HAIL *to the* KING, BABY!

BY JASON BATES

LAST YEAR, Duke Nukem defended Earth from an alien invasion and in the process gave us one of the PC's most enjoyable 3D action games. Now he's back, powered by the *Quake* engine and defending America's cultural capital — Las Vegas — from a second swarm of interstellar scumbags. Hang onto your hats and turn the page for your first-ever look at *Duke Nukem Forever.*
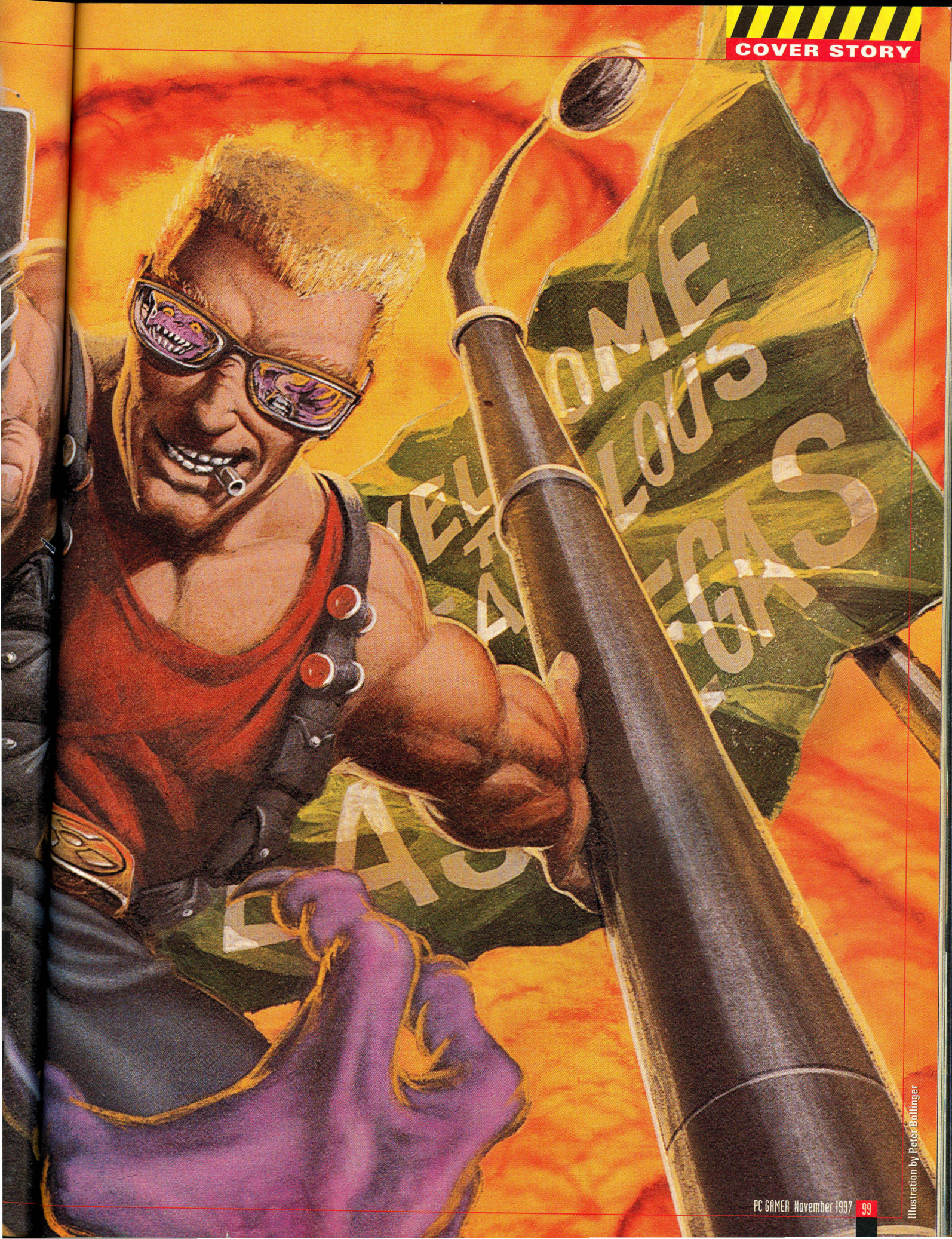
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he early part of 1996 was a bad time for the 3D action game genre. Gamers hungry for something new and original were instead force-fed a tiresome parade of uninspired

Doom clones, and the revolution that *Quake* promised was still some months away. Clearly, the genre needed something new. Something original. It needed a hero. And did it ever get one.

As if out of nowhere, 3D Realms' quirky and inventive *Duke Nukem 3D* burst onto the scene in early 1996 amid considerable fanfare, and instantly jumped to the top of the charts. And there it stayed, right up until *Quake* finally shipped, and even for some time after. The running popularity battle between the blasting genre's twin champions sparked a long, heated and at times rancorous debate amongst gamers over which was better, *Quake* or *Duke*.

A quick rehash of the classic arguments: one side claimed that *Quake* was vastly superior — that its true 3D engine, its customizability, and its superior Internet play made it the best game ever made. Others said that *Quake* was great technology but had only a thin veneer of solo gameplay, while *Duke Nukem 3D's*

clever weapons, comic book colors, wry sense of humor, and sheer sense of *fun* more than made up for the fact that the engine was slightly dated. In short, *Duke 3D* was a blast, and it's no wonder that more than a million copies were sold.

But now the time has come to toss away all those arguments, because now we get the best of both worlds, *Quake* and *Duke* alike. The next installment of the Duke Nukem series — *Duke Nukem Forever* — grafts the patented swagger of 3D Realms' macho mainstay onto the *Quake* engine, freshly-licensed from id Software. Or in Duke's own words: "Damn, I'm good."

