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Galaga
ギャラガ

By Todd Friedman

ギャラガ編隊の急襲にたちむかえ！

頭上から列をなして降下する敵は突如反転して編隊飛行にうつる。次々に編隊を離れ、不気味なカーブを描いて突っこんでくる。あのギャラクシアンよりもはるかに凶暴な異星人「ギャラガ」だ！迎えうつ我がファイターも最新型。ミサイル連射ができる。ギャラガの体当りや爆弾攻撃をさけながらミサイルを発射するスリルには誰でも夢中になってしまう。ファン待望の本格的スペースゲーム、それが「ギャラガ」だ！！

Almost every adult remembers the "Golden Age" of Video Gaming. Most would say this included arcade games from 1978 to 1983. If you were to ask someone what the five most popular games of that era were, Galaga would always be mentioned. It was, and is, one of the most popular games created in arcade industry. In 1981, Galaga was published by Namco in Japan and by Midway in North America.

It is considered a sequel to the less popular game, "Galaxian". In Galaga, you control a space ship at the bottom of the screen, scrolling left and right in order to avoid oncoming bombs and kamikaze attacks from alien invaders, and to fire your own missiles to fight back. The blue, yellow, and red alien insects are bees. The white, orange, and blue ones are butterflies. Sometimes the bees are referred to as hornets or wasps and the butterflies are referred to as moths. There are hundreds of stages to progress through. In Stage 1, the enemies do not drop bombs as they fly onto the screen, however, they do so in most of the later stages. As players progress through each screen, the speed and number of alien attacks increases. Alien formations also become more complex, making the aliens harder to shoot. Every third level is a "challenge stage" in which you have a free chance to shoot as many aliens as possible and rack up bonus points. The object is to shoot as many of them as possible before they leave the play area. You receive bonus points when you destroy an entire formation of eight Galagans. If all forty aliens are destroyed, players are awarded a special bonus of 10,000 points. Certain aliens have tractor beams they can use to capture one of your ships. If that wasn't your last "life," you can try to shoot that alien down and recapture your ship, giving you two ships at once and doubling your firepower. The two-ship advantage is key to a longer game.

One of the highest scores on Galaga was set by Phillip Day of Braidwood, Australia. His score of 3,275,720 is the fourth highest score posted in the twin galaxies score-board with the game mode set to Tournament Settings. The "Tournament Setting" of Galaga is based on the dip switch settings: the amount of lives (5) and use of a rapid-fire PC board. The world record highest score for Galaga was set in October 2018 by Armando Gonzalez of Los Angeles,
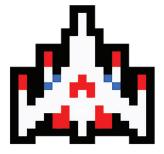
California. On April 29, 2018, Gonzalez achieved a world record high score of 6,056,490 points on the much harder Tournament settings. Phil Days explains to me, "I remember chasing Andrew Laidlaw's world record score of 2.7 million and thinking 'How am I ever going to beat that.' When I beat it with a score of 3.2 million - people, myself included, thought this was a convincing victory. But that was in 2009. Now the Galaga community has players like Armando Gonzalez scoring 6 million. I'm glad I got my score when I did." Phil says that after getting the Galaga Tournament World Record, he sold his cabinet and had no desire to ever play Galaga again.

The Galaga World Record score has been chased ever since the inception of arcade world record keeping by Twin Galaxies in 1982. There have been many record holders over the last 35 years, but the current world record is held by Armando Gonzalez, of Los Angeles, California. According to the Twin Galaxies Scoreboard at www.twingalaxies.com, Armando achieved the score of 6,056,480, Tournament settings. This is an incredible feat considering the second-place person is 1.5 million points lower. Gonzalez also scored 17,684,050 points based on Marathon settings this past October. In Marathon settings you get 3 lives to start and are eligible to receive more men at 20,000 points, then 70,000 points and every 70,000 points after that. The dip switches are set to the default setting. Armando offers a tip on getting your score to display over 1 million points. "All of the pros/experts play two credits, we let the player 1-up die first, then we play the 2-up player. The reason is because on the 2-up player side, it will record the million digits. If you get a million, the 'HIGH SCORE' cannot retain the millionth digit. It will show something like this 999997. If you play on the player 1-up side, it will NOT record the millionth digit."

Galaga has been re-created on almost every modern-day console and tablet. The excitement of playing Galaga anywhere makes it one of the most popular retro arcade games today, with only Pac-Man and Donkey Kong receiving more play. Armando tells me, "I have tried playing Galaga on the PlayStation and on MAME. I do not like it. It's totally different from the arcade cabinet. It's also more difficult because you have to use a video game controller or a keyboard. There is nothing like playing on the real thing and seeing the GALAGA marquee lit up!" Galaga has also appeared in the movies such as WarGames in 1983, The Karate Kid in 1984, Planes, Trains and Automobiles in 1987 and Pixels in 2015.

I personally still play Galaga on the remakes like "My Arcade" and the NES classic. It is still as fun as it was back in the early days. Every arcade owner in the Chicagoland area has a Galaga machine for gamers to play. It will always be close to gamers hearts and an enduring classic.

