

GAMESPOT FEATURE

THE FINAL HOURS OF  
**HALFLIFE**  
BEHIND CLOSED DOORS AT VALVE SOFTWARE



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<u>Chapter</u>	<u>Page</u>
Part 1 – Introduction	2
It's Four O'clock	3
Part 2 – The Microsoft Millionaires	6
The ID visit	7
Bring in the Troops	8
The Right E-mail, the Right Time	9
Part 3 - The Valve Difference	12
Improved Technology	14
There Was No Model	15
The Public Debut	16
Part 4 - Reassembling the Pieces	19
The Final Stretch	20
All the stars aligned	21
Part 5 – Squashing the final bug	24
The crab gets it	26

## Part 1 - Introduction

**D**own the hallway, there's the pulpy sound of a crowbar ku-thunking into the soft-as-a-peach outer layer of skin on some organic lime-green colored creature. To the left, one hears the rat-a-tat-like resonance of a machine gun spewing bullets, followed by the tings of scores of empty shell casings hitting the ground.

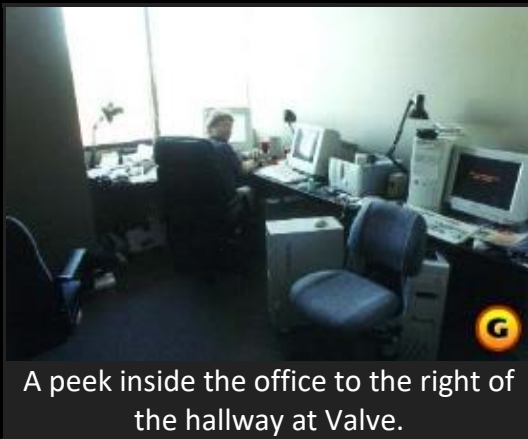
To the right, there's silence - almost. It's a quiet room, the silence broken only by the hollow cadence of fingers furiously tapping away on a keyboard.

A window provides a beautiful view of the Lake Washington, a stark contrast to the rest of the room, littered with hundreds of pieces of computer hardware, multiple monitors, a white board, and more than a few Diet Coke cans. One of the monitors is alive with lines of code - the technical language that makes a computer game run.



Valve's Robin Walker unleashes cacophonous machine gun fire during a test game of Half-Life.

There are no ku-thunks or rat-a-tats in this room. Not everyone at Valve Software is playing a last-minute game of Half-Life, the highly anticipated first-person action game published by Sierra Studios. In this room, someone's still working away and rightfully so - the game's not finished yet. But it's almost done.



A peek inside the office to the right of the hallway at Valve.

Almost.

"It's finally sinking in that two years of work is being taken away," sighs John Guthrie, a young and affable game designer at Kirkland, Washington-based Valve. This week, his colleagues have started calling him "neck beard," referring to the fact that he hasn't shaved in days. Today, his priorities lie elsewhere. "I keep watching the clock as

I play Half-Life again and again, knowing that at some point, someone is going to say it's time to stop."

Guthrie's been working on the game for two years, and as of late, that's meant 18-hour days with no weekends. He hasn't had time to sleep, much less shave. The brown doormat outside his office says it all in big black letters: GO AWAY. Although other employees don't spell it out so clearly, just about everyone at Valve feels the same way.



The hollow cadence of typing is the only thing heard to the right of the hallway.



Valve's John Guthrie

The minute hand on Guthrie's desk clock sweeps up to the top of the hour on this Monday afternoon. He glances at the clock, mentally noting that another hour has come and gone. But now, it's four o'clock, and everyone at Valve knows what that means: the ingeniously termed "four o'clock meeting." But the meeting is more important than the name suggests... especially today.

From his office at one end of the building, Valve co-founder Gabe Newell, wearing a maroon button-up golf shirt

and khakis, gets up out of his plush black leather chair, opens his door, and begins to walk down the hallway. He hears the sounds of gunfire, screams, and growling monsters, too. It's what he wants to hear. As he proceeds down the hallway past the eight-foot-high red mahogany doors of all the developers, he doesn't need to say anything. His mere presence says enough. He's like a shepherd subconsciously herding his sheep with an imaginary staff. Then, halfway down the hall, he finally announces the obvious: "It's time," he says. Everyone follows him in lemming-like fashion to the main conference room. The four o'clock meeting is about to begin.



Valve co-founder Gabe Newell gets up out of his chair and prepares for the portentous walk down the hall.

### It's Four O'clock

While walking down the hall, Newell provides an update on the game's progress. "Mike Harrington has about 80 percent of the outstanding work items," he says. "Everyone else is just playing through the game time and again searching for the bugs." They hope they don't find many. Half-Life, already delayed for nearly a year, must be on store shelves for Thanksgiving. Only a matter of days remain to get the game finished. Time is of the essence.



Valve co-founder Mike Harrington, the occupant of the office to the right.

That pressure and lack of sleep dictate that Newell keep the meeting short. There's no time for funny anecdotes or long-winded speeches. "What's left to do?" he asks, twiddling a black pen in his right hand. Then the bad news arrives. A few of the staff have found what they call "showstopper" bugs, errors in the software that make the game unplayable at certain points. The bugs can be fixed, but no one knows just how long it will take. And there's still one major issue that has yet to be resolved.



As a showstopper bug is found in Half-Life, Harrington and Programmer Yahn Bernier try to determine the cause.

A problem that causes the game's multiplayer server to run so fast it can't talk to the player's computer. At the moment, no one knows what's causing the problem, which means it's impossible to fix.

As the meeting draws to a close, all the developers look up to an object hanging two feet below the ceiling. This sort of dangling carrot is a piñata of a Headcrab, a vicious flesh-colored monster in the game. Made out of paper-mache by Guthrie's girlfriend Jamie, it hangs motionless, silently awaiting its fate.