The first question is why 3D Realms chose to license id's engine in the first place, after it had spent much time and energy creating its own in-house technologies, the *Prey* and Build engines. The short answer is timing. To build *Duke Nikem Forever* (or *Duke 4* for short) on the *Prey* engine would have delayed the release until late 1998, around the same

time as *Prey* itself. And to be honest, 3D Realms' Build engine (the basis of *Duke Nukem 3D*, *Shadow Warrior* and a slew of clones) is looking a little out of date these days. The only logical solution was to use the ready-made, industry-leading *Quake* technology.

3D Realms did consider other engines, including Epic's *Unreal*, but unlike *Unreal*, *Quake* was finished, it was a known quantity, and it was ready to go. By using the *Quake/Quake II* code base, 3D Realms gains the true 3D world and TCP/IP play of *Quake* with the added functionality of the upcoming *Quake II*: OpenGL, QuakeWorld, colored lighting, more brushes per level, and more interactivity with the environment. (And don't forget the crouch recently added to *Quake II* — who can imagine Duke Nukem not crouching?)

Yet after the long, acrimonious debates over *Quake* versus *Duke*, one has to ask if the necessity of licensing John Carmack's technology hurt 3D Realms' pride. The answer is no, according to Scott Miller, president of 3D Realms' parent company Apogee Software. "Pride cannot affect our decisions. Pride is the cause of many a company's demise," he says. "We see this deal with id as a way to get *Duke 4* out well ahead of *Prey*. We're not pushing *Duke 4* as a technology show-

Boom! The rocket launcher takes out a big piece of the Las Vegas landscape. About ten weapons are planned for *Duke Nukem Forever*. Though most haven't been created yet, a chaingun and shotgun are in.

THE HISTORY OF DUKE NUKEM

From an EGA side-scroller released as shareware on early bulletin board systems to the complex 3D worlds of the current project, the growth and development of the Duke Nukem series parallels that of much of the industry. But one thing that has remained consistent throughout is that Duke, whether drawn in pixels or polygons, has been preventing robots and aliens from taking over the Earth in a brightly-colored, tongue-in-cheek style.

DUKE NUKEM [June 1991]

The original *Duke Nukem* was a two-dimensional, EGA (that's 16 colors, for you youngsters out there) platform side-scroller released as PC shareware back in 1991. Featuring parallax scrolling and the first appearance of Dr. Proton, its gameplay was inspired by the then popular Sega Genesis console, and the game went on to be the best-selling shareware title of 1991 and 1992, even beating out *Wolfenstein 3D* during 1992. And of course back in those days, the shareware distribution was done not over the World Wide Web, but across the thousands of independent bulletin boards that were owned and operated by computer enthusiasts, as well as on Apogee's own Software Creations BBS. At its height, Software Creations had more than 150 lines, allowing users to dial in and download games over their brand new 1200 and 2400 baud modems.
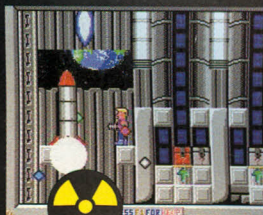
Duke Nukem made his first appearance in this eponymous shareware side-scroller.

DUKE NUKEM II [November 1993]

Another 2D side-scrolling adventure game, the sequel featured much brighter, VGA colors and brand new sound effects for the sound cards that were starting to come to market. The story was created by Tom Hall (now creating *Anachronox* for ION Storm), and it went like this — Duke, while being interviewed on TV about his latest best-selling book, "Why I'm So Great," is suddenly kidnapped by the alien Rigelatins and threatened with the sucking away of his brain. Many of the features that appeared later in *Duke Nukem 3D*, such as the jet pack, invincibility, and spy cameras, first showed up in this side-scroller. *Duke Nukem II* required the awesome power of a 286 to run, as opposed to the original, which had an XT as a minimum spec. Ah, those were the days!

DUKE NUKEM 3D [January 1996]

By the time the shareware version of *Duke Nukem 3D* was released, the Internet and the World Wide Web had grown exponentially, making it the natural distribution vehicle for the game, replacing the ad hoc system of game-related bulletin boards. *Duke 3D* topped the download charts for months and dominated the action gaming newsgroups for as long a time. It was also one of the first games to ship with a level editor in the final package — users everywhere were soon designing levels of their own, while dedicated deathmatchers were soon mixing it up over Total Entertainment Network and Kali, taking advantage of *Duke's* networked play. *Duke Nukem 3D* was followed by the add-ons *Duke Nukem Plutonium Pack*, *Duke Nukem Atomic Edition*, and *Duke it out in D.C.*

DUKE NUKEM FOREVER [1998]

To find out more about this one you ought to read the feature! But *Duke Nukem Forever* will be the first to use an id Software engine and support 3D accelerators. It's interesting to see how the series has shaped up; many elements from the earlier games have been reworked and revised as the series moved from a 2D side-scroller to a 3D shooter. What elements from the older games might make the cut this time around has yet to be decided, but there are a few interesting items still left unexplored — for example, the side-scrollers had a power-up called the gravity boots that let you walk on walls and ceilings.

That could be fun! (Hint, hint.)