Todd Friedman is heavily involved in the video game community. He is currently writing for Old School Gamer Magazine, Little Player Magazine, Retro Player Magazine, RetroGaming Times and The Walter Day Collection. He has Co-Promoted the Video Game Summit in Illinois for the past 10 Years. Todd is an avid video game collector with over 3500 console games and 35 systems, One of his main responsibilities is keeping the Walter Day Trading cards alive. Todd holds over 60 world records on the Nintendo Wii game DJ Hero. Todd was also a nominee for the International Video Game Hall of Fame, class of 2016 and 2017.

TIPS FROM ARMANDO GONZALEZ, WORLD RECORD HOLDER ON GALAGA

1. Make the red moths a priority to kill as many as you can.

2. When the Green Galaga is about to capture you, shoot him once to turn him purple that way you only have to shoot at him once and minimize the chances of killing your captured ship.

3. Develop a pattern for the three waves. The first wave and the third wave you can use the same pattern, however, the second wave which is harder will be a different pattern from the first and third.

4. At the beginning of each wave, you should fire a test shot to see where you are lining up your missiles. You should use "HIGH SCORE" to line up your shots.

5. Try to clear one side or the other side. You cannot have bees and moths on both sides.

6. Try to stay in the middle and if you are pushed to the side try to push the enemies back and then pull back.

CURRENT WORLD RECORD HOLDERS AS LISTED BY TWIN GALAXIES

(Tournament Settings)

Armando Gonzalez
6,056,490
Andrew Laidlaw
4,525,150
Andrew Barrow
3,514,030
Phillip Day
3,275,720
Brian Sevy
2,808,970

On October 31st, 2018, Gonzalez achieved another world record with a high score of 17,684,050 points on the Marathon settings.

An R-Type Revival

By Patrick Hickey Jr.

Old School Gamer Magazine chats with Tozai Games Producer Takuya Banno, who discusses their new edition of the classic shoot-em-up, R-Type, dubbed R-Type Dimensions EX, on the Nintendo Switch. Featuring a plethora of old school influences and odes, Dimensions EX is the best of both worlds, a throwback shooting experience with next generation visuals and difficulty.

Originally released by IREM in 1987 in arcades, R-Type eventually found its way on a myriad of home computer and gaming consoles after its reign of dominance in arcades, including the Sega Master System, TurboGrafx-16 (arguably considered the most faithful adaptation of the arcade original) and the ZX Spectrum. Ports of those versions have also found their way on the iOS, Nintendo Wii, 3DS, PlayStation Network, Google Play and Xbox 360 Live Arcade. In terms of legacy and reception, R-Type is considered one of the most difficult side-scrolling shooter experiences of all-time, but is equally hailed by critics for its visuals and gameplay.

OSG: *What has it been like to work with this series?*

TAKOYA - R-Type series has always been admired by gamers for its innovative game design, artistic graphics and sophisticated music, so it's been an honor to work with remaking these Shoot-em-up masterpieces. But on top of that, we at Tozai Games, with Scott Tsumura, being a head of IREM R&D back in the '80s, have a special emotional attachment to this series. The big challenge was, how should these games be remade? Balancing respect for the original and updating for the present gaming market is key. Because the original game design is so solid, we decided not to make any big changes to the experience, but instead made it more accessible and acceptable to today's players.

Adding 3D graphics is a big pillar of the remake, because it makes R-Type look like a new title. The 3D version is a re-imagining of the original version, so the process was very challenging, but exciting. We based it on the original 2D design and referenced old R&D documents provided by Irem and we discussed how each character would look if they existed in the real world. We also introduced an "Infinity mode" so everyone can play through to the game ending, which was quite impossible for majority of gamers when these games were in arcades.

OSG: *Why has the series endured for so long?*

TAKOYA - The R-Type series were truly innovative games. The key invention was "force," indestructible units attached to the front or back of your ship but that could also be separated from the ship. Force shoot several weapons based on the item players

last picked up and it can be used for both attack or defense, adding deep tactics to the gameplay. There were other innovations R-Type brought to the table, but one of the most noteworthy was the unique worldview, especially the Bydo creatures, who are shockingly unique, grotesque, but still beautiful. So, by a fortuitous combination of these factors, R-Type became one of the standouts in game history.

OSG: *How special is it for you to see it on the Switch?*

TAKOYA - Nintendo Switch is a great fit for R-Type Dimensions EX. The audience for the Switch contains both adults, who remember playing R-Type in the old days, and children, who are very new to the game. We want parents to remember the great fun they had playing R-Type and for children to discover the innovative experience. We added an offline co-op multiplayer mode to R-Type Dimensions EX to enable parents and kids to play together using two Joy-Con controllers as well.

OSG: *Who will enjoy it the most?*

TAKOYA - R-Type provides a deeper experience than many shooters, so we think R-Type Dimensions EX can be fun for all gamers. We hope older gamers will enjoy the classic gameplay as well as the evolution of the new graphics, and we also hope young gamers will discover the ultimately sophisticated game experience.