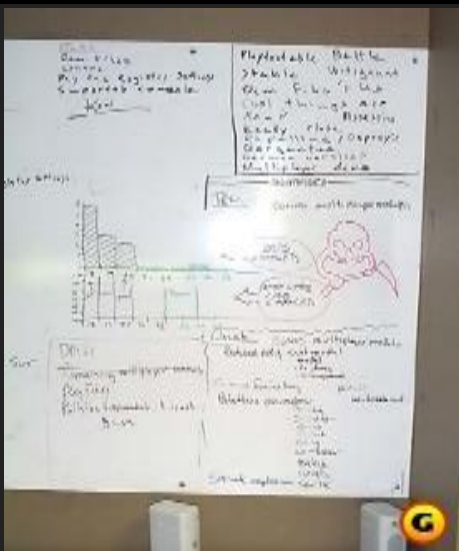
No one knows what's inside. "It's a surprise," says Jamie, with a look that says she'll really be happy to have her boyfriend back when this is all finally done.

On the desk below the crab, there's a yard-long black crowbar. Newell looks down at it for a second. You can tell he wants to pick it up, swing it, and bust the crab to smithereens. But that's not how things work. The piñata can't be touched until the team "goes gold" - industry slang for the moment when a game is finished and sent off to manufacturing. Only then does the crab meet its fate.



A group of Head Crabs attack in Half-Life.

As the meeting ends, the developers leave the conference area and head back to their offices. They're a rag-tag bunch. One used to be a patent lawyer in Atlanta. A couple of them were pizza delivery boys who dropped out of college to join Valve. One was a Guardian Angel in New York. Then there's the tattoo artist, the Harley-riding-prosthetic-limb-software-creating genius, and a lead singer in a Seattle rock band called Lucy's Fishing Trip. If you were trying to fit all this bunch into the typical game developer archetype - high-school nerds cum software geniuses - you'd be dead wrong.



A white-board lists the multitude of issues that still need to be addressed before Half-Life goes gold.

They've been through a lot together. The story of Half-Life is two-year epic, with plenty of twists and turns. And they had it to do it all from

scratch. As Newell, who along with partner Mike Harrington left a successful career at Microsoft to start Valve, reminds us, "Within the domain of where Mike and I were coming from at Microsoft, we were pretty damn good with operating systems and Windows. But in our minds, coming into this industry, we had a lot to prove." And prove themselves is exactly what they did.

## Part 2 - The Microsoft Millionaires

Newell was right - in the gaming world, he and Harrington were unknown commodities. Both were decade-long veterans of Microsoft, helping to manage staple products such as Windows NT, OS/2, and Microsoft Bob. It may not have been glamorous, but it was lucrative - very lucrative. Both Newell and Harrington are part of an elite group dubbed the "Microsoft Millionaires," young software developers who all made enormous amounts of money with their Microsoft stock options. Some have gone on to start their own restaurants. Others have bought farms in Iowa. But Harrington and Newell wanted to make games.

"I like developing software, good working environments, and games," explains Harrington, who has a boyish charm and approachable disposition. "I put all [these elements] together and decided that I couldn't just leave Microsoft and do nothing."

But Harrington didn't want to start the company on his own. He talked to lots of Microsoft employees about working together in the games market, but most were more interested in doing research than shipping products. Harrington didn't want to burn money on his hobby or toy around with technology forever. He wanted to ship games. And so did Gabe Newell. It was as simple as that.

Or so they thought. Mike's wife Monica, a marketing executive at Microsoft at the time, didn't take her husband's plan for a game shop very seriously at first. "I remember when Mike first told me he wanted to start a games company," she recalls. "I envisioned him working out of the extra space above our garage." However, she soon realized how serious both Harrington and Newell were about their new venture. "I woke up when he told me he and Gabe would be signing a five-year lease for office space in downtown Kirkland."

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**"I envisioned him working out of the extra space above our garage."**

**- Monica Harrington on her husband's plan to develop games.**

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id Software's Quake Engine would prove to be a key component of Half-Life.

Office space was only the first of many pieces of the puzzle that would quickly fall into place for the fledging game studio. With their own pocketbooks funding the company, initial financing wasn't the major issue it often is at other start-up developers. Still, important decisions had to be made from the outset. The first was what genre the company wanted to tackle. It didn't take long to decide. "3D action games were our favorite genre," says Newell. "We also thought there was a lot of room for improvement."

The only problem was that Newell and Harrington didn't know a thing about developing a 3D action game.

That's where Michael Abrash, a close friend of Harrington's, comes into the picture. "My friend Michael Abrash had recently left Microsoft to go to id Software," says Harrington. "He told me that we had to license this new engine that he was working on with John

Carmack." So, when the invitation came through to visit Abrash in Texas, Harrington and Newell were quickly on the road and on their way to id.

### The id Visit

In late 1996, Newell and Harrington arrived at id ready to listen and learn from the industry pros. However, as Abrash remembers, the id gang wasn't too thrilled at the prospect. "I don't recall that when [they] came down to id, there was a lot of great chemistry," he says bluntly. "Let's put it this way: It wasn't like when Nine-Inch Nails came to visit - that was a cool thing. These were guys that worked on stuff like Microsoft Bob and Home Automation. You're not



going to walk into the coolest game company on the face of the earth and have the guys say, 'Wow, nice to hang out with you!'"

Indeed, without Abrash's involvement, it's unclear whether Valve could have licensed the Quake engine. But because Abrash was willing to vouch for them, the powers at id agreed to meet and work with Newell and Harrington. It was an important break because the partners viewed acquisition of the Quake engine as critical to getting their company off the ground. "When we sat down and looked at it, the areas that we wanted to be innovative in for first-person action

games did not require us to be innovative in the areas where John [Carmack] had already done a lot of work," says Newell. "It would have been too much to go from 0 to 25 people and have a stable team to build an engine at the same time."

After picking up some tips and discussing the inner workings of the business, the two developers headed back to Seattle with Quake source code in hand. Except for Abrash, no one at id was sure they'd ever be back. "Everyone at id wasn't very optimistic about what Mike and Gabe were going to do," states Abrash.