The growth in the Duke Nukem series' popularity and technological sophistication in many ways mirrors that of the industry as a whole. What makes Apogee different, however, is that it got its start in the shareware market long before its games were sold at retail.
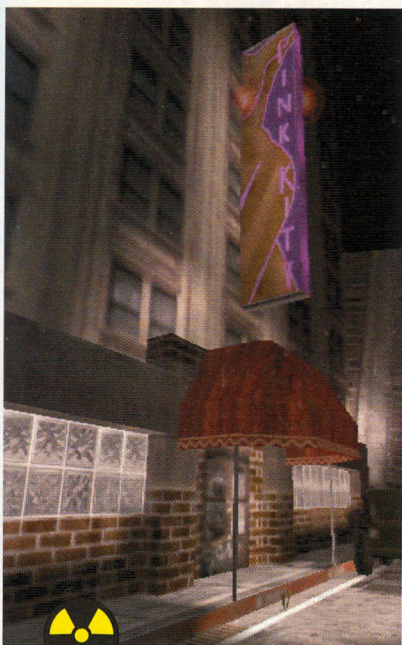

Al Bundy will feel right at home in this nudie bar — *Duke 4* will have an adult theme just as in *Duke 3D*.

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case like *Prey*; it's a game that will succeed or fail based on its unique content, gameplay innovations and Duke's characterization." And Apogee is not new to this concept — id's *Commander Keen* engine was used in Apogee's *Bio Menace*, and the *Wolfenstein 3D* engine was used in both the *Blake Stone* games.

"What we did was license an engine, and a good one. But that's the end of the story," says George Broussard, president of 3D Realms and the project leader on *Duke 4*. "*Duke Nukem Forever* will have it's own unique feel, setting and gameplay. When we're done, you won't even care that it's the *Quake II* engine anymore."

That's a good thing, considering that there are so many other *Quake* engine games on sale now or in imminent release (including the two *Quake* mission packs, *Hexen II*, *Half-Life*, *Daikatana*, *SiN,* and *Quake II*; not to mention other, non-*Quake* engine 3D games like *Jedi Knight, Unreal, Blood 2, Riot,* and 3D Realms' own *Prey*). With so much competition on the way, standing out from the crowd is critical, and Broussard knows this as well as anyone. He spelled out for us in detail exactly what
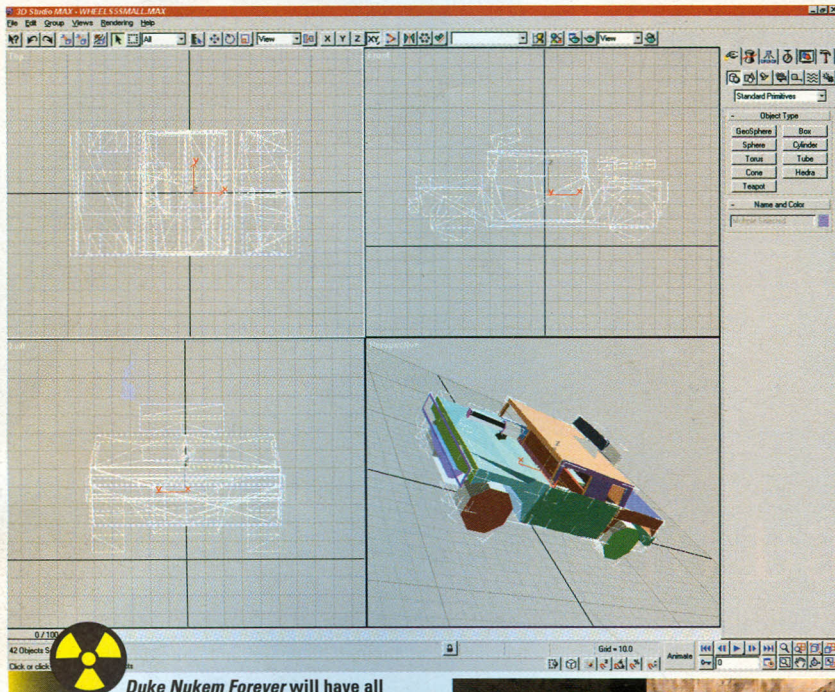
Duke Nukem Forever will have all the expandability of *Quake* and *Quake II*, allowing users to add their own models, levels, and extensions to the game.

There's talk of doing a Duke Nukem action movie, and lines of action figures and novels are in the works.

will make the new Duke different.

First off is the character of Duke himself. Duke talks trash. Duke sings. Duke has an ego the size of Texas, and if you were casting an action movie hero and had to choose between one of id's anonymous grunts or Duke Nukem, the choice couldn't be more clear. "He's the coolest 3D action hero. Period," says Broussard. (Naturally, Duke's voice has to remain consistent as well, so the good news is that L.A. disc jockey Jon St. John will reprise his voice once again.)

Then there's the famed interactivity of *Duke Nukem 3D* — a game world filled with little touches, like the pool table that actually works or the toilets that restore health when flushed — these were the little things that made *Duke 3D* more fun to play as a single-player game than any action title before, and arguably, since.

"What we did in *Duke 3D* took interactivity to a level that still has yet to be matched," says Broussard, "and people are still scrambling to catch up and surpass *Duke 3D*'s interactivity." In *Duke Nukem Forever*, 3D Realms hopes to up the ante again. "Everyone says that, but the cool thing is we actually have a history of doing it, so it's not just talk or hype. You will simply be able to 'do' more things in *Duke Nukem Forever* than you can in other 3D games," he says.

