

VIOLENT

(Right) id Software's greatest (and most violent) title so far – the spectacular *Doom*. id's radical marketing philosophy (which relies entirely on Shareware distribution) means that PC owners can play full-price games for little more than pocket change.



(Left) *Wolfenstein 3D*, the precursor to *Doom* and still a classic on the Public Domain circuit. The full Shareware version will be released in the shops for the first time via Mindscape in the near future – see this month's Eyewitness for more details.

id Software are a development team of die-hard games addicts who together have produced some of the PC's best ever shoot-'em-ups – for free. As their latest (and most violent) release, Doom, takes the Shareware world by storm, PC Gamer talk to the guys from Mesquite, Texas, whose games just keep on getting bigger, better – and bloodier.

BY GARY WHITTA

id SOFTWARE AREN'T famed for giving in-depth interviews. Not because they're shy. Not because they're spoilsports. But because they rarely find the time. Since they formed in 1990, they've been producing Shareware games for the PC virtually non-stop. *Doom*, the spectacular 3D shoot-'em-up that has redefined the term 'ultra-violent,' and currently has more PC gamers around the world hooked than any other, is their 14th release in four years.

id Software – who began life as Softdisk – have primarily always been a Shareware games company. The games they develop, such as the now classic *Commander Keen* and *Wolfenstein 3D*, are freely distributed on the Public Domain circuit, so anyone



id Software's boss, Jay Wilbur, at the company's Texas HQ. "We feel that *Doom* is as good as we could have made it..."

can play them, and without spending a fortune. Fans of the games can even register with id, pay a fee, and get an enhanced version, with more levels

"An important influence for Doom was the movie Evil Dead 2 – chainsaws and shotguns are an unbeatable combination!"

Jay Wilbur, id Software's boss

and even more features. Full-price retail versions, like the *Wolfenstein* follow-up *Spear Of Destiny*, inevitably follow, but the freedom of Shareware is where id are ultimately 'at.'

Tracking the team down for an interview has not been easy. They might be at the height of their powers right now, thanks to *Doom*, but with success comes plenty of hard toil. Work on new, improved versions of the game, and ideas for two even more elaborate 3D extravaganzas during 1994, have meant that *PC Gamer's* interview plans with id boss Jay Wilbur have just been something else to put on the man's pile of things to do... Luckily, id have never willingly shied away from publicity, and while *Doom* continues to send their reputation as top-drawer game developers rocketing skywards, we have a chat

CE



is golden

with the people behind one of the PC hits of '94... (If you still don't know what all the fuss is about, check out our review on page 88.)

PC Gamer: What are the origins of *Wolfenstein*, *Doom* and the whole 3D thing?

Jay Wilbur: After Scott Miller (president of Apogee Software) saw *Catacombs 3D* in the fall of 1991, he implored id Software to do a texture-mapped 3D game for Apogee. John Romero came up with the idea to create a 3D version of the classic Apple II game *Castle Wolfenstein*, except make it fast-action

PC Gamer: After the success of *Wolfenstein* a sequel was inevitable. But how did you come to do *Doom* in particular?

Jay Wilbur: We already created a sequel to *Wolfenstein* – *Spear Of Destiny*. We think one sequel to our games is enough, because we're usually chomping at the bit to work on newer technology. By the time we're done producing the sequel of our Shareware original, we're sick of the technology and can't wait to work on something fresh. *Doom* was pretty much a natural outgrowth of *Wolf3D*, technology-wise. As for concept, we really loved the

Alien movies and wanted to make an Alien-like game that captured the fast-paced action, brutality and fear of those movies. Another fine influence was the movie *Evil Dead 2* – chainsaws and shotguns are an unbeatable combination!

At one point, though, we thought about making a game with your character blasting his way through a government research lab, obliterating mutants and deformed horrors along the way. We were going to call it "It's Green And Pissed!"

PC Gamer: How much of an improvement, in gameplay terms, is *Doom* over your previous games? Do you feel you achieved what you set out to do?

"To be honest, Doom doesn't have half the blood and gore that we are capable of creating..."

Jay Wilbur, id Software's boss

Jay Wilbur: The gameplay in *Doom* is much better than that in *Wolfenstein*. Your player moves more realistically, bobbing while running, and the weapon swings from left to right at the same time. The faster you go, the more exaggerated your movements. Everything in the game has hit points and mass. When you shoot a toxic barrel, you take hit points from it until it explodes. Then, anything near it takes massive damage and is thrown away from the barrel depending on the mass of the object. Things have inertia too. In *Wolf3D*, when you ran and abruptly turned a corner, you moved



Tech support guy Shawn Green also acts as id's resident hairy person (every development team should have one).

unrealistically. In *Doom*, running and turning will make you skid a little to the side. All these little details add up to make the *Doom* experience feel more like real life – except for the violence (unless you live in New York).