Back in Seattle, Newell signed the papers to set up the company (on his wedding day, no less), and it was time to settle on a name for the new venture. Newell was intent on not following the industry standard. "We wanted a name that didn't suggest we were about testosterone-gorged muscles and the 'extreme' of anything," he explains. They finally settled on the name Valve (the other name they nearly picked was Hollow Box).

The duo was off to a good start - their hollow box was beginning to fill with ideas, technology, and advice from industry leaders such as id Software. Still, they'd need help to pull this off - and plenty of it.

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**"I don't recall that when [they] came down to id there was a lot of great chemistry."**

**- Michael Abrash on Valve's first visit to id.**

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## Bring in the Troops

Beside the Quake source code, the most important thing that Newell and Harrington obtained from id was a shopping list of sorts - a list of names of some of the most innovative and exciting developers working with Quake technology. Two of those developers were Steve Bond and John Guthrie, Floridians who had started a popular online fan site called Quake Command. Guthrie was going to college and delivering pizza when he and Bond received an e-mail that would change their lives.

"We got this e-mail from a guy named Gabe Newell," recalls Guthrie. "He told us he wanted to talk to us and left his phone number." Both Guthrie and Bond thought the e-mail message as a joke, and they ignored it until curiosity finally got the better of them. "Steve eventually called him," says Guthrie. "That day, Gabe bought Steve a plane ticket, a rental car, and a hotel room." It all seemed too good to be true. "Steve was standing at the airport," says Guthrie, "waiting for the electronic ticket to come through, and he kept saying, 'This has got to be a joke.'"



John Guthrie, former pizza delivery boy, checks his e-mail.

But it wasn't.

Once in Seattle, Bond was given a few days to stay in the city and make a decision that would change the rest of his life. Once Bond decided to join Valve, Guthrie wasn't far behind. "A week later, I followed Steve up to Seattle and decided to drop out of school." (In case his parents are reading, he's quick to add, "Though I'd like to return to [school] one day.")

Harrington can empathize. "Both Gabe and I didn't finish school - we dropped out to do software," he says, "and we firmly believe that if you find a smart creative person, they can do a great job." It's catching them early that's key: "If you're lucky enough to find them early on, you can be around when they grow into themselves. That's the time when they do a lot of really interesting work."

But with young guns, growing pains are inevitable, especially since many of their hires had never done professional work before. "We had to help them get grounded in Seattle," admits Harrington. "But it was a lot of fun - creating a positive work environment and some aspect of parenting, too."

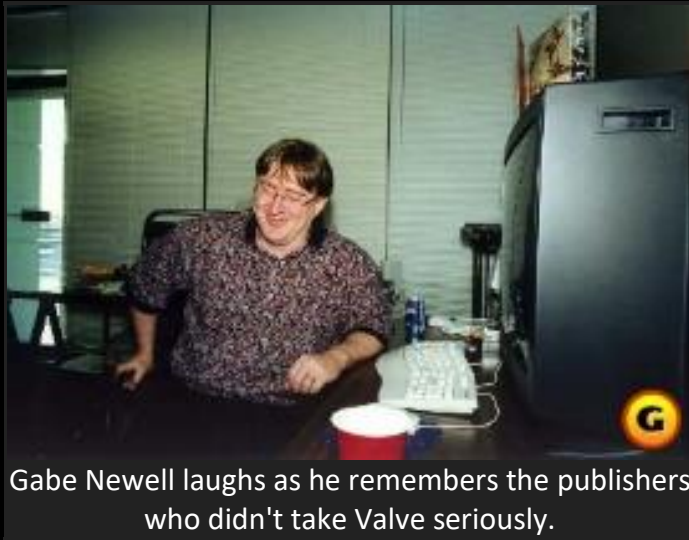
Harrington and Newell rounded out the team with other online developers, although they were careful to not hire myopic Quake fans that didn't have a sense of what was next for the genre. They also brought in some industry veterans from



Veteran 3D Realms artist Chuck Jones joined the Valve team.

companies such as 3D Realms, Shiny, and Microsoft to round out their team or "band" as Harrington refers to it. "Until you find the right people, the band just never takes off," he says. They had their technology, their team, and their genre. Now they needed a game and a publisher to put it on store shelves.

### The Right E-mail, the Right Time



Gabe Newell laughs as he remembers the publishers who didn't take Valve seriously.

With the team in place, the time had come for Valve to find a publishing partner. It had been mostly smooth sailing for them up until this point, but they were about to meet a strong cross-wind. "It was sort of weird going from Microsoft where you were really respected to going into a meeting with a game publisher who said, 'Go away, stop bugging me! Come back with credibility!'" remembers Newell.

He recalls one meeting in particular that didn't turn out as planned.

The presentation was proceeding as normal, when it was mentioned that Valve wanted to use a skeletal animation system (animating the characters using digital bones and joints) in the game. As soon as they suggested such a concept, "the publisher said, 'OK, meeting's over!' They didn't believe we could do it," says Newell, with a wide I-told-you-so grin.

But their luck turned when Newell e-mailed another Seattle publisher, Sierra On-Line. Ken Williams, industry legend and Sierra On-Line founder, received the message. Williams recalls that when he got the e-mail from Newell, "I had been looking aggressively for some product in the Quake genre. I was looking at licensing one of the 3D shooter engines and was negotiating with id and some others."

Fortunately for Valve, it had the advantage of a secured Quake engine license. Williams was intrigued. "Gabe said he had the license and a team of ex-Microsoft people put together. It was the right e-mail at the right time."



Ken Williams, founder of Sierra On-Line, met with the Valve team and was immediately impressed with their concept and expertise.

A meeting was set between about ten Valve staffers and Sierra in November of 1996. On that fateful day, it snowed in Seattle, an extremely rare occurrence that basically shuts the entire city down. But as Harrington says, "There was no way we weren't going to show up. We all get in my four-wheel drive car, slid around, and finally get to Sierra." The entire office building was vacant, except the one person who made it into work: Ken Williams.

