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ISSUE #21 • MARCH 2021



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807 NE Park Street • Grimes IA 50111

Back issues (if available): \$6 plus shipping

Subscription rates: US and possessions: \$30 for 1 year

Shipping address: OSG • 807 NE Park St • Grimes IA 50111

Postmaster – Send address changes to:
OSG • 807 NE Park St • Grimes IA 50111

Postage paid at Grimes, IA and other mailing locations.

Old School Gamer Magazine
(ISSN# 2574-8076 ONLINE/2574-8068 PRINT)

is published by BC Productions, Inc.
807 NE Park Street • Grimes, IA 50111

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COIN UP!

If there's one thing I love almost as much as I love guitars, it's guns... all kinds of guns. I've fired everything from a pellet rifle to an M55 self-propelled gun. There's just something special about pulling a lanyard and then seeing the top of a hill 12 miles away disappear with a huge BOOM! Maybe that's why I'm such a huge fan of First Person Shooters. I just really like that feeling of reaching out and fatally touching someone... it could be an alien, a Nazi Storm Trooper, a Wild West outlaw... heck, it could even be a laughing dog... We've got all kinds of great FPS articles in this issue. All you've got to do is set your sights on the pages and squeeze the trigger.

Gee, if we ever got any email from the readers, I might be tempted to do a Letters section... but not as crazy as the old days... really... I promise... you can trust me... Our email is OLDSCHOOLGAMERMAIL@gmail.com

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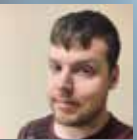
Patrick Hickey, Jr. is the author of The Minds Behind the Games book series and the Chairman of the City University of New York Journalism Discipline Council. Over the last 15 years, he has covered the video game industry for his website ReviewFix.com, as well as NBC, Examiner and Old School Gamer and has been interviewed by prominent publications such as Forbes, The New York Daily News and The Huffington Post. He also has several credits as a writer and voice actor in the video game industry on titles such as The Padre, KROOM, Relentless Rex, The Kaiju Offensive and Tony Barnes' upcoming game, RDRA.

THE EDITOR



Bill Donohue did a 13-year stint as Managing Editor for Game Players, Ultra Game Players, and PSM magazines. He created Gazuga and The Cleansing. He caused hundreds of readers to send cheese-filled letters to Game Players. He composed the ultimate Super Bomberman 2 anthem - (He Ain't Got) "No Boot". Crazy? Hey, it's a life choice...

THE SCRIBES



From the moment he touched an Intellivision controller in 1985, Mike Mertes knew that he had experienced something incredible that would shape him for the rest of his life. As a writer for www.gamerlogic.net and other media outlets, Mike enjoys articulating why games from the 8 and 16-bit console generations are some of the best of all time.



Brian Szarek enjoys repairing and refurbishing vintage home consoles and arcade games. He also enjoys collecting and playing everything from the entire Atari console line and ColecoVision to PS4 and Switch. He lives with his wife and two daughters in Belgium. He also found time to write a story for this issue!



Video game historian and national columnist Brett Weiss is the author of 10 books, including the Classic Home Video Games series, The 100 Greatest Console Video Games: 1977-1987, and The SNES Omnibus volumes 1 and 2. Find Weiss online at www.brettweisswords.com, and check out his YouTube show, Tales from a Retro Gamer.



Michael Thomasson is one of the most respected videogame historians in the field today. He teaches college level videogame history, design, and graphics courses. He authored Downright Bizarre Games and has contributed to nearly a dozen textbooks. Michael's columns have been distributed in newspapers and magazines worldwide.



Todd Friedman is currently writing for Old School Gamer Magazine, Retro Gaming Times, and the Walter Day Trading Card Collection. He has co-promoted the Video Game Summit in Chicago, IL for the last 12 years. He is also the Chairman of the Nomination Committee for the International Video Game Hall of Fame.



Since Kevin Butler played on the first Magnavox Odyssey in 1973, he was bitten by the video game bug. Retiring from the Navy in 2004, Kevin had already worked for Majicsoft and was doing FAQs for GameFAQs and contributing to the MAME project. He currently lives in Neosho, MO with his wife and one son who is also a video game hobbyist.



Brad Feingold's love for retro gaming goes all the way back to Space Invaders and Asteroids. Even though he plays the newer games, he always goes back to the classics. Thanks to the Nintendo Switch and the ability to play the retro and retro-looking games, his retro cravings will be complete.

iiRCADE

By Brad Feingold

In 2011, Jong-Wook Shin had a vision to create a user-friendly arcade system that would allow players to legally download games to a system and play with the full arcade experience. Nine years later, after a successful Kickstarter campaign, the iiRcade is now a reality.

When a product is announced to any outlet, the biggest concern is the amount of dedication that the creator is putting into the product. Since the announcement of the iiRcade, Jong-Wook Shin made it his priority to go onto Facebook and give any and all updates to everything about the project, from the games that are and will be available, to the design of the cabinet and stretch goals on Kickstarter. Every time he came on the screen, he was announcing something new and exciting. We couldn't wait to hear what he had to say.

A standard design cabinet was originally announced, but as time went on, there were announcements of new designs for a Double Dragon and also a Dragon's Lair cabinet. As of the release of this issue, there was an announcement of a new cabinet design based on the upcoming release of RetroMania Wrestling. This review is based on the Dragon's Lair 128GB cabinet.

I figured I'd open the stand kit first. Everything was well packed and wrapped tight. Upon removal of the first level of Styrofoam, I was amazed. The artwork on the sides of the cabinet was incredible! There was not a scratch or flaw on any part. Every new piece that came out held more incredible art. I could not wait to put it together.



I received some emails from some colleagues asking what it was like to assemble the entire unit. From the stand to the bar top unit itself, it was very easy to do.

The instructions that come with each part of the arcade are clear and precise and make it very easy to install the stand in less than 45 minutes. The only tool that you need is a Phillips screwdriver. All the hardware that you need for assembly is included.



Once finished, I started on the bar top. Like the stand, everything was packed nice and tight. The thin monitor and the protective glass were also strategically

wrapped to prevent any damage. But how do I install the computer and the controller?

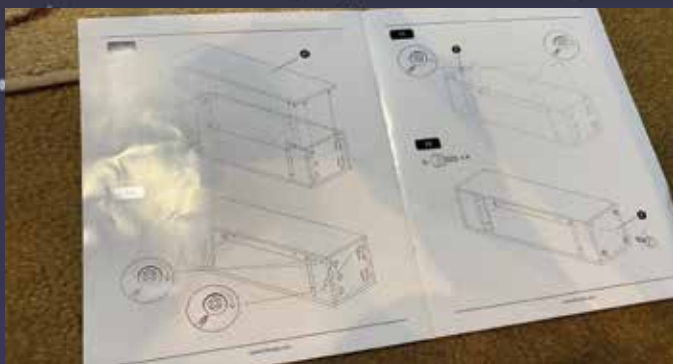
The answer was in one of the boxes. The Sanwa controller, which has a beautiful Dragon's Lair design, was already assembled, but what type of processor powers the beast? Is it Android, PC, or OS? Actually, it is none of the above. It is based on the Android system but is created from the ground up for the iiRcade. The general hardware is optimized solely for the unit as well, but it does run Unity, Unreal4 and Gamemaker2 games.

Once you get to the inside of the machine with the cables, you will not have any problems connecting the ports. Everything is set for the size and direction for each port, so you really can't make mistakes while connecting the wiring.

Now it's time to place the system on top of the stand, remove the stickers from the buttons, close up the back and power up. Once the system powers up, the iiRcade



logo flashes across the screen and gives you the option to scan the Q-code if you have an Android phone. After connecting to the home Wi-fi and registering the



and also by prices. At this time, the list is not that long, but it is enough to get you started as more titles are added on a weekly basis.

Some of the companies that iiRcade has already partnered with include Sega, Psikyo, Tozai, Toaplan, PaonDP, Data East (G-Mode), Jaleco (City Connection), Colecovision and others. Just as this issue was published, there was an announcement of a new partnership with Retrosoft Studios LLC, the creators of RetroMania Wrestling.

system, it starts to download the free games that come with the machine when you first start up.


The games that come pre-loaded with the machine are Dragon's Lair, Double Dragon, Gunbird, Beach Buggy Racing, Bomb Squad (online multiplayer party game), Snowboard Championship, Diver Boy, Dragon Master, Maniac Square, Twin Brats and Fancy World. The first game I had to test was Dragon's Lair. Everything about this game brought back every memory of my parents dropping me off at Showbiz Pizza and letting my friend and I play for a couple hours. I can't remember how many times I played this game. I remember there was a TV sitting on top of the game so other people could watch the action. Which reminds me, there is also an HDMI port inside the machine that allows you to connect to a computer capture card or to another TV so others can watch.

Once all of the games were loaded, I went through the entire list of games. Of course, Dragon's Lair and Double Dragon were my favorites, but it was time to see what else I could find. Using my laptop, I went to

What is nice about the iiRcade store, is once you purchase a game, you have a short grace period to play the game and, if you are not satisfied with it, you can return it for a refund. I wish was possible with home game systems.

This is the first and only legal Arcade system for home use that gives the user choices. This is a breath of fresh air for the Arcade community. Rather than be forced to have everything and fill up the 128GB memory, the organizational abilities are more open.

The iiRcade is a perfect introduction to the arcade community. Instead of having just one game, you will be able to have several at a time.

One final note. Also announced before publication, all of the Kickstarter orders were fulfilled and now the units are open to the public. If you are interested, you can visit iiRcade.com for more information. 



the iiRcade store where there is a list of downloadable games utilizing a system similar to the Nintendo switch store. Games are broken down into different categories



STRIFE

EVERYTHING OLD WAS NEW AGAIN

By Michael Mertes

Id Software's *DOOM* and *DOOM 2* set the standard for first-person shooters when it arrived on the PC, so it didn't take very long for other companies to license the *DOOM* game engine to try to cash in on the formula's success. *DOOM* clones were plentiful, but the common factor they shared was they failed to capture the atmosphere and addictive gameplay that id Software designed with their game. By 1996, the first-person shooter's next evolution would be ushered in by id Software's *Quake* and 3D Realms' *Duke Nukem 3D* with impressive engine capabilities that dwarfed anything the *DOOM* engine could handle. Even though the gaming world was ready to move on from the *DOOM* Engine, Rogue Entertainment hoped that their game, *Strife*, featuring a mix of the *DOOM* engine and unique gameplay elements, would bring them success.

store. There, on the newsstand, stood the PC Gamer magazine with an X-Wing vs. TIE Fighter depicted on the cover. This was the June 1996 issue of the magazine, and it, along with its demo CD-ROM, was coming home with me.

It was on this CD that I discovered the Strife demo and proceeded to explore every nook and cranny that the DOS demo offered. Despite the apparent downgrade in graphics, especially compared to *Duke Nukem 3D*, the Strife demo presented a piece of originality that *Duke 3D* didn't have. Though this demo enamored me, I never had the opportunity to play the full game. In 2014, the game was revamped and re-released as *Strife: Veteran Edition* and is currently available to purchase from Good Old Games. I decided that now was the time to finally experience what the full version of Strife had to offer.



THE STRIFE DEMO

It was late May of 1996. Summer vacation had just hit, and here I was flying down the road on my bicycle to my local convenience store. A few minutes prior, a friend of mine had called me and told me that he found this fantastic magazine called PC Gamer. I was instantly interested in the magazine because I was looking for something similar to Nintendo Power that would focus on PC gaming. The real sticking point was that he said that it included a CD-ROM that was loaded with a bunch of game demos on it. That was all I needed to hear and armed with \$8.00 in my pocket, I high tailed it to the

A NEW SPIN ON AN OLD ENGINE

The story of Strife starts after the arrival of a comet that brought with it an intense plague that destroyed most of the human population. The aftermath of this pandemic has effectively split the remaining human race into two classes: those who follow and work for the cult religious faction called The Order and the other side, which serves as mere slaves to them. Men, women, and children are kidnapped by The Order and rarely ever seen again. Eventually, the slaves get tired of being treated worse than dirt and start putting

together an underground resistance called The Front. You play as a nameless hero for hire who happens to get tangled up in the fight between the two factions and decides The Front is the far less insane of the two.

While players progressed in DOOM and a dozen other DOOM clones by hitting the exit button at the end of each level, Strife differentiates itself by setting up hub sections. Each hub section features multiple locations where the player will complete missions and side quests. This means that if a player wants to stop at a weapons shop or pub before investigating the sewers under the city, they are free to do so anytime. As you complete all of the hub's missions, the next hub will open, providing even more challenges. The story and universe in Strife are easily expanded while you play because you can converse with almost anyone in the game. Everyone is willing to have a conversation, from the creepy hermit lurking around the sewers to even the minor enemies hunting you down. By the time you get to the resistance base, their leader will introduce you to Blackbird, your handler, who will provide helpful hints for completing missions.

While conversing with the characters in Strife, you will have several dialogue options with which to respond. While it appears that some of these could branch out the story, most of them end up with the same result or end up halting the progress of the story. The only actual branching point occurs in the middle of the game, where the player must decide who to trust. The choice you make will ultimately determine what ending you will get after defeating the final boss.

GET VETTED

Original features aside, Strife does a great job of providing plenty of unique weapons and items to complete the game. Machine guns, missile launchers, and flamethrowers will get the job done if you want to go loud. If you'd prefer the stealth approach, your silenced crossbow can take out enemies from far away and prevent alarms from being set off. Yes, Strife even has some bare-bones stealth elements but never forces you to take the quiet path. Along with the variety of weapons comes plenty of enemies to kill, from humanoid knights, robots, cyborgs, and even a fight with the entity that started it all: The Comet.

Originally released as a DOS game, The Veteran edition of Strife works on modern PC operating systems without issue. It does a great job enhancing the textures and graphics of the original version. It still looks like a DOOM engine game, but you can't help but marvel at the fact that it even supports ultra-wide monitors. For those looking to stay vanilla, the GOG.com version comes with the original DOS version that runs just as smoothly on a Windows 10 PC.

After waiting 24 years to try the full version of this game, I can say I walked away satisfied, but not amazed. Age has undoubtedly prevented this game from remaining groundbreaking. I can certainly appreciate some of the features like the rudimentary dialogue system and hub level design that would become a staple in future first-person shooters like Deus Ex. I would have enjoyed this game ten times more had I picked it up in 1996, but I look at it now as a game that helped build the backbone of what would become a massive game genre. 🎮



BRIAN MCNEELY: POWERSLAVE

(JUMP, SHOOT AND) WALK LIKE AN EGYPTIAN

BY Patrick Hickey, Jr.

First-person shooters were all the rage in the '90s, mainly because they were different. They weren't arcade shooters, light-gun shooters, or platformers, genres that had all been done to death by that time. Thanks to games the likes of DOOM and Wolfenstein 3D, there was a ton of developers that saw in the genre an opportunity to jump on the bandwagon. While there were a plethora of weak copycat FPS games out there (even cereal brands the likes of Chex and Cap'n Crunch designed their own FPS games to try and cash in), Lobotomy Software's Powerslave was a unique, fast-paced shooter with a cool storyline that is undeniably different from the ton of other games in the genre available at the same time. Although there was never a sequel in the series and low sales (thanks to poor marketing and a limited number of copies available) on the PlayStation hindered its legacy, it remains anything but a DOOM clone. Add in a design team that consisted of Ezra Dreisbach (Champions of Norrath), Dominick Meissner (Days Gone and Assassin's Creed: Rebellion) and Brian McNeely (Quake and Duke Nukem 3D) and it's easy to see how influential the game is to the genre.

Thanks mainly to its sense of speed, a banging musical score, cool assortment of weapons and abilities, sometimes brutal difficulty and fun story, Powerslave felt different from other games in the genre, but had enough already cemented FPS sensibilities to be recognizable to those addicted to the style of gameplay. Fighting off aliens and mummies in the Egyptian city of Karnak, you'll have to jump, swim, and run through caves and temples - and do it all through narration by legendary voice actor Don LaFontaine. With items to collect through the gun-slinging journey and a pair of endings, Powerslave was an under-appreciated title that proved more could be done within the constraints of the first-person

view. It's safe to say that, in its own way, Powerslave laid the groundwork for games such as Fallout 3 and Metroid Prime.

