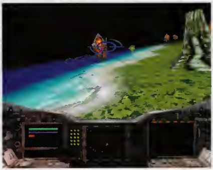
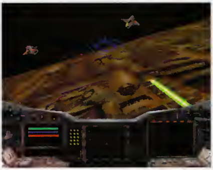


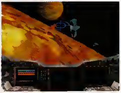
The battle arena is a free 3D world, with game limits defined by specific mission parameters

Windows 95 project. "We have integrated many new features into this version of *Shockwave Assault* that take full advantage of the enhancements in Win 95 software," explains Philippe Tarbouriech, the project director.

"Many of the 3D effects in *Shockwave Assault* would not have been possible under MS-DOS or Windows 3.1.," he continues. "In addition, Win 95 technology allows the PC to play streaming video for the first time." An important point, as *Shockwave Assault* features plenty of video footage, serving as both cut scenes and "live" updates of your performance and enemy status. It also takes full advantage of Win 95's "AutoPlay" feature. "Customers now have ease of use and fast gameplay comparable to dedicated videogame systems," enthuses Tarbouriech.



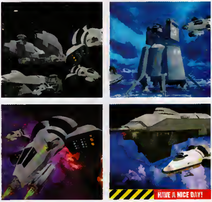
Your experimental F-177 ship comes armed with cannon and missiles. The view remains first person throughout



Other features of the PlayStation and Saturn versions enabled by 32-bit technology is the stereo music featuring Dolby Surround Sound, and photo-realistic terrains. The team is hopeful that the new versions will enjoy even greater success than the 3DO forebearer.

"We have integrated new features into the PlayStation version of *Shockwave Assault* taking into account customer feedback and technical advantages of the new system," explains Tarbouriech. "For example, the cockpit has been totally redesigned for better viewing by the player, there are numerous checkpoints throughout each mission, and the user interface has been redesigned to make it simpler to play."

This is one game series that will run and run.



Shockwave 2's introduction and cut scenes are some of the most impressive yet seen. These screens from the sequel to the 3DO original game illustrate the graphical improvements over the original

Shockwave Assault **features a large amount of video footage, serving as both cut scenes and "live" updates of your performance and enemy movements**

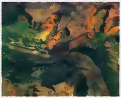
The Strike Series

Take to the skies in your own personal attack chopper as another 16-bit classic makes its 32-bit debut

Format:	**PlayStation, Saturn & Win 95**
Publisher:	**EA Studios**
Developer:	**EA Studios**
Release Date:	**Summer '96**
Origin:	**US**

Representing Team *Strike*: John Manley (Senior Game Director), Michael Becker (Senior Art Director), Dee Hewitt (Software Engineer), David Sullivan (Software Engineer) and Jay Friedman (Art Director)

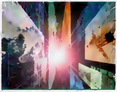
The *Strike* team collectively has more than 100 years experience in the videogame industry. All team members have creative input into the project and the team is proud in its knowledge that everyone feels ownership over its ultimate success. The team is dedicated to having fun in the process of making the product. Their motto is "If we can't have fun while we're making it, then how can we expect our customers to have fun while they're playing it?" That sounds fair to NEXT Generation



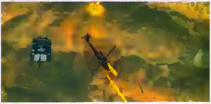
The *Strike* series of games has been successful on Genesis, Super NES, Game Gear, and Game Boy. The 32-bit versions planned for PlayStation, Saturn, and PC CD-ROM promise more of "that proven *Strike* recipe," as Game Director John Manley describes, but a radical upgrade in graphics, sound, and even a few additions to the gameplay will be made.

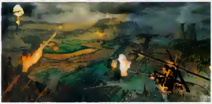
First, 32-bit *Strike* will feature all photo-realistic art: digitized representations of real terrain, real buildings, real weapons, and real people. Interactive music will vary according to game performance and the "mood" of different sequences, while the CD-ROM drive will be continue to pump out a stereo soundtrack. As is visible in the screen shots on the opposite page, the new versions of *Strike* will feature a wider range of views than the rigid isometric 3D presentation of its 16-bit predecessors. FMV clips and cut scenes will divide the action, serving as tactical briefings, mission overviews, and performance guides.

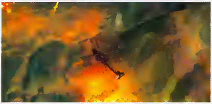
***Strike* will feature all photo-realistic art: digitized images of real terrain, real buildings, real weapons and real people**



Graphics for the new *Strike* games have been sourced from real-world tanks, planes, and weapons (above). Even the terrain is photo-realistic (left)



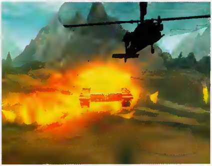




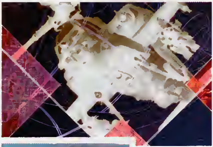
As these screen shots illustrate, the power of the 32-bit systems have enabled a wide degree of game "camera" movement around the 3D world

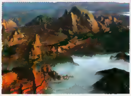
Gameplay-wise, the new versions of *Strike* will feature enhanced weapons and a wide variety of targets. Heat-seeking missiles, for example, are a feature that the *Strike* team has been keen to incorporate into the game from the beginning. But only now has there been enough spare processor power to facilitate their inclusion without detriment to the gameplay's interactivity.

Of all EA Studios' five new games in production, the new *Strike* is the furthest from completion, so game details are thin on the ground. It's not even known for sure which scenario gamers will be presented with (so far, 16-bit *Strike* games have featured desert, jungle, and urban environments). Interestingly, world history has tended to follow the games — and not vice versa. "We have been successful in writing scripts that eventually come true!" Manley observes wryly. "We actually wrote most of *Desert Strike* [the original game, set in the Middle East, pitting players against the army of an aggressive dictator] before Desert Shield happened. We were watching CNN at three in the afternoon and all of a sudden it was like, 'Oh my god — it's happening!'" The coincidence occurred again with part three in the series, reveals Manley. "With *Urban Strike*, we were writing about scenarios involving car bombs in Washington, and then the World Trade Center bombing happened a week later." The morale of this story? Unclear. But perhaps, in the interest of world peace, the *Strike* team should base future projects on scenarios involving the ending of world hunger. After they've finished having fun blowing things up, of course.



Explosions have traditionally played a large role in *Strike* games





With almost a year to go until release, the *Strike* team has plenty of time in which to incorporate the best possible visuals into the game

Psychic Detective

See the world through the eyes of a psychic and solve a murder mystery in EA Studios' first interactive movie

Representing Team *Psychic Detective*: Tim Learmont (Software Engineer), Randy Moss (Software Engineer), Jim Simmons (Producer), Ric Nall (Assistant Producer), Lucy Bradshaw (Project Manager) and Fredriqua Guetta (Video Colorist/Special Effects)

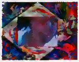
***Psychic Detective* was a massive project involving an equally massive group of people. Colossal Pictures directed the filming which lasted for about six weeks in San Francisco and Oakland. Since nothing like *Psychic Detective* has been done before, the 21 people involved with the project at EA Studios, 80 crew members, and 95 actors appealing in the product faced a unique challenge. Gamers will get to play EA Studios response to this challenge in November come *Psychic Detective*'s release**

Format:	**PlayStation, PC & 3DO**
Publisher:	**EA Studios**
Developer:	**EA Studios**
Release Date:	**November**
Origin:	**US**

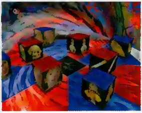
The majority of FMV-based interactive movies thrust upon the gaming public so far have been fundamentally lacking in rewarding gameplay. But then the majority have come from start-up "multimedia" companies — not established game developers. So the gaming world should perhaps look to EA Studios' collaboration with Colossal Pictures (the creators of "Liquid TV", in association with MTV) as the interactive movie's best chance of getting it right. If EA Studios can't make the concept work, then maybe no one can with today's' technology.

Shot on location throughout the San Francisco Bay area, *Psychic Detective* features five hours of live-action footage featuring both LA- and SF-based AFTRA actors. The majority of the footage won't be seen the first time through the game, so there's always plenty of new material to discover and explore each time you play.

Billed as an "interactive thriller," *Psychic Detective* is the brainchild of



Colossal Pictures brings to the project the cinematic skills and film experience necessary to make *Psychic Detective* more than simply a game with great graphics

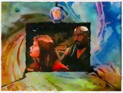


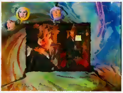
Puzzles will need to be solved by the player if your mission is to succeed

The game features the exploits of Eric Fox, a psychic wunderkind who for years has coasted through life on his paranormal talents

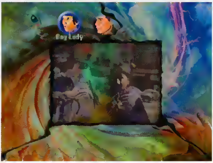
EA Studios' Jim Simmons, who worked in close collaboration with Emmy Award-winning director John Sanborn from Colossal Pictures, and screenwriter Michael Kaplan.

The game features the exploits of Eric Fox, a psychic wunderkind who for years has coasted through life on his paranormal talents: cheating on exams, seducing gullible women, and performing smart-alecky lounge shows in second-rate hotels. The player plays from inside Eric's mind, using his psychic powers to help the beautiful Laina Pozok unravel the mystery behind her father's suicide. Laina encourages Eric to travel from one character's mind to another to gather clues by experiencing events from their perspective. The depth and breadth of the storyline enables the player try out numerous leads, each with its own revelations and surprises. The player guides the story toward one of many endings, and decisions made by the player directly affect the storyline.





As Eric Fox, the game's protagonist, enters new locations, he is able to enter the minds of others. Those available for "viewing" appear as icons on the game screen



Throughout the game, Eric encounters a myriad of bizarre and colorful characters. He must interact with everyone he meets to find out which one is the murderer

"Designing and engineering games, especially new types of games like *Psychic Detective*, requires lots of experimentation and invention," says producer Jim Simmons. "Today's leading-edge animation houses, such as Colossal Pictures, our partner in *Psychic*, are especially suited for this type of work. They know what it takes to invent new techniques, work with software engineers, and painstakingly craft an audiovisual experience frame by frame, element by element."

Colossal Pictures is equally confident that the end result will blend the elements of movie and game successfully. "Every time you 'play' the movie, you discover new sequences, new materials — and an entirely different movie path," explains Director John Sanborn. He concludes that essentially, "*Psychic Detective* becomes the movie you want it to be."

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Shredfest

Ultra-realistic snowboarding action in the *Road Rash* style, complete with real gear, real pros, and real stunts

Format: **PlayStation, Saturn, 3DO**
Publisher: **EA Studios**
Developer: **EA Studios**
Release Date: **March '96**
Origin: **US**

Representing Team *Shredfest*: Margaret Foley (Art Director), Matt Sarconi (Lead Animator), Thom Phillabaum (Software Engineer), Lisa Ching (Software Engineer) and Mike Lopez (Course Designer)

The *Shredfest* team's greatest challenge has been developing accurate snowboarder animation and capturing the culture of the snowboarding sport. Research has included several difficult trips to the beautiful Sierras for some shreddin' and hanging out with some of today's most talented snowboard riders. The core team consists of the Executive Producer/Designer, 4 engineers, 5 artists, 4 course designers, and 3 production assistants. The game, videos and music of the final product will — EA Studios hopes — capture the current snowboarding culture perfectly

Many pro boarders play games on tour and are keen for *Shredfest* to succeed

The *Shredfest* team's aim is to recreate the style, passion, and culture of the snowboarding scene, within a fast-paced action game.

As such, the game model and presentation of *Shredfest* will be similar to that of the 32-bit versions of *Road Rash* — with fast-paced snowboard racing, plenty of video cut-scenes, and a CD full of rock music. It's not yet been decided which bands will contribute to the project, but following the success of EA Studios' collaboration with A&M Music for the *Road Rash* project, it is likely that a similar deal will be cut — perhaps with a different record label.

The *Shredfest* project enjoys the support of five snowboard manufacturers (Burton, Morrow, Nitro, Palmer, and Sims), and pro boarders representing these companies are featured in the game. Players start *Shredfest* as a "local" (novice), their location determined by the character they select. Players remain restricted to that location until enough prize money has been won to compete in wider competition. Contests cover a wide range of

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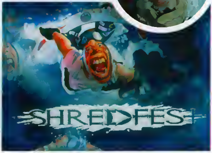
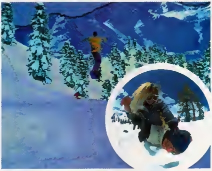


disciplines, with stunts taking equal prominence to simple racing.

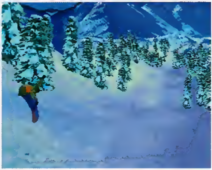
It's not yet determined how complex control of the snowboard will be. The team — made up of keen real life snowboarders — is anxious that the game be based upon real life, so gravity, speed, maximum turn rates, the shifting of body weight on the board, and so on, will all be incorporated into the physics model governing the boards' control. A balance has to be struck, however, between realism and rewarding gameplay for those of us not already skilled in the art of shredding down mountains at 60 mph.

Michael Chantry, the supervisory judge for International Snowboarding Federation, has been a consultant to the *Shredfest* project since the beginning. As well as helping coordinate the filming of the game's cut scenes (shot at Squaw Valley in California's Lake Tahoe), Chantry's expertise has been drawn upon in defining the tricks possible in the game, and then evaluating how these tricks are evaluated in the game's competitions. As in real life, points are awarded on a variable scale, depending on the boarder's aggression (speed and difficulty of trick), as well as height, complexity, and style. EA Studios is confident that *Shredfest* will be as close to capturing the atmosphere of real life circuit competition as a videogame can get.

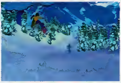


Professional boarders were used to pose for the digitizing of the game characters, as well as for filming the game's cut scenes and introductions

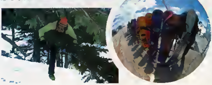
Gravity, speed, maximum turn rates, the shifting of body weight on the board, and so on, will all be incorporated into the physics model governing the boards' control



Creating an undulating 3D world has been one of the biggest obstacles to the team. The goal is to create an accurate game that's fun to play



In true snowboarding tradition, skiers are regarded as legitimate targets while on (or off) course. Many of the jokes in *Shredfest* are at unfortunate skiers' expense (right). Game action (above)



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Chronomaster

Is that a universe in your pocket or are you just happy to see me? The late Hugo and Nebula award winner Roger Zelazny's last project turns digital

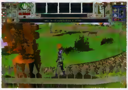
Format:	**PC**
Publisher:	**IntraCorp**
Developer:	**DreamForge**
Release Date:	**December**
Origin:	**US**

Time travel has always been a great fantasy background for game designers. And when one of the designers is the late Hugo and Nebula award-winning author Roger Zelazny, you can be sure that the plot of the game is going to be entirely intriguing. Zelazny's *Chronomaster* proves to be no exception.

Imagine a world where the obscenely wealthy — industrial lords and pirates alike — can create their own "pocket universes," with custom laws of physics and totally alternate realities. It was a concept Zelazny first explored in his sci-fi book *The Graveyard Hart* and it works well in this graphic adventure, his very last project.

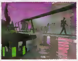
You take the role of Rene Korda, leading expert on the creation of pocket universes, who must investigate the mysterious destruction of two such universes. Both belong to pirates who gained their wealth in the planet-wide holocaust of the Pasqua Wipeout, and both have been frozen in a time-locked stasis. Terran authorities have commissioned you to discover the cause of the stasis and to free the millions of sentient beings who are imprisoned within them. Entering the universes with a supply of "bottled time" enables you to explore, but also exposes you to great danger (you can accidentally restart an erupting volcano, or a speeding bullet). But the real danger lies in restarting the entire universes — what are their creators trying to hide? And therein lies the real mystery of the game. Solving it will take you to a variety of locations, complete with magic (anything goes in a pocket universe), warping reality and, of course, plenty of puzzles to solve.