Valve began its pitch and, as Newell recalls, "About 20 or 30 minutes into the presentation, when we were just starting to gear up for our big close, Ken says, 'OK, you're done! Let me tell you why you should be working with Sierra rather than anyone else.'" They had caught him - hook, line, and sinker.



Sierra re-branded their entertainment software division as Sierra Studios in early 1998.

What impressed Williams so much about the Valve team? "Most of the [developers] I spoke with were groups of artists and designers, but no engineers," he states. "Valve were the first ones who were using an existing engine as a starting point, not a finishing point."

In addition, by 1996, Sierra had started to feel the pain of not having products in hot genres such as action and real-time strategy. It was time to make a move.

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**"Valve were the first ones who were using an existing [game] engine as a starting point, not a finishing point."**

**- Ken Williams**

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"We needed to get into the 3D shooter category," Williams says. "I did like Doom, but I saw it as a one-trick pony. By the time I decided we wanted into the genre, we were too far behind. With 20/20 hindsight, I blew it when I had the chance to buy id and didn't."

You read that right. Sierra had the opportunity to purchase id Software in the early '90s, but the deal broke down over a couple hundred thousand dollars that Sierra didn't want to put up front. But Williams didn't get mad, he got even. "Valve was the first group I had spoken with that could put Sierra in front of id," says Williams.

Shortly after the meeting with Valve, Williams left Sierra, and the torch was passed to Scott Lynch, the man who has briskly reinvigorated Sierra under the new label Sierra Studios. "Sierra got a little comfortable in the early '90s," he says. "We turned into a factory instead of a creative colony... We weren't seen as an innovative company." Valve had the potential to change all that.

But Lynch did have his concerns. "I think the big question with Valve right from the beginning was, 'OK, you've got the Quake engine, but is this just going to be new Quake levels?" he says. "What we all wanted to see was Valve take the technology as a foundation and add something new. When they started talking about telling a story and creating a persistent world, it was

pretty obvious they weren't going to do a mission pack with the Quake engine." Sierra was interested and confident. They signed Valve up for a one-game deal.

The game was code-named Quiver.

## Part 3 – The Valve Difference

When Valve started brainstorming about concepts for the game, one of the first ones brought up was a book Newell had read by Steven King called *The Mist*. "[The book] talks about this 'thing' that happens at the Arrowhead secret military base," recalls Harrington, "and this mist comes out like a big fog bank." Behind the bank is a slew of monsters who ravage a city and trap all these people in a grocery store.

Thankfully, the grocery store idea was dropped, but the parameters of King's story intrigued the team. "We thought it would be fun to do a scary action game," explains Harrington.

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**"Valve set out to do a class B game and not a class A game."**

- Michael Abrash

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What was then called *Quiver* would go through much development before the team would be satisfied with the story, much less the game. Yet the team didn't want to be too picky - Harrington wanted to ship a product as soon as possible. It was a wise move. For a new company, trying to create a blockbuster game often results in bankruptcy.

"Valve set out to do a class B game and not a class A game," says Abrash. "The model for starting a company, and the one I think Gabe and Mike followed - Carmack would tell you this in a second - is to just ship something." As Abrash explains, if a company sets out to do a killer game, it gets stuck "behind the curve" and ends up being too late with the product, which generally turns out to be a B game (or worse) anyway.

Eventually, the story for *Quiver* morphed into what we now know as *Half-Life*: The tale of an MIT-grad called Gordon Freeman who works at the Black Mesa Research Facility in Arizona. You're Freeman, an



In his HEV suit, meet Gordon Freeman, the character you play in *Half-Life*.



The military plays a role in the game's story too.

average Joe who has never carried a weapon, let alone killed anyone. However, inside the research facility, things are not as they seem - shady characters and secret experiments abound. On the fateful day when the game begins, a disaster strikes the facility, and things take off from there.

From the outset, Valve was intent on building a game around a story and not vice-versa. It wanted to make a dense environment that provided for something new around every corner. Valve wanted living and breathing characters. A plot. Puzzles. And a lot of action.

"For a long time," explains Newell, "3D action games seemed to keep treading down the same path - an increasing focus on a narrow definition of gameplay and a focus on the rendering [graphics] instead of the gameplay." Valve was intent on bringing something new to the game environment apart from snappy graphics. Not everyone thought it was a good idea.

"We'd occasionally get people who would say things like: 'Stories? Who needs them? I just want a rocket launcher that fires faster,'" says Newell. "It's pretty scary to be spending a big chunk of your own money and be going in a direction that's different than the norm." It's a sad commentary on the game industry that Valve was "different than the norm" just because it wanted to develop a cohesive story to accompany the game's action elements.



Mapping out level design for Half-Life on a white board.

Michael Abrash says that Valve realized something early on that helped it craft a highly balanced game: "For the most part, level designers can't design games," he says. "What Valve figured out was that you needed a creative committee to design a game. A level designer worries about things such as how to lay down the bricks, but not necessarily the story and the scope of the game."

With that idea in mind, last summer, Valve commissioned novelist Marc Laidlaw, whose award-winning novels include *Kalifornia* and *the 37th Mandala*, to help flesh out the plot and characters. "We didn't want the story to rely on one character coming and telling you the whole tale at one point and that was it," explains Laidlaw. "We wanted to gradually ease the player into the story and provide little clues along the way."

So, Valve created a cast of characters that would inhabit the game - Einstein-esque scientists who would talk to the player, security guards called Barneyes (in homage to Don Knotts' role

as the pretentious, lovable fool on the *Andy Griffith show*), and of course the player, Gordon Freeman. "In a lot of shooters," cautions Laidlaw, "for all you know, you could be a weapon walking around a level. It's pretty clear in *Half-Life* that's not the case."



Einstein-esque scientists populate the game's Black Mesa Research Facility.

Of course, all this was still on paper at this point. "We weren't even sure it was technically possible to make the characters talk," says Laidlaw. That's when Valve's software engineers came into play - the people who would lift the world of *Half-Life* from paper to digital reality.

## Improved Technology

Although Valve had the Quake technology, it didn't intend to just build a game on top of it. Valve had a group of engineers that wanted to extend the engine and custom-tailor it for the game.