OSG: *How will this entice older fans of the series?*

TAKOYA - With respect to the original version, we have preserved the same game experience as the old days, but with added features that let users explore every corner of the R-Type world. You can play through the game with the guarantee of seeing all stages in Infinite mode, or you can play the game in slow speed. We believe R-Type Dimensions EX offers much more than a simple remake for a new system and we hope older fans enjoy it.

OSG: *What do you think makes this game special?*

TAKOYA - R-Type Dimensions EX is special not only because it is R-Type, but it gives players various ways to enjoy the world of R-Type. Especially because R-Type II had limited availability in arcades and various console ports, we are thrilled to introduce the historically significant, yet rare R-Type II to a wider audience. But be warned: R-Type II is extremely hard, so many players will want to practice in Infinite mode!

OSG: *What's next?*

TAKOYA - We believe it's our mission to find, preserve, reimagine and reintroduce the great games from the past to today's gamers. Hopefully R-Type Dimensions EX will do well and we can expand our portfolio because many masterpiece are still sleeping! But for now, just enjoy R-Type!

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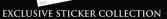
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Atari 2600 Shooters

By Brett Weiss

Despite limited horsepower, the Atari 2600 is home to ports of some of the greatest, most famous arcade shooters of all time. Each of them is missing certain aspects of its respective coin-op classic, but many retain the essential elements that made the originals great.

I've cherry picked nine such games from the system's expansive library, eight of which you can easily find for a buck or two apiece at a typical retro gaming store or convention. Spy Hunter is the lone exception as it is quite scare and can command well over $100 for the cartridge alone.

Without further ado, here are some Atari 2600 games that most everyone has heard of and that are a lot of fun to play, even if they are far from arcade-perfect:

Asteroids: Wisely steering clear of trying to mimic the look of the vector graphics (images based on geographic primitives, such as polygons, lines, curves, etc.) found in their own 1979 arcade classic, Atari rendered the 2600 version of Asteroids in unabashedly obvious raster graphics (a bitmap or grid of individual pixels that collectively compose an image). The space rocks flicker when too many appear onscreen, and they don't change direction or speed when shot, but they are colorful and fun to shoot. And, like the 2600 rendition of Space Invaders, Asteroids has lots of extra features not found its coin-op cousin, including shields, modes of play

that dispense with the satellites and UFOs, the ability to flip your ship 180 degrees, and more. The game doesn't handle as smoothly as the original (unless you've got a five-button Starplex Deluxe Video Game Controller), and your ship can only fire two shots at a time instead of four, but this is nevertheless a fine port all things considered.

Berzerk: Berzerk for the Atari 2600 is missing several elements from Stern's 1980 arcade classic. The robots can't shoot diagonally, the mazes are more simplistic, there is no two-player (alternating) mode, and the voice effects are absent (you'll need the 5200 version for that). Despite these shortcomings, the maze-navigating, robot-shooting action remains largely intact and highly enjoyable. Evil Otto, the bouncing head who appears when players stay in a maze too long, is just as menacing as ever, and the cyclopean robots are just as fun to avoid, shoot, and trick (into shooting each other and running into walls). Along

with Super Breakout, this is one of the better, more faithful coin-op conversions of the era, and it's still plenty challenging.

Centipede: A reasonably well-made port of Atari's 1980 coin-op classic, Centipede features a title screen that shows great graphical promise, depicting a colorful centipede amongst a field of mushroom-shaped mushrooms. Unfortunately, once the game begins, the mushrooms become simple rectangles. The rest of the graphics, such as your square firing implement, have been simplified as well. Gameplay is fantastic, however, as it emulates the arcade action nicely and includes all the important elements. Players maneuver a magic wand around the bottom portion of the screen, shooting upward at fleas, scorpions, spiders, and centipedes, the last of which twist and turn down through the field of mushrooms (which can also be shot). The game is trackball compatible, but the joystick works just as well since the shooter doesn't respond very quickly to fast spins of the ball.

Missile Command: The oft-praised Atari 2600 version of Missile Command is missing a pair of crucial components found in Atari's 1980 arcade classic: the antiballistic missile bases positioned on either side of the screen. This leaves a lone base in the center. Also, the bombers found in the arcade game are conspicuously absent, the famous "THE END" final screen is missing, and the Cold War storyline has been altered to a meaningless outer space yarn involving the Krytolians and their conquest of the planet Zardon. Despite this relatively large list of shortcomings, the game retains much of its fun factor, thanks in no small part to the greatness of

the original, panic-inducing gameplay mechanic: using a trackball to guide a gun sight around the screen, firing at

falling missiles in order to protect six cities on the planet's surface.

Moon Patrol: Considering the technical limitations of the Atari 2600, Moon Patrol does a good job of capturing the rock-solid action and memorable music of the highly regarded Williams arcade game (1982). Players drive a moon buggy from left to right, jumping over craters, landmines and shooting rocks, UFOs, tanks, and enemy cars. The buggy fires straight up and straight ahead, but the 2600 controller's lack of a second button means that players must use the joystick for jumping. Also, the enemy missiles that create craters look the same as the regular missiles, making for some unnecessary deaths. The moon buggy is a blocky version of its coin-op counterpart, and the mountainous back-grounds have been drastically simplified. Naturally, the parallax scrolling got lost in translation, but flickering is virtually non-existent. Unlike the arcade game, there are no continues, but the basic elements and essence of the action remain intact.