With a point-and-click adventure interface à la *Kings Quest* or *The Journeyman Project*, and graphics rendered on the almost obligatory SGI workstation, this could be the game that takes the tarnish off IntraCorp's (aka Capstone's) reputation.

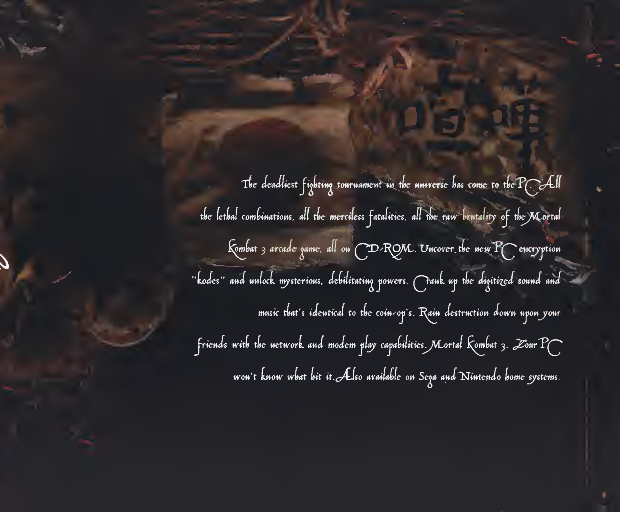


The phrase "it looks like a cut-scene but it's actually gameplay" is becoming cliché, but in the case of DreamForge's new *Chronomaster* it's true

The various pocket universes will bring you into contact with the pirates blamed for the missing universes



With a limited amount of time you must explore — point-and-click style — new universes created by wealthy lords and pirates



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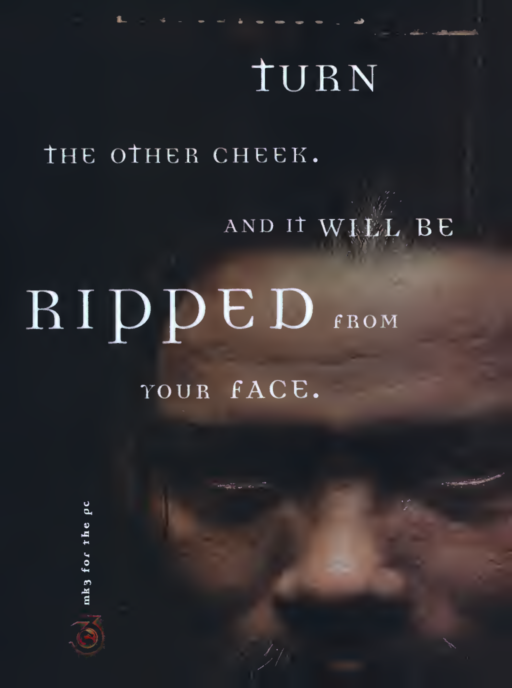
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- OSCAR THE RAGING RAT
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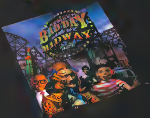

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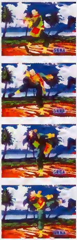
Virtua Fighter 2

The most anticipated fighting game of this season has the potential to increase Saturn sales, and to end some of the questions about the harried machine's capabilities



Like VF Remix, Virtua Fighter 2 boasts amazingly smooth animation and a remarkable color palette

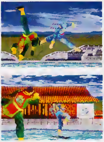
Format:	**Saturn**
Publisher:	**Sega**
Developer:	**Sega AM2**
Release Date:	**November**
Origin:	**Japan**

Most of the hard questions asked about the capabilities of Sega's Saturn machine (in part brought on by the somewhat disappointing look of *Virtua Fighter*) were quieted by AM2's release of *Virtua Fighter Remix*, an upgrade of the original fighter that boasted an entirely new graphics library the team designed after running into problems translating their first wave of arcade hits onto the fledgling console.

Now, as the battle for the winter holiday consumer draws dangerously close, AM2 is trying to ensure that its follow-up title, *Virtua Fighter 2*, will bear none of the rough edges that marred the *Virtua Fighter* release. So far, it looks like they're right on track.

Although there are only two new characters in *Virtua Fighter 2*, the game is much more than just an upgrade over the 1993 original. Each of the original characters has been reconstructed with higher polygon counts which creates a look far more realistic than the carved stone look of *Virtua Fighter*. Each character has also received new special attacks and animation to encourage fans of the original title to find new strategies and tactics in combat.

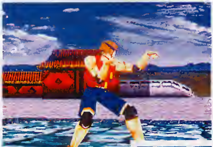
Perhaps the most noticeable difference comes in the form of the game's breathtaking backgrounds, which vary in theme from a simple cottage in front of a stone arena to a raft floating down a speeding river. And yet, these same backgrounds may prove to be Sega's greatest translation problem.



VF2's backgrounds are not only visually pleasing, but also bring a great deal of atmosphere to the title

With player polygon screens running at AM2's goal of 60 frames per second, the team is now struggling with the problem of getting the Saturn to handle the display of backgrounds with high polygon counts (such as the giant stone arch found on the river level) at the same time. Official word from Sega is that the project will still be released with all of the levels from the original, running at full speed.

Now that all eyes are on Sega's trump card entry for Christmas — and as an example of how far Saturn's architecture can be pushed — gamers everywhere are hoping that the company's confidence is well placed.



Both of Sega's new characters were the result of a programmer's creative thoughts during a trip to Hong Kong

Shun Di, one of Virtua Fighter 2's two new characters, is a master of Drunken-style Kung-Fu

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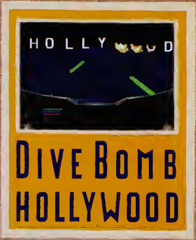
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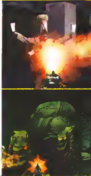

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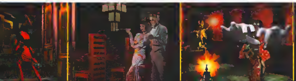
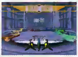


KILLING TIME. What a politically correct title, eh? You're trapped in a horrifying 3D world of the undead. But lucky you. You've brought along some serious firepower You've got to shoot first and catch your breath later. To solve the mystery, listen to the ghosts for clues. You'll have to call on your wits, call on your weapons or call for an organ donor if things go south. *Features:* 16 horrific enemies (only 300 could get 7 genuine ghosts on videotape). 45 supernatural areas to discover and over 200 rooms to explore. Requires use of the head, if it hasn't been blown off already.

Wing Arms

Never mind the ad campaigns, here's the kind of Saturn game Sega's going to need to stay one step ahead of Sony

Format: **Sega Saturn**
Publisher: **Sega**
Developer: **Sega**
Release Date: **February '96**
Origin: **Japan**



Located in the hanger are eight different planes to fly. In front is the P-38 Lightning

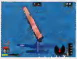
What really makes *Wing Arms* is something a screen-shot can't show — smooth animation

After a first wave of over-hyped and under-powered games, Sega is starting to pick up the slack on the Saturn, thanks in no small part to the new Sega Graphics Library (don't say operating system).

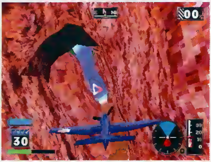
Greatly improved — though still far from complete — since our last look (NG 8) is *Wing Arms*. It is not the cachet that *Virtua Fighter 2* or even *Remix* is, but *Wing Arms*, a flight-sim/arcade game has the one sure thing going for it — extremely fun gameplay. A World War II era flight sim that focuses more on gameplay than realism, *Wing Arms* has an excellent, smooth flight model that makes flying easy and intuitive. Almost any maneuver, from Immelmanns to Yo-yos is simple to perform, which makes the game fun for beginners while offering enough variety to hold the interest of veteran pilots as well. But make no mistake about it — this is definitely an arcade game, not a flight simulator.

With eight different missions, featuring fierce battle over water, land, and in the air, and seven different vintage style planes, there's enough here to really sink your teeth into. The planes all have both vintage (guns) and modern (unguided rockets) armament. It has three standard views (cockpit, chase, and reverse chase) and features an innovative automatic-view change — if a plane locks onto on your tail, the game immediately shifts to chase view (over the shoulder), which makes dog fighting far more user-friendly.

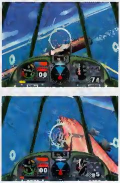
More than any form of high-impact TV advertising, it's games like this one — fun, good-looking, and fast — that are going to drive consumers out in droves to cash in on what the Saturn has to offer.



From Chase view, your fighter pilot homes in on this aircraft carrier, which fires back at you

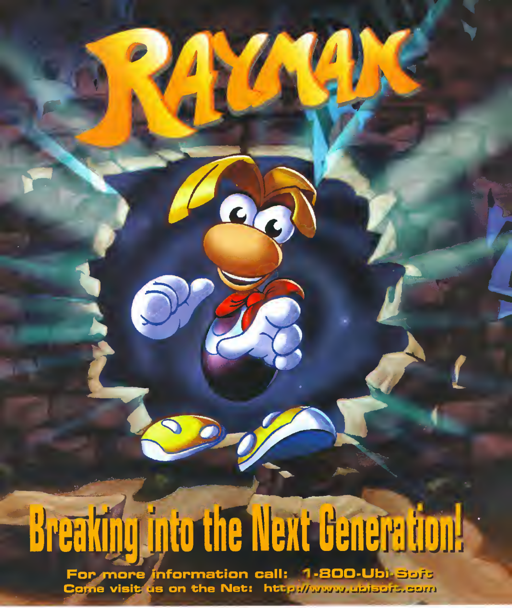


***Wing Arms* graphics are good, but what really makes the game is something a screen-shot can't show — fast, smooth animation**



Strafing ground- or water-based targets adds an impressive amount of action, and difficulty, to the game, shown here in the game's second level

***Wing Arms'* graphics are impressive, and take full advantage of the new Sega Graphics Library which delivers maximum detail at close range**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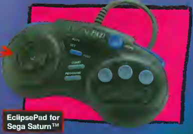
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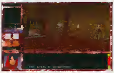
Descent to Undermountain

The Flame Sword of Lloth

With more arcade action and a TSR license, Interplay may be able to draw in gamers from outside the tight RPG realm

Format:	PC
Publisher:	Interplay
Developer:	Interplay
Release Date:	December
Origin:	US

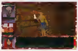
After pulling the lucrative *Dungeons and Dragons* license out from under TSR, it was obvious that Interplay would jump into high gear to produce as many RPGs (role-playing games) based on the popular game world as possible. Surprisingly though, the company is spending a great deal of time developing games that fall far outside the standard strategy adventures of most pen-and-paper conversions. Along with *Realms of Valor*, a fighting game being developed for 3DD's M2, *Descent to Undermountain* has the action appeal to draw new players into the AD&D (Advanced Dungeon & Dragons) world.



The numerous rooms of *Undermountain* deliver an exceptional level of detail that is far more than you'd expect from a fast-paced action title (above)

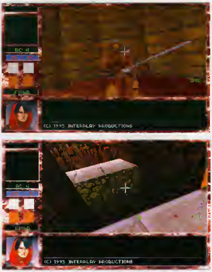
Set in the *Forgotten Realms* universe, *Undermountain* will use the same engine as the highly successful action title *Descent*, with several twists added to reflect the new nature of the adventure. New additions to the game are gravity (which changes in different areas of the labyrinth), new weapons (including magical attacks for spellcasters), and melee combat. Michael McConnohie, the creative director on the project, explains how difficult the latter feature was to integrate into the program: "The combat is the most difficult thing for us now because the collision spheres used in *Descent* are further out from your craft, and don't lend themselves to up-close combat. Being able to work those down to the point where you can actually hit a biped with a hand weapon is quite a challenge."

Much of your game time will be spent carefully roaming through passageways like this one. Keep an eye peeled for surprises of any kind



This bothersome zombie may not pose much of a threat on its own, but it's very likely that he's got several friends nearby

Like *Descent*, *Undermountain* will run in 320x200 mode with 256 colors, but there's still a chance that the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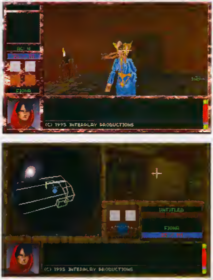
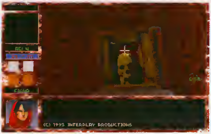
Human characters show a great deal more detail than the original *Descent*'s polygon heavy foes (above). The ability to look up and down helps players escape from hairy situations, increasing your options (top)



The map screens are similar to those found in *Descent*, but care is taken to keep the feel consistent with the medieval atmosphere of the game (above). Although the game does have its share of secrets to ferret out, the basic concept of the game is combat heavy (top)



Dangerous traps and spooky hidden items are scattered through the cavernous labyrinth. The helpful crosshair accompanies you everywhere

developers will be able to include a 640x480 mode for Windows 95 users by ship date. Unlike *Descent*, whose enemies typically consist of 25 to 30 polygons, *Underworld* will feature monsters straight out of the *AD&D* mythology made up of around 200 bit-mapped polygon objects apiece. Zombies, Skeletons, Drow, Mind Flayers, Gargoyles, and more than a dozen more are currently planned, and more may be added by the time of release. And even with all of the added weight, the game still clicks along at the same high frame-rate that made *Descent* so popular.

Perhaps the most intriguing aspect of *Undermountain* is the multiplayer options. In addition to a four-player networkable mode, Interplay plans to have the game up on a major network service by the end of the year (possibly Genie). In the service mode, a party could consist of four players hooked up from across the country, playing the game simultaneously.

With six different races, four character classes, more than 10 types of weaponry, weird puzzles that include teleportation, anti-magic, and low gravity traps, and a 3D automap, *Undermountain* has all of the fantasy fare to keep RPG fans engrossed for hours. But as nice as that is, the real story here is that this game has a chance to transcend the elitism usually surrounding RPGs by offering an atypical forum to introduce beginners to the joys of the adventure title.

More than just a churned out sequel, this title bears a good chance of being even more outstanding than the runaway success that spawned it.

The real story here is that this game has a chance to transcend the elitism usually surrounding RPGs

While secret doors are practically invisible when closed, they open in a smooth and realistic fashion

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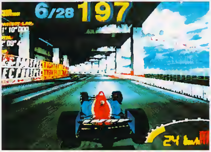
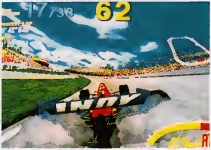
Indy 500

The all-American race formula gets the Model 2 treatment from Sega, but can it match the awesome *Sega Rally*?

Format:	**Arcade**
Manufacturer:	**Sega**
Developer:	**Sega AM1**
Release Date:	**Now (Japan)**
Origin:	**Japan**





Sega's follow-up to its huge — and hugely successful — *Sega Rally Championship* coin-op is another sit-down driving game boasting crowd-pulling texture-mapped graphics. *Indy 500* is based on the US sport of IndyCar racing, although Sega's AM1 design team has wisely decided to supplement the traditional oval circuits with some less realistic but infinitely more exciting courses.

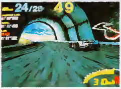
The roller-coaster-like Highland Raceway is the most improbable track — its vertiginous slopes are about as far from the banked ovals of IndyCar as it's possible to get — but it should give *Indy 500* the spectacular impact any major arcade game needs.

Among the other courses is Bayside Street, a testing city circuit with narrow lanes edged on both sides by walls. This limits the number of passing opportunities and makes it the most technically challenging of all the tracks.

Indy 500 is the latest Sega coin-op to make use of the proven Model 2 board — *Daytona USA*, *Virtua Fighter 2*, and *Sega Rally* were all based on the same technology, which bodes well for *Indy 500*. However, reaction to the game in Japan has been relatively muted so far, with Namco's impressive *Rave Racer* (NG 10) attracting a lot more players.