But way back in 1994, at the time of the game's development, Powerslave's goal wasn't to be iconic, but to be different and fun. Seeing the first-person shooter genre as an avenue to be explored more, McNeely and his team had to work for years before they were even close to having an opportunity to do something that ambitious, however. "I was working at Lobotomy Software, where I was one of the co-founders of the company and the director of our creative works. I was also heavily involved in game design and art asset creation," McNeely said. "In our early days, we dreamed of developing an original game from the ground up. Unfortunately, we didn't have the luxury of choosing exactly what we wanted to work on, so we took anything that came our way to keep the studio running. Some of



Brian McNeely and friend parting the waves.

our first projects included a port of a game called The Horde to SNES, which we finished, but sadly was never released. A couple of other notable early projects that helped get us going were Microsoft Soccer and Magic School Bus Explores the Solar System, both for Windows 95. None of these were dream projects for us, but they helped pay the bills and we were happy to have the opportunity to develop games. Our ultimate goal was to start our own project and to get closer to that, we got our hands on the 'Build' engine and started working on concepts for a PC first-person shooter."

But not so fast. Although they could now create the original game they always coveted, the first-person shooter space was more crowded than ever. McNeely and the team knew they had to stand out. "The project began with the desire to make a game with an Egyptian theme, so we started early development using the Build engine for our publisher at the time, Apogee Software," McNeely said. "Our game was being developed simultaneously with three other developers using the same engine. The other three games were Shadow Warrior, which had a ninja theme, Duke Nukem, which had a sci-fi theme and Blood, which had a horror theme. Our Egyptian themed game, originally called Ruins, rounded out the theme spread for this set. Eventually, the product changed hands on the publishing side, and we continued development on three platforms: PC, Saturn, and PlayStation. Playmates Interactive published the U.S. versions, Powerslave, and BMG published the game in Europe, Exhumed and Japan A.D. 1999: Pharaoh's Revival."

With three other games using the same engine, all being simultaneously developed, it was now obvious being able to stand out was going to be even more difficult. McNeely wasn't about to take this opportunity lightly, however. "I worked day and night with an incredibly talented group of developers as we collaborated and toiled to try and get everything right," McNeely said. "Most of my efforts were focused on the console



versions, with some of my contributions including game flow and structure, the design of the special artifacts and how they were used to enhance player abilities and unlock new areas, controls and player attributes, the design and behavior of enemies and weapons, the composition of the map and the stage themes, and the game's story. I also designed and created art for several stages, environment lighting, characters, effects, items and much of the UI."

That passion came from a lifetime of gaming. At the start of the project, McNeely knew he was close to having his dream of developing an original game realized and whenever he needed to muster up some more energy, all the time he dedicated to the craft as a kid definitely came into play. "I started out in the '70s as a kid playing games on the Magnavox Odyssey home console system at my parents' friend's house," McNeely said. "While the adults were socializing upstairs, I spent hours in the basement playing. I was hooked and really wanted my own home console, so I saved my paper route money

and bought an Atari 2600. I also spent a lot of time at local arcades with friends playing games. Some of my favorites were Joust, Zaxxon, Galaga, Tempest and Mario Bros. My friends and I would ride our bikes to a local pizza place to play Donkey Kong and then come home and draw our own levels for fun. I drew a lot when I was young, making up characters and stories and I would draw elaborate mazes with pencil and paper. As the years passed, I continued playing games and as arcades started to fade away, I spent more time at home playing through the '80s on the Intellivision, ColecoVision, Vectrex, and NES consoles."

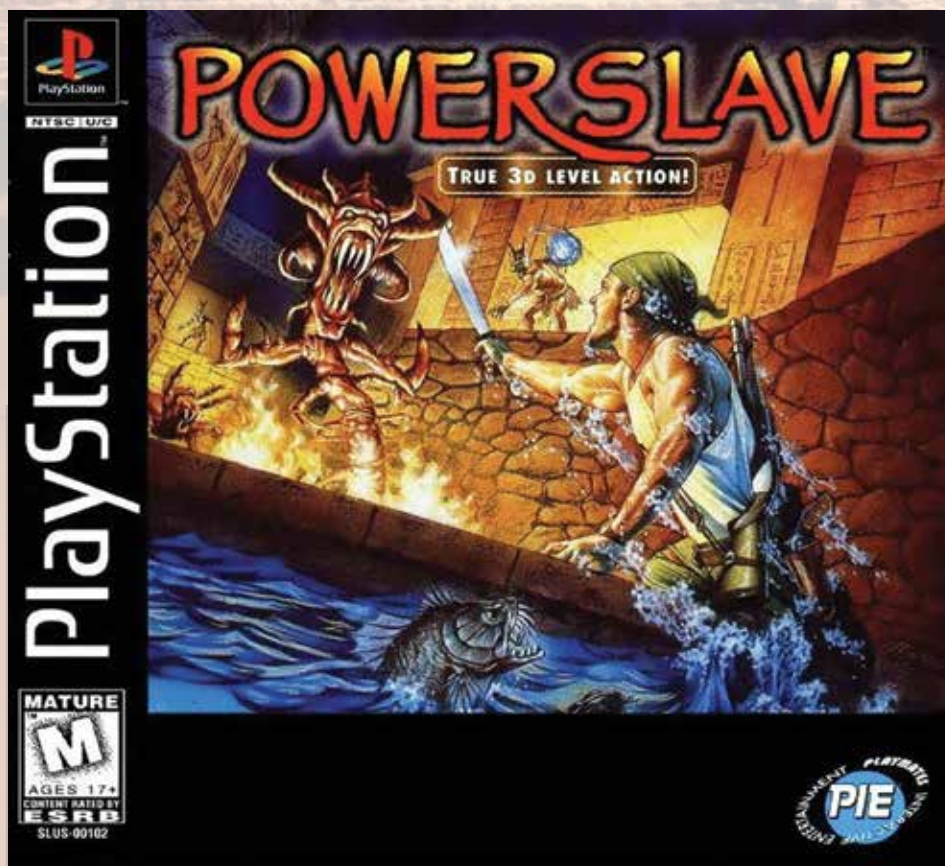
If you've ever played Powerslave, you'll see firsthand McNeely's creative impact on the game. His childhood is imprinted through the games' wild characters, abilities, weapons and mazes. Because of that, it's crazy to think he got into the industry, essentially, by chance. "I never considered gaming as a career until I saw an article in a local newspaper about Gameplay Counselors at Nintendo of America," McNeely said. "I couldn't believe the job was real, where people would get paid to play games all day and take calls from consumers all over the world, providing game tips and advice, so I immediately applied for a job and was hired in January 1989. It was like a dream come true for me. It was during my time working at Nintendo that I decided I wanted to find a way

to make developing games a career, so I enrolled in art school and earned my degree while working part-time, and then shortly after graduating, I was approached by a friend of mine and Nintendo co-worker, Paul Lange (the original founder of Lobotomy). He wanted to see if I was interested in helping out, which I absolutely was and shortly after I left Nintendo and joined Paul and two other Nintendo co-workers to help start Lobotomy Software in early 1993. We also recruited one of my good friends and a fellow art school student from the early '90s, Kevin Chung, to join Lobotomy. Kevin and I still work together today making games for Nintendo."

That job at Nintendo was ultimately McNeely's gateway to the industry and got him to understand games in ways he never thought possible, especially first-person shooters. "I think it's how immersive they are and how they provide the unique feeling that you are the player character," McNeely said. "In early first-person shooters, the player character art wasn't shown much from a third-person viewpoint and other than the hands in front of you, the face of the character was rarely seen. I think this helped fuel the imagination of the player into feeling more like they really were the character in the game, and I think this immersion is a big part of what makes first-person games so appealing. I also think the simple act of targeting and shooting things from a first-person viewpoint is easy to understand and fun and adds to the overall excitement and appeal."

With all of that in mind, McNeely and Lobotomy knew they could create a game that challenged a ton of old concepts that defined the FPS genre at the time. It didn't have to be all about the shooting. It could be faster. The player should be able to jump. It could have puzzles. The story could be fun. The enemies could be more colorful and cooler. It could have narration and pulse-pounding tunes. In the end, these are the main reasons why Powerslave ended up as a special title.

"There were a few key areas where we saw an opportunity to expand the FPS genre on consoles," McNeely said. "One



of them was controls and mobility and so we integrated fast and fluid movement to provide the sensation that the player was jogging and not walking heavily. We also exaggerated jumping abilities to allow the player to make soaring leaps. These amplified abilities allowed us to take a fresh approach with level design and open up the environments to accommodate a combination of fast-paced combat and platform jumping gameplay, creating a fast-paced experience that required dexterity with the controller and the feeling that you had super-human abilities.



“Another area was the overall structure and progression of the game. I wanted to avoid a linear experience, and instead offer a feeling of exploration and accomplishment, so we designed the ‘artifact system,’ in which the player discovered artifact items to gain permanent new special abilities which allowed access to areas of the game previously impossible to reach. The world map was added to help reinforce the setting of the game world and navigate through the structure of individual levels. All of this was similar to Metroid and several other games, so it wasn’t a new concept by any means, but it was a new approach for first-person console gaming.

“We also intentionally avoided showing the main player character outside of first-person (except for the intro and ending story sequences) to promote the feeling that each individual playing the game felt like they were truly taking on the role of the hero. I believe the combination of these things, exaggerated player mobility, non-linear artifact-based ability progression and withholding the visual identity of the player character during the game helped make the experience more unique and more immersive.”

With these gameplay mechanics in effect, Powerslave is a different animal from the three other games using the same engine. However, the game’s best feature almost never happened. Even wilder, it opened the floodgates for the team’s creativity as well. “There was a technique in the game we called the ‘bomb boost,’ where you look straight down, jump up, and toss an Amun Bomb to get a boost up to high areas not normally accessible,” McNeely said. “This was discovered by accident in

our studio by our team toward the end of production for the Saturn version. We considered removing the ability but realized it could be used to our advantage to enhance the game, so we quickly went through the stages and built-in new secret areas and hid the Team Doll idols as rewards. It was risky because we were so far into development, but it worked out and the result added a lot of extra gameplay to the product overall.

“We built on this even further by adding Lobo-flight mode to the Saturn version, unlocked after collecting all the Team Dolls and Dolphin and Vulture modes in the PlayStation version. It’s funny to think that all of these extra secrets and rewards started as the result of a last-minute accidental discovery. We also literally got into character to make a lot of the character assets for the game. All of the enemies and first-person weaponry art were created using a combination of digitized clay models, handmade props and human actors and then touching them up. To make the Mummy, I dressed up in a mummy costume and we used a video camera to capture all of the frames using a makeshift set in a garage with a few desk lamps and a black felt backdrop. One of our artists dressed up as Anubis (The God of Death) and we digitized my hands to be used for all of the first-person weapon art, including touch-ups to make the final hand art look veiny and rugged.”

The team’s fun didn’t end there either, as their creativity even surprised the publishers they worked for. “All of the secrets in the game have been revealed, but one that most wouldn’t know about is the title screen Easter egg in the Saturn version that was secretly implemented by our lead engineer. He covertly added a feature that switched the regular title screen art with a

picture of himself, but only on his Birthday, December 10,” McNeely said. “It was a crazy surprise for many, including all of us at Lobotomy because we didn’t know it was a part of the released product. I found out about it when one of our producers from Japan sent me a fax with an image of the changed title screen on December 10, 1996, shortly after the game’s release, emphatically asking me what it meant and how it happened. It was pretty funny at the time, but definitely not something developers could get away with today.

With all of this tender love and care, and fun under the hood, you’d expect the team to be confident in their chances of delivering a hit. However, for a variety of reasons, Powerslave didn’t have the staying power in the United States as it did in other parts of the world. That, however, didn’t stop the game from being warmly

But thanks to that critical success, the game was originally set to have a sequel. However, after Lobotomy was acquired by Crave Entertainment in 1998, that game was canceled. It’s something that he still thinks about to this day. “My only regret is that we decided to try and develop a sequel as a third-person game instead of sticking with the first-person formula,” McNeely said. “I think that decision played a part in the demise of the sequel and what could have been more success for our company.”

So, while Powerslave wasn’t the success it could have been and didn’t get the sequel it deserved, it did teach McNeely a few valuable lessons. Continuing to work in the industry and games in the Duke Nukem and Quake franchises after Powerslave, McNeely also earned design credits on the 2004 Xbox shooter Mob Enforcer and Stunt Racer 64.



received by a bevy of game publications the likes of Mean Machines, Absolute PlayStation and GamePro, which all gave the game a score over 90/100.

“We didn’t know what to expect when the game was released, but we felt good about what we had made and felt that the product had the potential to offer something different to gamers,” McNeely said. “There was a strong marketing push in Europe and as a result, the game did much better there. Our publisher in the U.S. didn’t produce many copies of the game and didn’t push much marketing for the game and so it wasn’t very well known in the U.S. Regardless of sales numbers, we were thrilled about the positive reactions the game received overall.”

“The experience helped me realize the importance of gathering preliminary gameplay feedback during development to help make a better product overall,” McNeely said. “We didn’t get much-unbiased feedback from players that weren’t directly involved with the development, like having focus testing sessions with friends and family, and as a result, the product ended up being geared more toward experienced game players, which is in part why the overall difficulty level was so high. If we had spent more time gathering feedback from a wide range of players, we could have made adjustments so that the game appealed to a larger audience. That experience helped me realize how important it is to translate what is learned from testing into a better-balanced game.”

In spite of what he'd change, McNeely firmly stands behind the game Powerslave ultimately became and believes it has stood the test of time. "I think from a feature standpoint some of things that make it special are the fast and fluid gameplay, the advanced difficulty, the system of progression and character building and the unique setting, but more than anything, I think it was the result of a unique combination of very talented, passionate and somewhat inexperienced game developers who came together to make a game with very little corporate oversight," McNeely said. "We had the freedom to do almost anything we wanted and the result was a product made by dedicated gamers for customers that were just like ourselves, and I think the unbridled spirit of our ideas, development processes and personalities became the essence of the final product."

hardware, played using a controller, can be just as fun, if not more fun, than first-person shooters designed for PC hardware, played with a mouse and keyboard," McNeely said. "I hope the game can be looked back as a unique blend of art and technology that presented something new for gamers that was a bit different than anything else at the time. I also hope people appreciated the challenging aspect of the game and didn't curse at the game too much while playing after dying and having to restart levels from the beginning over and over again. It was designed to be extra challenging, so I hope anyone that played it appreciated that." 🎮



At a time when console first-person shooters were considered inferior to those on the PC, Powerslave was one that not only played fast and fun but was tough. Add in the killer score, narration from a voice-acting legend and gameplay that blended exploration and platform games and McNeely is confident that his game has made an impact.

"I think the game helped advance the ideas of what a first-person shooter can be on a console platform and helped open the door to the idea that first-person shooters designed specifically for console



LIGHT GUN SHOOTERS

CLICK... CLICK... BANG!

By Brett Weiss

While most people equate games like Halo and Call of Duty with the first-person shooter genre, light gun games also fall into this category. Most of these types of shooters you can play using the standard controller for the respective game system, but many consoles have supported first- and third-party gun peripherals, such as the Zapper for the NES, the Justifier for the Genesis, and the GunCon for the PlayStation. Wielding these plastic guns is usually the way to go for accuracy, speed, and fun.

It can be a blast (literally and figuratively) to grab a weapon, aim at your television screen, and fire away at bad guys, robots, monsters, animals, and other targets, whether you are on-rails or off. Just be sure you have a CRT television hooked up because the technology is incompatible with modern TVs.

Some of the more popular light gun shooters released for home consoles over the years include Duck Hunt (NES), Area 51 (PlayStation, Saturn), Resident Evil: Dead Aim (PlayStation 2), and Link's Crossbow Training (Wii). Below are 10 more light gun games you should check out.