And since so many of the fun extras in *Duke Nukem 3D* were added in the last few months or so of development, when the whole team was eating, breathing and dreaming Duke Nukem, we should hope for and expect the same kind of thing to happen here, come crunch time.
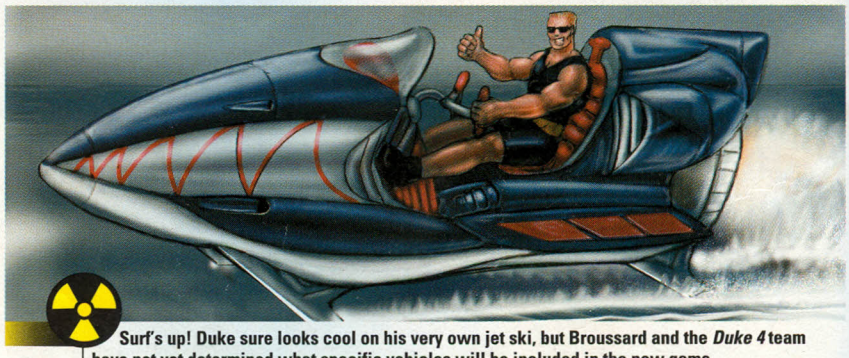
Finally, by simply being a Duke Nukem game, Broussard expects that the controversy and notoriety that ensues can't help but grab attention. "Controversy," says Broussard. "Yes, we love it, and you can bet right now that *Duke Nukem Forever* will offend someone, somewhere, for

The 3D Realms team is experimenting with putting in working vehicles as seen in *Shadow Warrior*.

some reason, and that 95 percent of the world will love it, while 5 percent sit and complain about this or that."

While 3D Realms' *Shadow Warrior* was recently subject to controversy for its handling of Asian characters (see the sidebar on page 107), *Duke Nukem 3D* drew its fair share of heat for its simple-minded depiction of women. All the women in *Duke Nukem 3D* were either strippers or hookers, and they weren't actual game characters with independent movement

and AI, but stationary, animated decorations. But since the success of Lara Croft in *Tomb Raider*, female characters are taking on starring roles in games like *Hexen II*, *Daikatana*, *Unreal*, and now *Quake II*, all of which have female leads or co-leads. So don't be surprised if Duke gets a girlfriend.

"Well over a year ago, we had a 3D shooter in development titled *Bombshell*, somewhat inspired by the movie *Barb Wire* and Pamela Anderson's title character," says Miller. "Though we fired the *Bombshell* team because the game was going nowhere, we liked the character so much that we're going to have her as a cameo in *Duke Nukem Forever*, plus we hope to have her as a choice you can play as in multi-player matches." And if Bombshell turns out to be popular, Miller says, then she'll have a larger role in *Duke 5* — (which admittedly is nothing more than a gleam in Miller's eye at this point) — and might possibly star in her own game down the road.

But don't expect Duke to share the spotlight with anyone this time around — Bombshell will be strictly a supporting role, and for good reason. "Since we have heavy character speech in our games, that'd mean a full set of male and female lines," says Broussard. "Something that's just too far beyond the scope of an action game. We'd rather put the time into enemies and things to do in a level."

But we'll join the crowd and ask — will the strippers return in *Duke Nukem Forever*? "Hey, it's Duke, and we're 3D Realms," says Broussard, and as you can

Surf's up! Duke sure looks cool on his very own jet ski, but Broussard and the *Duke 4* team have not yet determined what specific vehicles will be included in the new game.

MAX PAYNE

GET READY TO RUMBLE IN THE BRONX

The collapse of Scavenger, a company that recruited heavily from Scandinavia and Eastern Europe, left a lot of talented developers out of work, and many of them drifted back across the sea. A few of these returned to their native Finland and joined Remedy Entertainment, a game company founded in 1995 and filled with veterans of Europe's "demo" scene — it's currently co-developing a graphic benchmarking program called Final Reality (*http://www.remedy.fi/fr/index.html*), which will be released this winter.

But Remedy Entertainment was founded primarily to form games, and its first release, *Death Rally*, was particularly successful on the shareware charts. *Death Rally* was published by Apogee, and as a result the two companies developed a good working relationship, so it was natural that Remedy would turn to the Texans for its next game project, *Max Payne*.

And what a project it is. Far more sophisticated than *Death Rally*'s 2D, top-down shoot-and-drive action, *Max Payne* is a next-generation 3D game engine, based on the same kind of portal technology used in 3D Realms' own *Prey*. A 3D accelerator will be required for this one.

With *Max Payne*, the developers are promising that its

In the action-filled streets of Remedy Entertainment's *Max Payne*, your mission is to clean up the city, Dirty Harry-style.

unique portal technology, the power of the 3D accelerator, and the action-driven storyline, will result in the most realistically violent game yet. Payne will wade, Dirty Harry-style, through rivers of blood, laying waste to mobsters, cops on the take, doped-up psychopaths, and assorted thugs and villains.

Besides running around and shooting things, you'll be able to drive around in some of the game vehicles, though you might have to search someone's desk to find the keys, as some plot and adventure elements are important to the game. The game has an editor very similar to *Prey*'s "Preditor" to let create your own levels as well.

The title character, Max Payne, is an undercover cop in New York City who finds himself framed for the murder of his boss when he discovers evidence of widespread government corruption and mob infiltration of the police department. Now on the run for his life, Max will wander through gritty urban alleys, city streets, and abandoned warehouses in a third-person, *Tomb Raider*-style point of view.

Yeah, the plot's a bit hackneyed, but it would seem to fit well with the intense, action-oriented world of *Max Payne*. The plot is uncovered within the game, as players discover clues, talk to other characters, and investigate the corruption.

For added emphasis, new story elements are introduced between levels, with comic book-style storyboards introducing new chapters. This looks to be one of the few upcoming action games that is striving to incorporate a plot along with the constant action.

The game's story unfolds through comic-book style cutscenes that play between the levels.

see for yourself from these screen shots, the landscape of Las Vegas is the perfect setting for a Duke game, with its casinos, strip clubs, and houses of ill repute.