In *Wolf3D*, you basically had two kinds of keys to open doors, and you had 'pushwalls' which revealed treasure and secret passages. In *Doom*, there are plenty of secret doors, which are much easier to detect, and lots of traps and puzzles to keep you occupied. We tried to mix fast action with puzzle elements, so after you'd toasted all the monsters, you still had to figure your way out. In the registered version, there are teleporters that take you from place to place; you can flip switches that activate something on the current level; shoot walls to reveal secret rooms... All these capabilities make the game more fun to explore, which provides a much richer experience for the player.

PC Gamer: How do you feel about the violence in your games – some people say it's gratuitous, that it's far too bloody and graphic. Is this a concern for you?

Jay Wilbur: To be honest, *Doom* doesn't have half the blood and gore that we are capable of creating. Sure, there are some disturbing sights: squirming GIs hanging from the ceiling by their neck, with their arms and legs cut off; a long leg hanging from the ceiling; a GI impaled upon a large stake, still



David Osborn, one of id's many technical support guys, works to ensure that games like *Doom* make the grade.

like the rest of id's games. We actually started making *Wolf3D* in EGA mode, but we switched over to VGA after a month – we almost made the game in both EGA and VGA versions.

PC Gamer: The 3D graphics and gamestyle you pioneered for *Wolfenstein* has since been ripped off by dozens of other games. How do you feel about that? Doesn't it annoy you that others are taking advantage of your ideas in this way?

Jay Wilbur: We're glad that the 3D action game market is growing. It just makes more great games available to the public – and drives technology crazy. Everyone wants to be one up on everyone else with their 3D technology, but most of it is just minor refinements to the original *Wolf3D* engine.

Until we come out with a better engine that everyone can duplicate, the technology just stays at the level of our last game. *Doom* has just been released and there are no games out there yet that feature a reverse-engineered version of the *Doom* engine. It's true that Apogee have one under development, though.

◀ squirming. But all this contributes to the mood and setting of *Doom*. It's all very important to have in the game. Otherwise it wouldn't bother people on such a low, basic level. We try to provide an experience that people don't normally get, and to do that you have to overstep the boundaries that the big publishers don't dare cross. That's why we're successful – because we're unique and because we're rebels. We aren't concerned about the people that speak out against *Doom*'s morbid graphics and objective. Our sales figures tell us we should not be concerned. This is what a lot of people are into. Of course, we aren't against any kind of rating system being enforced upon our game – controversy sells. It's up to parents to decide what their children's life experiences consist of.

PC Gamer: Can you tell us about the Shareware angle? That's obviously what started you off,

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Jay Wilbur, id Software's boss

but why still write Shareware if you can produce commercial, full-price games?

Jay Wilbur: The Shareware concept is the most honest way of making a buck that I can think of. You produce a title, then upload it for the entire world to try out. If someone likes your title, and uses it regularly, you expect them to pay for it. What more could you ask for?

With our Shareware, however, there is a crucial difference. We don't expect anybody to stop using the free version of our games if they don't pay for it. We don't want people deleting *Doom* from their hard drive because the '30-day evaluation period has expired.' We trust people a little more than that.



If someone doesn't register *Doom* it means that either they don't like it, they can't afford it, or they plan on registering it in the future.

With every game we produce, we create a full-price retail version after the Shareware version has been shipped out. The big myth in the software industry is that retail games make the most money. That is totally wrong! There's a simple reason why we put out a Shareware version

before a retail version – *big bucks!* If you get a good royalty rate from a big publisher like Interplay, EA, Broderbund, Origin etc., you only make about seven dollars (around £4) per unit sold. True, the game gets distributed through software stores, but a hit game still only sells around 100,000 or so. Now look at Shareware – you get much wider distribution – because anybody can download the game for free – and it's totally legal to copy it, which means even more people can get to it. And we make much more per unit!

Another reason to develop the Shareware version first is that the Shareware community is used to being guinea pigs for software. If we release a game with bugs, we find out about it from 10,000 people days after we release version 1.0. But these people aren't upset, because they didn't have to pay for a bugged game. We fix the bugs and release new versions until we have a reasonably stable title that plays correctly on most systems. When we know our technology is solid, it's time to do a retail copy – which is done in a third of the time it took to develop the Shareware version – which is bug-free and whose development is paid for by the awesome sales of the Shareware version. The retail version come out, the game has a reasonable shelf-life, then dies off to be replaced by something else. The entire time, the Shareware version is selling like crazy and will continue selling for years! We are still bringing in plenty of dollars every month on our original *Commander Keen* series that we released in 1990! Shareware does not die.

PC Gamer: Technically speaking, the 3D system used in *Doom* is obviously a quantum leap ahead of your previous games and, indeed, most of the current rip-offs. How advanced is it, exactly?

Jay Wilbur: *Wolfenstein*'s 3D engine was a great hack. You have a two-dimensional matrix that represents the level, and you use ray-casting to determine what to draw on-screen. You cast a ray out into the matrix and when it hits a wall, you know where on the wall the ray hit, for texture information, and how far away the wall is for depth information. Very, very simple, yet very time-

Doom programmer David Taylor, hard at work on id's next project – the surrounding mess is an essential part of his working environment, apparently.



Many of the numerous alien creatures in *Doom* were built as highly detailed scale models, like the ones featured here, then digitised using this camcorder set-up.

consuming. *Doom*'s 3D engine has two types of information to make up the world – line segments (for walls) and sectors (for each area).