80
ROLLING START
STEP ON THE GAS PEDAL

Rolling starts (top) are very IndyCar, as are the many crashes (above)



Sega's efforts to create dynamic courses for *Indy 500* don't appear to have impressed Japanese gamers

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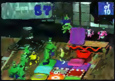

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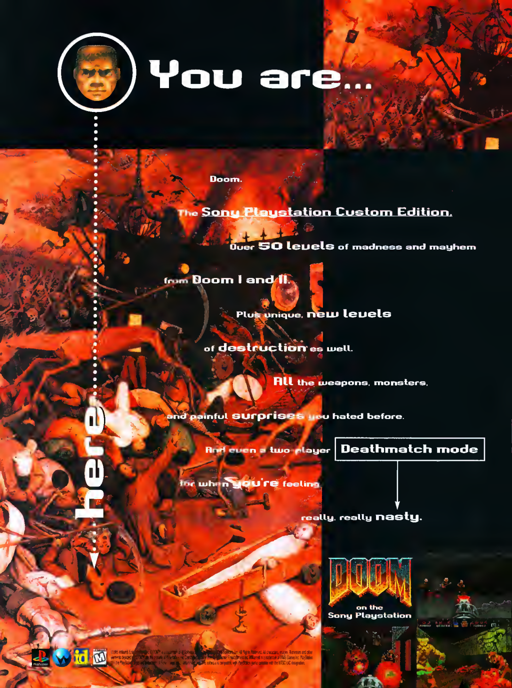

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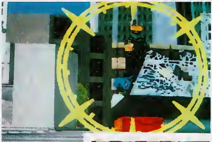
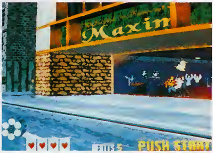
Virtua Cop 2

The gun game hasn't changed a great deal since *Operation Wolf.* Sega's *Virtua Cop 2* retains the basic gameplay but adds a few visual embellishments

Format:	**Arcade**
Publisher:	**Sega**
Developer:	**Sega AM2**
Release Date:	**TBA**
Origin:	**Japan**



***Virtua Cop 2* is powered by Sega's Model 2B board, which makes its overall look superior to its predecessor even if it's no different in terms of gameplay**

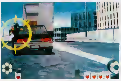


Gun games tend to have a long lifespan in the arcades, with sequels often keeping a series going for years — *Operation Wolf, Lethal Enforcers,* and *Mad Dog McCree* all spawned grander, more heavily armored offspring. With *Virtua Cop 2,* a two-gun coin-op with stylish polygon graphics in the mold of its other *Virtua* titles, Sega is adhering to the same formula.

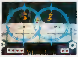
Virtua Cop was nothing more than a distillation of previous gun games into the attractive *Virtua*-house style, and *Virtua Cop 2* features the same magpie approach to game design. On certain levels, for example, there are barrels which, if shot, explode and eliminate all the enemies on-screen — a clearly *Doom*-inspired touch.

Also new are the driving sequences, where you look through the windscreen of a moving vehicle as enemies fire out of car windows and from the backs of trucks — a feature which appeared in *Operation Thunderbolt* and *Lethal Enforcers.* The targeting system remains the same as the original's, as do the three difficulty settings.

Already close to completion, *Virtua Cop 2* should sustain Sega's unmatched coin-op reputation, even if it will have trouble stealing the limelight from *Sega Rally Championship.*



One level of *Virtua Cop 2* puts you in a car chase, blasting at criminals leaning out of the cars in front of you



Like the original game, *Virtua Cop 2* is a two-lightgun cabinet, enabling two players to get into the shooting action

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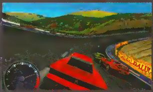

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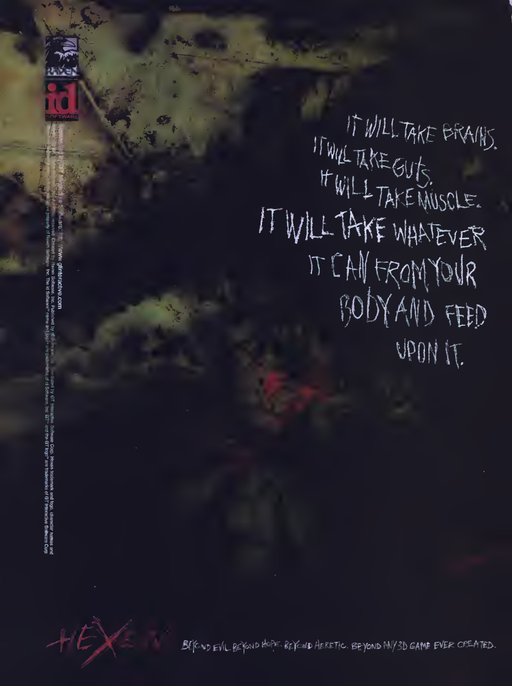
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BattleSport

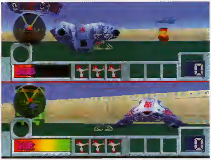
Touting a simple concept, simple controls, and competitive play, *BattleSport* may be 3DO's next "killer app"

Format: **3DO**
Publisher: **Studio 3DO**
Developer: **Cyclone**
Release Date: **December**
Origin: **US**

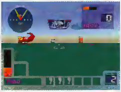
Of all the multiplayer games released during the past few years, only a handful (*Super Bomberman 2*, *Herzog Zwei*, and the tag mode in *Destruction Derby*) have managed to combine quick and easy controls with nontraditional gameplay, and still end up as an entertaining game.

Studio 3DO may have such a game in *BattleSport*. Offering players a simple game premise, an intuitive interface that takes only minutes to learn, and plenty of different power-ups to vary each run of the game, this title has all of the elements necessary for serious fun.

Although the texture-mapped polygon look is pleasing, *BattleSport*'s strength is its gameplay, not its graphics



The split-screen mode doesn't affect the game's speed, and shows an effective field of view

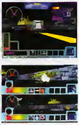


As seen, the simple interface makes for a quick learn before you really get into the game

The basic idea behind *BattleSport* is to take your battle-tank, find the ball, and shoot it into a goal. The interesting part is that there's another tank roaming around the arena trying to accomplish the same thing, intent on destroying your tank in the bargain. At the beginning of each level, players can purchase one of more than 20 different pieces of weaponry and power-ups including Super Missiles, Ball Attractors, Homing Mines, and Goal Shields, with money they've earned from winning earlier rounds. Once in the arena, items that give the player invisibility, and the ability of flight, or even blind the player can be grabbed, along with about 15 other bonuses. In addition to weaponry and power-ups, the team has also added a timer that adds a more realistic sports feel to the game, 10 different tanks to choose from, and a score of hidden items to keep players interested in long-term play. The two-player mode features a split-screen interface that offers a surprisingly effective field of view for both players, without interfering with the play speed.

Evan Margolin, the director of *BattleSport*, explains how the game evolved out of a relatively simple concept, "We're all big action gamers here [at Cyclone]. We wanted to create a fast-action, arena-based combat game and experimented with a 3D engine for it. When we got the basic engine up and running, the game was basically just about putting the ball into the goal, but when we started playing more, we found that people really want an opportunity to blast each other. One of the most difficult parts of design was getting a 3D engine with which we were satisfied. We didn't want to sacrifice speed, we wanted the game to be fast, we wanted the game to be hard hitting, and those were things we weren't willing to compromise on."

Although the realtime, texture-mapped polygon look is pleasing enough, *BattleSport*'s strength is in its gameplay, not its graphics. So, if you've been waiting for a 3DO title that's designed around ease of play, fast action, and strong competition, keep an eye out for this one.



In addition to the power-ups and weaponry, the timer adds a realistic sports feel to the game

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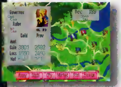

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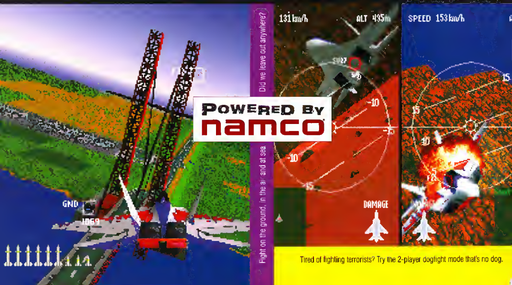
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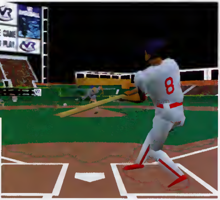
VR Baseball

InterPlay steps up to the plate with a new sports line boasting 3D rendered polygons, texture maps, and multiple camera angles



When this title is fully completed, *VR Baseball* will feature all the current major league teams and players

Featuring "Virtual Fieldvision," a 360° view mode, *VR Baseball* will enable players to see from multiple angles

A successful sports game franchise is like a license to print money, so it's no surprise that Interplay has jumped into the act with its new VR Sports division. A not so successful sports game franchise, on the other hand, is a lot like having the license to *Congo*, so again it's no surprise that VR Sports is going all out to make sure that its products are absolutely top-flight.

VR Baseball, its first effort, is a polygon-based baseball game with several new features, including multiple camera angles and something called "Virtual Fieldvision," a totally new 360° view mode. The game will provide all the expected features: real teams, real players, and real statistics, as well as the new divisional alignment and a general manager mode that enables you to keep abreast of real-life trades. There will be also be a feature for All-Star games, teams, and a home run derby.

Texture-mapped 3D polygons put sprite-based games to shame. *VR Baseball* will have the players' actual faces mapped onto their characters

Format:	**Sega Saturn**
Publisher:	**VR Sports**
Developer:	**VR Sports**
Release Date:	**TBA**
Origin:	**US**

Will *VR Sports* enable

Interplay to play with the monsters of the sports software world, Sega Sports, and EA? Releasing its baseball title first is a smart move; despite Sega's success with its *World Series* line, no one yet has a *Madden*-like hold on the baseball market. If VR Sports can gain a beachhead in the 32-bit market with baseball, it may be able to fell the giants of the sports market and step forward with its own dynasty. ng

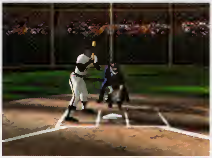
It's no surprise that VR Sports is going all out to make sure that its products are absolutely top-flight

A typical April schedule displays all of your team's opponents for the upcoming month

3D Baseball

Using its proprietary Real Motion Control, Crystal Dynamics hopes to capture baseball's season crown

Format:	**Saturn**
Publisher:	**Crystal Dynamics**
Developer:	**Crystal Dynamics**
Release Date:	**December**
Origin:	**US**



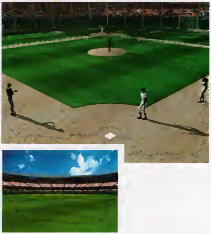
Realism is the goal of *3D Baseball* — even the umpires moves were motion captured

The release of both Sega's Saturn and the PlayStation is causing a leveling of the playing field as smaller companies rush to create the "killer app" that will catapult them to the top of the sales charts. This is especially apparent in the sports category — a genre Electronic Arts has dominated since the release of *John Madden Football* in 1991 — in which a score of titles are aimed at capturing baseball audiences.

The game's designers have placed realism as their central target, using Crystal's proprietary Real Motion Control

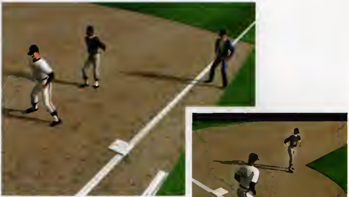
As the first title in Crystal Dynamics' Championship Sports line, *3D Baseball* will set the stage for an entire series to come. The game's designers have placed realism as their central target, using Crystal's proprietary Real Motion Control to display extremely realistic movement in a 3D world. The technology is used to grab moves specific to an actual player (the company has an agreement with the MLBPA (Major League Baseball Players' Association) and will include stats for more than 700 major league players in the game) and animate this motion with their on-screen personae.

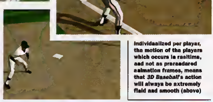
In addition to all of the standard baseball options, *3D Baseball* will also include the element of fatigue in pitchers, a full Pennant race, and even a Home Run Derby mode.



A scene from a game (top). Teams will have the correct uniforms texture mapped onto their bodies; *3D Baseball* is just the first of many titles to come from Crystal's Championship Sports line

> **"What we do is build polygonal models, break each model up into joints, and then follow the curve of each joint in motion"**
> Sam Player, designer





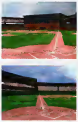
Individualized per player, the motion of the players which occurs in realtime, and not as prerendered animation frames, means that *3D Baseball*'s action will always be extremely fluid and smooth (above)

Sam Player, the game designer on *3D Baseball*, is excited about future possibilities of the Real Motion Control system. "A lot of times you'll see companies use motion capture, but they don't use it to its fullest advantage," said Player. "The reason everything always ends up looking choppy in those games is that the machines can't store all of the frames necessary for the full animation, and they end up showing every fifth frame or so.

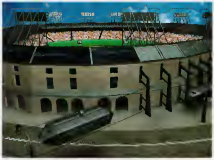
"What we do is build polygonal models, break each model up into joints, and then follow the curve of each joint in motion. Then we save these curves instead of each individual frame of animation. The tissue of a player's body realistically follows the framework underneath." The resulting effect is seen not only in players' fluid animation, but in the way that each of the motions can blend into another one at a moment's notice, a feature giving *3D Baseball* instant response-time and firm control.

The company has spent about 200 hours in the studio capturing nearly 500 motions, 150 of which will probably make it into the final release. The total frame count is expected to be about 30,000, a number that should have most graphics connoisseurs drooling.

But Crystal Dynamics has very strong competition: Interplay, Sony/Imagesoft, and Electronic Arts are all looking to grab the sports crown for themselves. But regardless of who ends up as the sales war winner, the outlook for gamers is bright. ng



Multiple views will put *3D Baseball* a step ahead of its 16-bit ancestors, and on par with 32-bit titles



As well as the company spending nearly 200 hours capturing a 500 different motions, rendered stadiums add to the realism of the game

Correction

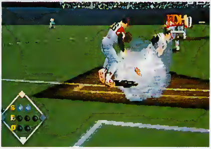
In last month's issue, pictures of Crystal Dynamic's *3D Baseball* were accidentally printed with a story on Interplay's *VR Baseball*. **NEXT Generation** wishes to apologize to both companies, and for any confusion this may have caused our readers. A corrected preview of *VR Baseball* can be found on page 151

Final Arch

Baseball games rarely make much of an impact, but Sega's latest Saturn-powered coin-op is shaping up to be one of the better-looking ones

Format:	**Arcade/Saturn**
Publisher:	**Sega**
Developer:	**Sega AM1**
Release Date:	**TBA**
Origin:	**Japan**

Each player has 20 different attributes which affect their batting, pitching, and fielding techniques



Slides are realistically animated and accompanied by dust

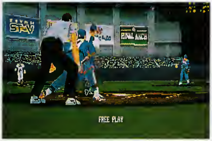
Sega's attempt to use Saturn technology in a range of arcade machines has borne little fruit so far. Apart from a couple of derivative side-on beat 'em ups and a puzzle game, the company's new baseball sim is the first real evidence of faith in the polygon-handling abilities of the ST-V — an arcade board designed to allow easy porting of software between arcade and Saturn.

Final Arch, which soon may undergo a name change, follows a series of popular sprite-based baseball arcade games released by Sega, is a supremely good-looking title. Given the excellent level of detail, the most remarkable feature is the speed of the action: The camera rotates and zooms exceptionally smoothly at a constant 30 frames per second.