BARKER BILL'S TRICK SHOOTING (NES)



Everyone and their (laughing) dog knows all about Duck Hunt, arguably the most iconic light gun shooter ever made. However, the relatively obscure Barker Bill's Trick Shooting is a more colorful, more versatile, more enjoyable experience while offering the type of simplicity Duck Hunt fans enjoy. You take aim and fire at various targets through four different areas: Balloon Saloon (shoot balloons before they reach the top of the screen); Flying Saucers (shoot saucers that a man and his assistant throw into the air); Window Pains (shoot falling items through open windows); and Fun Follies (cycle through the previous events). Fun Follies also includes Trixie's Shot (shoot coins a dancing woman holds out) and Bill's Thrills (shoot items before they fall on a woman's head). The Duck Hunt dog pops up in Balloon Saloon. You're not supposed to shoot him, but you probably will... on purpose.



Namco Guncon



CROSSBOW (ATARI 7800)

Some of you may remember Crossbow, the 1983 arcade semi-classic from Exidy. The game used a faux crossbow controller for blasting such enemies as ghosts, frogs, witches, dragons, alligators, archers, slime monsters, and pterodactyls. The Atari light gun steps in as a good substitute for the 7800 version as you aim (so to speak) to keep a group of friends safe as they walk (from left to right) through eight colorful, richly detailed levels that you can play in any order: Desert, Caverns, Volcano, Jungle, Village, River, Drawbridge, and Castle Hall. You basically act as a sniper to ward off the aforementioned enemies, and you can shoot other items for bonus points. Crossbow was ported to the Atari 2600 as well, but it doesn't look as good as the 7800 version.



GANGSTER TOWN (SEGA MASTER SYSTEM)

One of the best, most dynamic light gun shooters of the 8-bit era, Gangster Town puts you in the role of an

FBI agent, ridding the city of gangsters. You begin with some routine target shooting to determine the difficulty of the game based on your skill level, and then there's an exciting car chase where you fire away as armed gangsters shoot at you from car windows and bomb-dropping airplanes fly overhead. Subsequent stages take place downtown, in a saloon, in a nightclub, and at the docks. The action in these areas scrolls vertically as you shoot bottles, bombs, mice, and other targets, including gangsters who pop out from manhole covers and appear in the windows and doorways of buildings. One nice touch is that when you shoot a gangster, he will turn into an angel and fly away. Even better, you can shoot that angel! Levels scroll for a set amount of time; when the scrolling stops, that level's boss will appear. A second player can join in the fun for some co-op action in this enjoyable, graphically impressive game.

Sega Light Phaser





LETHAL ENFORCERS II: GUNFIGHTERS (SEGA GENESIS)

Based on the Konami coin-op game, Lethal Enforcers II transports the light gun action of the original Lethal Enforcers to the Old West, an apt setting for such a title. Armed, via the Sega Justifier, with a standard handgun and the ability to upgrade to a rifle, cannon, Gatling gun, double rig (two pistols), .50 caliber Sharp's rifle, and shotgun by shooting on-screen icons, you try to kill outlaws while avoiding innocents. You can also shoot enemy projectiles and such environmental objects as barrels, windows, signs, and lamps. Multi-scene stages to battle through include The Bank Robbery, Stagecoach Holdup, Saloon Showdown, The Train Robbery, and The Hideout, each ending with a boss. A pair of between-level bonus rounds lets you take pot shots at whiskey bottles and engage in a quick-draw contest. Konami's arcade original is more colorful, and the voice effects are grating, but this is a super fun game. The Sega CD version released the same year has digitized sound.



YOSHI'S SAFARI (SUPER NINTENDO)

As Mario rides his dinosaur buddy Yoshi around twisting, turning tracks, you aim the Super Scope 6 light rifle at the screen, shooting Flying Goombas, Koopa Para Troopas, Cheep Cheeps, Bowser, and other enemies, including bosses that wear armor and fire at you. Shooting large gates unlocks secrets and hidden areas. If Yoshi gets hit by friendly fire, he loses health, turns around, and gives you a dirty look. In two-player co-op, the second gamer uses a standard controller to guide Yoshi, who can duck, jump over gaps, slow down (he moves forward automatically), and turn right and left. Your ultimate goal is to retrieve 12 crystals in order to save the Kingdom from those evil Koopalings. The pseudo 3D graphics are impressive, as are the scaling and Mode 7 effects, but the game is short and easy to beat. Luckily, finishing the game unlocks a mode with different colors and harder bosses. Recommended for kids and hardcore Yoshi fans.



VIRTUA COP (SEGA SATURN)

Grab the bright orange Stunner gun and get ready for

some Virtua Cop, which was ported from Sega's 1994 arcade game. The game casts you in the role of a police officer tracking down illegal gunrunners. While avoiding killing civilians, you fire at bad guys through three multi-scene stages: Arms Black Market, Underground Weapon Storage, and Gang Headquarters. There are no unorthodox weapons like grenades or flamethrowers, but you can find power-ups that upgrade your gun to automatic, machine gun, rifle, magnum, or shotgun. You should shoot and reload quickly as enemies pop up frequently and at varying angles from behind barrels, buildings, hills, vehicles, and the like. This game was an early favorite among Saturn owners, and it holds up today. Even better is Virtua Cop 2, which offers more levels, more weapons, more destructible scenery, harder gameplay, a wider variety of enemies, and, best of all, driving sequences.

elements. Select missions have limited ammo, but usually you can blast away without worrying about running out of bullets. After each game, you are graded according to your performance. Point Blank 2 and Point Blank 3 followed on the PlayStation, and you can play on the go with Point Blank DS for the Nintendo DS.



HOUSE OF THE DEAD 2 (DREAMCAST)

A terrific port of Sega's difficult, quarter-gobbling coin-op game, House of the Dead 2 casts gamers in the role of either James Taylor (first player) or Gary Stewart (second player), government agents who must thwart a maniac mastermind who has unleashed zombies and other monsters on an Italian city. As with many light gun games, this is an on-rails shooter (meaning the action takes you down a predetermined path), but there are many branching pathways, making for an absorbing, re-playable adventure. As you make your way through the nicely rendered levels, blasting gory green holes through the shambling monsters, you can destroy barrels and boxes in order to acquire such items as health packs and gun power-ups. In addition to the standard and original modes, you can practice in training mode and take on the game's major baddies in boss mode. One caveat: there's no first-party light gun for the U.S. Dreamcast; I recommend the InterAct brand over Mad Catz. Regarding the House of the Dead series overall, I'm a fan and have spent the most time with House of the Dead III for the Xbox.



POINT BLANK (PLAYSTATION)

A lighthearted, cartoonish, non-violent, and even humorous target shooting game, Point Blank is a port of Namco's coin-op classic, where gamers fire at a bunch of targets (many of them whimsical), including ducks, piranhas, vultures, birds popping out of windows, cardboard cutout ninjas, aliens, bouncing plates, tanks driving toward you from the background, and far too many others to mention. Stages are diverse (types include Accuracy, Intelligence, Memory, Simulation, Visual Acuity, and Speed), and some contain puzzle elements, testing your shooting skills in a variety of ways. You'll fire at bad guys while avoiding civilians, shoot an apple off a guy's head within a set time limit, shoot the keys of a keyboard to spell out words, annihilate a sports car, fire at flaming rocks emitting from erupting volcanoes, and blast the wool off of animated sheep. There are even stages with Whack-A-Mole-type

Nintendo Zapper





A PAIR OF SEGA JUSTIFIERS...
SO BEAUTIFUL, SO DANGEROUS...



TIME CRISIS II (PLAYSTATION 2)

The first light gun game for the PlayStation 2 (the original Time Crisis was ported to the PS1), Time Crisis II was originally offered with Namco's then-new (and quickly popular) Guncon2 peripheral. The package cost \$60, which was a solid deal, even in 2001. As with similar games, you run around shooting in a variety of environments (timed in this case, as the title implies), but here you can duck and hide behind walls and obstacles, enabling you to avoid enemy fire while reloading your weapon. You'll also board a train and enjoy a high-speed boat chase. In addition to being a nice port with enhanced graphics, the game offers new features, including hidden objectives, two-player split-screen action, a training mode, and various target and timed mini-games. If you want to get super old school cool, the game offers i.Link support, where you and another player - each with a PS2, a CRT television set, and, of course, a copy of the game - can enjoy the action as arcade-like as possible on dual screens. As enjoyable as Time Crisis II is, Time Crisis 3 is even better, so be sure to check out the sequel as well.



SHOOTING RANGE (NINTENDO WII)

One of nine games on the Wii Play compilation disc, Shooting Range is the Wii's answer to Duck Hunt. Brandishing the Wii Remote like a gun, you blast targets through five levels of play. Said targets include red, yellow, and blue balloons that float up from the ground, traditional round targets that appear randomly (be sure to avoid hitting targets containing Miis), clay pigeons (flying discs), cans (keep them floating in the air by shooting them), and flying saucers that swoop down and carry off innocents. The levels are short, and there are surprisingly few duck targets, but the shooting action has a satisfying feel and sound, and, if you're like me, you'll play again and again to boost your high score. If Link's Crossbow Training is the only light gun shooter you've played on the Wii, grab a copy of Wii Play and check out Shooting Range. (The disc has some other enjoyable games as well, most notably Tanks! and Laser Hockey). 🎮



Nintendo Super Scope

DRAGON'S LAIR

A HUGE GAME IN A SMALL ARCADE

By Michael Mertes

Dragon's Lair, one of the most famous games of the 1980s arcade era, is now available in a playable 1/6th scale arcade cabinet, thanks to New Wave Toys. Dragon's Lair was released initially in 1983 and blew away people seeing it for the first time with its impressive playable cartoon presentation. While the game and its subsequent sequels have been available on many platforms for years, the original machine is still very sought after.



New Wave Toys faithfully maintains the design of the original cabinet.

New Wave Toys' Replicade arcade lineup has been a godsend for someone like me who owns and enjoys arcade cabinets but has sadly run out of space to continue collecting them. Thanks to the Replicade's reduced footprint, I can purchase several of them and not have to worry about carting it down into my basement with a hand truck. New Wave Toys first launched their Replicade series with Centipede, and it became an instant hit with classic arcade fans. Following that release, New Wave Toys released Tempest, Street Fighter 2, and have now launched Dragon's Lair. Two things stand out about the Replicade cabinets: the first being that New Wave Toys takes both the positive and negative feedback on its products very seriously and is very active in supporting its customers. The second is that each Replicade the company releases improves upon the last with additional features that increases its playability.

As the 4th entry in the Replicade series, Dragon's Lair maintains a high standard of accuracy to the original full-scale cabinet. The cabinet's original shape is maintained, and the artwork from the marquee, side art, and control panel are reproduced accurately. Dragon's Lair featured a digital scoreboard to highlight the player's score, lives, and credits, and New Wave Toys has managed to duplicate the scoreboard in this miniature completely. Along with the lighted marquee and bright screen, the scoreboard and lighted coin slots make this Replicade stand out in a room.



A replica LaserDisc player is included in the back of the cabinet.



If you've never played or seen Dragon's Lair before, the game can best be described as a "prompt and play" style of interaction. As Dirk the Daring, players attempt to rescue Princess Daphne by adventuring room to room through a castle. Everything in the castle is out to kill Dirk, and players can only survive by hitting the joystick in the correct direction or pressing the sword button to defend or strike with it when prompted. The game is truly one of those titles that can only be beaten by memorizing the scenes and split-second timing. As such, the controls for Dragon's Lair need to be responsive, and the Dragon's Lair Replicade achieves this even with the buttons and joystick being reduced to fit with the 1/6 scale reduction.

New Wave Toys has gone the extra mile on the Dragon's Lair cabinet, even paying homage to the original equipment that helped bring a spark back to the declining arcades: the laserdisc player. Sitting in a pull-out drawer on the Replicade cabinet's back is a non-working plastic replica of the original arcade cabinet's laserdisc player. It even includes a replica remote and laserdisc that you can pop into a laserdisc player to complete the experience. While some might find this an unnecessary addition, I thought it was a very thoughtful extra that highlights just how unique Dragon's Lair was. I work with someone who happened to service the original Dragon's Lair arcade cabinets, and he was completely blown away by the Replicade when he saw it. The cherry on the top, though, was when he said, "I remember the Laserdisc player used to be such a dust magnet." to which I responded: "You mean this laserdisc player?" His jaw just about hit the floor when I presented the replica laserdisc player to him. He was utterly impressed with the unit.

The backside of the Dragon's Lair Replicade contains more than just a place to store a replica Laserdisc player. Spinning the unit around, you'll find a micro USB port to charge the battery, along with two regular USB ports to plug in external controllers. If, for some reason, you are not a fan of using the Replicade's onboard joystick and button, you can easily plug in a USB gamepad. I tested the external gamepad function with both a PS4 controller and the mini Street Fighter 2 joystick made by New Wave Toys, and they both worked very well.

As I mentioned, New Wave Toys keeps stepping up their game with the release of each subsequent Replicade cabinet, and this time they have done so by including an HDMI out port on the cabinet. Being able to plug the Replicade cabinet into any HDMI capable TV instantly increases the game's accessibility. Utilizing the HDMI port will produce a 720P signal to whatever display device you plug it into, and I had no issues capturing screenshots on my capture card with it. While the HDMI signal output signal is very clean, it's important to note that one should not expect a crystal-clear high definition representation of the game. Instead, the game's footage more accurately resembles the original 4:3 video aspect laserdisc quality, which genuinely honors the original cabinet.

As someone who wasn't a devout fan of the original Dragon's Lair, this New Wave Toys release has allowed me to give the game a second look and truly understand why it has such a loyal fan base. After years of briefly playing the game on consoles, I'm proud to say that I finally completed the game on this 1/6th scale cabinet. If you haven't given the Replicade arcade game lineup a try yet, this is undoubtedly the one with which to start. 🎮



ENTER THE DRAGON

A GAME YOU LOVE... OR LOVE TO HATE

You know, 1986 marked a very significant moment in my life, as it would be the first time I would get the opportunity to step into an arcade. I had previous experience of what a video game was, as I had access to both an Intellivision and a Commodore 64 and was hopelessly infatuated with the games both systems provided.

The arcade had such a different atmosphere, though, that I could feel the difference as my parents walked me up to the entrance. I distinctly remember how dark the arcade was, with only the glow from many different video game cabinet screens lighting up the faces of people of so many different ages. My parents walked me around the arcade with more of the intention to show me what an arcade was rather than have me play the games in them because I was so little. That didn't stop me though; I had to play, and after doing some whining, my dad popped a quarter into my first arcade game: Rampage. I died quickly but was amazed by the giant characters and sounds. Realizing that I could play more games, my parents grabbed my hands and made a beeline for the exit, but not before I spotted one more item of interest: A cartoon was being played on a TV on top of an arcade cabinet, and it looked incredible.

"Dad... what cartoon is that?" I asked. The look on my dad's face changed immediately, and with a grimace, he replied: "That... is Dragon's Lair, and it's more than just a cartoon. It's a cartoon you can play, and it's impossible to beat."

A cartoon you could play? I was already amazed by the graphics on other arcade games, and now I was being told that there was a game that looked like my favorite Saturday morning cartoons. I didn't understand how you could play Dragon's Lair until I got closer to the cabinet and realized that the TV on top of the cabinet was duplicating what was on the primary arcade monitor. My dad explained to me that when the game first came out, it was very popular and because so many people would crowd around it, the arcade added an extra screen so more people could watch it being played. Since three

years had passed since its 1983 release, only a handful of people were around the cabinet now, but watching it being played was a marvel.

Unfortunately, I would not get the opportunity to play the game at that moment because my dad told me that it would be too hard for me and that it was too expensive to play. While I would get to play ports of the game on various game consoles over the years, it wasn't until recently that I got to play the game on the original cabinet when the Underground Retrocade got one as an addition to their game lineup. It's no doubt that the game can be very hard, but it's a beautiful sight to behold even to this day. My favorite sequence in the game is the Lizard King fight, where Dirk loses his sword and is forced to chase it down, all while trying to avoid being knocked out by the Lizard King. I'm not too fond of the sequence with the spinning batons, though, and still can't figure out how to get past it. The real best part of the game is Princess Daphne. Who wouldn't want to step in a castle death trap for her?