THE GAME

Duke Nukem Forever takes place in Las Vegas and the surrounding state of Nevada, where Duke's old nemesis from the early side-scroller days, Dr. Proton, is making a comeback. Proton has set up camp in Area 51 (the top secret base where the government is rumored to study captured UFOs, in case you don't watch "The X-Files"), destroyed much of Las Vegas with a tactical nuke, and recruited an alien army to help him conquer the Earth. Hey, what more do you want from a super-villain?

"Proton has taken over Area 51 and used the spacecraft there to contact aliens around the galaxy who have had their butts kicked by Duke," Miller says. "Proton's plan is for all of these aliens to join forces with him and be rid of Duke once and for all." The wicked Dr. Proton, himself a formidable 7'6" cyborg, has also re-
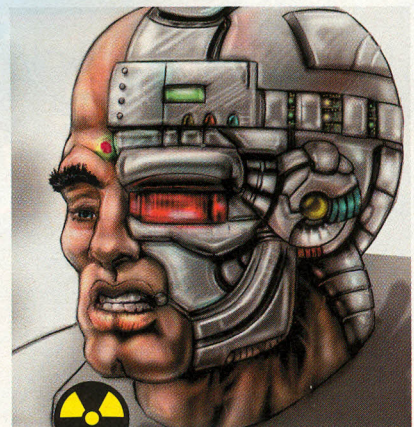
animated the Area 51 military guards and given them bionic enhancements, creating an army of super-dupes to do his bidding — and naturally, only Duke can stop these nefarious schemes. It's a classic comic book plot, and one perfectly in keeping with a Duke Nukem game.

But apart from this backstory, 3D Realms is keeping other details under wraps, and of course, the story is subject to change. "I often think some people give out too much information on their games, so then there is nothing left to discover as you play," says Broussard. One thing we can reveal, though — most of the bad guys from Duke Nukem 3D have been retired, and the only baddies from the last game that will re-appear here are the famous Pig Cops, this time dressed in military duds. "Honestly, the enemies in Duke 3D were not that good," says Miller. "We'll do much better this time."
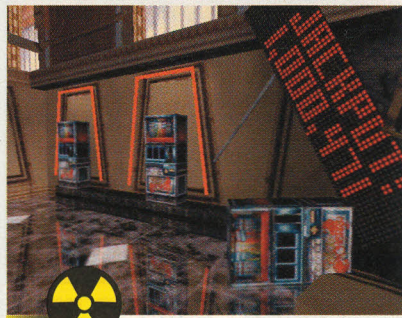
CHAINGUNS AND CHOPPERS

No preview of an action game is complete without a perusal of its arsenal. While many of the de-

signs for the Duke 4 weapons are still being worked out, Broussard already knows what the basic lineup will be. "Right now, we have the shotgun, chaingun and rocket launcher," he says,

Duke's nemesis, Dr. Proton, makes an explosive return in *Duke Nukem Forever* when he nukes Las Vegas.

requested the return of the Shrinker, and we are seriously considering it," Broussard says. He adds that there will be about ten weapons in all. "Trying to balance any more becomes silly and unfocused," he says.

Considering what was achieved with *Duke Nukem 3D*, we're confident that *Duke Nukem Forever* will have an impressive load of fun gadgets and toys to play with — and along with *Quake*'s Capture The Flag grappling hook and *Heretic*'s animalizers, *Duke 3D*'s shrinker, freeze gun, laser tripwires, pipebombs, holodukes, and jetpack rank among the best power-ups ever seen in this genre.

Meanwhile, when it comes to Duke's famed interactivity, 3D Realms says the team will surpass what it's accomplished in the past, with stuff light years beyond what was seen in *Shadow Warrior*. They're currently testing out vehicles in the game environment and figuring out which ones are fun enough to keep.

Some of the concept art shows Duke on a motorcycle, an idea Broussard likes: "Duke on a Harley? That's too obvious and natural of an idea that we'd be crazy not to try it," he says. As for the rest, again, Broussard doesn't want to give away too much when there could be competitors reading this article. "*Duke Nukem Forever* is far enough out that we really don't want to give all our ideas away, although I promise you, you haven't seen anything yet. Imagine *Duke Nukem Forever* to be *Duke 3D* on crack and steroids at the same time. It's going to simply be insane to play," he says.
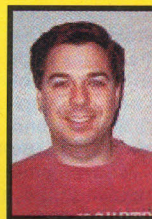
BITS AND BYTES

Writing all the squiggly code that makes Duke come alive is the task of long-time 3D Realms vet Todd Replogle and Chris Hargrove, freshly plucked from Raven Software. They're already messing with the *Quake* engine and playing around with ideas.

As Broussard points out, just because you license Carmack's technol-

No trip to Las Vegas would be complete without a visit to the lair of the one-armed bandits.

adding that he considers such weapons as standard issue in action games these days. But even these obvious choices may offer a few unique twists, such as a SWAT team-style flashlight mounted on the shotgun.

As for the rest, Broussard says, "There will be a lot of new weapons. We are making a new game here, around the consistent game character of Duke Nukem. Just like in James Bond movies, it's always Bond, but each time he's back, you eagerly wait for the scene with 'Q' to see what toys and gadgets he has this time."

But 3D Realms will be listening to fan input, and may let people vote on its web site as to which older Duke Nukem weapons make the cut. "Lots of fans have

Creating the outdoor, urban environments of *Duke Nukem 3D* in the *Quake* engine is no easy task, but as these screen shots demonstrate, the design team is already tackling the problem.

AN AUDIENCE WITH THE FOUNDER

Scott Miller founded Apogee Software in 1987 and pioneered the shareware model of games marketing, and was recently awarded a Lifetime Achievement Award from the Shareware Industry Foundation. He's been in the games business for a long time and has a unique perspective on it.