The main concern of Sega's AM1 division (which was also responsible for the Model 2B-powered *Indy 500*) was to make *Final Arch* as realistic as possible. In addition to the TV-style presentation and the wide range of camera close-ups, there's an impressive range of convincing animation for the motion-captured characters, and each player has 20 different attributes which can affect his batting, pitching, and fielding techniques.

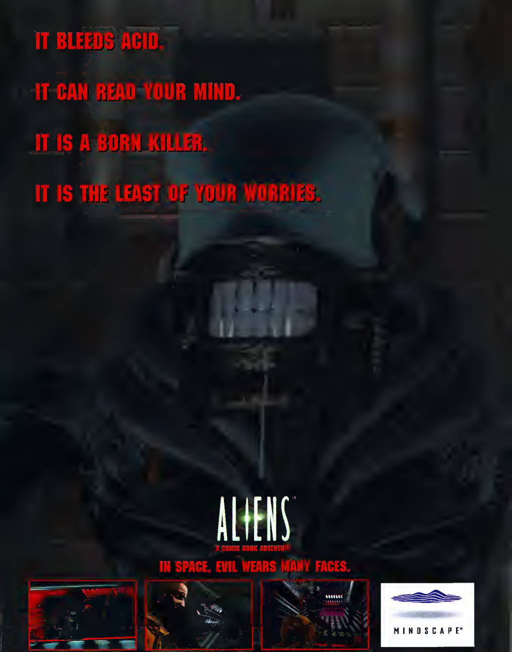
It's possible that Sega's ST-V coin-op won't make the journey to the US

PRESS START BUTTON
FREE PLAY



Not only are the polygon graphics well shaded, but the player animation and camera movement are superbly fluid

At this stage, it's unclear whether *Final Arch* will be ported to the Saturn, but it seems unlikely that Sega will waste what could turn out to be a playable and technically advanced version of the sport.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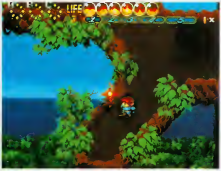
Shining Wisdom

Nintendo's *Zelda* is the benchmark for action RPGs. Now Sega's premier designers are trying to capture its spirit for the latest game in a classic series



Although it lacks the kind of pyrotechnics you'd expect from a Saturn game, *Shining Wisdom*'s animation and detailed gameplay should provide some compensation. The SGI-rendered hero, Mars (below)

All the characters in the game were modeled in 3D using *SoftImage*, resulting in a total of 10,000 frames of animation

Format: **Saturn**
Publisher: **Sega**
Developer: **Sonic Team**
Release Date: **Now (Japan)**
Origin: **Japan**

The classy series of *Shining Force* RPGs (role-playing games) is set to continue on the Saturn. While this new version looks primitive, due to its limited use of color, what can't be conveyed by these screen shots is the sheer amount of animation: all the characters in the game were modeled in 3D using SoftImage, resulting in a total of 10,000 frames.

Unlike the previous games, *Shining Wisdom* is an action RPG in the mold of 16-bit *Zelda* — in fact, its designers, Sonic Team (responsible for the first Genesis *Sonic*), have recently gone on record praising Nintendo's Super Famicom classic. *Shining Wisdom* is likely to embody all the features that make games like *Zelda*, *Secret Of Mana*, and the PC Engine's *Y's* series such fun to play.

As in most action RPGs, collectible items bestow special abilities on the game's hero: a Pegasus helmet enables him to fly, a Power Glove empowers him to throw enemies, and a Mole Glove will show him how to dig. Bizarrely, he'll also be able to transform himself into a monkey and swing from tree to tree.

Japanese text permitting, **NEXT Generation** will have a review of *Shining Wisdom* next issue. ng

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cute dogs
that hangs its head out the window,
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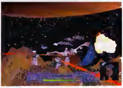

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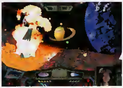

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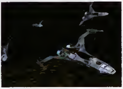

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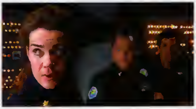

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Scavenger

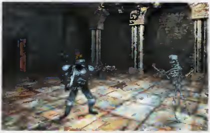
Los Angeles developer Scavenger may not be a household name just yet, but it's working on it. NEXT Generation meets a company with genuine pride in its work

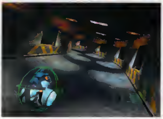
With Into the Shadows' realistic scenery, breathtaking lighting effects, and stunning character animation, it could easily pass as a pre-rendered graphic demo

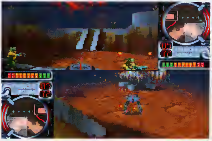
If you've never heard of Scavenger, the chances are that you will do soon, whatever platform you may now own. Scavenger is a Los Angeles, CA-based software firm on the verge of joining that elite group of developers which have access to state-of-the-art technology but which also recognize the overriding importance of playability. The company's forthcoming range of PC, Saturn, 32X, and PlayStation games could very well set a new visual standard on their respective machines, but Scavenger asserts what really counts is the gameplay.

Into The Shadows is initially the most impressive game of the pack. It's a PC dungeon game that, with its realistic scenery, breathtaking lighting effects, and stunning character animation, could quite easily pass as a pre-rendered graphic demo. Running full-screen in SVGA on a high-end Pentium, the 256-color, true-3D, texture-mapped polygon environment moves at more than 25 frames per second (fps) and boasts realtime lighting and motion-captured characters. This graphic sophistication would be impossible without Scavenger's Triton Advanced Physics Engine, which it has been working on for the past two years.

Into The Shadows is primarily a fighting game — an interesting choice of genre considering all the effort that has gone into the scenery. However, there is a significant exploration element involved — the player has to collect objects and discover secrets as he or she moves around the castle. To create the characters' movements, the firm enlisted the help of a Polhemus motion-tracking system, which has had considerable

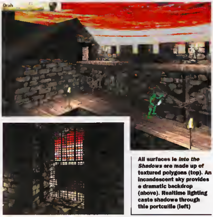




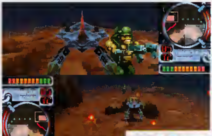


Into The Shadows **(above),** ***Vertigo*** **(below), and** ***Amok***

ng alphas



All surfaces in *Into the Shadows* are made up of textured polygons (top). An incandescent sky provides a dramatic backdrop (above). Realtime lighting casts shadows through this portcullis (left)



Saturn owners will be looking forward to *Amok*'s two-player mode. The head-to-head action can get very hectic

***Amok* boasts a wide variety of enemies. And like the scenery, these insect-like creatures have a tendency to pixelate when they come close to the camera**

Scavenger is determined that none of its games will ever appear on other platforms. Managing Director Daniel Small also insists that the company will never license its engine

benefits for naturalistic movement — and seeing hordes of belligerent skeletons, ghouls, and other foul creatures marching toward you in SVGA is a jaw-dropping experience.

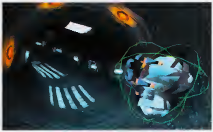
Scavenger is determined that none of its games will ever appear on other platforms. Managing Director Daniel Small also insists that the company will never license its engine: "Half the world is going toward using other people's engines, and only a few people are creating engines and developing technologies. We've been working on most of our technologies for two to three years now. Everybody here wants to make an original. We're not into the porting idea."

Although *Into The Shadows* will only appear on the PC, both Saturn and 32X owners will have their own innovative and visually outstanding titles, *Vertigo* and *Amok*. *Vertigo*, a pure 3D racing game running in 32,000 colors at 30 fps, is one of a pair of games scheduled to appear on the Saturn this year. Scavenger believes that what distinguishes *Vertigo* is its 3D collision system, combined with fast and varied gameplay. Although collision is a basic gaming element in all 3D action games, Scavenger believes it is ahead of the competition in this area, having taken account of every possible situation to create a truly immersive gameworld.

The other Saturn title is *Amok*. A two-player action racing game slightly resembling 3DO's *Total Eclipse*, this title offers a blend of slick graphics and intense split-screen racing certain to captivate Saturn audiences when it's released later this year. It also boasts landscape-altering algorithms the likes of which are in games like *Magic Carpet*.

"For most companies the landscape is static," observes Small. "Some firms replace one bitmap with another, but that's just too easy. Our BSpace algorithm enables us to permanently alter the gaming environment to create a more involving game."

It's refreshing in this era of hard-nosed commercialism to see a company that genuinely cares about its products. Daniel Small signs off: "There are people in this office for 24 hours a day, seven days a week. It's a lifestyle. This isn't a job. It's in people. It's their life." This is the level of dedication which makes Scavenger definitely a company worth watching. ng



With their 32,000 colors, you'll often find yourself admiring the spectacular backdrops in *Vertigo*. Belting toward a tunnel (above)

the hero?
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but the chili dog farts.

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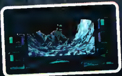
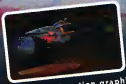


3D roller-coaster action



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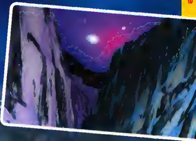

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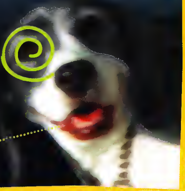

The next generation
in 3D gaming!

WipeOut PlayStation **Destruction Derby** PlayStation **Last Gladiators** Saturn **Daedalus Encounter** 3DO **Virtua Fighter** 32X **Apache** PC **Batman & Robin** Super NES **MK III** Genesis **Secret of Evermore** Super NES

We're gonna wrap you up in a cocoon of game reviews

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191	Arcade
191	Virtual Boy

Every month, the experts at **NEXT Generation** thoroughly play the latest titles available to give you the expert opinion on where to go for the best in gaming Now that developers are finally releasing their holiday titles, gamers have more choices than ever before.

★★★★★ **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.

PlayStation

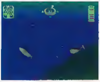
Aquanaut's Holiday

Publisher: ArtDink (Japan)
Developer: ArtDink

It is evident that the 3D environment will play a significant part in next generation gaming, and *Aquanaut's Holiday* is a prime example of this approach. Billed as an underwater exploration game, this *Sim-City*ish title drops you into the murky ocean waters enabling you to move about freely, establishing underwater stations, and building reefs as you go.

Seen from a first-person perspective, *AH*'s exotic sea life and realistic landscapes soon have you believing you really are exploring the floor of the ocean. And though the gaming aspect is a little on the subtle side, it's enjoyable just swimming around.

Rating: ★★★★



***Aquanaut's Holiday*'s cool blue waters surround you in this underwater exploration game**

Cyber War

Publisher: Coco Nuts (Japan)
Developer: Soft Vision

In *Cyber War*, the sequel to *Lawnmower Man*, Bandai has made the assumption that watching a movie is more fun than actually playing a game. Made up of several small events such as piloting a space ship through a virtual maze, *Cyber War* is held together loosely by a set of animated clips.

The only real interactivity is of the *Dragon's Lair*-style. This means pushing left at just the right moment or firing on a particular doorway to cue up the right animation clip. All in all, the extensive waiting around time only serves as a good opportunity to consider the short-lived novelty status of this game.

Rating: ★★

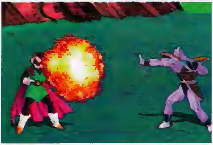
Dragon Ball Z

Publisher: Bandai (Japan)
Developer: Bandai

Based on a popular Japanese animation series, *Dragon Ball Z* made its debut on the 16-bit systems and was hugely successful with those fans familiar with the series. What this 2D fighter has going for it beyond name recognition, however, is not easy to identify.

Boasting nothing by way of real innovation, *Dragon Ball Z* is an instant disappointment to those looking for something new and exciting from the PlayStation. The gameplay is at very best average and the graphics are sub-standard when compared to other fighters like *Mortal Kombat*. About the only thing this one has going for it is the vast selection of characters.

Rating: ★★



The characters in Bandai's new PlayStation title, *Dragon Ball Z*, may be familiar to game fans in Japan, but in the US they carry very little weight

Philosoma

Publisher: SCE Japan (Japan)
Developer: SCE Japan

The original heyday of the space shooter has come and gone, and with games like *Philosoma*, it won't take long to remember why.

In many ways, this title is like the greatest hits of the space-shooter genre, featuring stages in the *Gradius*-style overhead perspective, the side-view (dating all the way back to *Defender*), and the behind-the-ship view which never quite worked on any of the earlier systems, nor does it really work here.

Philosoma looks nice enough and plays well, but the title breaks no new ground in any way. So, if you're feeling nostalgic, be sure to check out this one.

Rating: ★★

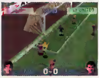
Winning Eleven

Publisher: Konami (Japan)
Developer: Konami

When looking at a game like *Winning Eleven*, it's easy to see where sports titles are going on the next generation systems. This polygonal soccer game rivals even the great *FIFA Soccer* for 3DO in gameplay, and though the look is a little less natural, it's easy to see the advantage of polygon characters when they turn 360° in setting up for a shot or make a perfectly angled slide tackle.

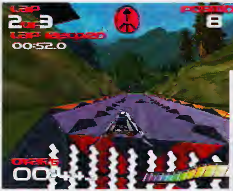
The interchangeable camera views, extensive replay features, and realistic gameplay are some of the other impressive factors that go into making this one of the finest soccer games to date.

Rating: ★★★★

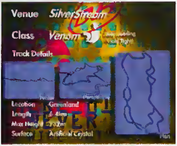


The polygonal characters of *Winning Eleven* move very well

PlayStation



The narrow tracks of *WipeOut* may seem confusing at first, but with some practice they start to feel just right. Here, your racer passes over a canyon gap


Venue Silver Stream
Class Venom
Track Details
Location Greenland
Surface Artificial Crystal

For skilled racers, loading screens are a real aid. The Profile grid, for example, assists you in foreseeing upcoming hills

CLASSIC

WipeOut

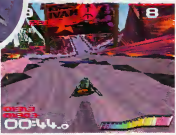
Publisher: Psygnosis
Developer: Psygnosis

There have been a number of next generation games with their share of flash, but not much substance. *WipeOut* stands tall above these titles with more flash and substance than most games were ever even meant to have. Set in the not-so-distant future, this hovercraft racer boasts some of the best looking landscapes seen to date, with equally exquisite tracks resting gracefully in the hills and valleys of each environment. It would have been easy enough to stop there, but Psygnosis went the extra mile with innovative lighting techniques and an overall stylistic approach to visual design.

Although the graphics and heart-pounding soundtrack are easy enough to fall in love with, the most exciting aspect of this title is the racing itself. Zipping over hills and rounding the smooth curves is an overall lesson in excitement. The significant learning curve for play control may prove a bit on the frustrating side the first few times you play through, but once the occasional lucky move starts translating into seasoned tactics, you'll know it was worth the time and effort.

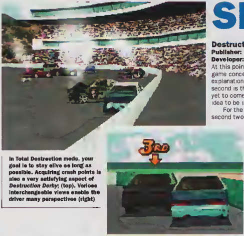
Wipeout is, in every way, an exhilarating game with a real feeling of quality through and through. If there's anything left in the racing genre to look forward to now, it's a sequel. A new high-water mark has been set with Psygnosis' *WipeOut*.

Rating: ★★★★★



Opponents are capable of blasting you from behind, dropping mines, and using other power-ups to slow you down, as this craft is about to do in this slim tunnel (above right). Mastering the skills of climbing hills and making the right road choices will increase your chances of taking the lead and keeping it, despite the ruthlessness of your enemies (right)

PlayStation



In Total Destruction mode, your goal is to stay alive as long as possible. Acquiring crash points is also a very satisfying aspect of *Destruction Derby*; (top). Various interchangeable views enable the driver many perspectives (right)

SMASHING

Destruction Derby

Publisher: Psygnosis
Developer: Reflections

At this point in the videogame industry, when a completely original game concept makes its way to the surface, there are three likely explanations. The first being that the idea is just not that good. The second is that the idea is simply brilliant and the proper genius had yet to come along. The third is that new technology is enabling an idea to be implemented for the first time.