Put simply, Valve's vision for Half-Life was beyond the capabilities of the Quake engine, and to make it a reality, major obstacles had to be overcome. For example, due to the limited memory of typical PCs, conventional animation methods simply would not work for the amount of character animation the team wanted to put into the game.



Ken Birdwell explains his proprietary skeletal animation system that uses bones and joints to animate characters.

That's where Ken Birdwell, a man who John Guthrie calls a "genius," comes into the picture. Birdwell, who rides a Harley and used to design software that scanned a person's foot and created custom shoe insoles, was behind the concept of skeletal animation in the game. "I wanted to see more fluid animation, but we didn't have enough memory," he explains. "We needed to compress down the animation by a factor of 10 to 100. Skeletal animation was the answer. We actually create bones and joints for the characters." As characters walk around in the environment, they have a virtual skeleton that creates the movements seen on screen.

The skeletal animation system also proved useful in solving the problem of making mouths that move on the characters. Newell is particularly proud of this achievement. "I remember when Ken and Kelly [Bailey] had been working in secret to get the mouths to move - a really hard technological problem. They kept it quiet because they wanted to impress us all when it was done. It's an amazing feeling to think that something really innovative and cool is going to come out of the guy in the office next to you."

To make the mouths of the characters move in the game, Birdwell and Bailey actually created bones in the faces of characters, which in turn are used to manipulate the movement of their jaws. Guthrie is still dumbfounded by this achievement. "If you ever wonder who goes to

college when he's 13, it's someone like Ken Birdwell. He solves really hard programming problems."



Advanced AI would help keep the player on the edge of their seat.

Another major area of innovation for Valve was in artificial intelligence. Although a lot of games promise advanced intelligence, Valve spent months developing proprietary technology that would actually make enemies work together in packs and flocks. Dave Mattson, a web

master at the popular Half-Life fan site halflife.org remembers when Gabe Newell gave him a demonstration of the game's AI. "Gabe showed me this map that only contained four Houndeye enemies," he remembers. "One of them quickly assumed the role as leader and stood on his lone hind leg and watched our every move, looking for signs of aggression. The other three creatures cautiously began exploring their surroundings - sniffing the floor and licking bloodstains. It was incredible."

### There Was No Model



Warren Spector cites the warehouse environments as only weak links in Half-Life's realistic gamespace.

Together, the characters, story, AI, and skeletal animation system served as a toolbox that Valve could use in creating the Half-Life game experience. And the group pulled it off beautifully. As game designer Warren Spector, who worked on the Ultima Underworld team, puts it: "The most impressive thing Valve has done is make you feel like you're in a real place. This isn't some goofy gamespace, but a believable research center." (Spector does have one minor complaint. "Half-Life is still set in a warehouse world," he says. "I gave Gabe a hard time about this once. The archetypal game world is filled with nothing but crates.")

But crates aside, nothing else about Half-Life is archetypal. In particular, Half-Life engages the user's intellect in ways never before seen in the first-person genre. "In Quake," explains Newell, "the monsters didn't force you to make a lot of decisions - you never had to say to yourself, 'Do I go after these little things first or the bigger thing?' There wasn't a lot of that kind of stuff."

Next up were the levels, which were designed using an open-ended, collaborative process. "We'd generate a general outline for a certain level," explains Laidlaw. "Then the level designer would go out and generate the architecture, and we'd come back together and see how we could add interactivity to the environment and bring it to life." The levels were designed against a continuous musical backdrop - everything from Mozart to Marilyn Manson.

As for the rest of the design process, Valve pretty much made it up as it went. "What was really exciting about this project was what was really scary," details Laidlaw. "We didn't have a model. It's a great challenge. You have to refer to what worked in the process of creation as a reference point for how to build the game."



The levels for the game were designed in a popular level editor called WorldCraft. It's included with the full retail release.





The first screenshot of Half-Life, released in April, 1997.

It was an arduous road with many unexpected twists. As Laidlaw puts it, "Our model really evolved over time." Yes, it did, as anyone who saw the first screenshots of Half-Life when it was announced to the public in mid-1997 will surely attest.

### The Public Debut

"We did a lot of growing up in public," admits Gabe Newell. When Valve and Sierra jointly announced the game last year, they released two screenshots that bear little resemblance to the images in the final game. And that's a good thing. "The screenshots we put out when we announced the game were terrible," concedes Newell.

Time passed, and the images got better. At the 1997 Electronic Entertainment Expo, Valve had a tremendous showing, demonstrating its high-end AI and Birdwell's skeletal animation system. "We had pretty interesting technology to show what we were doing with the Quake engine," says Newell, "but we didn't have the game yet."

That didn't stop the press or buyers from christening Half-Life as the Next Big Thing. Rumors had the number of preorders for Half-Life in the hundreds of thousands of units after the game was shown at E3. It was even voted as a "Best Game" at the show despite the fact that there wasn't really much of a game on display. The reaction was misguided, but understandable. Awash in a sea of Quake clones, the media was so excited to see original thinking in the genre, it wanted to support the product as much as it could.



Houndeyes populated the second publicly released screenshot, which Newell admits, was "terrible."

Not everyone was so optimistic. John Carmack at id Software remembers that he was still very skeptical about Half-Life: "For whatever reasons, Half-Life was the license we paid the least

attention to during development. The early showings and screenshots never really got us very excited."

Energized by its success at the show, the team pushed forward with development in hopes of getting Half-Life ready for the holiday season. As Scott Lynch at Sierra Studios remembers, "The big competition last year was Quake II, and there was a lot of push to get our game out there to go head to head with it."

It wasn't to be. By August of 1997, Valve recognized that finishing the game for the holidays would mean making major compromises on the product. "We realized that to make Christmas, we would have to give up a bunch of stuff we

wanted to do," explains Newell. "We had to make a decision about what way we wanted to go, and it was a scary decision. We're a self-funded company, so when we pay people's salaries, I write a check out of my personal checking account."