Phoenix: Based on Centuri's 1980 coin-op classic, Phoenix for the Atari

2600 is missing a number of elements found in the original game, including music, starry backgrounds, and birds during the mother ship level (bullets simply appear and drop down). Also, there are fewer enemies per stage, and the large birds don't start out small and round. However, the game has nice animation and graphics (despite the expected simplifications), and the basic shooting action maintains a large per-centage of its fun factor and strategic maneuvering. Judicious use of the shields remains important, and clipping the large birds' wings, then hitting them in their bellies, still brings big points. The game could use some options, though, such as difficulty levels and a two-player alternating mode.

Space Invaders: Based on the groundbreaking, enormously popular Taito arcade game from 1978, Space Invaders was the first million-seller video game cartridge, firmly entrenching the Atari 2600 into mainstream America. The gameplay of this killer title is faithful in both spirit and mechanics (fire at waves of descending aliens) to its coin-op counterpart, but it offers a number of welcome enhancements and alterna-tives, including zigzagging laser bombs, two-player simultaneous modes, invisible invaders, and moving shields. The cartridge version doesn't look exactly like the arcade original, and it offers only 36 invaders per wave (as opposed to 55), but it does have appealing graphics, relative-ly faithful sound effects, and excellent shooting action. A must-own for 2600 fans, the home version of Space Invaders breathed new life into a legendary game.

Spy Hunter: Packaged with a Dual Control Module, which connects a pair of standard 2600 joysticks for two-but-ton firing, Spy Hunter is a surprisingly

faithful adaptation of Bally Midway's 1983 arcade game. It features all the weapons and enemies of the original and even includes the Peter Gunn theme music and speedboat sequences (though the transition from road to water occurs automatically instead of at the player's behest). Detour and road condition reports are missing, and the graphics have been darkened and simplified (the helicopter looks especially lame), but the racing, shooting (machine guns and missiles), and obstacle-emitting (oil slicks and smoke) action remains largely intact. This game is much harder to find

than the rest of the carts on this list, but it is well worth the search.

Stargate: One of the best arcade translations ever released for the Atari 2600, Stargate (later released as Defender II) is visually faithful (for the most part) to Williams' 1981 coin-op classic, and it includes most of the original enemies and features. The first joystick operates ship movement and firing while the second is used for smart bombs, hyperspace, and inviso-shields, making this one of the more elaborate 2600 shooters in terms of controls. Flickering is almost non-existent, the sound effects are dazzling, and the gameplay is intense. One setback is the fact that the arcade version is capable of displaying more enemies onscreen at once. Also, the two-player (alternating) mode is missing. Even so, this is a vast improvement over the 2600 version of Defender. 🎮

Brett Weiss - Brett Weiss is the author of nine books, including the Classic Home Video Games series, The 100 Greatest Console Video Games: 1977-1987, and The SNES Omnibus: The Super Nintendo and Its Games, Vol. 1 (A–M). He's had articles published in numerous magazines and newspapers, including the Fort Worth Star-Telegram, Game Informer, Classic Gamer Magazine, Video Game Trader, Video Game Collector, Filmfax, and Fangoria.

Thunderforce

FROM THE HOME TO THE ARCADE

By Michael Thomasson

It is a rare occurrence when a home console game makes its way to the video arcade, but that is what happened with the horizontal-scrolling shooter Thunder Force. Like a reverse chain of events, in the literary world it would be equivalent to a book being based on a film!

When the original Sega Genesis version of Thunder Force III was released in 1990, it garnered much praise and became an immediate hit. Even almost three decades later, it is still recognized as one of the best shoot 'em ups (SHMUPS) ever designed, boasting beautiful graphics with extensive use of parallax scrolling, as well as fast and furious gameplay.

The developer of the original Genesis version, Technosoft, co-produced Sega's System C2 arcade hardware, and built it "on top" of the Sega console, keeping the same CPU, sound and graphic processors. The color palette was improved, increasing the palette from 512 to 4096 possible colors, but other than that there are few technical differences between the two.

Since the hardware was nearly identical, Technosoft was easily able to test the new coin-op hardware by porting its popular Thunder Force III title to the new platform, allowing the game to find its way into the arcades. To differentiate the two, the game was renamed Thunder Force AC, with the new suffix pulling the letters 'A' and 'C' from the word "ArCade."

In the game, the player pilots a Galaxy Federation spacecraft by the name of FIRE-LEO-03 Styx. Its mission is to destroy cloaking devices on five planets and reveal the secret location of the enemy headquarters in order to obliterate the ORN Empire's bio-computer - Cha Os.