For the most part, *Destruction Derby* can be explained by the second two. The idea of smashing into other cars at high speeds, after all, is a fantasy shared by anyone who has ever spent time behind the wheel of a car. Yet the crash mechanics (and graphic representations thereof) would never have been possible on a 16-bit system.

There is, however, a certain spark missing in *Destruction Derby*. It's not in anything tangible, as the gameplay, graphics, and sound are all handled extremely well, but there is something in the one-player racing option that never quite clicks. Two-player contests are entirely different, especially the smash-up derby held in an open arena. It's the one-player mode that's lacking

So try before you buy for solo play. But spend just a few seconds in the open arena with a buddy, and you'll wonder how you ever lived without this form of release.

Rating: ★★★★

Saturn

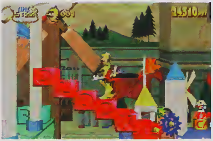
Clockwork Knight 2

Publisher: Sega Japan (Japan)
Developer: Sega Japan

Following up on the success of the first *Clockwork Knight*, this sequel relies on the same formula as the original. And the game is almost the same, except you can scroll in and out of the background, providing a feeling of *3D*. Though the Saturn's appeal is said to be aimed at an older audience, the cute graphics and bright pastel colors of *Clockwork Knight 2* are most likely to attract a much younger crowd.

There was a question, when *CK* was released, if the next generation gamer was still interested in side-scrolling action games. Perhaps the success of *CK2* is meant to be the determining factor for Sega as to whether or not there is any life still left in this genre. If you like *CK* you are sure to like *CK2*.

Rating: ★★★



The bright pastel colors of *Clockwork Knight 2* are not likely to have much appeal for older gamers, but younger ones will enjoy its simple gameplay

Dark Legends

Publisher: Data East
Developer: Data East

There are several uses for the power of the next generation systems, including shining up the tired genres of the 16-bit platforms. *Dark Legends*, a *2D* brawler, attempts to take advantage of this angle, somehow missing the mark.

There are a few elements in *Dark Legends* that make thorough use of Saturn's power, including a wide variety of colors, smoothly scaling backgrounds, and unusually large fighters. But for the most part, *DL* is very much like all the *2D* fighters preceding it. Though it is possible to have fun playing this game, it would be a mistake to buy a next generation system for a game like *Dark Legends*.

Rating: ★★

Riglord Saga

Publisher: Sega Japan (Japan)
Developer: Micro Cabin Corp.

Having enjoyed huge success in Japan, *Riglord Saga* is just the kind of gorgeous game likely to dazzle US role-playing game (RPG) fans. Though it falls a little short in exploratory fun and while it depends too heavily on battles and pre-determined story development, there is little doubt that this is the model of RPGs to appear on Saturn.

The stylistic good looks of *Riglord Saga* are sure to have a serious impact on US RPG fans

It's doubtful, due to its rather dry format, that this game is likely to attract many non-RPG fans even with its gorgeous graphics, but for those eager to get a look at a next generation RPG, *Riglord Saga* is not at all a bad place to start.

Rating: ★★★

Street Fighter: The Movie

Publisher: Acclaim
Developer: Capcom

There's no doubt that games like *Mortal Kombat* and *Fatal Fury* owe a debt of gratitude to the *Street Fighter* series. And while the genre has burned itself out in the eyes of many gamers, the legend of *Street Fighter* lives on. Hoping to cash in on its notoriety, *Street Fighter: The Movie* is a near-perfect translation of its coin-op brethren.

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Saturn

THUMBS UP

Last Gladiators

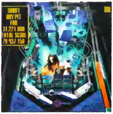
Publisher: Kaze Co.
Developer: Kaze Co.

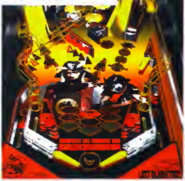
If there was fun to be had in an arcade before the invention of videogames, it was most likely to come from a pinball machine: a machine with two flippers, a hyper-sensitive set of bumpers and targets, and a shiny silver ball. But pinball machines have generally fallen off in popularity and as one final insult to the genius of pinball, now they can be duplicated on the very platform that made them nearly obsolete

Video pinball has always been a near-miss proposal, but with the advance play controls of systems like Sega Saturn, and the excellent programming represented in games like *Last Gladiators*, it is hard to deny there's much that can't be done accurately in this style simulator

With four tables from which to choose, and all the bonuses, jackpots, and skill shots offered in today's most advanced pinball machines, *Last Gladiators* is not only convincing, but it's a great deal of fun. It would have been nice to perhaps have a choice of different perspectives, but at least the view offered is easy to work with.

Rating: ★★★★





Each table of *Last Gladiators* has its own style and attitude, but they all play pretty much the same (top). The fluid motion of the ball is so realistic that you will soon forget you're watching a television screen (above)

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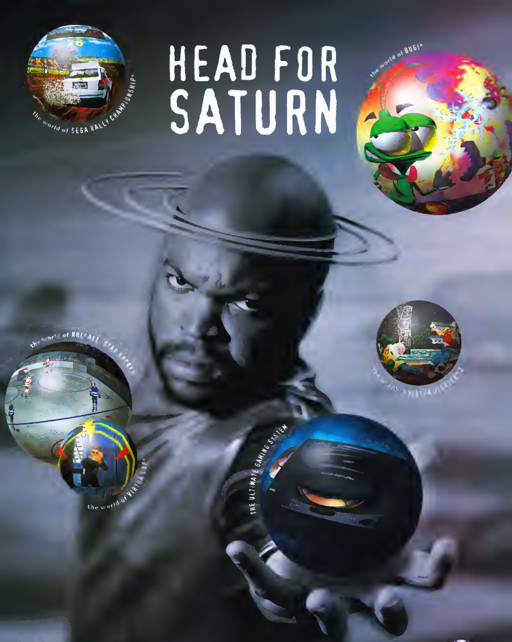
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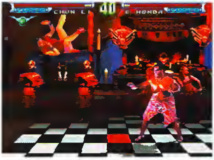


All your favorite characters from *Street Fighter 2* — Chun-Li and E. Honda (above), Guile, M. Bison, and Ken — appear in *Street Fighter: The Movie*

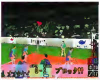
Featuring all the major, and even some minor, characters from the humbly received movie, this title is not only well executed, but extremely thorough, including the Movie, Two-player, Tournament, and the Single player modes. While the fact remains that *Street Fighter: The Movie* is still a two-dimensional fighter, the title looks and plays great.
Rating: ★★★

Virtual Volleyball

Publisher: Imagineer Co. (Japan)
Developer: Imagineer Co.

In *Virtual Volleyball*, the first polygonal volleyball game to appear on any system, it's clear that polygons don't necessarily make a good game. Yes, the players are in full 3D, but with limited control over where they can move or what they can do once they get there, it's not much fun controlling them.

There are inherent problems in doing a volleyball game when considering the matter of trying to control an entire team, but *Virtual Volleyball* seems to make no effort to solve any of these problems, leaving the gamer with an extremely vacant feeling.
Rating: ★



The general lack of control in *Virtual Volleyball* puts this one in the "not quite there" category

3DO

Panzer General

Publisher: SSI
Developer: SSI

One of the best PC wargames of '94 has arrived on 3DO. It may not have a whole lot of flash, but what it lacks in style, it makes up in substance. If you ever wanted to command the Blitzkrieg, well, here's your chance. Almost every ground and air attack craft of the WWII European theater is represented, from tanks to tactical bombers, and the strategy is miles deep

Supply problems, hidden units, they're all there, fighting as either the Axis (as the title implies) or the Allies. The 3DO enables you to use zooming map screens, but if you find yourself

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3DO

MOVING

If FMV makes you sick, The *Daedalus Encounter* might not change your mind, but it might keep you amused (inset). The idea is straightforward: follow these two clumsy, accident-prone space marines around and keep them out of trouble (above)

The Daedalus Encounter

Publisher: Panasonic
Developer: Mechadeus

Released for the PC earlier this year, *The Daedalus Encounter* is a straightforward port. As a disembodied brain encased in a mechanical probe (well, not exactly, but close enough), you, the player, get to sit around watching long FMV scenes, then hop in at odd moments to pull your two clumsy human comrades out of trouble. This is accomplished by solving logic puzzles, but the occasional action sequence is thrown in for good measure.

If the video were any less well produced than it is, this would be a tedious bore. As it stands, the game's mixture of digitized video, starring Tia *Wayne's World* Carrera (clad in form-fitting jumpsuit while her male counterpart wears body armor — subtle), and rendered scenery are always a joy, and make it worthwhile — think of *7th Guest* with a solid story and decent acting and you get the idea. Also, every once in a while, you actually get to "pilot" your little probe instead of just watching video of it flying around, which helps. The puzzles range from laughably easy to mind-numbingly complex (we dare anyone to figure out scene 20's "orbit" puzzle in a timely fashion). A little more consistency of challenge would have been a nice idea.

The 3DO version is, perhaps predictably, more of a chore to control than the PC version, but the video quality is excellent, and its full-surround stereo is great. We almost hate to admit it, but here's an FMV title that works.

Rating: ★★★

If puzzles are your game, this won't disappoint, but the widely varying complexity of the challenges could put some folks off

turning off the music and battle animation after about five minutes, don't worry, so did we.

Rating: ★★★★

Crushing the opponent's pathetic cavalry with the "Blitz" is the big thrill in *Panzer General*

Jaguar

Pitfall: The Mayan Adventure

Publisher: Atari
Developer: Activision

Debuting on the 16-bit systems, *Pitfall: The Mayan Adventure* has made a few successful port-overs to platforms like the Sega CD and the 32X. In what represents a home-coming for the *Pitfall* series, *The Mayan Adventure* is now available on the Jaguar and is every bit as good a game as it was on any other system.

The allure of *Pitfall* may be the lush jungle environments, the smooth animation, or the overall playability, but whatever it is, *Pitfall* maintains a feeling of quality game design from the very beginning, and is well worth checking out, especially if you're an old-school *Pitfall* fan.

Rating: ★★★★

Swinging from vines was never like this in the original *Pitfall*

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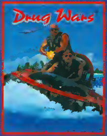

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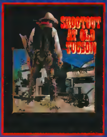
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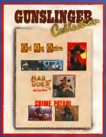
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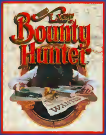
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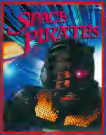
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Rayman
Publisher: Atari
Developer: Ubi Soft

Although this title will soon be available for just about every system that was ever created, it will be difficult to find a version that out-performs the Jaguar. With its vast color palette, detailed sound effects, and overall playability, there is nothing about *Rayman* for the Jaguar that falls below the mark of excellent. In fact, there is little if anything about the PlayStation or Saturn versions that will top this one.

The only question left unanswered, then, is whether players need yet another side-scrolling action game. The answer is, of course, no, but since we know we're going to get them anyway, it's at least nice to know that they might be as good a *Rayman*.

Rating: ★★★★

***Rayman*'s sharp graphics are sure to dazzle any Jaguar cynics**

32**X**

UN-X-PECTED!

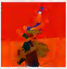
Virtua Fighter
Publisher: Sega
Developer: Sega AM2

Virtua Fighter, the two-year-old arcade brawler that was squeezed onto Sega's high-end Saturn and was completed full of glitches and a significantly smaller polygon count, arrived on the 32X without the glitches and with added features not in the coin-op.

What makes *Virtua Fighter* such a great game is the excellent hand-to-hand combat, and the 32X version has kept all the moves intact. The characters don't look quite as good as the Saturn version, but still look amazingly solid. Also added is the three new camera angles (birds-eye, low-angle, and high angle), a tournament feature for a group of competitors, and a full-match replay feature. All of these features are ones that home games need to have, and ones that certainly should've been included with the Saturn version.

Should you trade your Saturn in for a 32X? In a word, no! *Virtua Fighter Remix* and *Virtua Fighter 2* have no chance of fitting on Sega's little add-on. However, if you already own a 32X, *Virtua Fighter* is the best fighting game available — and one you'll need.

Rating: ★★★★



The popular replay feature is here, minus the glitches of Saturn's version (inset). There's three views to choose from, like this over the shoulder view (top)

32X

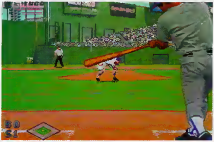
World Series Baseball
Publisher: Sega
Developer: Blue Sky

Arguably the best baseball series on the market, *World Series Baseball '95* has made its way to the 32X. And everything that made *WSB* for the Genesis the best baseball game ever is here.

This title features all 28 stadiums, up-to-date rosters, a full season, playoffs, the world series, trading, drafting, all-time greats, stats, and even an all-star game based on players' performances from the season you play. There's also slight improvements in graphics, sound, and even play. While the improvements aren't incredible, they do make the 32X version the best baseball game anywhere. The play is deep enough for the biggest stat freak, and fast enough for the arcade fan.

World Series '95 for the 32X isn't much better than its 16-bit counterpart, but it's easily the best baseball game available. This one won't disappoint.

Rating: ★★★★★



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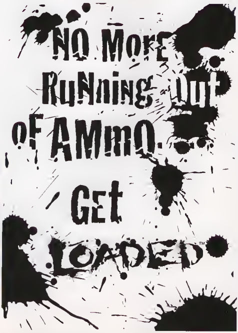
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Neo-Geo

The King Of Fighters '95
Publisher: Neo-Geo
Developer: SNK

In an ever-intriguing effort to vary the endless supply of 2D fighters churned out for the Neo-Geo, SNK has added the facet of team matches to *The King Of The Fighters '95*. The idea behind fighting as a three-person team (one fighter after another, not three at one time) adds an interesting flare to the game, but the final result is still a one-on-one fighting game with nothing much new to offer the seasoned fighter.

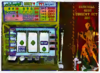
We hate to even suggest it, but in the end, if you like two-dimensional fighters, you'll probably like this one.
Rating: ★★

PC

Casino Deluxe
Publisher: Impressions Software
Developer: Impressions Software

You might think that doing computer simulations of gambling games is easy, but the plethora of incredibly bad ones on the market shows the fallacy in that thought. *Casino Deluxe* is an exception. It spares us the FMV and "virtual casino" walkthroughs and concentrates on the games. Slots, Pai Gow, Caribbean, video Poker, Craps, Roulette, and Blackjack are all represented here.

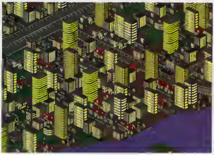
On the downside, the strategy guides cover only the basics and unless you're testing your "system," playing casino games isn't that fun on the PC. Still, if you're into these games, this is one of the best around.
Rating: ★★★



Graphically, *Casino Deluxe* is one of the best casino games around

C.E.O.
Publisher: I•Motion
Developer: Artdink

Much the way that, deep down, Maxis' *SimTower* was nothing more than an elevator simulator, this game is really a management-training game, loaded down with



In I•Motion's *C.E.O.* you get the chance to run big businesses, but the actual play mechanics are more like *SimCity* or *A-Train*

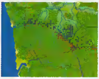
lots of other features, like stocks, subsidiaries, and various *SimCity* elements, that's trying to convince you that you are actually running a mega-corporation.