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## "The early showings and screenshots [of Half-Life] never really got us very excited."

- John Carmack of id Software.

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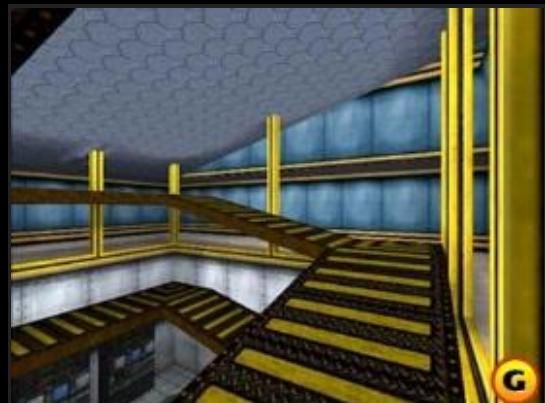
happened. With the holiday pressure off, Valve could spend time evaluating its progress, painfully reviewing every aspect of the game. In essence, the work on Half-Life was weighed in the balance. And it was found wanting. Near the end 1997, privately and behind closed doors, Valve decided that most of its work - including the work on levels and AI - would be completely scrapped. It just wasn't working.



Scripted sequences such as this one were shown at E3 and won over critics.

Money wasn't the only concern. The relationship with Sierra Studios was also conceivably at risk. Half-Life was supposed to be its biggest game of the year, but it wasn't going to be ready. The massive wheels of promotion and PR had already started to turn, and now the company had to put the brakes on. It seemed like a disaster.

Actually, it was the best thing that could have



Levels such as this one had to be completely scrapped because they didn't live up to expectations.



The bull-chicken enemy shown here would eventually be re-designed.

## Part 4 – Reassembling the Pieces

"Last year, we had a lot of great technology," explains Ken Birdwell, "and it would have been a really competent game, but it wouldn't have gone over the edge anywhere. In the middle of last year, we got some inklings of what we really could do with the game, and by late last year, we had seen what the game should be - we just had to do it."

Not surprisingly, this "voyage of discovery" (as Harrington describes it) caused massive turmoil



The Heavy Weapons grunt was one enemy cut from the final game.

on the project. "The net result is that we threw out just about everything," admits Birdwell. "All the AI was gone, and we gutted the levels. In reality, Half-Life got delayed because of Half-Life." In Birdwell's estimation, what players are now experiencing on their PCs, "is really Half-Life 2. It's an incredible game."

If Valve's founders hadn't had such deep pockets, it's doubtful whether they could have secretly rebuild Half-Life from the ground up. Most developers would simply be unable to fund such a redevelopment process, especially on their first game.

However, this process is precisely how Half-Life moved from a B game to an A game. As Michael Abrash puts it, "For Valve, the first year was learning how to do a game, and the second year was applying it."

As Valve rolled into 1998, Harrington was confident, and the team was now stacked. To finish the project in a timely fashion, Valve had quietly shut down a second team working on an unannounced game. "All the vegetables were in the pot, so to speak, earlier this year," says Harrington. The company's resources were now completely focused on completing the game.

It didn't seem to matter. Valve hoped to have the game out in the spring... then in June... then in the summer... then September... and finally Thanksgiving. The slippery slope of release dates was the cause of great concern within Sierra, where employees would joke that they didn't think they would ever see Half-Life sitting on a store shelf.

"I don't think we wanted to admit to ourselves how much work we had left to do on the content side of things," says Newell, fessing up about the delays. "It's extremely embarrassing." Newell is very cognizant of what Valve put Sierra through during the delays. "Sierra has been pretty supportive, even though we've screwed up their quarterly [financial] forecasts for five quarters," he says with a shy laugh.

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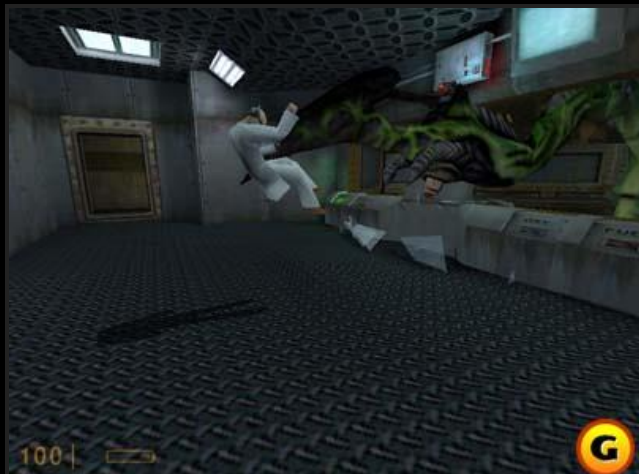
**What players are now experiencing on their PCs, "is really Half-Life 2," according to Valve's Ken Birdwell.**

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By the time E3 rolled around in June, significant progress had been made. Valve showed off the new and improved Half-Life at Sierra's booth. Most who saw the game didn't realize exactly how much redesign Valve had gone through. Valve was also starting to doubt itself - was Half-Life really good enough to compete against the likes of Sin, Shogo, Blood 2, Heretic 2, and (at the time) Daikatana? "In this industry, you really rally around the trade shows," explains Harrington. "There isn't a lot of public feedback during the process of creating a game, and given that we're a new company, you tend to wonder if you're on course or not."



Gabe Newell, in the middle of a multiplayer game, fesses up about the game's countless missed release dates.



This scripted sequence of a green tentacle attacking a scientist wowed the crowd at E3 1998.

They were. The reaction at E3 was tremendous and a huge morale booster for the company. Valve was on track and received another Game of the Show award. Its vision for Half-Life was within its grasp. It had become the game Valve wanted it to be.

Now they just had to finish it.

### The Final Stretch

After E3, the team entered what's affectionately known as "crunch mode," working almost nonstop to deliver the game. "Over the past few months," explains Valve's Robin Walker, "everyone got their turn at being the people who had to spend three days in a room with the door shut getting something done."