Since Mike was only two months old at the time Dragon's Lair was released, he thought he would consult with his older but wiser fellow magazine writers to share some of their favorite memories of the game.



TODD FRIEDMAN

I first saw and played Dragon's Lair at my local arcade years after it came out. I was 9 when it was released in

1983, but a few years later, I went to the local arcade in town and saw it from a distance. The thing I remember most is the narrator telling the story of the game with the music and sounds in the background. I had never seen an arcade game that real before. At first, I was not a fan of the game because it was really hard. It made me spend all my tokens back in the day, and I hardly got far in the game. After getting older and better at games, Dragon's Lair became one of my favorite arcade games of all time. My favorite sequence in the game is the ramps with the large rolling balls. To me, it reminds me of bowling balls and growing up in the arcade section of bowling alleys. My least favorite sequence would have to be any scene using the sword. It's really hard to determine when to hit the sword button and when to wait until the light flickers.



BILL DONOHUE

I first encountered Dragon's Lair in the foyer of the Senator theatre in Downtown Chico. The movie house was located near the small park with the bandstand where years later we would play our last show in Chico before moving to the Bay Area, and about a block away from The Haunted Tower, which is the subject of another Jaded Gamer column to be written later. Richard "The Mad Scientist" Kisling (He got the nickname from inventing a drink called The Nebulon Paralyzer. I don't know what the hell he put in it, but it definitely worked as advertised!) and I had gone to the Midnight Movies to catch a pair of cult films. We wandered into the foyer, and there it was: a game like no other we'd ever seen. There were no pixelated images wandering around a bland background. No random "bleeps" and "bloops." No, this looked like a cartoon... a glorious, full-color cartoon. Right away, we knew we had to play it. Half an hour later, we'd blown all our beer money. Our favorite scene was the beginning of the gameplay. Our least favorite scene was the beginning of gameplay because

we never could get past that rat bastard. I think alcohol might have had something to do with that... Did we like the game? Are you nuts? Did we like the game... you'd have to be a moron to think that! Geez!!!



MICHAEL THOMASSON

My first encounter was in '83 at the Aladdin's Castle arcade in Fayette Mall in Lexington, Kentucky. Before even seeing Don Bluth's animation used in the game, I knew that it was something special, as there was a crowd gathered around the coin-op. That particular arcade often mounted a secondary monitor on top of popular titles to allow onlookers to see the action if an over-the-shoulder spot wasn't available. It also served to attract nearby walkers from the mall hallway. It was the first coin-op I ever encountered that took an extra quarter. At fifty cents, it was a big spend in the early '80s. I was fond of the "Ye Whirlpools" and "Ye Rapids" levels as the discoloration in the water made for easy navigating in a game that was often more trial and error than apparent. Of course, my favorite sequence was the battle with Singe, although I was never able to complete it myself until it was released on the Sega CD over a decade later in December of '93. 🎮



Wolfenstein 3D

A NAZI STRONGHOLD AWAITS

By Michael Thomasson

Many hobbyists and fans have been misled in thinking that Wolfenstein 3D was the original first-person shooter. However, before John Carmack, Tom Hall, and John Romero created Wolfenstein 3D, the team also designed two predecessors: Hovertank 3-D for DOS and an Apple II title called Catacomb 3-D. In fact, the latter ran on an early version of Carmack's Wolfenstein 3D engine.

The trio also worked on the family-friendly Commander Keen series of games for id Software. Come the nineties, id recognized that the gaming demographic had changed and wanted to move away from wholesome content to something with more bite. Carmack suggested that they shed Keen's fireman poles and pogo sticks, while Hall suggested doing a tribute to the sci-fi franchise Aliens with the working title, It's Green and Pissed!

Being a big fanboy of Silas S. Warner's top-down infiltration game Castle Wolfenstein, Romero suggested they set out to reimagine the early eighties stealth-based, action-adventure shooter.

The Fourth Reich, Luger's Run, Adolph's Bane, and Castle Hasselhoff were all working titles. Upon discovering that Muse Software was kaput, the team swiftly secured the rights to Castle Wolfenstein for a mere five thousand dollars.

The reimagined version was intended to be more stealth than fast-paced action. Sneaking up on enemies, stealing enemy uniforms to disguise the player's



Catacomb 3D was created for the Apple II.



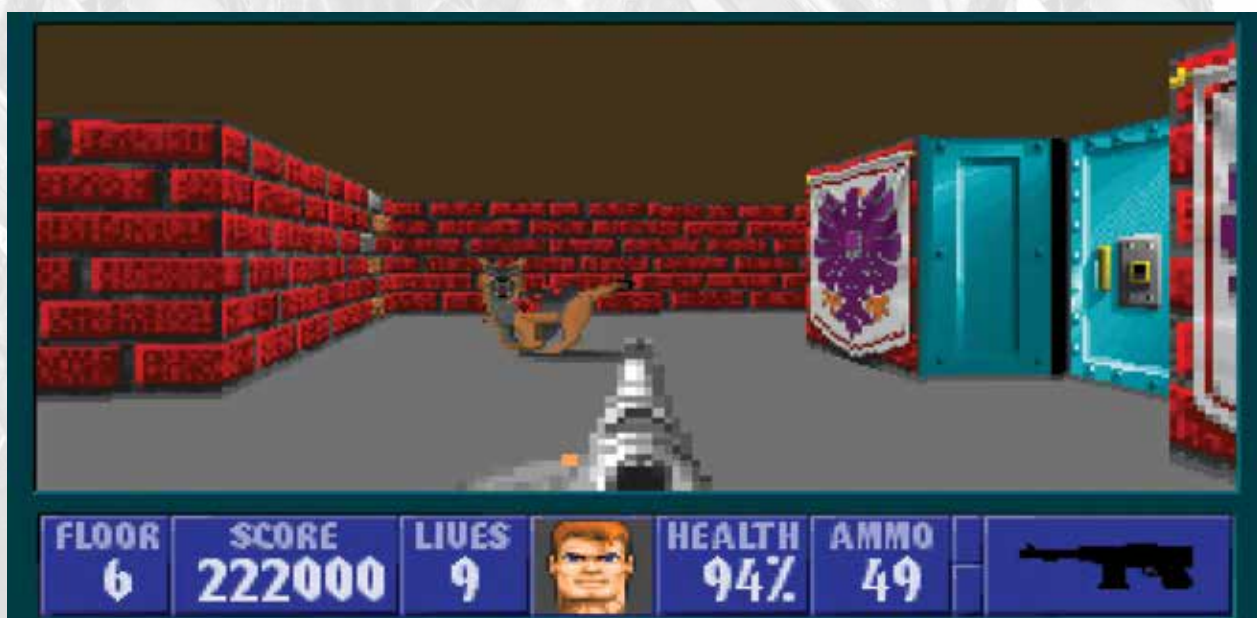
***Hovortank 3D* was another early creation from the *Castle Wolfenstein 3D* team.**

identity, and hiding corpses of downed enemies were some initial gameplay mechanics that were scrapped after Romero felt that it slowed the pace of the game too much. He wanted a game that would allow the players “to mow down Nazis” such as SS soldiers, and even Hitler himself. While this level of violence and gore was alarming for the time, the team actually withdrew anti-fascist references and Nazi atrocities to circumvent controversy.

Regardless, the shock content within the game urged

FormGen, the company that had the distribution deal with id Software, to express concern. In a defiant response, the development team added Horst-Wessel-Lied, the anthem of the Nazi Party, to the opening screen. More atrocities, such as German shrieks and screams of agony were added to the soundtrack, pushing the game over-the-top. Furthermore, the hallways were now buried in corpses and skeletons, and doused with blood splatter on the walls.

In this World War II game, the player is put in the boots of William “B.J.” Blaskowicz, a captured Jewish



American soldier of Polish descent. Using a concealed knife, B.J. escapes his cell and wreaks havoc on the Nazi army in an attempt to escape from Castle Wolfenstein.

B.J. upgrades his armaments to pistols, machine guns, and a Gatling gun from defeated SS troopers or from stashes hidden behind push walls. He must ward off German shepherds, army soldiers, officers, and pale-skinned mutants. Blaskowicz can heal himself with med kits, chicken meals, and even dog food when in a real bind!

The Allied Army dispatches the protagonist on several missions such as stopping the mad Doctor Schabbs and his army of mutant prototypes, hunting for plans of chemical warfare, and of course the epic battle with a deranged Hitler sporting a robotic suit!

The initial versions of Wolfenstein 3D were released for free. During the next year, over 200,000 fans paid up to continue playing the game, proving the viability of the shareware publishing model. 🇺🇸

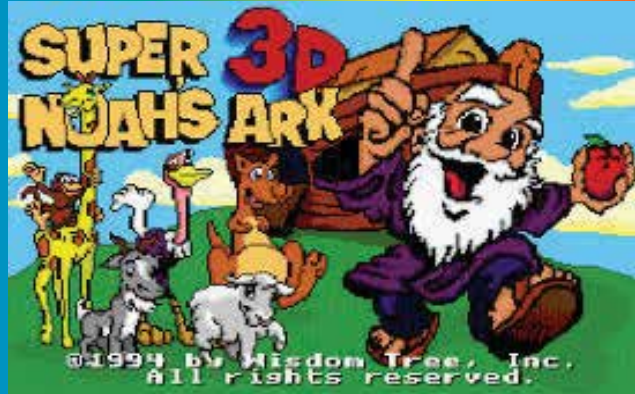
BANNED

The game does not portray Nazi Germany in a good light. It would certainly be a tough sell. Germany is not proud of its role during World War II, and in the 90's, Germany outright banned the use of swastikas within its borders – including digitally in video games. In late 2018, the laws were relaxed a bit allowing Nazi symbols, provided they were used in “an artistic or dramatic manner.”

More recently, Wolfenstein games have been released in Germany – many with modifications. The swastika has been replaced with other, less-specific geometric shapes, Hitler is referred to as a “chancellor” instead of “the Führer,” and humorously, his trademark mustache has been shaved!

A KINDER, GENTLER WOLFENSTEIN

The Super Nintendo received a rather uncanny clone titled Super 3D Noah's Ark. The setting was changed from Castle Wolfenstein and moved to the celebrated sea-faring vessel. Enraged goats replaced the Nazi regime. Wolfenstein's rocket launchers, machine guns, and other armaments were swapped with rather odd devices that fire grain. That's right – small, hard, dry seeds harvested for animal consumption. Why? Because Super 3D Noah's Ark is a non-violent game. So, instead of killing the animals, players must feed them until they gently fall asleep. Put them down quick or else face the consequences. Goats kick at Noah, while antelopes, ostriches, sheep and oxen discharge spittle from a distance. The son of Lamech can also utilize slingshots and cast watermelons and coconuts at larger animals including elephants and camels. Quick, grab your controller and a copy of the Holy Bible and get to mashing buttons in the name of the Lord!





PAC-ATTACK

Secret Pac-Man themed levels are hidden within the game. The familiar Pac-Man tune plays in the background, while Pac's nemesis ghosts patrol the 3D maze. The level, if looked at from a bird's eye view, is very similar to the traditional Pac-Man maze. The dots are replaced with chalices while a monarch's crown replaced the fruit. Extra life icons can be found where the once-mighty power-pills used to reside. The lack of power-pills means that the ghosts are totally invincible, so Pac-Man must avoid the ghosts at all cost!



--- ---... / -... ..-.- / -... .- -.. / .-- --- .-... ..-

During episode 3 of Wolfenstein 3D, the audio track plays some peculiar beeps and blips in the background. These were not random, but actually a form of character encoding known as Morse code. The dots and dashes, when deciphered, reveal the following message:

To: BIG BAD WOLF
 DE: LITTLE RED RIDING HOOD
 ELIMINATE HITLER
 IMPERATIVE: COMPLETE MISSION WITHIN 24 HOURS. OUT.

END OF DAYS: THE SEGA 32X

SPIDERMAN: WEB OF FIRE

By Michael Mertes

As support for the Sega 32X stopped, Spider-Man tried to rescue disappointed fans who decided to invest in the short live console add-on. Released in early 1996, Spider-Man: Web of Fire was developed by BlueSky Software and published by Sega. BlueSky software had previously designed the Vectorman games with much acclaim due to its great gameplay, graphics, and sound. Unfortunately, these same great highlights don't translate to the game that would become the last game released on the 32X.

Like the previous Spider-Man game released on the Genesis and Sega CD, Web of Fire is a side-scrolling platformer that pits our web-headed hero against HYDRA, who takes control of New York with a city-wide electrical force field. Spider-Man must destroy the generators that power the force field to save the day. The first stage of the game takes place on the rooftops of buildings in New York and tries to ease the player into trying all the different moves Spider-Man can perform. While Spider-Man and his many actions look great, actually performing them smoothly is challenging and often puts Spidey in deadly predicaments. For a game based on a comic book, the graphics look very dark and fail to pop out in any fashion. Combine this with a lack of stimulating sound effects, music, and uninspired enemies, the game doesn't give off enough fun factor to continue playing it. This is disappointing

considering that the original 1991 Spider-Man released on the Genesis was quite fun to play and even received an upgraded version on Sega CD. Since this game only had a small cartridge run when released, it is exceptionally collectible, and loose copies often pop up on eBay for over 500 dollars. While the game might look great on a shelf, web-heads should consider spending their Daily Bugle money elsewhere if they are looking for fun.

NEXT WITH 32X

With the introduction of the 32-bit 3DO and 64-bit Jaguar, the video game console market was expanding. Each new contender claimed that their offerings were better than anything both Sega and Nintendo had. Being mindful of this situation, Sega weighed its options on the next logical step for a new console. Unfortunately, Sega of American and Sega of Japan had conflicting ideas about what that new Sega console would be. Forced to comply with the wishes of Sega of Japan, Sega of American would be releasing a Genesis add-on called the 32X in November of 1994.

To loyal Sega fans, the announcement of the 32X was a positive one, Genesis owners would still have access to their existing 16-bit games, but with the 32X, their Genesis would be upgraded to a 32-bit console. Sega had even secured the best-selling PC game, DOOM,





towards its last days could be found for as low as \$9.99 at electronic stores, a substantial drop from its original \$159.99 asking price.

CONNECTIVITY FRUSTRATIONS

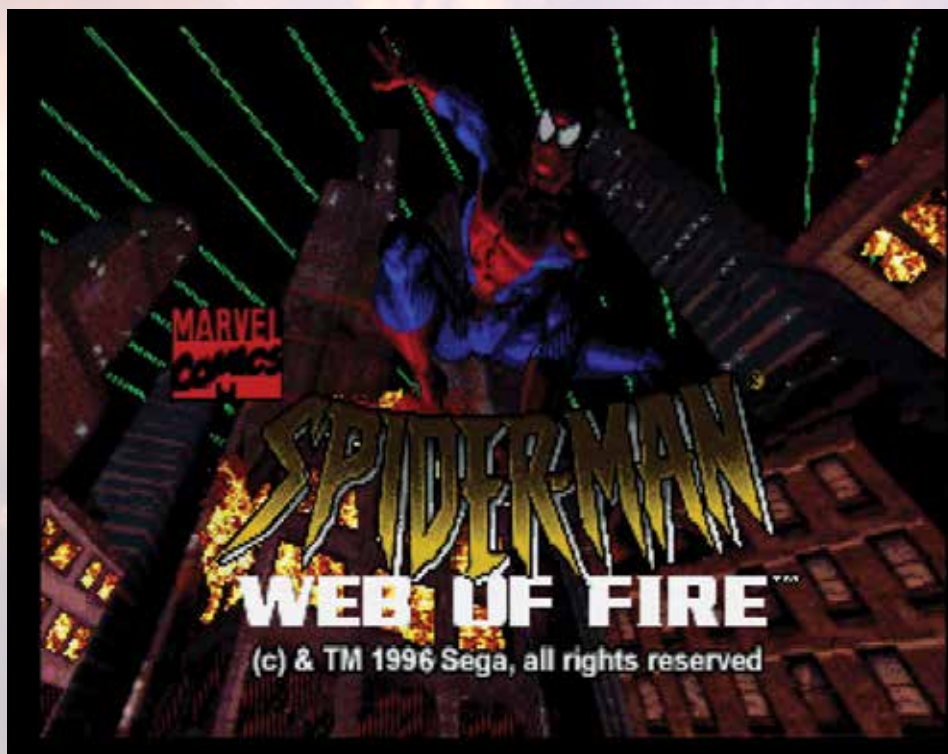
The 32X is its own adventure in connecting the add-on from both a power and video perspective. Much like the Sega CD, the 32X comes with a power adapter to power the unit individually. Adding Genesis's power supply to the mix means that you now have to provide a big enough power strip to accommodate all three boxy power adapters. This was just one of the many complaints that 32X customers brought to Sega's attention, which in turn prompted Sega to release its own Sega branded power strip that was spaced so that all three systems could be plugged in. If you are using a 32X and Sega CD with your Genesis today, I would suggest visiting Retro Game Cave's website to pick up their TRIO power adapter. The TRIO power adapter provides the miraculous task of powering all three systems with one power adapter. Just make sure you pick the right adapter depending on what model Sega Genesis or Sega CD you own.

to be available on the 32X, a far less expensive option than trying to purchase a PC. The writers behind video game magazines were not as optimistic. As rumors kept pouring in that a true Sega 32-bit system was on the way, magazines like Game Informer felt that the 32X was an unneeded and obsolete add-on that wouldn't have a long shelf life. If this ended up being the case, it could severely damage the excellent reputation Sega worked so hard to get with its consumers.