When was the last time you saw a real CEO (or anyone for that matter) try to get the busses and trains to run efficiently? This isn't a bad game, but it just doesn't give a good feeling of cohesion.
Rating: ★★

D-Day: America Invades
Publisher: Avalon Hill
Developer: Atomic Games

This distant descendent of *Utah Beach* does an exceptional job of simulating the battle of D-Day and the difficult yard-by-yard fighting that followed, as the Allies fought for the crucial territorial advantages that would eventually clinch victory in the European theater of World War II.

As the decision-maker for just about everything, you can change variables of the battle, including even crucial weather conditions, which adds to your options. Atomic Games manages to take much of the tedium out of this tile-based wargame, enabling you to concentrate on strategy as you try to duplicate history, or if you're playing as the Nazis, change it.
Rating: ★★★★

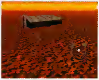


***D-Day's* play is greatly improved by time-saving devices Atomic has incorporated into the game**

Mirage
Publisher: Atlantis Interactive
Developer: The Dream Designers

You know, with great graphics, you really don't need good gameplay, logical puzzles, or a clear interface. Oh no, wait, that's wrong! And that's what's wrong this disc.

Basically, this is like *Myst* set in the old west, only with even less cohesion and logic than *Myst*. Like areas that will randomly kill you? Like spending minutes searching for hot-spots with a mouse? No? Well then, stay away from this.
Rating: ★



If looks were everything, *Mirage* would be the only thing. Too bad that's not true, oe either count

NFL Pro League Football
Publisher: Micro Sports
Developer: Micro Sports

PC sports titles usually feature excellent statistical models and totally simple graphics. Now Micro Sports is trying to broaden its

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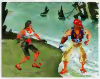
appeal by adding better graphics to its football game. It shouldn't because, instead of good simple graphics, it now has horribly "good" graphics, with choppy animation, and poor sound quality. The statistic model is still phenomenal though, able to replay whole seasons with surprisingly accurate results. Micro Sports either needs to stay simple or partner up with someone who has more graphic experience.
Rating: ★★★

Savage Warriors
Publisher: Mindscape
Developer: Atreid Concept

Two-dimensional fighters are still big news in the PC world, and *Savage Warriors* is a good example of the genre. The characters move fluidly, the backgrounds look great, the control is good, and there are plenty of hidden moves. The ability to hang from background items is particularly innovative.

Sound is somewhat uninspired, though, and it was frustrating that there was no tournament mode, or way to select who to fight in one-player mode. Still, if you're looking for 2D fighting on the PC, *Savage Warriors* is very competent effort.
Rating: ★★★

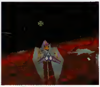


You can't ask for much more on a PC than *Savage Warriors'* smooth animation and good action

Terminal Velocity
Publisher: Apogee
Developer: 3D Realms

It seems every time you think there would be no possible way for someone to do another *Doom/Descent* clone, Apogee releases a new title. Don't get us wrong — this is fun to play, and it adds some flight-sim elements. And, happily, you're not always stuck in tunnels (there are various cities and space environments among other locales).

But overall, the genre, as currently exploited, is beginning to wear thin, and another "save-the-earth" shoot-em-up isn't going to alter that aging process.
Rating: ★★

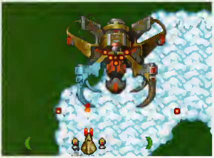


***Terminal Velocity* is about as dressed up as *Doom* can be**

Tyrian
Publisher: Epic Megagames
Developer: Epic Megagames

There haven't been many vertically scrolling shooters out for the PC, and while this title would likely die a quick death on the console market, it has got a much better chance on the PC.

You know the drill — buzz through 50 levels of multiscrolling, power-up seeking, everything-on-the-screen-shooting, bullet-avoiding action. Actually, you have to buy the power-ups with cash you get in



The action in *Tyrian* is just as intense as any of the countless shooters on any of the consoles — but it's got a better chance to succeed on the PC

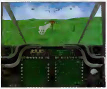
PC

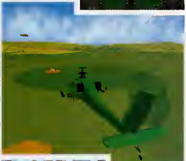
STRIKING!

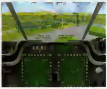
Apache
Publisher: Interactive Magic
Developer: Digital Integration

"Wild" Bill Stealy, one of the founders of sim-giant Microprose, is back and it's no surprise that Interactive Magic's first project is a stunningly realistic simulation of one of the most complex military aircrafts of all time — the weapon-packed AH-64D Apache Longbow helicopter. Just getting the thing to fly without plunging into the ground takes skill and practice, to say nothing of staying alive (or completing missions) in a hostile environment. In a concession to the *Doom* generation, though, there is an Arcade mode in the game that greatly simplifies the control and enables you to get up and kill quickly.

The three mission scenarios (Yemen, Korea, and Cyprus) are progressively more difficult and, although the shaded polygons look simple to texture-map jaded eyes, the graphics work well. The network and modem play is superb, enabling you to have a comrade to fly as a wingman, weapons operator on your Apache, or as an enemy 'copter. Overall, the combination of extreme realism in the flight model with satisfying scenarios puts *Apache* very near the top of the simulation heap.
Rating: ★★★★★







The actual graphics of the game are not overly complicated, but the gameplay and action are intense (top and above). Learning to fly definitely takes some practice and concentration, but once you've got the hang of it, you'll find that the flight model and mechanics are entirely realistic (left)

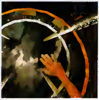
each level, which is cool, as is the fact that you can save games at any time. There's also a story in the game. Grab datacubes in each level to discover, for once, just why you're killing everything you see.
Rating: ★★★★

Macintosh

Frankenstein: Through the Eyes of the Monster
Publisher: Interplay
Developer: Amazing Media

Frankenstein: Through the Eyes of the Monster is one of those precious handful of FMV-intensive games that's almost entirely devoid of cheese. Even Tim Curry's smarmy portrayal of the mad, egomaniac scientist Dr. Frankenstein seems to work here, and players could call their constant desire to beat the crap out of the good doctor a gameplay element. We can vouch that it spurred us along.

Thrust into the role of a man hanged for murder and then reanimated in a maniac's lab, the player must explore the brooding Castle Frankenstein in search of clues to the nature and consequences of his own bizarre resurrection. The game is a photorealistic beauty, with a transparent interface and some of the most seamless video integration around today. The horror element is nicely gradated here as well, with surprises ranging from the "God-Awful Epiphany" to the cinema-style shock to the base-level gross-out, and the puzzles manage to avoid insulting the player's intelligence. This is a class act, shy of "stunning" only by the mannered nature of its subject matter, and hints that Amazing Media may be poised to kick some major interactive butt.
Rating: ★★★


Here's your new arm. Dr. Frankenstein gave you the first one that came in, er uh, handy

Sega CD

SPUN OUT

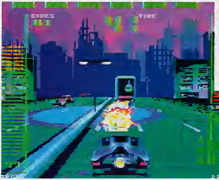
Batman and Robin
Publisher: Sega
Developer: Sega

Don't be fooled here. While the Genesis version of this title might have been a lackluster, side-scrolling action game, rest assured that the Sega CD version is quite different — it's a lackluster driving/shooting game, instead.

As game designs go, this is about as basic as they come. First, you drive for a level (the first level is mostly straight and flat though, so don't worry), then you get to fire headlight-mounted guns at a few cars, then you get to drive some more, chasing down the mobile forces of Poison Ivy. Next, you get to drive some more and chase down the Riddler, and after that, well, you get the picture.

From a technical standpoint, the scrolling is extremely smooth, and there's a surprising amount of stuff lining the road — a trick neatly avoided by EA's *Road Rash* for Sega CD. There's also plenty of cool animated cut-scenes pulled from the series. However, it's mostly a journey into sheer tedium, boring yet frustrating at the same time.
Rating: ★★

You're treated to some cool animated scenes from the animated series in between the somewhat mediocre driving and shooting stages (top). But frankly, it's better off to tape the series from cable



If you like the way this looks, then you're in luck since every level in *Batman and Robin* looks a lot like it. It helps to be totally fixated on driving the Batmobile, too

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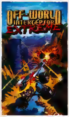

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ZOMBIE™

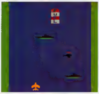
CD ROM GAME

Atari 2600 Action Pack
Publisher: Activision
Developer: Activision

Ah, nostalgia. Here at last, owners of the finest personal computer platform in the world, the Macintosh, can gleefully waste their high-end graphics and sound capabilities on all the chunky, buzzing, blocky, repetitive, ugly-ass games they used to play on their Atari 2600s, back when 64 K was a wet-silicate dream. *River Raid*, *Spider Fighter*, *Chopper Command*, *Seaquest*, *Freeway*, *Kaboom!*, and even the original *Pitfall!* — they're all here, some in eight or more vibrant colors!

What can be said? These games are simple, they're no-frills, and some of them are still fun... for about five minutes. After that point, nostalgia had better keep you awake buddy-san because these *Jurassic* turds won't.

Rating: ★



With *Atari 2600 Action Pack*, you can play fuzzy, buzzing games on your high-end Mac system! Joy!

Genesis

Foreman For Real
Publisher: Acclaim
Developer: Probe

Foreman For Real is the second boxing effort for the Genesis to sport the rotund, aging, but never-say-die boxer's name. The first *George Foreman's KO* boxing was a truly enjoyable game, but this second effort is a differant story. In the three years between the games, Acclaim has managed to destroy the gameplay, ruin the graphics, and completely suck out every bit of fun.

The option of playing in a tournament, season, or exhibition game would be great if the boxing wasn't so incredibly dreadful. What you do most in *Foreman For Real* is mash the buttons in the hopes that your opponent will eventually fall. This is fun, isn't it?

There seems to be no real effort put into any single aspect of this title, and the end result is arguably one of the poorer boxing efforts ever released.

Rating: ★

Sega Genesis

FINISHED?

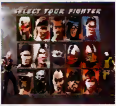
Mortal Kombat III
Publisher: Williams Bally/Midway
Developer: Sculptured

With the emerging genre of 3D fighters bullying their way to the forefront, the third installment of the 2D, blood-spilling arcade classic *Mortal Kombat* was received with much skepticism. But now it heads to the 16-bit platform where 3D is not an option, and it should resume its place on the top of the console fighting games.

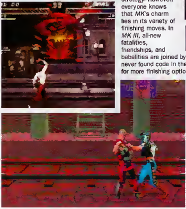
Mortal Kombat III features familiar characters like Lui-Kang, Sonya, and Sub-Zero, along with a gaggle of new characters like Sheeva and Night Wolf who add very little to the game. The fighting is still decent, but with the addition of a *Killer Instinct*-type combo system, there is less and less strategy. However, everyone knows that *MK*'s charm lies in its variety of finishing moves. In *MK III*, all-new fatalities, friendships, and babalities are joined by animalities (an often rumored but never found code in the first two games of the series) to make for more finishing options than fighting moves. The graphics and sound are easily on par with *MKII*, and much better than most Genesis games.

As a 16-bit game, *MKIII* is certain to maintain a large part of its loyal following happy with its hidden secrets and mega-gallons of blood, but as a whole, the *MK* series is getting stale and in dire need of some major reworking.

Rating: ★★★★



Sixteen characters, all with their own variety of moves (and finishing moves) is a key to *Mortal Kombat III*'s success



Blood, and gallons of it, is what *MK*, *MKIII* included, is all about (inset). Night Wolf is one of the few new characters with charm (above). The *Killer Instinct*-style combo-system minimizes strategy

***Foreman For Real* looks like every other bad boxing game, and it plays even worse**

Scooby Doo
Publisher: Acclaim
Developer: Sunsoft

Ruh Roh Raggy! That's right, Scooby, Shaggy, Thelma, and the whole gang are now part of a graphic adventure videogame.

The look of the famous TV show is captured wonderfully, from Shaggy's walk to Scooby's dialogue to the zany chase scenes. However, watching reruns of the cartoon is a much more exciting way to enjoy these elements. What *Scooby* suffers from is a slow interface that has no place on a gaming console. It takes entirely too long to do anything and ultimately just makes you not want to play. While the idea is a good one — solve one or two mysteries with the hapless Shaggy and Scooby — the application of the idea was done in an uninventive and tiring, old format.

If you have the patience to wade through the interface, the occasional humor and puzzle elements will reward you, but the amount of reward isn't equivalent to the amount of pain.

Rating: ★★

rating super nes

Prime Time Football '96

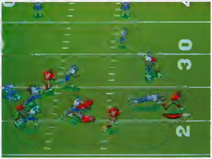
Publisher: Sega
Developer: Sega Sports

Last year, *NFL '95* was arguably the best football sim available on the 16-bit systems. This year, Sega has added the football/baseball star Deion Sanders to the title, the usual updated rosters, and made some minor tweaks in gameplay.

Overall, this is the same basic title as *NFL '95*, but with new players. All 28 teams include updated rosters, accurate ratings, season play, and stats kept for every player. The gameplay is still simple and realistic. The pending power of the 32-bit football games makes the tiny sprite-based players look archaic, but as Genesis football games go, *Prime Time* is a winner. Plus, the gameplay is slightly faster than *'95* and the AI is a much tougher.

There is nothing really wrong with *Prime Time* other than the fact that it isn't much better than last year's version.

Rating: ★★★★



If this screen looks a lot like *NFL '95*, it's probably because it looks just like *NFL '95*. Still, *Prime Time '96* features faster gameplay and tougher AI

Super NES

Batman Forever

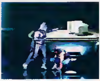
Publisher: Acclaim
Developer: Acclaim

The summer's biggest movie has been turned into — surprise! — another side-scrolling action game. Acclaim has spent a lot of money developing its in-house video and motion-capture facilities and it shows here, literally.

The game *looks* incredible. "But," you might ask, "how does it play?" Well, a lot like *Final Fight*, except it's not good. See a digitized Batman shuffle from left to right, punching and kicking bad guys. See Robin join him. Boring.

For all their digitized glory, the characters are surprisingly small, and the control is awful — it actually uses the SELECT button, plus the control pad, to fire the Batrope. And while Batman has a large array of weapons at his command — Batarangs, smoke bombs, even something called "Slippery Goo" (really!) — and there's a lot of hidden areas and items, courtesy of The Riddler, in the end, the game's biggest accomplishment is making *Maximum Carnage* look like a masterpiece. To be avoided.

Rating: ★



Coming up with new riffs about side-scrollers based on films, like *Batman Forever*, is a real chore

Big Sky Trooper

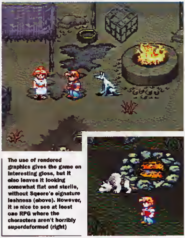
Publisher: JVC
Developer: LucasArts

It's difficult to pin down exactly what genre this game falls into, but it's some kind of combination of action, RPG (role-playing game), puzzle, and trading games.

However, considering how cute *Big Sky Trooper* attempts to be — the hero's spaceship is shaped like a big, floppy-eared dog, his (or her) battlesuit looks like nothing so much as an upright canister vacuum cleaner, and the main enemy consists of a race of conquering intergalactic slugs —

Super NES

GREEN



The use of rendered graphics gives the game an interesting gloss, but it also leaves it looking somewhat flat and sterile, without Square's signature lushness (above). However, it is nice to see at least one RPG where the characters aren't horribly superdeformed (right)

Secret of Evermore

Publisher: Square Soft
Developer: Square Soft

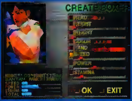
Square Soft is practically synonymous with Japanese RPG, but here's their first title developed in the United States, and specifically for an US audience. *Secret of Evermore* centers, naturally, on a young boy and his dog, trapped in an artificial dimension created by a team of scientists. At 24Mbits, the adventure is as sprawling as any Square title, and Evermore itself is broken into a number of different fantasy worlds, giving the game a great deal of variety. The magic system is certainly new, based on alchemy, requiring you to find and utilize ingredients in different combinations, rather than spell points.