Still, everyone at Valve kept pushing the game design onward and upward. "It's hard to judge the point where you decide, 'OK, we have sucked people in,'" explains Newell.



While immersed in a multiplayer game, Robin Walker remembers the crunch days over the past few months.

"Each room needs to have enough cool stuff so players will never say, 'OK, been there, done that, and that's all you're doing for me now.'"

But time was increasingly a consideration. As Ken Birdwell decrees, "Most everything about a game is a decision about time. We have a million features we'd like to get in, but the question is, 'What can we get in before we ship and still make a fun project?'" When all was said and done, most of the features that Valve wanted to put into Half-Life made it in - but there are a few exceptions. "Pain skins," which would show certain parts of bodies being wounded instead of the entire body, were cut, as was the ability for players to map their actual faces to the multiplayer characters. And then there were the design concepts that just didn't pan out, including one plan to have players actually pilot a helicopter in the game, with controls that Newell once called "just as good as a flight sim." Maybe next time.

But the most innovative elements did make the cut, including the talking characters and ultrarealistic environments. As Newell sits at his desk discussing the game, he remembers a wonderful anecdote about his play experience the night before while he was testing. "I was playing this level in the game where you have to escort a scientist through the whole level and make sure he survives because he needs to help operate machinery," he recalls. "I was having a really good time, and all of the sudden, he was killed by an enemy. To be honest, I felt just terrible. I felt guilty. I was engaged with these people on a level where they had been working so hard for me. I felt like I owed them protection." After all the redesigns and reevaluation, Newell was finally getting the gameplay experience he wanted out of the game.



Kinetic environments such as this one set Half-Life apart from other 3D shooters.

Before Valve would finish the full version Half-Life, it had to complete an OEM release of the product, a special release of the game for shipped by hardware vendors with their video and audio cards. The special release, entitled Day One, would turn out to be one of the best marketing tools Valve could ever hope for - it finally showed the press and the industry what the game was really about. Valve's secret was unveiled in all its glory.

### All the Stars Aligned

By September, Half-Life: Day One - which consisted of a near-final version of the first 20 percent of the game - became the most talked about game on the planet. Although it was never intended for public distribution, it quickly leaked out onto the Internet where gamers hungrily downloaded illegal versions of the game. The demand for the OEM version only grew when many critics and industry luminaries decreed it to be one of the best 3D action games ever.

"Most of the Texas game development community was stunned by the final Half-Life demo," says John Carmack of id.



Multiplayer games are another key element to Half-Life.

"There has never been a game demo that got as big a reaction at id as the Half-Life OEM version. We had some doubts, but it looks like Valve's plan worked."

John Romero at Ion Storm was also hooked on the OEM version: "It was amazing. I played it straight through for 4.5 hours until I finished it. At no time in the game do you feel safe, and that is a key element to hooking the player." Obviously Valve's plan of characters and a dense environment was brought to fruition. The level of realism and detail was second to none.

"From art to design to programming, Half-Life is the best produced and most intelligently designed 3D game I've played," says id co-owner Kevin Cloud. High praise from the design gods Valve first met with for advice. "If games are a combination of programming, art, and design, then Half-Life is a great balance of the three. It defies the prevalent notion that story line and interactive environments are the antithesis of gaming action."

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**"I played it straight through for 4.5 hours until I finished it."**

**- John Romero of Ion Storm on the Half-Life OEM Version.**

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The rich movie-like environments impressed Tim Sweeney at Epic MegaGames, who created the Unreal engine.

Tim Sweeney, who created the Unreal engine, was similarly impressed with

Day One. "Half-Life is the first game I've played that really feels like you're playing a movie," he remarks. "Previously, all those interactive movie games felt like watching a slow, poorly made movie and having to stop every 10 seconds to click somewhere on the screen." Sweeney also thinks that Valve has upped the ante for other developers. "They've set a new standard for immersiveness. Other game developers will have

to work very hard to compete with them."

For Harrington, the praise is humbling. "I think all developers are self-conscious and self-doubting. But when we started getting a positive reaction from the OEM version, we were really relieved."

If anything, Half-Life had been delayed so long and Valve had kept so much of the game a secret that everyone was surprised at just how good it was. Conceptually, everyone knew that Valve was trying to push the limits of what an action game could be, but no one expected the execution to be so flawless. Walking through the game's environments is like walking into a Wizard-of-Oz-esque universe - vibrant colors, an interesting cast of characters, and most of

all, a rich world that feels alive. Half-Life makes other action games seem hollow by comparison. As George Broussard, who helped create Duke Nukem, puts it, "Finally, there are characters more than enemies, and more than guys that just stand around waiting to be killed."



Beyond Day One, Half-Life takes players to strange locations such as this mysterious alien world.

There was no question that the entire industry was lauding Valve's achievement with the OEM version. Still, Valve's work was far from done, and the most monumental task of all was still ahead of it: finishing the full version of the game in time for the Thanksgiving holiday rush. With Valve now locked into a release date, the final month would be the hardest one yet on the project.

By early November, only one major bug stood in Valve's way of bringing Half-Life to store shelves around the world. But in the software world, one showstopper bug is one too many.



## Part 5 - Squashing the Final Bug



Engineer Yahn Bernier works to solve the final bug in Half-Life.

"Personal hygiene is at an all-time low," warns John Guthrie, standing in the hall at Valve late in the evening. For the members of Valve, priorities lie elsewhere. The sounds of multiplayer matches resonate through the halls, but once again, Mike Harrington's office is silent. He's still working on solving the last few bugs, along with Yahn Bernier, Valve's software development engineer and former patent attorney.

Standing in the hallway outside Harrington's office, his wife Monica jokes that she had to work at Valve so she'd have a chance to see her husband. In his office, the wonderful view of the Lake Washington out the window has morphed into a deep, black hole. Harrington probably wishes that his monitor was black too - that would mean he was done coding. Not quite yet.

Harrington now has a beard, which has slowly developed over the week as he's worked nonstop on finishing the game. On the wall opposite the windows, there's a white board that lists "Days to Ship." They're all marked off. Valve was supposed to be done the game on Monday. It's now Thursday, and the pressure on Harrington to finish is enormous.