The software versions, however, do have differences. In the Sega Genesis version, there were five primary planets (Hydra, Gorgon, Seiren, Haides, and Ellis) to blast through before continuing on to the ORN Empire headquarters. In the new AC version, planets Haides and Ellis are entirely different from their Genesis counterparts. Other levels have minor layout and enemy pattern variations. The level select was removed, making the game more linear, and when the player dies, they continue forward into the stage rather than being sent back to the beginning of the level. 🎮

Michael Thomasson is one of the most widely respected videogame historians in the field today. He teaches multiple college level videogame courses, and has contributed to dozens of gaming texts and television shows including MTV's Video MODS and the highly-rated book Downright Bizarre Games. He has written business plans, managed a multiple game-related retail stores, and consults for multiple video game and computer museums. Michael has helped publish 100s of games on Atari, Sega and other console platforms. In 2014, The Guinness Book of World Records declared that Thomasson had "The Largest Videogame Collection" in the world. Visit www.GoodDealGames.com.

The Art of Shooting

By Walter Day

Yes, there is an "art to shooting" in video game playing. Essentially, managing your bullets, especially when you are only given, more or less, one bullet at a time. This pertains particularly to the legendary games of the classic arcade era. In this article, I have asked Triforce Johnson to reflect on the overall challenge the gamer faces when they are given a limited number of bullets to ward off enemy assaults. Also, Grant Thienemann chimes in with an analysis of the gameplay strategies he had to resort to in order to survive the bullet limitations he faced in Berzerk. Both TriForce and Grant are seasoned classic arcade veterans who have mastered some of the most challenging games and beat them "one bullet at a time."

It's a well-known fact that after the Golden Age of video games gave way to the titles of the late 80s and early 90s, the games were less competitive and less challenging. They were games that flooded the screen with lots of CGI and bullets. The games did not require much gameplay precision, and, in many cases, they didn't demand that the player execute their moves with a high level of skill. Some of these were shmups (shoot-em-ups), some of them were side-scrollers, and some were just unique creations. They were far less difficult to conquer than the golden age titles that demanded that the gamer survive typically using only one round at a time. The common obstacle that everyone had to face was that the bullet had to either hit an object or leave the top of the screen before the player was awarded another round.
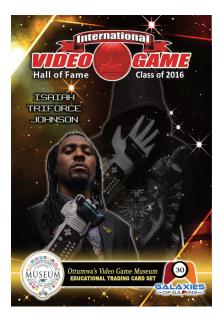
Many of the greatest titles from the 1980s gave the player only one round at a time. And though many other games issued more than a single bullet at a time, the gamer was still faced with the same formidable task of defending against a multitude of enemies while receiving a very, very limited number of rounds in proportion to the number of adversaries converging on the gamer. Some of those titles included Moon Cresta, Phoenix. Moon Patrol, Astro Fighter, Polaris, and Scramble, to name a few.

But in every case, whether the gamer enjoyed a single bullet or multiple rounds, the gamer was challenged to develop these skills: precision, timing, moving in the pocket, and finding the rhythm that avoids the enemies -- as seen in Galaxian. The older games were always challenging the gamer to avoid lots of death-dealing objects. Though some games relied on heavier firepower, such as Missile Command, Defender and Robotron, the extra stress of having to save/protect defenseless targets in these games made the challenge at least equal to the games that awarded only a single bullet.

Speaking from first-hand experience, noted gamers TriForce Johnson and Grant Thienemann reflect on these ideas and more:
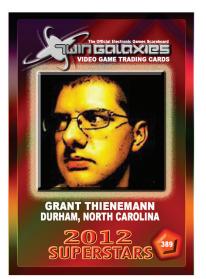
"Without question, you cannot compare the difficulty of yesterday's arcade classic shoot-em-ups with today's bullet-storm games. Yesterday's classics were once based on precision and dexterity, whereas modern games replaced it with enemy cluster and patterned defense. An example of this are games like Berserk and Robotron in comparison to Smash TV and Total Carnage. All 4 games are "mazed" shooters and carry the same gameplay principles. All four games are difficult in their own right. However, as hard as Smash TV and Total Carnage are, the level of difficulty of games such as Berzerk and Robotron is 100-fold harder. It made me have tremendous respect for the skill level of players such as Abner Ashman and the late Joel West."

• Triforce Johnson IVGHOF 2016 Inductee

And, as a champ of Berzerk, Grant Thieneman says, "In Berzerk and Frenzy, the humanoid (your player) only ever got two bullets at any one time. This is the biggest handicap against the player in both games where the robots will have up to 5 bullets compared to your 2 bullets and is even more pronounced in Frenzy. You do not get to shoot another shot until the two bullets you already shot hits a wall, robot or goes off the screen. In Frenzy this becomes infinitely more difficult when you get to the two mirror rooms where all the walls are mirrors. It is easily possible to fire your two bullets and not have them for the rest of the room as they go bouncing around the room. While this doesn't sound terrible, you must also realize you will die if you get hit by your own bullet.

With the limited amount of bullets at your disposal, you have to master both precision and timing simultaneously. An advanced Berzerk/ Frenzy player will be able to fire a single shot with both precision and timing to hit a robot that is coming into your path. An advanced Frenzy player will learn to angle bounce shots off the mirror walls to attack the robots in the maze without putting themselves in danger.