It's a fine effort, and a great game, but it's also a first effort for a new team, and that shows in a number of small but important ways. Combat is handled through action instead of combat screens, as in Square's own Secret of Mana, and while that's good, here it's often more of a challenge than it needs to be. The storyline takes a while to get going, and meanders aimlessly at times. Perhaps most tellingly, the central character is never joined by anyone (besides his dog, who doesn't say much), remaining a loner for most of the running time. This may be a reflection of American "pioneer spirit" vs the more Japanese group mentality, but it also leaves less chance for interaction and character development.

It's possible that if this had come from anyone but Square, we wouldn't be so critical. Evermore is lighthearted and extremely enjoyable, and as a debut title for a new team of designers, it points to a rosy future — but it does leave us mostly wanting to see what comes next.

Rating: ★★★★

How would you design the perfect boxer?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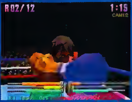
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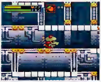
NYR
NOT YET RATED

it's also incredibly large and surprisingly complex. What exactly this game's intended audience is supposed to be, we can't figure out, but it deserves at least a small one.

Goofy, fun, and reasonably challenging — and marred only by a clunky menu system and a series of needlessly complicated mazes — *Big Sky Trooper* is worth a look

Rating: ★★★



Yes, it's not quite like anything else out there, but it works, and it's called *Big Sky Troopers*

The Mask

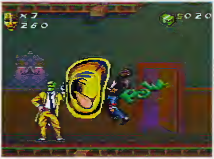
Publisher: THQ

Developer: Black Pearl

Now *here's* a surprise: a side-scrolling action game based on a *good* film. Go figure. If the movie's strength was a well-animated Jim Carrey, the game's biggest strength is easily a well-animated Mask.

Cartoonish to the extreme, it's also incradibly fluid and very funny, using many of the character's powers from the film, plus a few others, integrating them well into the gameplay. Control is slick, and while the level mazes are, at times, too convoluted for their own good, they're certainly inventive. Half of the fun is just discovering what parts of the background The Mask can use to get around, getting sucked through vents and so on. The title could have used some difficulty tweaking, and it lacks any sort of save or continue feature, but overall it's a solid, enjoyable surprise.

Rating: ★★★



Using many of the strange character's strengths from the film of the same name, *The Mask* spotlights strong gameplay and fluid animation

Mechwarrior 3050

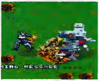
Publisher: Activision

Developer: Tiburon Entertainment

This came out about a year and a half ago for Genesis. A three-quarter view perspective shooter, *Mechwarrior 3050* is clearly inspired by EA's *Desert Strike* series, only instead of flying a souped-up Apache, you're walking around in one of Fasa corp's Battlemechs. The game looks good, in fact, it looks much better than the previous Genesis version, although this version had noticeably clunky animation — your 'mech doesn't walk as much as shuffle and bounce around — and it's worth pointing out that there was better control on Genesis as well.

Nonetheless, If you like your games challenging, you can't beat this one. there are so many enemies who come at you from all sides, It sort of makes you wonder what sort of military genius decided to send in one guy.

Rating: ★★★



***Mechwarrior 3050* is nothing if not frenetic — how many enemies can you deal with at once?**

NHL '96

Publisher: Electronic Arts

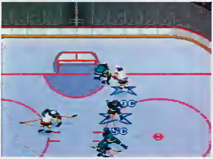
Developer: High Score/Tiburon

One thing you can say about EA's *NHL* series is that they just keep getting better. You can also say that the Super NES version never stacks up against Genesis'.

This time around however, EA has come very close, managing a trick or two over Genesis. The graphics are predictably sharper, with small, but noticeable extra bits of animation, like ice spraying from a player's skates when he stops short, and the addition of the Super NES control pad's extra top buttons makes controlling the action a little easier.

If you can choose between the two, the Genesis version still has smoother gameplay and seems to have better computer AI, but look, they brought the fights back in both versions, and this is an excellent alternative.

Rating: ★★★★★



***NHL '96* looks good, and for once, a Super NES EA sports title comes close to its Genesis counterpart in gameplay. This series continues to get better**

Speedy Gonzales in Las Gatos Banditos

Publisher: Acclaim

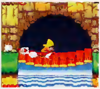
Developer: Sunsoft

Let's just take all the "side-scrolling-game-based-on-a-licensed-character" spiel as already read in to the text, shall we?

Stop us if you've heard this before: A group of cats has kidnapped all the mice in Mexico and taken them prisoner around the country, so Speedy has to rescue them. It would seem that the main advantage to being "The Fastest Mouse in all Mexico" is that it entitles lil' ol' Speedy to rip off most of his level design and play mechanics from *Sonic the Hedgehog* — all he's really lacking is a spin dash.

However, perhaps as punishment, Speedy also seems stricken with some kind of animated arthritis, as he's generously given perhaps two or three frames of animation per action, on top of which, he's saddled with a momentum that makes you feel as though you're controlling a large walrus, rather than a mouse. In other words, this is a darn bad game.

Rating: ★



Delayed for nearly two years, the long awaited *Speedy Gonzales* game is finally here. oh God...

Weaponlord

Publisher: Namco

Developer: Namco

Once again, this nifty little 2D brawler rises above the pack, thanks to its emphasis on weapon combat, inclusion of moves and countermoves, parries, and weapon breakers. It's the sort of game *Samurai Shodown* wishes it could be, and if you're a devotee, you'll be studying it for years.

The Super NES makes the game look great, although the choppy animation from the Genesis version still bugs us. The only other downside is the relatively small number of fighters, seven, but with gameplay this deep (and muscles this ripped — even the female warriors weigh in at 200 plus pounds, with zero fat) it almost doesn't matter.

Rating: ★★★★

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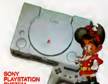

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Zoop

Publisher: Viacom New Media
Developer: Hookatone/Panelcomp

It all started with the nice and simple game *Tetris*, and then things got complicated.

Zoop isn't all that difficult to grasp — you fire a central triangle at a series of shapes encroaching from the sides of the screen. If your triangle is the same color as the oncoming shape, the shape disappears and the triangle moves to hit the next shape in the row. If the triangle hits something that's a different color, the triangle and the shape exchange colors and the triangle bounces back. Get it?

Anyway, this very quickly leads to extremely complicated strategies for clearing the screen, especially since all sorts of special items can appear for you to "grab." These items can do things like clear whole colors and whatnot. Aw hell, just look at the picture. It's not bad really, but the idea isn't that intuitive, and once you get past the learning curve it lacks the addictive quality this kind of game needs. We think we're starting to see diminishing returns on this whole "puzzle" thing.

Rating: ★★

Arcade

Speed Racer

Publisher: Nemco
Developer: Nemco

This conversion of this cartoon follows the standard driving formula, adds special weapons for each character, and enables you to be Speed himself. But, if you're over your "Speed" phase, then you'll probably pass this up.

You can drive as Speed in the *Mach Five* against old enemies like Ninja, Kabala, Snake, and even Speed's long lost brother, Racer X. You can also drive as any one of these other guys as well.

The three courses are made tolerant only by the walloping amount of trickery you inflict upon your enemies, and vice versa, up to the very last inch of runway.

But despite the use of Speed, lots of tricks, and sounds, like Tricksy's gasping voice, this is good kiddy gaming, and no more.

Rating: ★★

Viper Phase 1

Publisher: Febtek
Developer: Seibu Kaihatsu

At this point of overhead shooting games, we can safely say a shooter is a shooter is a shooter. What differentiates them is found entirely in the details.

Viper is made up of beautiful, multi-level backgrounds, digitized explosions, and streams of bullets, missiles, and bombs; and its nine levels increase in difficulty as you acquire weapons. But, like all shooters, unless your hand-eye coordination is really solid, the fun will pass you right by.

Rating: ★★★

SORRY!

No new games were made available for review this month on the following system

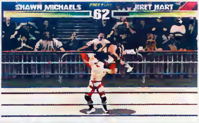
Virtual Boy

Arcade

TAKEDOWN

WWF Wrestlemania

Publisher: Williams Belly/Midwey
Developer: Williams Belly/Midwey

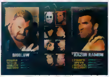


With the multitude of fighting games flooding the arcade floors and even more pouring into the homes of anxious gamers, most people will be able to scratch their fighting itch this holiday season with few problems. But with the foresight that there are too many fighters in the market right now, Williams has issued *WWF Wrestlemania* in the hopes to catch people falling off the glutted fighter train.

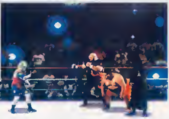
WWF Wrestlemania is no *Mortal Kombat*; it's not meant to be as serious, nor as bloody (in fact there's no blood in *Wrestlemania*), but it uses techniques that made *Mortal Kombat* the success it is today. And, it's really a much better, albeit very similar, game than *WWF Raw*. Cleanly digitized characters from *WWF Raw* include Bam Bam Bigelow, Lex Luger, Brett Hart, Yokozuna, and others, who react faster, and use an adequate arsenal of tricks, special moves, and special throws to keep your interest up. Bouncing off the ropes, leaping from the corners, and exercising the throw moves are particularly cool, especially since each character's moves satisfy that wrestling urge in unique ways. Of the eight wrestlers, Doink the Clown's Joy buzzer is charming but is too easily read; Razor Ramon's Slice 'N' Dice slash is powerful, but his Rug Slam works better, but special note should be made of Bam Bam Bigelow's Neck Breaker, Yokozuna's pin, Lex Luger's inverted scissor kick, which removes large amounts of energy from the opponent.

Playing Head-to-Head is best, but Cooperative has its qualities, too. Gameplay is quick, full of corny fun — like when you hit Yokozuna, for example, hamhocks, cabbage, and fish fly out from behind his belly — lighthearted, and simultaneously fierce. You'll be sure to have fun and get in some good fighting at the same time. Just don't expect it to be *Mortal Kombat*.

Rating: ★★★



The best part about *Wrestlemania* is picking your opponent up and slamming him (top). Choose your favorite wrestler (above)



Is this three on one? Nah, it's two-on-two Cooperative play wherein you can throw your team member right out of the ring by mistake. The clean digitized characters make use of the ring's depth (above)

NG Picks for Nov '95

Once a month the experts at **NEXT Generation** team up with Electronics Boutique to bring you a list of the very best titles that gaming has to offer. These are the games every gamer must own to consider their home libraries complete. If you're looking for the latest games at reasonable prices, with great selection and customer service as an added bonus, don't hesitate to check out the helpful staff at your local Electronics Boutique. Here's this month's lineup...

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PlayStation

Wipeout (Psygnosis) — *Wipeout*'s long-term playability shoots it into top spot this month above last month's Platinum Pick, *Destruction Derby*. With cut-scene quality graphics in gameplay and racing action that will leave you white knuckled and bleary eyed, this has everything a futuristic racer should have — including a bevy of awesome power-ups. For more fun, add another TV and another PlayStation and test out the link-up mode.
Rating: ★★★★★

Saturn

Virtua Fighter Remix (Sega) — Sega's stunning graphic makeover of *Virtua Fighter* (*VF 1.5*?) breathes new life into the first 3D fighter and offers a tantalizing taste of what we can expect from *VF2*. With all the combos moves and action of the original arcade game, the new texture-mapped graphics make playing this one hard to forget.
Rating: ★★★★★

Jaguar

Power Drive Rally (Time Warner Interactive) — This excellent third party Jaguar title offers a top-down view of racing. The control is excellent, you have an incredible variety of tracks and road conditions to experience, and there's even a co-pilot to help you navigate the curvy tracks. For fans of rally racing, this one can't be beat. One of the strongest Jaguar titles yet.
Rating: ★★★

3DO

Slam 'N' Jam (Crystal Dynamics) — Slipping to second position this month (see our Platinum Pick for the number one 3DO title), *Slam 'N' Jam* is the sports game that gets even nonsports fans trash talking and slam dunking. Fast-paced action, in-your-face graphics and plenty of realistic basketball statistics will keep your hands glued to the controller and your eyes glued to the screen.
Rating: ★★★★

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PC

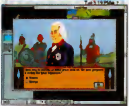
Mortal Kombat 3 (GT Interactive) — The title that shows the PC can stand up against the next generation machines as a gaming platform. Smooth animation, excellent graphics, and every fatality, hidden move, and background of the arcade version (and a couple of new surprises) provide a rare action treat for PC gamers. The best fighting game yet made for home computers.

Rating: ★★★★

Genesis

NHL '96 (EA Sports) — The most playable hockey game ever made. All NHL players and teams are here with amazing statistical accuracy in white knuckled action that's sure to please any fan. New features in this year's revision include tougher opponents, spin-a-rama moves, and power-stops, plus the game's already impressive shooting and skating routines. Possibly the best sports game ever made.

Rating: ★★★★★



Super NES

Civilization (KOEI) — An excellent remake of Microprose's PC classic for the Super Nintendo. Players take on the role of an all-powerful monarch as they guide their people from cavemen to nuclear physicists and help them take over the world. KOEI has done a great job of bringing all of the gameplay and fun of the original without cutting any corners or losing any of the epic flavor of the title. One of the most addictive carts ever made.

Rating: ★★★★

Platinum Pick

Wing Commander III: Heart of the Tiger (Origin) — The 3DO version of this interactive masterpiece is the best yet, especially when coupled with the 3DO FlightStick from CH Products. A space combat game at its heart, what's impressive about *WCIII* are the awesome interactive cut-scenes, featuring the acting of such celebrities as John Rhys-Davies and Mark "Star Wars" Hamill.

Rating: ★★★★★

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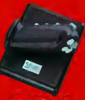

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functions

F-16 FighterStick
20 programmable
functions

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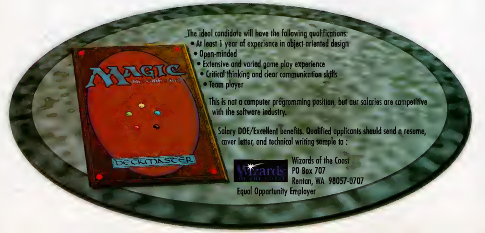

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corresponding

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Write where you belong. Send your thoughts to NEXT Generation

I have a Jag & 3DO and will most likely get the Sony PlayStation. But the quantity of the output devices exceed the capacity of my input systems. Do you know of any type of **switchbox** thingy (many inputs and one output with a A/B/C switch) either in composite and/or stereo RCA plug or S-video plug format? This would make my cabling nightmare go away. Thanks,

Dave
daveth@boi.hp.com

You can get an RCA-style switchbox at any Radio Shack, or high-end electronics store

I am extremely concerned with the trend that has been established in the early goings of 32-bit gaming. It seems that the minute I pick up a controller, the ending credits begin to roll, **I'm lucky to get more than 30 minutes** out of my gaming experience. Unlike the early goings of 16-bit where games did nothing to utilize the hardware, I feel the early crop of 32-bit games are graphic and technical masterpieces. Unfortunately, this is where the problems arise. With the mind numbing power these new systems possess, developers are able to present us with astounding artwork and incredible 3D. Such sophistication lends itself to many late nights for the programmers; what once took six months to develop might now take a year as the artist is presented with the means to deliver Disney-quality visuals. Imagine the time consumption in making a *Super Metroid* with *Astal* quality art... It's a scary thought, and the way I see it now, it will only remain a dream unless developers want to take the time to bring us not only astounding visuals but also substance and length. But this is the '90s and, of course, company profit takes precedence over my gaming enjoyment. Hmm... Eight-bit *Castlevania* with 32-bit visuals. A guy can dream, can't he?