Meanwhile, the rest of the team waits and tries to adjust to its new-found freedom. "Gabe urged us to say our good-byes to Half-Life and prepare to see our baby go out into the world," explains Marc Laidlaw.



Harrington, taking a break from programming, turns around and stares at his white board detailing the "Days to Ship."



The white board in Harrington's office lists "Days To Ship"

"People who had been working 24 hour days were suddenly sitting about hollow-eyed and wondering what to do with themselves."

It's ironic, but true. While a few programmers such as Harrington and Bernier worked away on the final lines of code, the rest of the company didn't have much to do. The art had been rendered, the sound effects recorded, the levels designed, and the manual finalized. Physically

exhausted and emotionally spent, all they could do now is wait and wait for the last elusive bug to be squashed.



Level designer John Guthrie and animator Steve Theodore discuss some of their favorite levels in the game.

known as their life (or in some cases, their wife)."

Gabe Newell sits in his office and remembers his last game of multiplayer. "I was sitting here testing multiplayer, and I was thinking, 'Damn, this is really cool!'" he says. "At the end of other projects, I'm usually more neutral about them when they go out the door, with an acute awareness of everything you'd like to have added. [I don't feel like that] with Half-Life."



Gabe Newell fondly recalls a multiplayer game he had the previous night.

Finally, the Valve team finds the error in the game that has been preventing multiplayer games from functioning correctly. It's a one-line fix - so simple, yet so elusive. A new "release candidate" CD is quickly burned and sent off for final tests. As Newell explains, "[There's] a 48-hour cooling off process where everybody makes sure you haven't done anything silly, like forgotten a file."

Valve thinks it's done. As Marc Laidlaw put it, "People were escorted to that strange, half-remembered place called home to reacquaint themselves with something



Aaron Stackpole lifts a new computer into the testing ring to make sure Half-Life plays on a wide array of machines.

Most of the other Valve members go home and test out the multiplayer support over the Internet. They all wait as Sierra's test department checks over the game to make sure it's ready to go to a factory where hundreds of thousands of CDs will be replicated and shipped to stores in time for Thanksgiving.

They wait.

On Saturday, November 7th, the fateful e-mail comes down the pipeline: the release candidate has been approved for replication. Half-Life is done. "We were all in a state of shock [when we got the e-mail]," says Laidlaw.

Now, the Valve team would reassemble once more in the office to celebrate the game and officially declare it gold. And they'd finally lay into that piñata.



Chuck Jones and Steve Theodore read an e-mail declaring that Half-Life has been approved for production.

### The Crab Gets It

In the same conference area where Valve holds its 4:00 meetings, the team reassembles on Monday at 3:45 and declares that the game has indeed gone gold. Today's 4:00 meeting is going to be a bit different, highlighted by the smashing of the Headcrab. Most of the team can't wait. Most of them can't believe the day has finally come. And most of them want to get back to sleep.



Gabe Newell takes a whack at the Headcrab.

The clock strikes four, and the solemn ceremony begins. Newell picks up the crowbar with both his hands. He sets his sights on the Headcrab, and everyone else stands back. He winds up, takes a stance, and gives it a good whack. It goes flying. A rubber band drops down on the ground from inside the crab.

Next, Mike Harrington takes over the crowbar and prepares for his assault on the Headcrab. As he winds up, Newell is already thinking about Valve's next project. "Next up for us is Team Fortress 2, a team-based online action game. After that, we really

have to sit down and decide what we want to do next."

If the blueprint on the wall is any indication, Valve has big plans. It's already under construction on the rest of the floor to greatly expand the office space.

"You can certainly expect that Valve will be working on Half-Life 2, and they are also looking at expanding to a second team," explains Scott Lynch. It must be music to his ears, considering that Valve's Half-Life is bound to bring the Sierra name back to the forefront of interactive entertainment.

Harrington takes a whack at the crab, narrowly missing Newell with the crowbar. Out flow pieces of Monopoly money and some wind-up South Park characters. Guthrie's girlfriend Jamie hadn't told anyone what was inside of the crab. To be honest, it's unlikely the team members cared much about the paper money and plastic wind-up toys it contained. What mattered more what the piñata symbolized: They were finally done. Half-Life was gold. Everyone at Valve was caught up in the moment.



Team Fortress 2 is Valve's next project.



The Headcrab is destroyed. Half-Life is gold.

"I'll be the first person to admit we were lucky," says Newell, as he can reflect back on the process of developing Half-Life, from those first initial meetings with id through going gold moments ago. "I don't mean to diminish all the hard work that went into this game, but there was an element of luck associated with Half-Life. Hopefully, its success will let us do even more interesting things with our next game."

As the team stands around the conference room, everyone is elated that the game is done. All the trials and tribulations of the past

two years seem insignificant right now. But what is significant involves how Valve Software has quickly gone from zero to hero in the process of just two years. Seldom is a game of Half-Life's quality released, and next to never is such a product the creation of a brand-new development team, founded by software developers with little or no professional game experience. This is something special.

Now that they are done, the developers will go back to reality. Ken Birdwell will ride his Harley around Kirkland. Kelly Bailey will likely pick up the microphone and sing again for his band, Lucy's Fishing Trip. And maybe John Guthrie will even go deliver a pizza for the fun of it. That is, after the entire team and their spouses hit the beaches in Mexico for a company-wide vacation celebrating the release of the game. And no, they aren't allowing any laptops on the beach. They should probably leave that crowbar behind, too.



(l to r) Valve's Bill Van Buren, John Cook, and Mike Harrington (with beard) celebrate going gold.



The entire Valve team (including the Head Crab) assemble for a group picture.



*Half-Life was released on November 19<sup>th</sup> 1998 to universal acclaim and would receive over 50 game of the year awards. As of September 23<sup>rd</sup> 2017 it has sold 4.12 million copies. (Source: VGZarts)*

*The game remains hugely influential to this day.*