Despite the gaming press having a skeptical opinion on the 32X's success, the console successfully launched on November 21, 1994, and the reviews for its launch games were also very favorable. DOOM, Star Wars Arcade, and Virtua Racing Deluxe had plenty to offer Sega fans that wanted to experience a taste of next-generation graphics and capabilities. Regrettably, the 32X's lack of many original games hampered any continued excitement for the console. Instead, games like NBA Jam and Mortal Kombat 2, with minor graphical upgrades over the Genesis version, were all that ended up on shelves. Like the magazines had predicted, it became clear to the general gaming public that the true 32-bit Sega system would be the Saturn.

The 32X game library would only amount to 40 games worldwide and, with future game titles moving over to the new consoles for development, support for the 32x stopped. This angered Sega fans, and the 32X add-on soon found itself in garage sales or the back of closets. The add-on

The various models of the Sega Genesis also play a factor in how the 32X can be a pain to get functioning. The 32X essentially makes the Genesis A/V port a passthrough device to push video and audio. This requires you to connect as a passthrough cable from



THE 32X LIBRARY

DOOM



SPIDERMAN: WEB OF FIRE



MORTAL KOMBAT



VIRTUA FIGHTER



STAR WARS



VIRTUA RACING



your Genesis into the 32X, and then the 32X uses its own video cable to output the signal to your TV. The Genesis and Genesis 2 use different sized video ports, so Sega also had to include a conversion cable to accommodate early Genesis adopters. Unfortunately, even many years after the 32X's release date, there is no improved way to reduce the A/V cable clutter that the 32X brings with it. As someone who likes to use RGB video output whenever possible, I had quite the adventure of purchasing multiple SCART cables and adapters to get my "Tower of Power" functioning to its maximum capacity. Those who own a Genesis Model 3 were entirely out of luck if they had an interest in the 32X or Sega CD, as that model did not have the capability of using them.


As annoying as the connection experience can be, players could at least play all of their original Sega cartridges through the 32X cartridge slot. A handful of enhanced 32X Sega CD titles were also released that utilized the 32X to improve certain CD games' presentation. Those looking to continue to play Master System games with the Power Base converter accessory would need to remove the 32X to play those classic 8-bit games as it was incompatible.

MY FIRST 32X EXPERIENCE WAS DOOMED

I first learned of the 32X through Game Informer magazine. I always thought it was neat that the Genesis could keep getting new add-ons that upgraded the system, but I still stood by my Super Nintendo as my console of choice. That didn't stop my grade school friend from trying to prove to me that the Genesis was far superior anytime he could. We had both received the December 1994 issue of Game Informer with the 32X version of DOOM on the cover, and after discussing the review, he mentioned to me that he had been saving up money from his paper route to get the fancy new add-on.

Early in December 1994, my hyped 32X friend called me: "My dad helped me get the 32X and three games. We are picking you up this afternoon, and after you see this thing in action, you'll finally understand why Sega is better than Nintendo." A few hours later, I was over at my friend's house, and adorned on the top of their puke-colored family room carpet was the Genesis model 2 with a 32X inserted on the top of it. Next to the console were all three 32X launch title games: DOOM, Star Wars Arcade, and Virtua Racing. Having played DOOM on PC briefly, seeing how the game

would perform on the fancy new 32X seemed like a first easy pick. "Ok, let's play DOOM!" I said. The color in my friend's drained to a ghostly white. "Ok, we can play it... but we have to play it with the sound off, and if we hear my dad open his office door, we have to shut it off." He then proceeded to tell me that he convinced his dad that the Doom for 32X was completely different from the one on PC. If his dad found out the game was in the house, the game and the 32X would probably go out in the trash. His parents disapproved of extremely violent video games, and DOOM took top honors for that category. We turned down the TV and popped the cartridge into the 32X to experience the bloody carnage that was DOOM.

I only got to experience DOOM and the 32X for 15 minutes. As it turns out, having the TV turned completely down to experience the hottest new video game console add-on is too suspicious. My friend's dad investigated the lack of noise, and to his horror, discovered we were playing the same DOOM that was available on PC. The 32X and games went back to the store that afternoon, right after I was dropped off at home. 



FIRST PERSON NAUSEA

PLEASE SHOOT ME, MOMMY!

By Brian Szarek

Like many folks who grew up on the Atari 2600, Nintendo Entertainment System, Sega Genesis, Atari Lynx, etc... I grew up on the Atari 2600, Nintendo Entertainment System, Sega Genesis, Atari Lynx, etc., and continue to collect and repair them. There are so many genres to be celebrated in those early years, such as the platformers, side scrollers, maze games, simulators, racing, etc. I also celebrate the many peripherals that were created to support those games. I spent countless hours playing games like Berzerk, Pac-Man (and its variants), E.T. (which gave me nightmares that I still remember to this day, but I digress), Space Invaders, Super Mario Brothers (and its sequels), Mike Tyson's Punch-Out, Paperboy, Sonic the Hedgehog (and its sequels), and so many others.

As we all know, paired with Super Mario Brothers for the NES was Duck Hunt, which was an absolute favorite of mine growing up. Who didn't love blasting the ducks with the included NES Zapper, feeling like Arnold Schwarzenegger doing it? That would be my first real experience playing a "first person shooter", and I loved it. I also really enjoyed simulators like Star Wars (arcade) and After Burner, but FPS were a different beast entirely.

We also all know the path the genre would take, as it has been well chronicled in this issue, with the likes of Wolfenstein 3D, DOOM and Duke Nukem 3D. For this

reason, I won't go into detail about the history in this essay. I never was a "PC Gamer", so to speak, but I purchased my first PC in about 1994 - a Packard Bell 486SX25Mhz running 4MB of RAM! Scorching! It came with a 40MB hard disk drive, but no operating system, so I had to learn how to do that on my own. I also did not have a mouse initially. I also eventually purchased a Sound Blaster CD-ROM and sound card kit from Radio Shack for \$99 and popped that in as well. It had a decent 2400 baud modem that I ended up upgrading to a 14.4K modem at some point. This was all paired with a 14" VGA monitor.

At the time that I bought the computer, I really didn't know what I could do with it. My friend, who was and is a computer whiz, had just gone on a two week vacation and I couldn't get a hold of him to help. I ended up leaning into the Bulletin Board System (BBS) scene, downloading lots of shareware (as well as getting what I could from computer magazine demo discs and the like), and tying up my parents phone line for hours on end. I enjoyed connecting with people locally and across the country, sharing what we could, and meeting new people.

With this shiny new computer in my house, I wanted to explore what kinds of games could be played. My friend and I had played a "Life"-style game from Sierra called Jones: In the Fast Lane. The gameplay was simple



Me playing my Atari 2600 Light Sixer at approximately 7 years old. Even in my youth I played classic games.



The infamous NES Zapper, the ultimate peripheral for killing ducks.

but addicting. You choose your character, make choices that have “real world consequences”, and play it out until someone reaches their life goals. If only life was so easy. This game, and many others, can now be found and played for free at www.classicreload.com.

Other games that were heavily circulated at the time, through BBS, demo discs, and the like were the first person shooters mentioned above. Everybody was talking about them and everybody told me I had to try them. Coming from a primarily platformer world, this was certainly a departure for me. First of all, I had never really played a game without a controller, joystick or other peripheral. For me, playing a full speed game with a keyboard was a novel and difficult concept. I know Wolfenstein 3D had been around for a couple years prior to my PC purchase and could be played with a joystick or mouse, but I didn’t have those as options at the time.

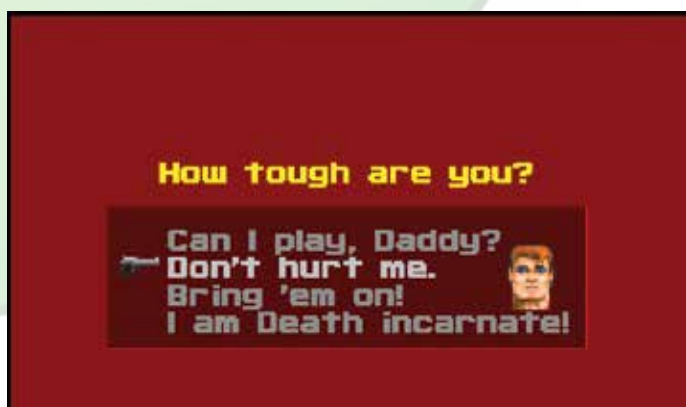
I started my journey by popping the game in and choosing “Don’t Hurt Me” for the difficulty. I acquainted myself with the controls and started making my way through the Nazi dungeon maze, moving through room after room, the on-screen motions so quick and jarring that it nearly immediately gave me a headache. It wasn’t the fact that we couldn’t see the full body of the character that drove me crazy, it was the motion. I truly enjoyed the concept of the game - try to escape from the Nazi prison “Castle Wolfenstein” all the while hunting down Nazis and escaping from their dogs and other hunters.

I remember playing for a while, dying a whole lot of times, restarting, yelling at the computer monitor then having to explain to my parents what I was yelling about. After a few hours of this quick side to side motion, the

headache got worse and I began to feel nauseous. It was at that point that I gave up on Wolfenstein 3D. I would go on to try DOOM and other similar games, but I never could get into the gameplay.

I spent a lot of time in local arcades in the late 80s and early 90s, playing other FPS games such as Terminator 2, which was an absolute favorite of mine. I plunked a lot of quarters into that one. Even in my modern game playing for the PS4 I tried out a few FPS games, since I got them cheap and everyone raved about them. I still can’t get into them and the up and down, side to side motion just gives me massive headaches. Apparently I’m not alone. I never thought of myself as someone that suffers from motion sickness, but as an early 2020 article from GameTech online stated, “What this all boils down to is the fact that there is more overall camera movement, as the player’s perspective is more limited and requires more looking around in order to determine what’s going on, especially in an action-heavy setting with the requirement of fast reaction times.” The authorless article further explains, “The experience of game-induced motion sickness is akin to being carsick or seasick, as both of those scenarios involve a conflict of stationary and moving objects and environments.”

I’m sure as the years and console generations continue to pass us by, I will continue to try new FPS games. I certainly don’t want to be close-minded. But I think most of my future gaming will likely steer away from the genre. 🤖



I didn’t need daddy’s permission, but I was too young (and way too scared) to face Death Incarnate.



That stubborn T-1000 is definitely a major pain in the gluteus maximus.

CRAIG STITT: DISRUPTOR

SOMETHING SPECIAL AFTER SONIC

By Patrick Hickey, Jr.

At a time where games in the first-person shooter genre tried incredibly hard to mirror the gameplay of DOOM, Universal Interactive's Disruptor was a breath of fresh air. Although it sold just 130,000 copies on the console, its solid use of 3D gameplay, excellent control, weapon and enemy diversity and a fun story made it a game that was unique for its time and one that has aged considerably well over two decades since its initial release.

While the firepower element of any FPS shooter is important and Disruptor brought the heat with nine different guns, the game also had "Psionic" weapons that added another element to the fast-paced action

and allowed you to connect with your character in a way that many FPS didn't allow back in the '90s. Add in some witty dialogue and a fun story that has the player (a member of Lightstormer Corp), defend the Earth against invading enemies and it's a diamond in the rough of DOOM clones on the PS1 that actually fueled the technology for some of Universal Interactive's biggest hits on the console, most notably Spyro the Dragon.

Responsible for art and design on Disruptor alongside Ted Price and others at Insomniac Games, Craig Stitt (who'd later contribute to four Ratchet & Clank and three Spyro the Dragon games) may not have even got into the industry at all if not for a few people in his life that saw his talent. "The way I got into the gaming industry was kind of incredible," Stitt said. "In 1990, I was working at a company called Genigraphics, doing computer graphics, which was cool, but it was mostly boring 'business graphics' like pie charts and bullet point text screens. Occasionally, we got to do something more artistic, but mostly it was really tedious. At the time, I was married and my wife (ex), knew I hated my job (I'm sure she was tired of me complaining each night when I got home), so she would go through the want ads in the newspaper, circle anything she thought I might like and leave the paper sitting on the kitchen table. One day, she actually called while I was still at work and said she had found my dream job. When I got home, she handed me the paper. It read, 'WANTED: Video Game Designers and Artists, NO experience necessary.' I know I kept that little clipping, but I haven't been able to find it.

"I put together a resume and a little portfolio and sent it in. Initially, I thought the job was for developing SEGA's arcade games and I was a little bummed that it was for their home system, but now I am very glad it was the home system and not for the arcade. Mark Cerny is

Craig Stitt: creator of Disruptor



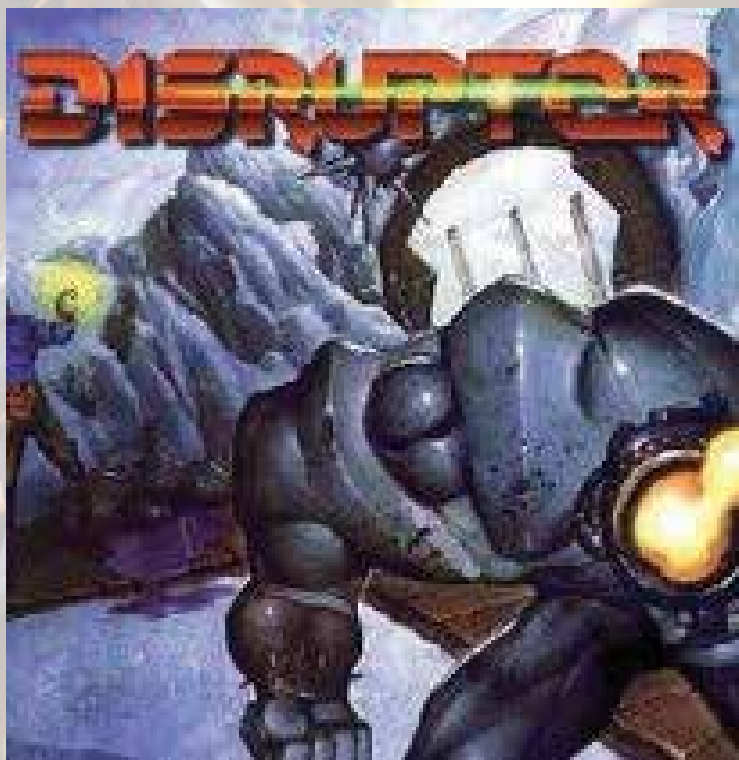
the one who put the ad in the paper. He wanted to build a team with people from outside the industry so he could train them to make games the way he wanted to make games. I applied for both positions, game designer and game artist. A few days later, Mark called and said he wanted me to come in for an interview. This is when I found out it was for the Genesis. I hadn't even touched an NES, nor even heard of the Genesis, so I called a buddy and borrowed his NES and sat and played games non-stop for the next several days. Mark hired me as an artist and my first game was Kid Chameleon."