We take this information and Binary Space Partition the map, which cuts it up into a sub-sector tree. At any point in the map, the BSP tree tells the engine what to draw and hidden-area removal is totally automatic. This let's *Doom*'s engine run very fast because lots of the computation is done beforehand. But, basically, *Doom*'s engine is a natural progression from *Wolfenstein*'s. You are still locked onto a plane – you can't look up or down – but you have a much richer environment, with lighting and different height floors and ceilings. It's important to stress that to get results this impressive, you need to have good algorithms. A bad algorithm translated into assembler will still run much slower than a good algorithm coded in BASIC. *Doom* was written in C and there are only two small assembler routines – one to draw vertical columns and the other to draw horizontal lines. Look at *Doom*, play *Doom* – it's all C. Assembly-language pinheads take note!

PC Gamer: Do you have a philosophy about what makes a good game?

Jay Wilbur: The most difficult thing to get right is balance. Balance is what game design is all about.

“Violence is an integral part of our game design because of the base instincts it invokes in players”

Jay Wilbur, id Software's boss

Don't throw too many things into the game and clutter the interface, and don't skip on the fundamentals. As far as features are concerned, our games are light. We want you to be able to pick this game up and learn it in five minutes, all the while discovering new things as you journey through our world. The play mechanic is also one of the top concerns – the game must be as elegant in its interface as possible. *Ultima VII*'s interface consisted of two button clicks – this is the right direction to go in, although providing hotkeys for advanced users is definitely a must. You can very comfortably play *Doom* using just a mouse. The middle button moves you forward, the primary button strafes, and double-clicking opens doors, flips switches, pushes buttons (and so on). The simpler, the better. But what makes a good game?

Give the player a top-notch graphic engine that can provide a rich environment to travel in, make the controls as easy and intuitive as possible – and when the player fails, he should feel that it's his fault, not the game screwing him. If the player feels the game is fair, he'll continue playing. An unfair game just frustrates players and gets shelved.

PC Gamer: How long did *Doom* take to create?

Jay Wilbur: *Doom* was developed over a period of one year. In the middle of the project, we took five months out to convert *Wolfenstein* to the Super

Jay Wilbur: There's still plenty left to do with 3D! As baseline systems get faster and faster, we can more fully render our worlds. The next 3D engine will offer you six degrees of freedom, meaning it will be like *Doom*, but you'll be able to look up and down as well. The sky will be a polar map, not a flat background image. You'll be able to wait under a bridge until an enemy walks over, and you'll be able to shoot straight up through the bridge! Everything will consist of 3D modelled images, even your player character. There'll be clouds floating high in the sky that you can get to (you can discover an ancient castle located on top). The list goes on and on... The next 3D engine will be more of an improvement over *Doom* than *Doom* was over *Wolfenstein*.

PC Gamer: Some of your critics would say that this 3D blasting genre is ultimately limited. What do you say to that?

Jay Wilbur: The shoot-'em-up style is only as limited as your imagination. There are endless scenarios in which you can justify a shoot-'em-up. Eventually, our games will involve more plot, more puzzles and more realism – but violence in an integral part of our designs, because of the base instincts it invokes in players. People like the experience...

“That's why we're successful – because we're unique and because we're rebels”

Jay Wilbur, id Software's boss

Nintendo. When development re-continued full-steam ahead, in August, we refined many of our ideas and game concepts before finishing it. Some minor game changes were made mere months before the game was shipped out. This is why our games do so well – the title matures over the course of development. Most companies have a spec drawn up before development starts. Then they develop the game over the course of a year or two. When it comes out, it's state-of-the-art two years ago!

Doom version 1.2 is about to ship – this should be the final version, with all bugs fixed and features implemented. Now we're developing the retail version of *Doom: Hell On Earth*. It should take us until about August 1994, and then it's onto *Quake* and newer, better 3D technology.

PC Gamer: What do you think of *Doom* now it's finally reached completion?

Jay Wilbur: We feel *Doom* is about as good as we could have made it. There are various game concepts we really like that weren't fully explored, but there's always the retail version for those. One of *Doom*'s levels, Mt. Erebus, is particularly striking – it's set mostly outdoors. This is a remarkable contrast to the rest of the game, which takes place mainly indoors, with the player sometimes seeing outside. We plan on designing most of *Doom: Hell On Earth* as outside areas.

PC Gamer: So what's next? Is there still more you can do with this 3D technology?



Meet John Romero (no relation to George A), lead programmer on *Wolfenstein* and *Doom*. Top geezer!

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(Left) Oh dear, I wouldn't want to meet this pair down a dark alley. For the moment, though, they're graphic artist Kevin Cloud (sitting on the left) and programmer David Taylor.

(Below) John Carmack, another from id's skilled programming team and all-round good egg.



(Left) Sandy Petersen, the designer of *Wolfenstein 3D*, *Doom* and the forthcoming opus *Quake*, which promises to be to *Doom* what *Doom* was to *Wolfenstein*. Sounds promising...