PC Gamer: Lately it seems like if there's trouble in the gaming industry, there's a good chance Apogee's involved. For example, the *Duke* versus *Quake* flame wars, your *Raptor* trademark, the war of words between Ritual and Apogee, alleged ethnic insensitivity in *Shadow Warrior*, and the recent patent controversy. Why is this?

Miller: Certain things we help orchestrate, such as the strippers in *Duke Nukem 3D*. Most controversies happen without our initiating them, though, such as the SPA Codie Awards controversy and the "war" with Ritual. What makes us different, perhaps, is that unlike other companies, we'll take our issues public. For example, dozens of other developers and publishers received a similar letter regarding the patent issue, but we were the first to take it public.

PC Gamer: Some in the industry have criticized Apogee for its politically incorrect content — the strippers in *Duke Nukem 3D*, the ethnic stereotypes in *Shadow Warrior*. How do you respond?

Miller: The claims that *Shadow Warrior* is racist against Asians caught us by surprise, and was certainly not our intent. We like to be controversial with the content of our games, but we'd never purposely use racism toward this goal. I'm afraid that we live in such a politically correct society nowadays that it's almost impossible to make a piece of entertainment that doesn't step on at least one group's toes. We can't afford to walk on eggshells here, because we'd end up making a game so watered-down that it appeals to no one.

PC Gamer: Do game developers have a certain responsibility?

Miller: I think developers have a responsibility to shoot for a particular market and correctly label their game for that market. If the consumer knows who the game is targeted for, then they can make the appropriate buying decision. We shoot for an adult market and we label our games to indicate this, just like movies are rated.

I think this is the developer's main responsibility, to label their games properly and where buyers can clearly see the label.

PC Gamer: How did you end up licensing the Build engine to people like Capstone and Lobotomy even before *Duke Nukem* came out?

Miller: We wanted Build to take over the world! Actually, we knew there was a lot of money to be made licensing, so I sent faxes to a dozen publishers and developers, telling them about Build's features and its availability. We also made a VHS tape with George [Broussard] and I showing the engine in action, which impressed many companies, including Activision at the time, who was going to license the engine until we chose FormGen over them to release *Duke Nukem 3D*. Then they didn't like us anymore. Activision lost the deal to FormGen by only $30,000 in advances, which they refused to match.

PC Gamer: Licensing the *Quake* engine couldn't have been cheap. How big was that check?

Miller: The size of the check, which is an advance on royalties for id, not a flat fee, was huge, but is confidential as per our agreement.

PC Gamer: You helped id Software immensely in the early days, but missed out on a lot of its subsequent success until *Duke* came along. Was there some sort of falling out?

Miller: Not at all, at least not from our side. After the giant success of *Wolfenstein 3D*, it made sense for id to handle their own shareware marketing for *Doom*. After they announced their plans, Jay Wilbur and I had many conversations in which I helped them with marketing ideas and giving them contacts for handling direct orders, etc. I think that players prefer to think that developers have rivalries, but the reality is that we are generally all friends or friendly to each other.

PC Gamer: How important a factor has engine licensing become as a source of income for developers?

Miller: For us, engine licensing has been worth millions, and Build has made more than most of our games, and the money is still coming in from licenses. When you spend a year or more making an engine, licensing is a great way to recoup this huge time investment. We have every intention to license *Prey*, and several well known publishers have already shown interest. *Prey*'s engine will be ready to hand over early in 1998. The fact is that most developers should not be in the business of making engines because it takes too long, is too costly, and is too difficult. I think there are only a few 3D engine designers capable of developing a visionary 3D engine, and most companies do not employ someone of this caliber. This is partly why many developers nowadays have decided not to even pursue 3D engine development.

This menacing mechanical monstrosity is our first glimpse at a *Duke Nukem Forever* enemy. Dr. Proton will employ a whole army of cyborgs and robots in his desperate bid at world conquest.

ogy doesn't mean you won't need programmers of your own to add that little bit extra. "An engine is just that, an engine," says Broussard. "Look at Build. We licensed that engine four or five times, and the games that were built on top of that engine were all different, and all required their custom code. And we will want to re-do a lot of the *Quake II* 'game' stuff anyway, just to keep it from looking like a clone. If we have Duke on ropes, driving vehicles and interacting with his environment in a hundred different ways, then that all represents new code we have to write. Duke games require lots of gimmicks and special, one-time events, and those kind of additions must all be hand-coded."

But 3D Realms will need to take delivery of the final *Quake II* code from id Software before that kind of work can begin in earnest. "We can actually do quite a lot without the *Quake II* code," says Broussard. "What we're spending time on are the 'new' ideas that we want to do. This can all be done in Quake C and pretty easily converted to *Quake II* .DLLs later."

Another bonus of using the *Quake II* engine is that homebrew hackers will have the opportunity to play with the guts of the game, modifying its art and weapons and story to create a whole new slew of freeware Duke stuff that will keep the community together, much more so than was the case with *Duke 3D* and its not-so-well-documented editor.

LOOK AND FEEL

Because 3D Realms is still waiting for the *Quake II* code, all the screen shots in this feature are shown in 256 colors and running in the standard *Quake* engine. But that 256-color limit may not be the case in the final game — better things are afoot. "Certainly environments like the Grand Canyon and Hoover Dam, which are so colorful, will present unique challenges," says Ruben Cabrera, an artist on the project, "but we

have a couple of ideas that we are still working on to take advantage of color." There is serious discussion about moving to 16-bit color, though there are frame rate issues to consider.