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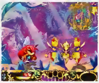
***Astal*, a platform game on Sega Saturn, shows the strong use of colorful graphics in 32-bit games**

The art in 32-bit games is indeed astounding, but what's important to remember is that there are also new tools, like *Adobe Photoshop*, *3D Studio*, and *Debabelizer* that make doing the art for games far easier than the days of hand-pixeled sprites designed on graph paper. As for gameplay, with some of the early 32-bit titles you may certainly have a point — gameplay sometimes discouragingly takes a back seat to looks, but we have also seen some new gameplay elements in products like *Jumping Flash!*, *Destruction Derby*, and even to a degree in *Bug!* that lead us to believe that radical shifts in the gameplay paradigm — for the better — are coming.

You guys at **NG** are my favorite, but you're starting to leave Jaguar behind with the 16-bit units. I am disappointed in the lack of Jaguar coverage and am mad at the **nasty comments about Jaguar.** PEOPLE, JAGUAR DOES NOT SUCK, JUST BECAUSE IT'S MADE BY ATARI DOESN'T MEAN IT SUCKS!!!!!!!!!!!! Please start covering Jaguar more, or just like *EGM*, I'll just toss 'em all in the trash, OK?

Kevin Anderson
TEKKEN2@aol.com

We review every Jaguar title that ships and preview Jaguar titles whenever applicable. The Jaguar was on the cover of **NG 4** and we interviewed Atari's President, Sam Tramiel, in **NG 7**. We would argue that **NEXT Generation's** coverage of Atari is the most comprehensive in the industry.

When you refer to a game having 60 FPS like *Daytona USA*, **do you really mean 60 *frames* per second** or do you mean 60 *fields* per second? Television broadcasts are at 30 FPS (frames per second), which means they are actually running 60 fields per second. A standard television interlaces 30 negative and 30 positive fields one after the other, hence the 60 fields per second or 30 total frames per second. One field is only 50% of the total frame.

So, are you saying that *Daytona USA* (arcade) is actually running at 120 fields per second? I don't see why, because the human eye can't detect any flicker after 22 frames per second (or 44 fields per second). It kinda seems like a waste of processing power.

Sean
SeanM2@ix.netcom.com

FPS mean frames per second. However, we should note that often arcade monitors are not interlaced. Interlacing TV images is a hold-over from the early days of TV, when electron guns were too slow to draw the whole screen in one pass.

Several people are under the belief that the **Ultra 64's delayed release in the US** is due to the weak value of the dollar. I strongly disagree with this assumed position.

I think that a far more probable reason would have to do with hardware delays (despite Nintendo's claim to be on time). First, if Nintendo was concerned with the value of the dollar hurting sales, it would be much more logical for NOA to sell the system on time, hold funds in the US until the dollar gained strength, then convert it to yen. This is common practice for many multinational companies. To simply wait until April and base its bet on the economy is a little more than a gamble. What if the dollar sank further? Not only would Nintendo lose money on a weak currency, but it would also incur costs due to warehousing and systems unsold, as well as lose out on the technology life-cycle.

Jim deVos
via the Net

There are many reasons for the delay of the Ultra 64, including hardware and software delays; sorting out the storage medium of the system (nothing is etched in stone yet); putting the finishing touches on publisher and developer rights, and, maybe even most importantly, not cutting into Super NES' holiday sales.

It seems that no matter where I look, you guys always have something bad to say about Sega and all of Sega's products, particularly its newest machine, the Saturn.

Nobody can deny that *Daytona USA* is the most enjoyable racing game to ever hit the home market, and despite what everyone says, the polygon redrawing isn't really that bad. My friend and I are convinced **you guys are being paid off by Sony US**.

So what's the deal?

Steve Williams
Fitzgerald GA

While *Daytona USA* for the Saturn has excellent gameplay, its draw-in speed is very slow

We're not getting "paid off" by anyone, and we have no particular pro or anti biases against companies. We judge each product on its individual merits — Sega has stumbled badly with the 32X and Sega CD and we have rightfully taken it to task for them. The Saturn has great, currently unrealized potential, and we are as anxious as anyone else to see software that lets it perform to its maximum abilities.

I was just reading **NG 8** (letters) in which a reader wrote in and said that he called USA-SEGA and the folks there told him that ***Killer Instinct* was coming out for Sega systems.** You called in and claimed you were told the same. Well, how come when I called they told me different?

Second, let me start by saying that throughout the whole article on the Saturn in **NG 8** (Now Read the *Facts*) you said nothing good about it and you all you did was bash Sega. What's wrong, didn't Sega advertise enough in your "not-so-cool" mag?

Third, *Killer Instinct* is made by Midway, all that Nintendo did was pay to have its stupid name on the game. So, in actuality, there could be a chance this *Mortal Kombat* wanna-be could come out for the Saturn, although it's a slim chance.

And last but not least, who are you to speak for 100,000 gamers out there? And as for anyone being called a "liar," people in glass houses should not throw stones.

Jamie Bertucci
Burbank, IL

Jamie, the day *Killer Instinct* ships for the Saturn, we will fly to Burbank and personally build you your very own glass house.

I am beginning to notice a disturbing trend in your magazine. Many magazines compare *Virtuo Fighter* and *Tekken* or [*Battle Arena*] *Toshinden* to give a stark contrast in fighting games and to show the supposed advantages of the PlayStation. However, **this is an unfair comparison**. First of all, it is similar to comparing *Daytona USA* to *Pole Position* — the former is built on the precepts and success of the latter, to which it owes gratitude.

Magazines should be comparing *Tekken* and *Toshinden* to *Virtuo Fighter 2*, yet I haven't seen any do so without admitting that *VF 2* is a better game. But what, you might respond about the fact that *Tekken* or *Toshinden* will be available to the home systems earlier than *VF2*? Well, if you plan on waiting for the best game, *VF2* is only coming out a few months after *Tekken*, and if you've waited the five months after *VF* was made available, then waiting a little longer for quality shouldn't upset you.

People are so anxious to jump on the Sony bandwagon that they don't stop and think what they're saying.

All I ask is that you compare comparable games and try not to commit such noticeable logical flaws. You've fought well against becoming an all-hype magazine. Please don't cross the line you are narrowly beginning to approach.

David Goranson
Pocasset, MA

Until *VF 2* arrives on the Saturn, comparisons will be made between *VF1* and *Toshinden*

Last time we checked, comparing first-generation, home 32-bit fighting games to other first-generation, home 32-bit fighting games (or racing games to other racing games) was not exactly a flaw in logic. Just because *Pole Position* came out before *Daytona* doesn't mean we can't look at them and say *Daytono* is better than *Pole Position*. If Namco had come out with *Pole Position* for PlayStation, we would be well justified in saying that Sega's hardware looked better based on the software that was out.

And while we're sure that fighting games better than *Tekken*, *Toshinden*, or *VF2* will ship eventually on both Sega and Sony platforms, following that logical stream would lead us to conclude that we should never buy or play any games, because better ones will someday be out. Thanks, but we want to play now

I just finished **NEXT Generation #7**. The magazine is truly for the thinking gamer. Right now I am in the **Marine Corps Boot Camp**. My job when I graduate will be electronic repair.

No one around here knows the answer to this question. Can you help out? What are the technical differences between the Panasonic and Goldstar 3DOs? By the way, is there any treatment for extended videogame withdrawal?

Recruit Sean Graham
Paris Island, SC

The differences between the two 3DO hardware manufacturers, Panasonic and Goldstar, remaining on the market are entirely cosmetic — in terms of technical specifications, they are the same. And in response to the best treatment for videogame withdrawal? It's **NEXT Generation**, of course.

Screen burn-in. What's the story? It is common knowledge that if you leave any still image on your screen for a good length of time you can/will burn the image into your TV/CRT. However, **is it possible to suffer burn-in on your TV from normal gameplay?** Many games maintain a constant status screen for points, life, etc. Will these status bars affect the monitor?

Gary Swerski
Lake Parsippany, NJ

The cheaper and older the monitor, the more likely the screen is to experience burn-in, which happens when the cathode rays in a picture tube burn the phosphor from the inside of the tube. None of the TVs we have at **NEXT Generation** have ever experienced a problem. In general you only see burn-in these days on ATMs and old arcade machines that display the same images for literally hundreds of hours at a stretch.

Unless you have a projection TV, which can burn-in from normal game use, and you don't leave a game on your screen for 24 hours a day weeks on end, you should have no problems from status bars and other static images

I have been an avid game-player since the 2600 inception. However, I think **it's time for the industry to stop and take a breather.** Initially it was simple to decide on a game system. I first owned a 2600, then an NES. Both easy choices considering the competition. Then came Genesis, and things began to get complicated. After the Super NES there were two equally successful competing systems for the first time in the industry. Things were still pretty simple. Now however, we are faced with Atari vs. 3DO vs. Sega vs. Sony vs. Nintendo vs. Apple (!?), not to mention the PC. What we have is the most confusing market in an industry in recent history. Not only that, but the turnover rate in the industry is getting ridiculous. I mean, 3DO came out in 1993 and we are being sold the upgrade that apparently will take it beyond the PlayStation and Saturn, just two years later. I am now more than ever a firm believer in the 3DO concept of a "standard" game platform, or barring that, fewer competitors. I suppose that it all equals out eventually, but the fact that the new systems are (approximately) on equal footing performance-wise and that many third party games are now multi-platform, has me seriously questioning where the industry will go, and if it will survive. Do you guys have any opinions?

Curtis Naus
West Grove, PA

You bring up some good points, but it's important to note that things were never quite so simple. Back "In the old days," there wasn't just the 2600; there was the Bally Astrocade, the Fairchild Channel F, the Odyssey II, the Vextrex, the Intellivsion, and the Colecovision, to name a few. All looked like serious contenders at one point. The latter two, along with the Atari 5200, 7800, and the Sega Master System also fought with the NES for dominance in the "second wave." And who can forget the great also-ran of the 16-bit era, NEC's TurboGrafx 16? There have always been a lot of players, we just tend to remember that the winners were the "obvious choice" when it came time to buy a system.

Most industry insiders feel there are more systems available or coming than can be supported by the market and that a shakeout will take place over the next year or so, leaving two systems dominant in the industry, with perhaps one as a distant third, and the rest scrambling for leftovers. Currently, many insiders consider the Ultra 64 and PlayStation as the strongest contenders, although that is likely to change many times before we know who the real winners are.

I enjoyed Marcus Webb's Arcadia in **NG 7**. However, the analogy comparing the film to home video relationship with the arcade to home videogame relationship is flawed. **Seven billion is not "missing" from the arcade industry** — it was never there. The adversarial relationship between the arcade industry and the home game industry can't be compared to the profitable, mutually beneficial relationship enjoyed by the film industry and home video sales and rentals.

I manage a small arcade and often see patrons spend hundreds of dollars during the course of a few months on one or two of their favorite games. The movie-goer may see a good movie twice, perhaps three times, but videogame players may play a popular game two or three times a week for months. The kid who loves *Mortal Kombat 3* and the *Mortal Kombat* movie will spend significantly more at the arcade than at the theater. And he [or she] will do so at home. The home video will cost $29; the home videogame will debut at $60. Consumer expense for arcade and home videogames is greater for afficionados than the expense for film and home video.

Because of the higher cost for the "complete" videogame experience (to play in the arcade and at home) and the longer time involved in games versus movies, I would suspect that there are significantly fewer avid videogamer players then avid movie goers. I also suspect that there are significantly fewer casual gamers than casual movie-goers. And it's specifically the casual market, those people only willing to spend a few dollars at one time, that makes up the bulk of the market.

If the above is close to the mark, then the demand for the videogamer's dollar often must pit the arcade game against the home game, because both experiences are moderately costly, but the movie goer can easily afford both home and theater experience. Beyond economy, however, the experience of watching a movie at home, even in a home theater, can never equal the true, larger than life theater experience. In contrast, the arcade video experience has been very closely duplicated by the home consoles.

The purpose and public perception of the different forms of entertainment also greatly influence why the theater to home video market is complementary, but the arcade to home game market is competitive. A film's replay value comes from how well a story is told; you can't see the story again in the theater when you want to, because movies have a limited play run. The only way to see the story again is to rent the video or wait for it to hit TV. In general a videogame's purpose is not to tell a story. Some game designers might like you to think that the story is important to the game, but few patrons at my arcade have particularly enjoyed the story sequences in *MK III* or *Killer Instinct*. I have yet to fathom why videogame makers insist on creating "plots" for an entertainment form that is not necessarily a story, but must always be a game. It is the gameplay that is important to a game, and that is sadly lacking from many arcade and home games. The videogame industry markets home games while the arcade games are still popular, so it's no wonder that home videogame sales directly affect arcade game revenues. If home videos were released while films were still in first run theaters, you would see home video sales affect box office revenues, too! Is $7 billion missing from this industry? I think the question should be, "Will the arcade industry and the home videogame industry ever create revenue for each other, or continue to create competition for themselves?" In an attempt to answer this question positively, we can use the film to home video analogy.

Stories in fighting games like *MK*, are not key for success, but they do add depth and intrigue

The game industry ought to enlarge the score of the arcade experience, the same way the theater experience is larger than the home video experience. Marcus Webb suggests that the industry is changing the scope of the arcade experience through high-end simulations and chip updates that keep games fresh. But the videogame industry must resolve its "identity crisis." A film is a story. Consumers know what they're getting ahead of time. It is not clear what what videogame designers are attempting to make videogames become. Games need not incorporate a story in order to be successful. Often, the "story" is a poor substitute for engaging gameplay. It seems the coin-op industry has had few "pure" games in recent years, and it is gameplay, as any die-hard gamer will tell you, that is the key to the game's success. However, a few arcade and home games have truly innovative and fun gameplay. The videogame industry must design games for varied markets. Markets, I feel, must evolve like organisms and up-to-now the arcade industry did not feel the pressure to evolve. But soon, very soon — a monumental change must occur, or the business will eat itself out of this form of existence. Seven billion is not missing from the industry; but, if the industry is willing to be creative and take some chances, then there may be ways to make the arcade and home markets complement each other. Maybe not $7 billion dollar's worth, but then again, maybe more.

Roger Pugh
Carbondale, IL

Thanks for the excellent letter. Some would argue that the evolution of the arcade experience into something larger than stand-up TVs has already started with games like the eight-player version of *Daytona USA* (complete with hydrolic motion), which simply cannot be duplicated in the home. It's clear that if the arcade industry wants to get its hand on the "missing" $7 billion Marcus Webb discussed, it needs more than just another *Street Fighter* clone.

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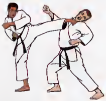
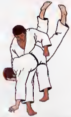
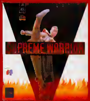




STEP 3 If no gagging sounds can be heard, administer 4 sharp blows to victim's larynx with heel of foot. Note: A purplish color on victim's face is desired as it indicates that choking is not entirely due to foot odor.

STEP 4 If victim is still not choking, turn upside down and shake vigorously until spleen is lodged in throat.

IF VICTIM DOES NOT BEGIN TO CHOKE REPEAT THIS 4-STEP SEQUENCE. DO NOT GIVE UP.



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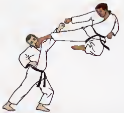
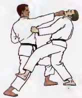
STANDARD GUIDE FOR CHOKING VICTIMS

YOUR VICTIM IS NOT CHOKING YET.
YOU MUST ACT FAST. EVERY SECOND COUNTS.



STEP 1 To initiate choking, tilt victim's head back using heel of foot. Proceed to lodge foot in victim's mouth, removing any excess teeth, as they may impair steps 2, 3, and 4.



STEP 2 Insert fist into mouth and probe for bronchial tubes. When found, grab tightly and pull out through nose.

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