However a master Berzerk/Frenzy player learns to play the game without relying on their two bullets. The true master of the game learns to manipulate the robots so the humanoid can traverse the maze without having to use their bullets constantly. This is done by manipulating the robots to kill each other, making them run into walls and trapping robots in the maze until Evil Otto comes out. The master then manipulates both the robots and Evil Otto so that Evil Otto kills the remaining robots in the maze.

The last skill a Berzerk/Frenzy player needs to master is spatial awareness. The player must be able to not only keep track of their bullets that are in the maze but of all the other bullets coming at them in the maze as well, and learn to navigate the tiny safe areas where the humanoid can freely move without having to worry about the bullets killing them. This area changes every second of the game. This becomes a dance of life and death the master does to survive the Berzerk and Frenzy mazes. Many will play the game but very few will ever master Berzerk and Frenzy." [G]

Walter Day - As the founder of Twin Galaxies, the oldest video game scorekeeping and adjudication service in history, Walter Day is known as the creator of e-sports and has often been called The Patron Saint of Video Games. His remarkable efforts to find, verify and catalog video game world records has led to a decades-long partnership with The Guinness Book of World Records.

32X - Star Wars Arcade

By Ken Horowitz

One of the marquee titles for the launch of the 32X was Star Wars Arcade, a conversion of the Sega coin- op game. Based on the climactic Death Star battle of Episode IV, it set players in the role of Luke Skywalker as he made his classic run to destroy the massive battle station. The game was an ideal choice for showing off the 3D potential of the 32X hardware, giving Genesis owners a true polygonal title that could definitely not have been done on the stock 16-bit console. At a time when most games were two-dimensional and utilized a mostly side- scrolling perspective, a fully-3D game in the Star Wars universe could potentially be the game that sold the system. Star Wars Arcade was popular and new, and the popularity of arcade titles can be a fleeting thing. It was therefore critical that Sega be able to strike while the iron was hot and port the game before it was overshadowed by newer games.

Unfortunately, bringing the arcade experience home wasn't as easy as it sounded. Pressed for time to assemble a launch library for the 32X, Sega brought the idea of making a home version of Star Wars Arcade to Sega Interactive Development Division (SIDD) in May 1994. It was clear there was a small window of opportunity, so a port would be considered only if SIDD could do it in four months. If it couldn't, then the idea would be scrapped. Technical Director Christopher Warner, who created the 32X version's polygon engine, viewed the challenge as an opportunity. He enjoyed developing game engines for new hardware, and he

had experience doing so for the Genesis. He had already created an engine on the Genesis, and after reviewing the initial specifications of the 32X, he felt that a port of Star Wars Arcade was possible on such a tight schedule. He pitched the idea to Rod Nakamoto, who accepted—

Admiral Ackbar

ALL wings prepare to jump into hyperspace and stand-by to receive orders.

HI-SCORE 10000   TIME 173   PILOT 0

only if Warner would write all the 32X code himself. Warner accepted.

Star Wars Arcade was coded entirely in 68000 Assembly language on Sega's powerful Model 1 arcade board and was very different from the 32X architecture. When work on the port began in mid–May 1994, SIDD had the source code and assets for the arcade game, but the assembly language syntax was too different from the SuperH, or SH2 processor, that the 32X used. SIDD Producer Frank Hsu reverse-engineered the arcade design, giving Warner and Programmer Steven Lashower the layouts to each level and player control description. Warner and Lashower then redid the game from the ground up, as it was the quickest and easiest route if they expected to get the game into stores by November.
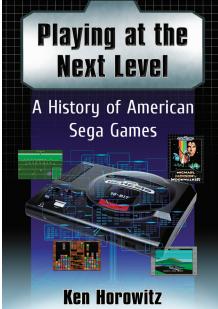
Warner had a 32X development kit, but its hardware wasn't finalized. It was also the size of a small refrigerator and constantly ran hot, which helped warm team members when the temperature was cool but required fans and some distance when it wasn't. Warner was inexperienced with 32X coding, giving the term "from scratch" a literal meaning, but he found the 32X hardware to be simple and elegant. All the rendering had to be coded on the 32X's SuperH processor and be directly written to the frame buffers. The development kit wasn't very stable, but things improved with each hardware revision.

He found that the polygon engine was the hardest part of his job. It was particularly difficult to get the game's engine to handle the amount of polygons needed on- screen. He spent nearly two months using various tricks and tactics to optimize it, finally achieving success by using a polygon rasterizer created by Rod Nakamoto, along with some reverse-engineering of the optimized polygon renderers found in various commercial PC games. This way, he was finally able to make the 32X's renderer fast enough to run the polygon count for Star Wars Arcade. While Warner handled the 32X coding,

Ken Horowitz – Dr. Kenneth Horowitz is an English professor who has taught research and writing for 20 years. He is the author of "Playing at the Next Level: A History of American Sega Games" and " The Sega Arcade Revolution: A History in 62 games," and his work has been featured in numerous video game publications like GamesTM and Hardcore Gamer Magazine. Ken has also published academic articles in professional publications, such as Language Magazine and the Hispanic Educational Technology Services Journal.

PAL Edition Box from TheCoverProject.net

Playing at the Next Level

A History of American Sega Games

Ken Horowitz

Lashower toiled on the Genesis side of the design. Without a 32X kit of his own, he could only see the graphics layer created by the Genesis, and he had to imagine how the 32X graphics would look onscreen.