Although he hasn't aware of the landscape of the industry in the early '90s, that doesn't mean Stitt wasn't a fan of games. If nothing else, Stitt was heavily influenced by the arcade era of gaming and loved the concept of creating worlds, characters and stories. Even if he may not have originally thought a job in the video game industry was something he was destined for, as truth would have it, he was a perfect fit.

"The only gaming system I had as a kid was a Coleco Telstar," Stitt said. "Although I spent a LOT of time over at my friend's playing on his Atari 2600. In high school, I dropped a lot of quarters at the arcades. My favorites being Asteroids, Battle Zone, Defender (we use to play it 'two-player:' one person flying and working the forward blasters, with the other player dropping bombs), Dig Dug, Space Invaders, Star Castle. I also played a lot of D&D and other tabletop strategy games in high school."

After being hired by Sega, Stitt contributed art to classics such as Kid Chameleon, Comix Zone and Sonic 2, as well as the cult classic The Ooze. Before his eventual work on Disruptor, Stitt proved himself a more than capable artist. However, with the industry changing, Stitt knew he had to adapt and grow. According to Stitt, he saw the PlayStation as a new challenge and an opportunity to start anew with Universal after seeing his time at Sega coming to a close. It also represented an opportunity to reconnect with the man that gave him his start in the industry.

"I had played a lot of Wolfenstein and DOOM, but I really wasn't all that excited to work on an FPS/DOOM clone," Stitt said. "But I wanted to work with Mark Cerny again and I really, really needed to get away from SEGA. It was a HUGE change going from the Genesis to the PS1.



I was so used to 'painting' each texture, pixel by pixel, that it was surreal to be able to just paint in Photoshop and not have to worry about pallets or the number of colors used. (I also had to learn Photoshop when I started at Insomniac).

"The steepest learning curve was learning 3D. I had played a little bit at SEGA with 3D software, but once I was at Insomniac, it became the primary tool, along with Photoshop, for building the worlds and the enemies. Once I started working on Disruptor, I came to really enjoy the game and no longer thought of it as a 'DOOM clone' and felt we had something fun and different to offer players. I remember battling frame rate was the hardest and most frustrating part and it was always an issue.

Regardless of the early frustration of working on the PlayStation, Stitt quickly found his groove with Universal Interactive and Cerny again. "The concept art for the levels had been done (before I got there) by Catherine Hardwicke, who had been the production designer for the movie Tank Girl (1995)," Stitt said. "Mark Cerny would give us the level maps, hand-drawn on graph paper. Since we had some very nice pre-production drawings, I remember Mark working the shapes and buildings into his maps, which made my job of building the levels much easier. In later games, where the designers drew out the maps before any specific pro-



what I was doing!”

Even after the tight quarters situation was alleviated, the close-knit nature of the team ended up benefitting the artistically-gifted Stitt, who ended up playing a more than influential role in the game’s look as a result. “A few months later, after we had moved into the new building and we had a little more room between our desks, I walked past Ted’s desk and saw him drawing out designs for some enemies. Now, Ted was excellent when it came to 3D modeling, but he couldn’t draw,” Stitt said. “I went to my desk, quickly sketched out something that was similar to what I had seen Ted trying to draw and took it over to him. He looked at it, then

duction art had done for the level, it was a real pain sometimes for the artist trying to ‘fit’ 3D elements into the maps, and then pain for the designers when they would have to go back to make changes on maps because there just wasn’t room to build 3D objects into the environment.”

Stitt still remembers how working at Universal made collaboration a bit easier than it could have been somewhere else. “Our first offices were on the backlot at Universal Studios, which was a lot of fun (being on the backlot). We had a couple small rooms down the hall from Naughty Dog in a building used by Steven Spielberg (he eventually needed the whole building, so we moved into one of the larger buildings up in the front lot. I remember the office that Ted Price and I were in was so small that I could only move my chair back a couple inches before I hit the front of Ted’s desk, which was partially stressful because all Ted had to do was look up from his work to look right over my shoulder at

handed me the stack of enemy descriptions that were sitting on his desk and asked me to do the rest of them as well! I couldn’t have been happier since drawing strange monsters was a favorite of mine.”

Despite being able to work within his strengths on *Disruptor* and help craft the game’s look and feel, the entire cycle proved to be a challenge for him, but one he believed he was ready for. “Learning 3D while creating the actual levels was very difficult and very stressful,” Stitt said. “Frame rate was the constant enemy of what I ‘wanted’ to do vs what I could do, so learning to create what I wanted, within the limitations frame rate demanded was the most challenging thing... and was so in every game I worked on from that point forward.

“Thinking about ‘working within limitations’ reminded me of an artist that I worked with at SEGA on *Kid Chameleon*, for the Genesis. He was an incredible artist, but like all of us, he had never worked making games (or in his case had never worked with computer

graphics). I remember him having a really, really hard time working within the limits of frame size, frame count and pallet restrictions. His work was beautiful, but he always had to go back and fix stuff because he hadn't worked within the limits the programmers/designers had given us. When he finally left, I believe it was because he just never felt happy with his art, or comfortable working within the very tight restraints demanded by the computer graphics of the time.

"The biggest lesson learned for me while working on Disruptor is finding that balance of 'what can be done' within the limits of what you're working on, and yet still pushing those limits right to the edge of what was possible. Remembering conversations I heard between Mark Cerny and Al Hastings, I think these same limitations, and finding ways to push them, is what lead to the break-through elements of the engine used for the Spyro games."

While the rest of the development process was tame according to Stitt, he does remember there being issues with versions outside the United States. "There was a big deal about NOT having any red blood in the game, especially if we wanted to sell the game in Europe," Stitt said. "We thought we had done a good job avoiding anything controversial, but we had to go back into the European version and remove the hair that flew off a mutant rat when you shot it because someone in Europe thought it looked like blood."

All that aside, over two Decades later, Stitt still understands what made the game stand out from the plethora of other FPS games at the time - things that make the game still playable

However, all of those positives didn't lend itself to the game being a success. While it's looked at today as a unique, immersive and fun FPS and one that was well-received by critics, it wasn't the commercial success it could have been. Although he's been a part of games that have sold millions upon millions of copies for the Genesis, PlayStation and PlayStation 2, Disruptor was a special title for Stitt - one that he believed in and one he believed deserved to be appreciated far more than it initially was.

"It was exciting of course, but at the same time a little disappointing," Stitt said. "Universal really dropped the ball when it came to advertising, so it was actually rare to come across someone who had heard of the game, much less played it. This was maybe extra hard for me because I had come from working on Sonic 2 where even if you didn't play video games, you knew who Sonic was."



All that aside, over two decades later, Stitt still understands what made the game stand out from the plethora of other FPS games at the time - things that make the game still playable and special today. "I think the wide range of environments in Disruptor helped it to stand out. The dramatic use of color and the varied architecture really helped the player know what level/world they were in. If all you had was a screenshot and you are familiar with the game, you know it's Disruptor. Clearly, I tend to look at things (movies, etc.) from a visual standpoint since that is/was my job and what I enjoy. Today when I look at FPS and TPS games, so many of them look the same. Gritty, dark, dirty with overly detailed photorealism. If not for the enemies, they would be indistinguishable from one another (there are exceptions, of course)."

As far as the game's legacy goes, Stitt doesn't know how it affected the industry on its own, but he does know

what it did for Universal's future work. "I don't know if it really has one on its own, although I could be wrong since here; we are almost 25 years later talking about it," Stitt said. "However, the work on Disruptor and the limitations everyone faced helped fuel the advancements that lead to the Spyro games."

Again, working on massively successful titles in a career that spanned over 20 years, Disruptor could have just been seen as a little project to many. However, Stitt's first game on the PlayStation holds a special place in his portfolio and is one he'll always remember. "My favorite review for Disruptor (I can't remember who it was from) was, 'The best little game you've never heard of,'" Stitt said. "For a game that few people have ever heard of, much less played, I think that is a really nice way for it to be remembered." 🎮

The President at the end of the game, accompanied by some of Craig Stitt's original monster sketches.





AN INTERVIEW WITH JOHN ROMERO

By Todd Friedman

First person shooting games would not be where they are today without John Romero. John has created some of the most classic FPS games of all time. Most of the games he created in the 1980's are still played today. John's resume of games is so long it takes pages to name them all. The most talked about games, however, are titles such as Quake, Red Faction, and DOOM... but it was Wolfenstein 3D in 1992 that changed the whole dynamic of first-person shooters.

John helped create the company "id Software" in 1991 and planned on changing the way PC games were played forever. Before id Software developed Wolfenstein 3D, another company before it created what would

become the start of the franchise. Castle Wolfenstein and Beyond Castle Wolfenstein were created by Muse Software in the 1980's. These games were not first-person shooters but more like an arcade style shooter similar to Berzerk. Overhead maps guided you as you moved your player around to shoot enemies. The style of play was exciting for the time and made the Wolfenstein games very popular.

John Romero and id Software single-handedly created the genre of first person shooting with Wolfenstein 3D. With its ray cast rendering, it created the illusion of walking around the map through the eyes of the player. Wolfenstein 3D was a commercial success and



has been recognized as one the greatest games of all time. The game took a risk by using Nazi enemies and making it realistic to the gamer. The gamble worked as the players got more excited about killing Nazis and winning in the game.

Here is my interview with John, talking about Wolfenstein 3D and his opinions on current gaming and first-person shooters.

OLD SCHOOL GAMER (OSG): When did you know you were going to be in the video game business?

John Romero (RO): It was most likely after I got my Apple II+ in 1982. Making games is the only thing I wanted to do since then.

OSG: Do you remember when you created your first game and what do you remember about the experience?

RO: The first game I created was in 1979 when I started learning HP-BASIC on the community college's mainframe. I was 11 years old and taught myself how to code in the computer lab. My first game was a simple adventure game with about 5 rooms. It was really amazing to create something that ran on a TV screen,

and it was so much fun learning the language.

OSG: What were your goals and expectations when you co-founded id Software?

RO: Id was my fourth startup. The goal was to take the amazing horizontal scrolling tech that John C. wrote and make games with it. Beyond that, we were excited to experiment and try to make the best games we could. The expectation was to have fun making games, no matter what they were. As long as we all shared the same passion for game development, we knew we would make magic.

OSG: How many people first started working for id software and how many people were involved designing Wolfenstein 3D?

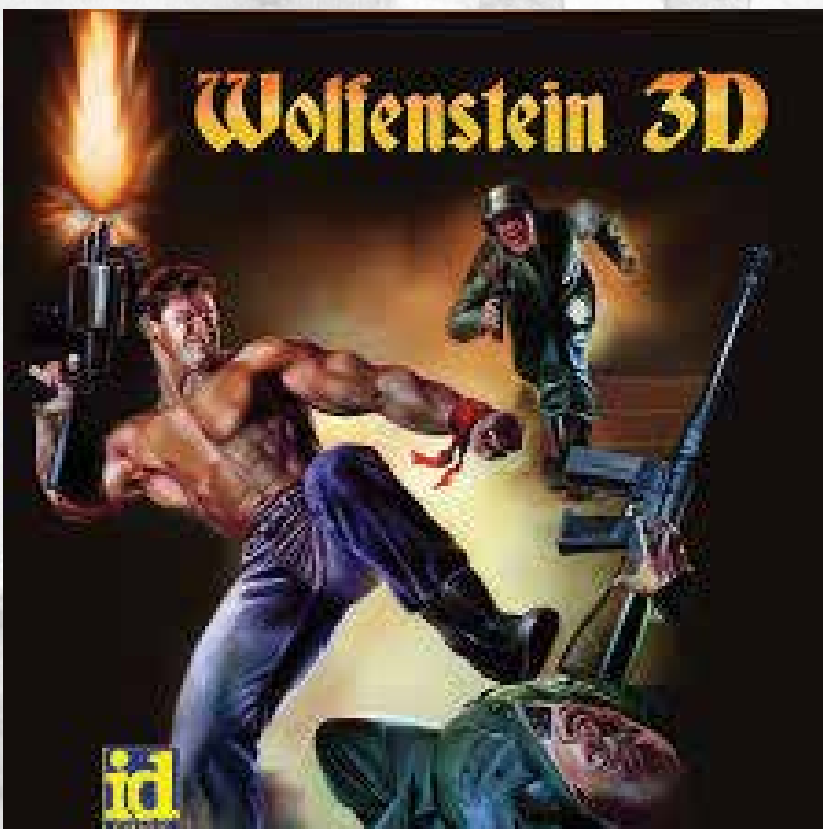
RO: At the very beginning in 1990, three of us created the original Commander Keen trilogy: me, Tom Hall, and John Carmack. In February 1991, Adrian Carmack joined us when the company officially started. A year later, it was still just the four of us when we started making Wolfenstein 3D.

OSG: What gave you the idea of the look and feel of Wolfenstein 3D?

RO: We had made two FPS games before Wolfenstein 3D: Hovortank One and Catacomb 3D. We knew with Wolfenstein that you were going to be a military character who is breaking out of a Nazi castle. I came up with the idea to make a 3D version of the original Castle Wolfenstein from 1981 because it was such an incredible classic game. I felt that if we were going to make a state-of-the-art game, we should recreate a previous state-of-the-art game and design it in a new way.

OSG: How long did it take to create Wolfenstein 3D and was it the amount of time you expected?

RO: We spent four months from concept to uploading the shareware version. It took another month for us to finish the other five episodes of levels and create the hint book. We had no expectations about how long it



was going to take – we were experimenting and working hard at it, so whenever we finished, we knew we'd have something great to play.

OSG: Most critics call Wolfenstein 3D one of the greatest games ever made. How does it feel that you were involved in creating it?

RO: Well, we owe a huge debt to Silas Warner for creating the original. The design of Castle Wolfenstein is the reason why we wanted to make a new one, to follow in his legendary footsteps and modify the design to better fit this new category of game we would eventually call an FPS.

OSG: What was your goal for Wolfenstein 3D when it was released? Did it meet or exceed your expectations?

RO: The goal was for Wolfenstein 3D to be a really fun game that would make people want to buy the registered version. We were making decent money from our Commander Keen sales still and adding Wolfenstein 3D's income would ensure we could keep making games together. The first month, Wolfenstein 3D's sales exceeded all our expectations. With no advertising, the game sold 4000 copies in the first month at \$60 each.

OSG: Some view Wolfenstein 3D as the pioneer for first person shooters. Do you believe it was the game that started it all?

RO: Yes, Wolf3D was the first shooter to embody the speed and violence of the genre. Wolf3D ran at 70fps on a VGA CRT in 1992 running on a 386 PC. The design of the game was simplified to its core run-and-gun gameplay. Anything that slowed you down, we removed it. Also important was the digitized audio we used for the first time on the Sound Blaster. It is so fitting because Castle Wolfenstein in 1981 was the first Apple II game to use digitized audio and it scared the hell out of you when a character opened the door and yelled "SS!" That was the cue to flip the drive door open in case you got caught. The millisecond you were caught,



the disk was updated that you died. Without writing to the disk, you could resume where you left off after quitting and running the game again.

OSG: Before Wolfenstein 3D, what were some of your favorite games you created and why?

RO: Definitely the Commander Keen games were lots of fun to make. We created seven of those and received lots of mail from kids with hand-drawn pictures of the various characters we put in the games. Before id, I made a game called Dangerous Dave that ended up being more popular than DOOM in India and Pakistan due to its installation on every new PC sold for years. In 1984 and 1985 I made a couple games named Subnodule and Pyramids of Egypt that I sold in computer stores. Those were fun games to make because they were bigger than my average game and were more polished.

OSG: Who did the cover art for the game and what was the vision?

RO: The cover art for Wolfenstein 3D was painted by Ken Reiger, the artist that painted the Commander Keen: Aliens Ate My Babysitter box cover. There wasn't really a vision for the cover – we just told him you were a beefy Schwarzenegger-like soldier with a chain gun blasting your way through Nazis. Ken figured it out.



OSG: What are some interesting and/or funny stories that happened while working on the game?