In the meantime, the graphics team is working from the *Quake II* tech specs when building models and textures, and then they're stuffing them into the *Quake* engine (with less colors, of course) in some early levels just to see how they look. So what you are seeing in this feature are some very early — but very tasty — looks at some of the Las Vegas environs that will form the backdrop of *Duke Nukem Forever*. The colors are not all there yet, but the graphics strictly adhere to the *Quake II* specs for scene complexity. "Our scenes are all under 500 polygons
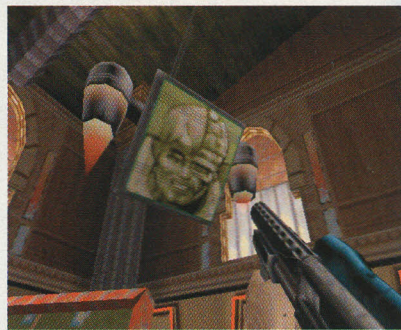
If you remember the side-scroller Duke Nukem games, you'll remember the taunting messages from Dr. Proton.

and many are half that or less," says Broussard. "So the bottom line is that these are real shots of real gameplay."

A special challenge for the art staff is bringing the bright, colorful world of the previous Duke games to the *Quake* engine without looking too cartoonish or too dark and gloomy. "We are interested in developing a place that feels as real as possible," says Michael Wallin, another artist on *Duke 4*. "To succeed in this we will have colors that are not too saturated or cartoon-looking, and contrasts that match the environmental mood of the place we are in. We will also utilize a dynamic palette so we will have the flexibility to create environments that do not all look the same. So, in short, *Duke 4* will not be a middle ground between *Duke3D* and *Quake*; it will be more robust and real for the player than either environment."

So how does the art team work together to create a consistent look for the game? "Well, it all depends on what the game is about — where it's taking place and when," says Brian Cozzens, another of the project's four artists. "Everyone gets together and offers suggestions about how it should look and feel, what general mood it should convey. Then it's written into our design documents. From there, the artists begin to work up sketches of characters, and begin to create prototype work — such as

The new engine allows for even more activity — and interactivity — than before. Here is a delapidated foot bridge that Duke will have to negotiate. No word yet if the cacti cause damage!

textures and models. If George and the team likes those, we work from there."

LEVEL LORDS

When it comes to building levels, using the *Quake II* engine gives the map designers more free-dom than Build, but it also means some new challenges. Outdoor areas in particular must be handled carefully. But the team, headed up by Duke veteran Allen Blum (this is his fourth Duke game) is more than ready to make the change.

"*Duke Nukem 3D* used the Build Engine, which was actually 2D," says Blum. "But with a couple of tricks we were able to make it seem very three-dimensional. Now that we're using the *Quake II* engine, we have less limitations and can make the Duke environment even more realistic than ever before."

Getting ready for this jump was not as difficult as it might seem, as the level designers had already been intrigued by *Quake* and its shareware editors long before *Duke Nukem Forever* got under-way. "I looked at Thred, Worldcraft, and Stoneless while I was still working on *Shadow Warrior*, even before I knew we were going to license the *Quake II* engine," says level designer Keith Schuler. "These editors were a welcome break from Build, and helped me learn my way around the various nuances and limitations of making 3D levels." Schuler's moved on to id's own *Quake* editor now, and he's also played around with some of the *Quake* patches like Team Fortress, and created one of his own that added some *Duke 3D* features, including respawn markers and remote ridicule, to *Quake*.

Still, other challenges lay ahead, especially creating the outdoor, real-world feel of the previous Dúke game with an engine more usually associated with creating claustrophobic dungeons. "Creating outdoor areas with the *Quake* engine requires more planning than a *Duke 3D* level did, obviously due to the differences of how *Quake* deals with level architecture," says level designer Stephen Coole. "In *Duke*, a wall that blocks the player's view will suffice and raise your framerate, while in *Quake* the same wall may not help block your view or will add more polygons to the scene, actually slowing it down. There are new tricks and design methods to be learned, but I feel the end result will yield a much bet-ter game than *Duke Nukem 3D*."

As for cinematics, the team is com-

DUKE NUKEM: THE FRANCHISE!

Toys, movies, novels — there's plenty of merchandising opportunities to tap into with a successful game franchise, so don't be surprised if you start seeing Duke Nukem goodies outside of the software stores. 3D Realms has passed off all the merchandising side of the business to GT Interactive, who will be bringing several products to market soon.

A new line of Duke Nukem action figures made by Resaurus will be out by this holiday season, with the first set including Duke Nukem himself and some of the enemies, such as the Pig Cop and the Octabrain. They should cost about $8 a piece.

A second way to get an actual three-dimensional Duke into your life is with the foot-high Duke Nukem figurine, created by Moore Creations and pictured here. Also headed to the stores is a new line of novels from Pocket Books.

And for console gamers who can't get enough of "The Duke," there's a new PlayStation-only Duke Nukem being developed with a third-person point of view.

This foot-high Duke figurine toy should soon be available soon in hobby shops everywhere.

Then of course there is *Duke Nukem: The Movie*. According to George Broussard, a studio was very interested in the project and the negotiations may move beyond the hypothetical stage soon, though the studio might wait and see if the Duke Nukem novels, comic books, and other toys are a hit.

The guys at 3D Realms love the idea of a Duke movie, and of course everyone has an idea about who should play the lead.

"I like Schwarzenneger, myself," says George Broussard. "Nobody does action like he does, but he'd have to dye his hair blonde and he'd probably be too expensive — but man, it'd be cool to see on the screen."