The SIDD team worked hard to make the home version of Star Wars Arcade as close to the original as possible. Sega provided an actual arcade machine for the SIDD office, and the team spent hours playing it, making comparisons, and using the information to tweak the 32X version. Time spent playing the game was put to good use in pushing the game's art style. Star Wars Arcade marked a clear transition in the way Sega handled its game art, as artists moved away from traditional 2D work using programs like DPaint to titles that were fully 3D titles or incorporated 3D rendered elements.

Lashower was the first to admit that Star Wars Arcade was far from perfect, but he and Warner were proud of their effort. The game was coded in just under four months on hardware that wasn't entirely finalized until the project was nearly done. It ended up being a massive hit, selling nearly 1–1 with the 32X. Star Wars Arcade contributed greatly to the early strong sales of the 32X hardware, which reached 600,000 units by January 1995. Of the four titles released with the add-on in November 1994 (the others being Doom, Virtua Racing, and Cosmic Carnage), Star Wars Arcade was the only one with universal name recognition. Everyone knew what Star Wars was, and the game brought a solid showing of the 32X's power along with its famous moniker. Had Sega not been able to get the game out on time, it would have proved disastrous for the 32X's launch.

Star Wars Arcade also helped soften the blow of what would be the major hit of Christmas 1994, Nintendo's Donkey Kong Country. That game's multi-million unit holiday dominance pulled Nintendo's software sales out of a 32 percent drop and helped keep the SNES hot while the industry moved to more powerful consoles. The video game industry overall had suffered a sales slump since 1993, but the drop was hurting Sega more than it was Nintendo. Thanks to its strong showing, Sega was able to hold on to its lead in the console market, finishing 1994 with 58 percent of the overall hardware sales. **OG**

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Dr. Kenneth Horowitz is an English professor who has taught research and writing for 20 years. He is the author of *Playing at the Next Level: A History of American Sega Games* and *The Sega Arcade Revolution: A History in 62 games*, and his work has been featured in numerous video game publications like *GamesTM* and *Hardcore Gamer Magazine*. Ken has also published academic articles in professional publications, such as *Language Magazine* and the *Hispanic Educational Technology Services Journal*.

RetroPlace.com

A NEW COMMUNITY TO COLLECT WITH

By Old School Gamer

The staff of Old School Gamer has possibly found a new home for keeping track of our console game collection online and we recommend you check them out! This dynamic site, Retroplace.com, is built utilizing an amazing database that can do so many things. I can easily see it becoming the industry standard, much like discogs.com became for vinyl/tape/cd collecting, if they are able to convert and obtain some new users to manage their collections.

SELLING

Armin Hierstetter, my contact at Retroplace, tells me that there "simply is no great marketplace out there that is dedicated to (retro) video games. There is eBay and Amazon, of course, but their commissions are way too high. Also, those platforms are not dedicated to gamer's needs and putting stuff up for sale is way too time consuming. Retroplace changes all of that. Because the database "knows" the vast majority of games already, putting up a game for sale is a matter of a minute. The process is way smarter than Amazon or eBay."
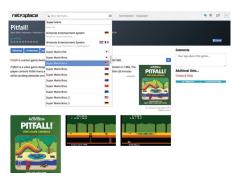
When selling your extra games, they only charge a 7% fee, while sites like Amazon can charge up to 15-20% of the final sales price. They have also built in an API (Application Program Interface) for sellers that will hopefully become very successful, as I know that stores are going to be very interested in working with their system.
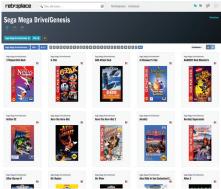
BUYING AND COLLECTING

Getting past the selling side of the equation, I'm personally more interested in the database it utilizes for both tracking my collection and buying the ones I'm missing, that are easily identifiable. Their database has over 112,000 games covering 132 systems and it is almost (and I say almost) excessive with the amount of data stored therein. The database also features descriptions, box images, screenshots, connections to other related games on other platforms or sharing other things in common (Same Name Game feature). I thought I would throw it a curve ball and search for Lode Runner for the Apple][, but they hit the ball, as they are indexing computer games as well. While some of the less popular titles don't have as much detail, it is there and growing! I'm told that personal collections are growing quickly in the system with over 1,500 games being added every week. The great thing about this is that users can manage their game collections completely free of charge. While Armin and his crew at Retroplace.com already did the heavy lifting (getting loads of data uploaded - images, descriptions and more), edits to the data are easy, and adding pictures and more goes through a quick approval process then online.

Built both for desktop browsing and mobile browsing, the optimization of the screen space is fantastic! They are packing all the power of Retroplace.com into a 5-6" screen so that when you are out game hunting you can check and modify your collection. While it appears all features are available on the mobile version, when doing the heavy lifting on building your collection into the system, I'd recommend using your desktop computer. The predictive search system and the layout of the page for adding new titles is great. It will just take me a little time in front of a large screen to get my initial data entry complete.