RO: You might not believe it, but Wolfenstein 3D's levels were the most boring chore for Tom and me to do. The Commander Keen levels were so much more fun to make because we could directly see the level on the screen the way we would play it. With Wolfenstein 3D, the level is abstracted because we created them in 2D from above – to see them in 3D we had to run the game and see if the level looked and felt good. Our design palette was limited, so we didn't have much we could do in a level besides do cool things with sound areas.



Due to the chore of W3D level design being boring, Tom and I would play Fatal Fury on the NEOGEO next to us... or Street Fighter 2 on the SNES... or go swimming in the pool. I used to remind Tom we needed to get those levels done so we didn't have to do them again. This was mostly during the time we had to create the last 50 levels after we had created the 10 shareware levels.

OSG: If you could make a change to Wolfenstein 3D, what would it be and why?

RO: I would remove the score items, remove lives, add more weapons, give away less ammo depending on difficulty, improve melee combat, and lots of other things. This is for the original DOS game. Those changes would make the game easier to finish, add more variety to the weapons, and toughen up the balance.

OSG: You have designed and created many more first-person shooters after Wolfenstein 3D. Which are your favorites and was Wolfenstein the game that influenced the others?

RO: DOOM and Quake were my favorites after Wolfenstein 3D. Each game was unique, and its design was formed by the success and failures of the previous game.

OSG: What are your opinions about today's generation of video games? How do you compare them to older, classic games?

RO: Today's games are absolutely incredible. I wish I was growing up right now – the variety and quality is stunning. Important games have their place when they are created, and everything ages and becomes simplistic. There's no need to compare today's games to their antecedents; just appreciate that they existed so today's games could likewise exist. Just remember how those games made you feel – that was entirely their point.

OSG: How do you feel about consoles and handhelds playing Wolfenstein 3D on their platforms?

RO: Well, it's great of course. Being able to play a game that's almost 30 years old on new hardware is always a sign that the game did something right. People are still playing Tetris!

OSG: Do you believe that first-person shooter games are too violent and lead to violence in America?

RO: Absolutely not. If anything, they were a release valve.

OSG: Who is your favorite video game character of all time and what makes that character special?

RO: I would have to pick Chrono from Chrono Trigger. The entire story is designed around Chrono, and he's only trying to save the world from Lavos with a rag-tag group of friends from various timelines.

OSG: Is there a game that you wished you were on the development team at that time and why?

RO: I would have loved to be part of World of Warcraft, and I wish I had made Minecraft. The reason is simple: both games are incredible and have had a massive impact on people for a long time.

OSG: DOOM was inducted into the International Video Game Hall of Fame in 2019. What were your thoughts and feelings about it?

RO: I'm definitely honored that DOOM was one of the recipients of the first cohort of the IVGHOF. Back in the 90's, Wolfenstein 3D and DOOM were both added to the Computer Gaming World Hall of Fame, which was the same thing, only decades earlier. We'll always remember Johnny Wilson and Scorpia.

OSG: In recent years you have created Romero Games, LTD. Where do you see your next generation of games going and what are your goals?

RO: Our newest game, Empire of Sin, launches on December 1, 2020. It's an example of how we always try to do something new, to explore genres and push them further. Most of all, it represents a really great time making a game with an exceptional team in a

wonderful country, Ireland.

OSG: Where do you see video gaming in the next 10 years?

RO: Better tech, every genre inching forward, and possibly something unexpected that changes everything. 🎮



MAJOR HAVOC

LET SLIP THE DOGS OF WAR!

By Kevin Butler

By 1980, Atari was leading the way in vector games. After releasing Battlezone, Asteroids Deluxe, and Red Baron, Atari realized it would have to step up its game. Atari had immediately started work on a next generation vector generator that would use color. The result of this research was a new type of generator called a color X,Y. This new color vector generator hardware allowed one to create very vivid and unique visual effects in color. Originally, the first game to fully utilize these features was going to be Space Duel, however, events proved otherwise, and that honor went to Tempest. Other games that utilized this new hardware were Space Duel, Quantum, Star Wars, and Empire Strikes Back. Major Havoc would be released in November of 1983, making it the fifth game released

utilizing this hardware. Incidentally, this was one of the last of the Atari arcade games to utilize this technology.

The premise of Major Havoc is that you are the leader of a band of clones who are fighting for all of humanity. The evil Vaxxian Empire has conquered the galaxy and as a result, your people have been enslaved. Your job is to fly your Catastrofighter to many space stations as you work your way back toward your home world. With its wide array of enemies and other hazards, Major Havoc proved to be a major challenge for all players.

While the game proved to be quite popular, unfortunately, the video game crash of 1983 sealed its fate (along with many other games). In addition, since it was done as a vector game, operators were very afraid to buy X-Y games because they broke a lot. The story, though, doesn't end here. A group of hobbyists, along with Owen Rubin, are creating the promised ending for Major Havoc 37 years after its release. For a game this old, that is a major testament to its staying power.

I had the honor and privilege of talking to Owen Rubin, the creator and programmer of Major Havoc.

Old School Gamer (OSG): When did you first start getting involved with computers?

Owen Rubin (OR): It would have been in tenth grade. I worked on a Bendix G15. It was a first-generation computer running on tubes and the memory was actually a magnetic drum that had

MAJOR HAVOC

MCMLXXXIII ATARI

THE ENEMY LIST

NAME

POINTS

SPACE ENEMIES

FISHOIDS

1000



FLYBOIDS

500



MAZOIDS

500



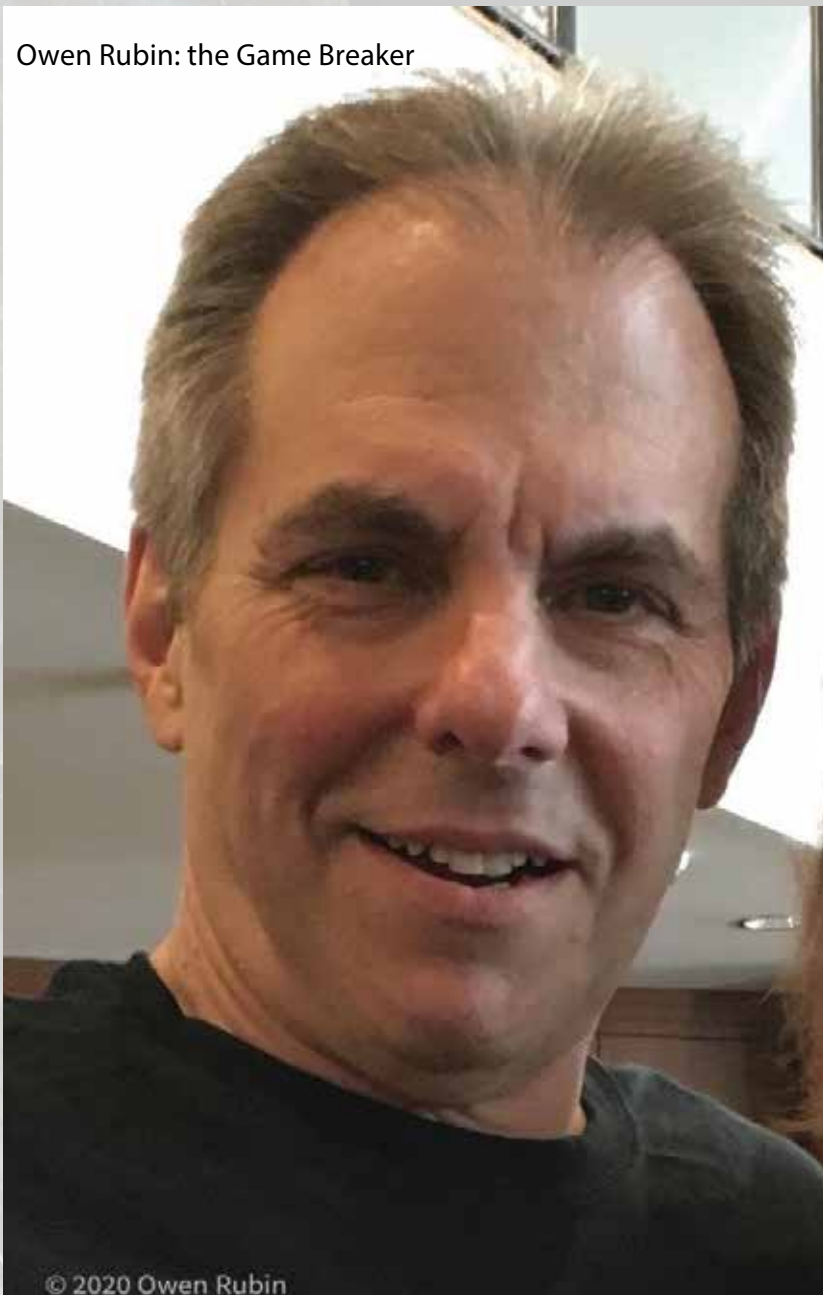
Posted with permission of Owen Rubin

1800 memory locations on it. Its output was a typewriter which wasn't that fast. It was on this system I wrote my first computer game, Tic-Tac-Toe, which was probably as complex a game as this computer could accomplish. During my senior year, our school got a General Electric 600. Going through the manuals on the machine, I found I could hack through the terminal (capture terminal) and use it for hacking passwords (in a non-secure environment). I also created a computer dating program based on specific inputs.

OSG: Where did you go to college and did you major in computers?

OR: I went to the University of California at Berkeley. It was there that I majored in electrical engineering and computer sciences. I got to work with the IBM 1620, CDC 6600 (upgrade from the CDC 6400), Xerox XDS 920, DEC 11/45, and DEC 11/70 (both time-share systems) to name a few. I also worked on a Meta-4 which emulated other systems. When they brought the Intel 4004 to Berkeley, I realized that smaller systems were more fun to program. I designed several different programs either through punch cards or directly on other systems like the PDP 11/70. I primarily programmed in C but used other languages, such as FORTRAN, in classes. I graduated with my BS in Electrical Engineering Computer Science (EECS).

Owen Rubin: the Game Breaker



OSG: What did you do after you graduated from college?

OR: I was one of the first five programmers hired by Atari. I was interviewed for a hardware engineering position. When I was turned down, I explained that I was interviewing for a Software Engineer position. I was interviewed again, and I was hired as a programmer and game designer. At Atari, although we may have been hired for something specific, we still assisted in other areas.

OSG: Who else was at Atari at the time?

OR: I remember Mike Albaugh because he was one of those that interviewed me. Also, I remember Tom Hogue and Dennis Kobel.

OSG: After you were hired by Atari, what was your first project?

OR: I was not assigned a project, but rather told to design something. Playing on the Atari game Stunt Cycle, I decided to create a game where a person was a human cannonball. The player would load the cannon with gunpowder and launch the person at a hole in the wall. If they missed, they would hear a splat sound and the player would slide down the wall and limp off the screen. The sound was achieved by throwing a wet paper towel against the floor and recording the waveform.

Unfortunately, management thought the game was a little too violent, so nothing came of it.

OSG: I heard that you were the one they came to if you wanted a game to be "broken".

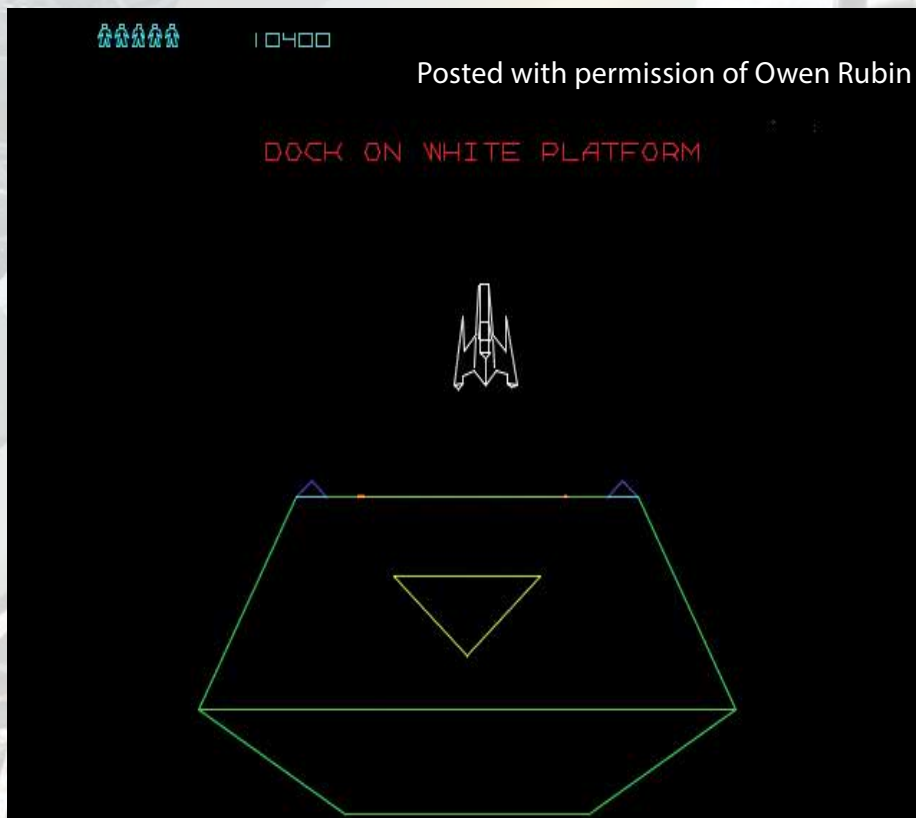
OR: Yes, it was well known that I could find ways to break and crash games. It just seemed to happen when I played. You see, Atari did require everyone to play each other's games and provide feedback.

OSG: You were also a part of Battlezone by contributing the exploding volcano.

OR: Yes, I shared a lab with Mr. Rotberg and our chairs were almost back to back. I would tease Ed Rotberg every day asking why the volcano had not erupted. In very colorful language, Ed told me if I wanted the volcano to erupt, give him the code to do it. Well, I wrote a few lines of code and left the code for an erupting volcano on his chair.

I also wanted to add a feature that wasn't included in the game. My idea was this: as the game progressed, the Earth would set behind the horizon. This would progressively make the playing field look darker and darker making the game harder for people who played too long. In this dark environment, I had an idea for making the vectors dim out as the earth set. The only things the player would see would be the radar, shots, the missile's shadow, and the volcano in the background. It was decided, at the time, that adding this feature would be considered as "cheating" by the game. Years later, Ed and I agreed that this feature should have been added and it would have been possible without adding any real overhead to the game.

OSG: What was your next thing you were working on?



OR: I worked on several games before Battlezone, including Triple Hunt and Skydiver. After Battlezone, I worked on a game I called Tube Chase. It was a 3D game where you basically went rapidly through tunnels and had to choose which way to branch. It did not earn well enough, so Atari eventually sold it.

After that, I wanted to work more with vector graphics. I was thinking something along the lines of a colorized version of Asteroids, but they released Asteroids Deluxe.

OSG: So, did you then enter the world of color vector graphics?

OR: Not quite yet. The VP of marketing wanted a version of Space Wars that used raster graphics so they could sell "Space War" and it would be called Orbit. One of the biggest features this game had was it sported 22 buttons to play and custom make your game however you wanted.

Then I inherited a color vector game that would be Asteroids but in color. Unfortunately, due to the fact that Asteroids Deluxe was just released, they wanted me to do something else. I got to do some

innovative things such as creating “3D” objects rather than rocks, tethering the two ships together to work collaboratively, and even a player versus player combat mode. This game became Space Duel.

OSG: After your success with Space Duel, what came next?

OR: I had an idea based on the Star Trek episode “The Tholian Web”. It was a game where you had to go through several mazes to make it back to your own home world. Unfortunately, it was not fun on its own. I switched to a maze game where you had to run a character around, find something, and get out. Eventually this morphed, over time, to become Major Havoc. My original name for the hero was Rex (Wrecks) Havoc but an underground comic book by that name made us change it to Major Havoc. Lyle Rains (VP of Engineering) was involved, and he created the various animations of the main character. A lot of inspiration on the overall look was inspired by the original Battlestar Galactica. The original intent was to have many unique mazes but we soon realized that wasn’t realistic so it got pared down to four mazes where we could change what enemies and hazards were located within each variant. These variants were located in a

table that had enemies, speeds, timers, robots, etc. for each maze.