Still, don't get your hopes just yet. Hollywood is pretty darn slow about putting a project together — we're still waiting for the *Doom* movie, after all.

pletely undecided on what that aspect will entail, other than the fact that there will definitely be some. But they are aiming for something more professional and of higher quality than what's been done in the past, while retaining the same twisted humor that appeared in *Duke Nukem 3D*. "We don't believe in pretty-looking cinematics just to keep people busy," says Broussard. "We want some really cool content to watch, so it's worth your time to not hit the Escape key." Even so, cutscenes created from within the game engine (like you'll see in *Quake II*) have not been ruled out.

All right then, what about system requirements? Minimum requirements should be something similar to 16 megs with 32 recommended on a Pentium class machine; a P133 or higher is recommended. "We've also discussed the possibility of converting the *Quake II* engine into 16-bit, so the game will look amazing and things like color palettes aren't a concern," says Broussard. "What is a concern, though, is the speed hit 16-bit color adds to a software engine. But since we're targeting a mid-to-late 1998 release, we also think computers will evolve fast enough to keep the framerates and action high."

But what about MMX, Intel's much-ballyhooed godsend to Wintel game makers? "It was dropped, due to not improving performance enough to justify its development time," says Broussard. "Ken Silverman did try it, and just wasn't happy with the speed increases."

All the fans will want to know when this game is coming out, but, in true Texas-style, 3D Realms won't commit to anything more definite than that mid-to-late '98 timeframe or, even less specifically, "when it's done." In the meantime, it's highly likely that the game will get its first live showing at E3 in Atlanta next May.

Broussard, 3D Realms, and the *Duke 4* team are promising a lot, but their track record has already shown that they can deliver — they have the technology, the experience, and the work ethic to pound away on this thing until it's done right. They know their character, know this genre, and know its audience, and we'd be a bit surprised if they didn't get it right. We're not fortune tellers, but we have every confidence that *Duke Nukem Forever* will be one of the biggest — and perhaps the best — titles of 1998.

PCG

The GL support in *Duke Nukem Forever* will be optional; a 3D Realms game won't require a 3D card until *Prey*.

## TIME TO PREY
APOGEE'S NEXT BIG THING

Pitting a full-blooded Apache Indian against three alien races, *Talon Brave: Prey* is probably the first action game from 3D Realms with a full-blown, honest to goodness storyline.

Using a new portal technology instead of today's standard BSP tree, the game also offers a unique environment of dynamic entries into other levels and architecture which can be modified — or destroyed— during the course of the game.

Heading up the design team is Paul Schuytema, and he is well-qualified to do so. Formerly the lead designer on *Mechwarrior 3*, prior to that he taught interactive authoring, 3D animation, creative writing, and science fiction world-building on the collegiate level, while maintaining a second career as a game design consultant and freelance writer. Now he will apply all those skills at once on *Prey*.

For more on *Prey*, check out our September issue.
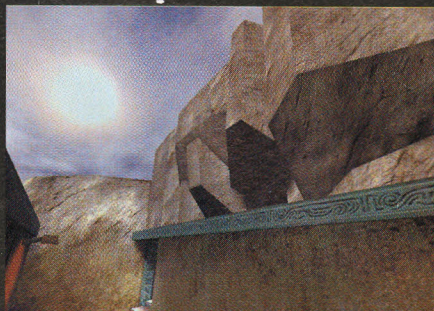
AN INTERVIEW WITH PAUL SCHUYTEMA

PC Gamer: Why is Talon Brave fighting the Trocara?

Paul Schuytema

Schuytema: On one hand, that's a question for the player to discover. The short answer is that Talon is, in every sense of the word, a reluctant hero. He's sort of abducted, in a very unusual manner, and finds himself in a place that he didn't expect to be — but the Trocara didn't expect Talon either.

PC Gamer: Will *Prey* allow players to destroy anything?
Schuytema: We could do that, but what happens when you blow the floor out of the lowest room in an environment? Do you simply fall through? Our lead programmer Will Scarboro still can't have infinitely complex environments, so there has to be a limit. We have to also make sure that we're not allowing the player to create shortcuts.

PC Gamer: It seems that *Prey*'s dynamic technology opens up all kinds of four dimensional level design possibilities. What *can't* you do?
Schuytema: Actually, our Portal Technology engine *is*, mathematically, a four-dimensional engine. Just sit down with Will Scarboro, and he'll tell you all about it until your head explodes! Any three-dimensional position in the *Prey*

engine can posses multiple three-dimensional points, just as any 2D position in a 3D world can posses multiple 2D points — try it with some graph paper, and you'll see what I mean. The implications for gameplay are simply staggering, as you've guessed. We're going to have fun with these capabilities, but we're not going to go overboard. I need to feel comfortable that this type of "folded space" fits consistently within the fictional realm of the game universe. But secretly I hope that someone will license the engine to make a wholly surrealistic game, sort of an ode to Dali.

PC Gamer: This project sounds like a perfect fit for your background. How did you find out about it?
Schuytema: I call it my "Creative Holy Grail." Before *Prey*, I had what I considered *the* cherry project in the industry: lead designer of *MechWarrior 3*. I loved it there and sure wasn't looking for anything else. But Scott and George, who had known me for quite a while, heard that I'd jumped ship from academia and had entered the game industry, and Scott came a huntin'. I was flattered beyond belief, but I still didn't think it could beat out *Mech 3*. They flew me down, laid their cards on the table, and essentially offered me creative carte blanche with the *Prey* project. My wife and I talked about it long and hard for a few weeks, and we came to the conclusion that this was one of those decisions we'd second-guess for the rest of our lives if we didn't take it.

So I said "Hell, yes" and I haven't regretted it for a second. This project is really a test, and it stretches the creative talents of our entire team on a daily basis.

It's a daunting task, but no one on the *Prey* team would trade this opportunity for anything.