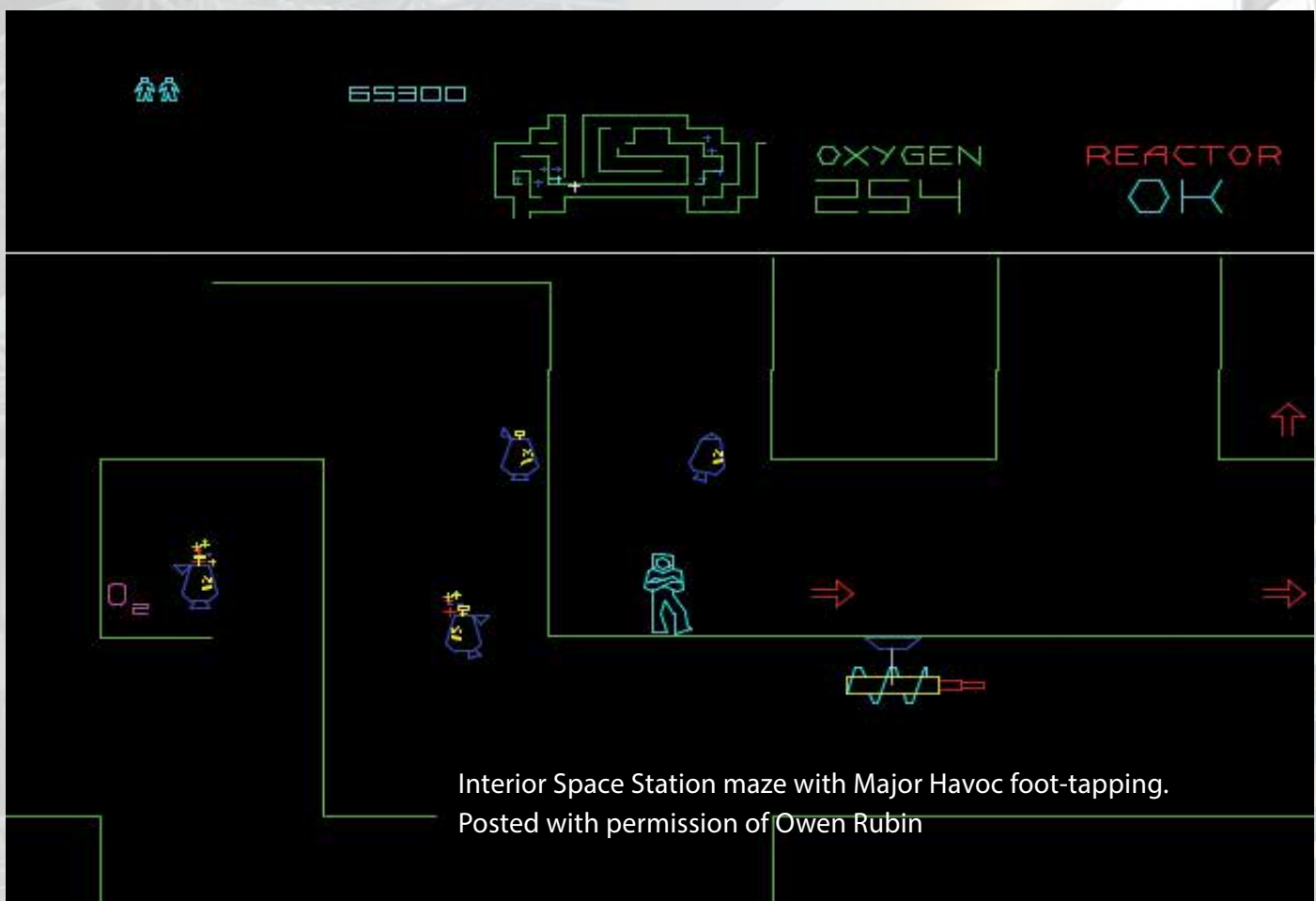
OSG: I have heard that the final game wasn’t like the original with regards to the levels.

OR: This is true. My original idea was for one to go through four space stations and then land on a planet. When you finished the sixteenth wave, you would have to fight the main home world to free your people. One of the ideas for the fourth space wave was to fight a fortress with a shield. Behind this shield were guns that would fire at you... think Star Castle. Unfortunately, it took a lot of time to fight through this fortress. Atari didn’t like that, so they cut that part out. Another part involved this being a game with an end. That end was you making it to the Vaxx home world. I put a message within the game itself that told the player that the home world was near. Problem is, we never had time to do the home world but the (forgotten) message remained. That actually got players to play constantly to get to this illusionary home world.

Presently, an individual by the name of Jess Askey is



The proposed 4th wave Fortress that never made it into the game.
Posted with permission of Owen Rubin



programming these lost levels with input from myself and several others helping with the project. We may see this soon. Unfortunately, since we do not own the rights to Major Havoc, only people with an original game will be able to make this work.

OSG: One of the cool things about Major Havoc is the animation.

OR: Yes, I created an animation system that allowed for smooth transition between animation modes like walk, run, jump, fall, etc. Suffice it to say, it was a design that used table driven data to allow for smooth transitions between different states of animation.

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OSG: What are some other interesting features of the game?

OR: I initially had created more mazes but time and space were of the essence so I managed to boil it down to four hard-coded mazes. I then created another table of enemies. This table included things such as the enemy type (robots, mobile guns, one-way signs, e.g.). It also included enemy speeds, shooting intervals, and timing of movement. This also includes a random generator for when you are outside the spaceship inside the mazes. Overall, even though there are four mazes, they are very different due to using the table of enemies and many challenges can be created this way. I also included a Breakout game in the lower right corner as a diversion from the action. I created a unique camera routine that always panned to let you see ahead of yourself as you ran/fell or jumped in any direction. It was very subtle, but the camera would scroll Havoc to the side so he could see more of the maze ahead.

Also, while not necessarily a feature, half-way through this project they assigned a second programmer to help get the project completed. His name was Mark

Cerny. It didn't seem like a very good situation, at first, since he was put into the middle of a project. As we continued on the project, I gained a great amount of respect for him as a programmer. Also, since he worked on the Sonic games, notice what happens when Sonic stands for too long... that same foot tap from Major Havoc.

OSG: What did you do after Major Havoc was finally done?

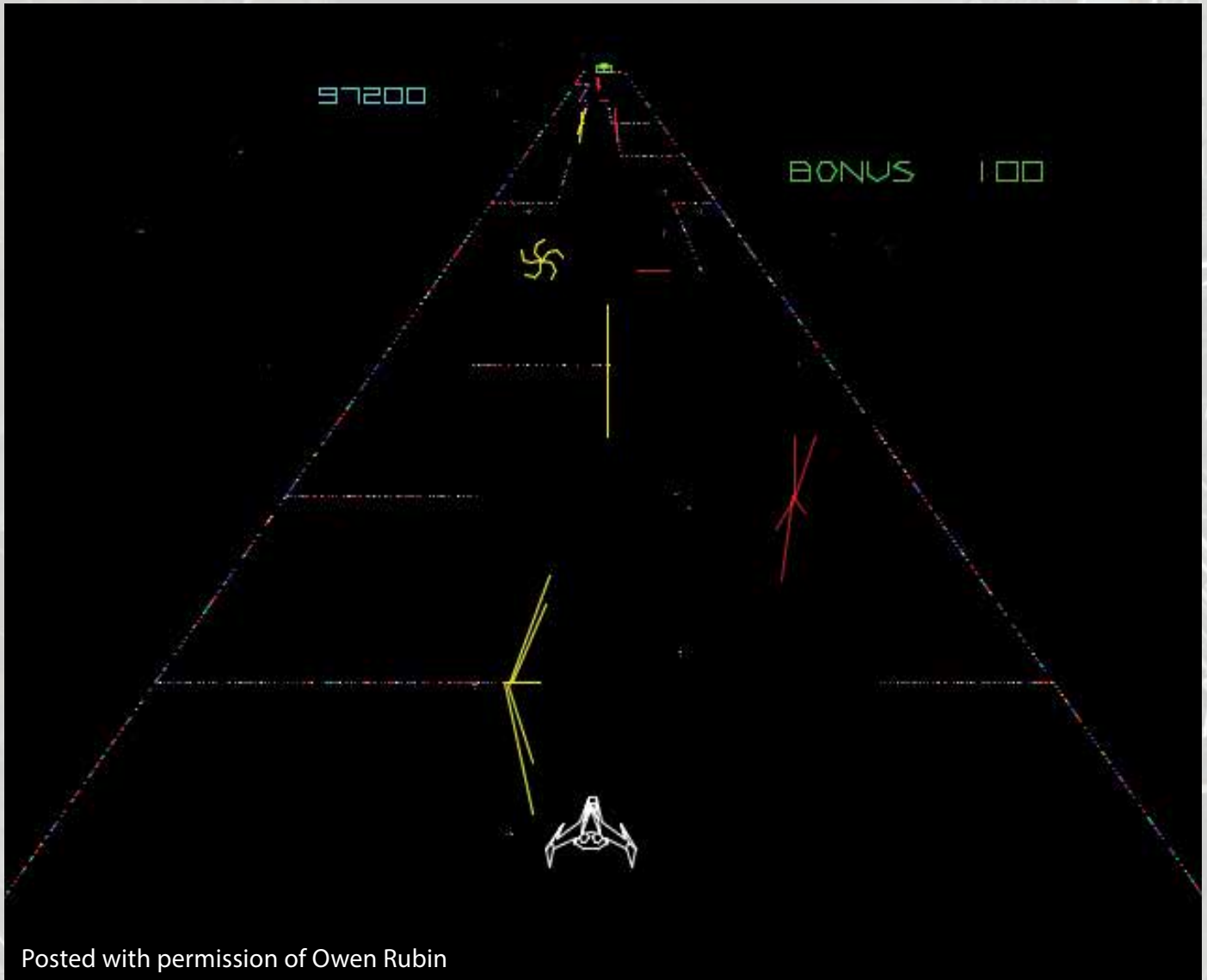
OR: After Major Havoc got finished, I started working on a real golf simulator. But I left Atari in 1984 and joined Bally Sente. Fortunately, I was in like company there with folks such as Ed Rotberg and Howard Delman who I had worked with before. We were busy trying to create games that would break new ground. After three years, though, Bally Sente closed in 1987.

OSG: What did you do after that?

OR: I went to a startup company called Interactive Productions run by Rob Fulop. This is the company that created the game Night Trap which was later released on the Sega CD. I was with them for only six months. I then got an offer from Apple to do OS development work.

OSG: What kind of developing did you do with Apple?

OR: Because of my experience with assembly programming on the 6502, I wrote the operating system (OS) "stuff" for Apple II GS. I later transitioned to the Mac team. I helped develop a system where instead of using floppy discs to install the OS on a MAC, you would use a CD instead. This would save significant costs on the number of floppy discs that had to be manufactured,



Posted with permission of Owen Rubin

thus the cost of the system release. I also worked on the prototype creation of the first low-cost color Mac, the Mac LC. I left Apple in 1994 and headed over to Pacific Bell to work on broadband and digital TV. I was part of the design team for one of the first digital set top boxes and on the first broadband system in California where my team designed services for broadband, like video on demand, cable modems, and set top gaming.

OSG: Wow, that sounds like a drastic career shift!

OR: It was, but I enjoyed doing it. It led me to one of my favorite jobs, Broadband and Digital TV research at Interval Research, a company started by Paul Allen, the co-founder of Microsoft. After that, I moved on to various other start-up companies starting in 1999 doing various projects and I eventually ended up back at Apple again.

OSG: So, you made a full circle...

OR: It does seem that way, but in addition to working for other companies, I have plenty of projects to keep myself busy also.

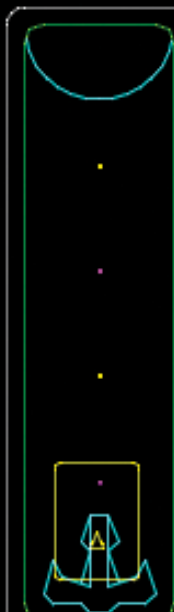
OSG: I would like to take this opportunity to thank you for giving up your time to do this article. It has been both a pleasure and a true education.

OR: You are very welcome. 🧑🏻💻

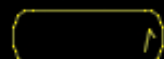


CONDITION YELLOW

DESTROY FISH ROBOTS



LEVEL 01



ENTER RED WARP-----



Winning Breakout gave you a free guy. Also, Breakout was needed for long trips in hyperspace. Posted with permission of Owen Rubin

Old School Bookshelf

Atari, Coin-Op, Player 2, Nintendo Arcade

Once Upon Atari - How I Made History By Killing An Industry - By Howard Scott Warshaw

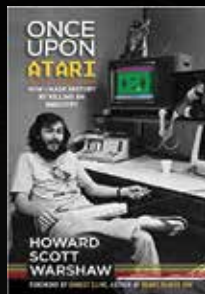
Atari history has always been a big interest of mine. I didn't own an Atari, my Dad chose Intellivision for our family and I only later owned an Atari when I was first in my mid-30s.

The history of this original innovator in the video game industry is fantastic to hear straight from the horse's mouth. HSW was with Atari during the Warner Communications years when the Atari 2600 home console was in its "owning the industry" stage; it was nearly the only "game" in town in the early 1980s. He is known for his outlandish style, programming two of the greatest games for the system, Yar's Revenge and Raiders of the Lost Ark and its most infamous game, E.T., which he completed in just over a month.

HSW walked a great line with content on this book, making it so that the geeks that understood code and the process of programming (but may not be able to actually program like him) would enjoy it and the general video game public would also enjoy the great stories of the early days of the video game industry. Look for a special excerpt from this book in the next issue of Old School Gamer.

Coin-Operated Americans - Shooting Boyhood at the Video Game Arcade By Carly A Kocurek

I heard about this after watching a video documentary online that featured the author as one of its experts. While I knew it was a lot different than other books than I have in the library, I didn't realize it's almost totally different from the other books. This is a detailed study of arcade life in the 1980s and 1990s. It does have the extra angle about how the arcade atmosphere was initially based on attracting boys and covers "cultural narratives about technology, masculinity and youth at the video arcade" as the back cover says. It has some great sections covering things like Twin Galaxies, Death Race and the infiltration of arcade culture into movies.



A cool book to pick up to get further your knowledge of the arcade and video game culture, this time from a more intellectual view.

Ready Player Two by Ernest Cline

If you loved the first movie (Ready Player One) or even more if you loved the first book, you need to get this book! I had it reserved through Amazon the day I heard it was available and when it arrived, it took up all of my reading time for the next week as I zoomed through it. In short, the adventure isn't done. James Haladay and his alter ego, Anorak wasn't done, and Wade and his friends are back on another adventure. Honestly, I don't want to give away any more on this book. Just know that the pop culture references are heavy, and the adventure is cool. For those of you that don't want to spend the time to read the book, wait for the movie that has already been optioned.



Beyond Donkey Kong - A History of Nintendo Arcade Games - by Ken Horowitz

Wow what a book! Most retro arcade video gaming people know of the Radar Scope to Donkey Kong story, of Playchoice 10's, the red tents, and more, but this book goes so much further! Ken Horowitz tells the story with Nintendo's history of playing cards up to its first electro-mechanical games and its entry into the arcade market with products like Laser Clay Shooting and Wild Gunman. With occasional offshoots in the story saying what the home market was getting from Nintendo, they keep going through all of the releases that graced the arcades through Nintendo directly and its many partners and adversaries in the industry. A great read for someone who only knows Nintendo as Mario and Donkey Kong. This is a highly recommended read for arcade and home console enthusiasts. Look for a special excerpt from this book in an upcoming issue of Old School Gamer



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RETRO DESIGN MODERN TECH

Experience the next generation home arcade with online multiplayer gaming, wireless Bluetooth or wired headset support, HDMI out for simultaneous TV and iiRcade display and more.



CONVERTS TO A BARTOP

Available in a bartop or full standup arcade configuration with the stand. With the optional stand, you can create the ultimate in-home arcade gaming experience.