The place where Retroplace will most likely be growing the most is its transactional data and game value. This allows the user to see what they should be paying for the game when digging through various retro gaming shops or while travelling to conventions. Right now, because the site is still relatively new, there isn't much in the way of recent sale prices, but this will change as more people become comfortable with their system and the sales side of Retroplace. For now, it is just all about me entering my collection into Retroplace, which will start this weekend!

namco

パックマン

PUCK MAN

危い！
点滅する
パワーエサを食え！

The Origins of the Name "Pac-Man"

INDECENT TO ICONIC

By Ethan Johnson

All old-school gamers should be familiar with localization by now. Whether that is the censorship of Nazi symbols in Bionic Commando or the hilarious cutscenes of Zero Wing, things can change for better or worse when crossing the Pacific. It is fair to say though that there is probably one simple translation more famous than any other.

So at Namco, this designer named Toru Iwatani had created a round, yellow character that ate dots in a maze. He decided since this game was about eating, his character would have a related name. The Japanese onomatopoeia for somebody opening and closing their mouth while eating is paku paku taberu, so Iwatani called his creation Pakkuman. When Namco released the game though, they did not name it after the character. Instead it was called Puck Man, presumably due to the similarity in Japanese pronunciation and his resemblance to a hockey puck (though nobody really knows).

After striking a license with Bally to promote this game to the U.S, the Americans brought up a concern. They worried that vandalizing kids would scratch out the two halves of the 'P' in Puck Man which would leave an "F" at the start of the marquee. Yikes. Midway president Hank Ross said the Americans sent a list of alternative names back to Japan and they were all rejected as unsuitable. However, Namco offered a suitable alternative with "Pac", ironically bringing the American game's name closer to the original name for the character. They put a hyphen in and thus "Pac-Man" became his moniker to the rest of the world.

So who exactly suggested this name change? According to one person, neither Midway nor Namco in Japan had anything to do with it. The co-founder and VP of Namco America at the time, Satish Bhutani, claims to have brought up and solved the concern before it ever became Midway's issue. He had received an early Puck Man cocktail cabinet (which he retains in his garage to this day) and came up with the new name himself. He didn't actually stay around to bask in the glory of Pac-Man's success, but he feels his influence was a part of it's popularity.

However, there is contradiction to this viewpoint. The Americans first saw the game at a showing in Japan held by Namco to interest potential licensees. After the heads of Midway returned, they lobbied for the game to be chosen. Tom Neiman, the head of Bally's marketing, recalls that they already had the alternative name lined up after he expressed that teenagers were going to drop the 'P'. Sales head of nearby Chicago plant Game Plan Ken Anderson recalls that Namco showed their products in America with the name already changed and Bally had not yet chosen a license (he incidentally lost Pac-Man to a coin flip that he won).

An interesting point in this was that Bally only obtained the rights for the game in North America. In Europe, Namco sold boards directly to other manufacturers so the licensing deal nor the trademark carried over. In Germany the game was officially distributed as Puckman just as in Japan and other East Asian countries. It was probably not as much of a fuss in a non-English-speaking territory. They also made their own unique artwork, though it belies the colorfulness of the game within.

It is also worth asking if this concern was valid, considering that marquee art on arcade games usually sits behind glass. Veterans of the arcades will certainly have seen some damage to the side art, scratched into like a wooden desk or an oak tree so it's not an entirely irrational fear. Probably the wiser decision in that regard was changing the original artwork with it's long nose. If that had remained, we may have been talking about "Dick Man" instead!

In fairly rapid order, the unified Pac-Man brand (with a hyphen, both words capitalized) solidified in the West. The lovable character in his many iterations remains one of gaming's icons and the long-time mascot for Namco despite never having the game-selling power as a Mario. A name that spawned many jokes - but prevented many others - Pac-Man will forever remain as the influential game that changed our world.

(Further information on the European Puck Man can be found at: https://www.gamegeschiedenis.nl/2018/05/not-just-in-japan-pac-man-initially-released-as-puck-man-in-west-germany/)

Above: Toru Iwatani sketches out Pakkuman's Pixels. Below: Japanese arcade with Puckman and German Puckman at the Bonami Computer Museum

A Killer App: Star Raiders

By Bill Lange

Star Raiders, the iconic computer adventure game, was created for the Atari 400/800 home computer line, in fact, it was created at the same time as the development of the computers. It was programmed by Atari hardware designer Doug Neubauer. Neubauer was also on the design team of Atari's famous POKEY (POtentiometer and KEYboard) chip that controlled the Atari 8-bit computer's paddle controller potentiometers, the keyboard, and most notable, the audio special effects and music generation. The POKEY chip was also used in the audio circuitry of the Atari 5200 game console and some of Atari's classic arcade video game cabinets such as Missile Command, Centipede, Star Wars and others. While the Atari 7800 gaming console didn't have a POKEY chip onboard, it did support game cartridges which could include a POKEY chip along with the game ROM. Only two officially released games, Ballblazer and Commando, supported this feature. Later hacks and homebrew games would also take advantage of this feature as well.

Star Raiders was based, in part, on earlier text-based, turned-based Star Trek computer games. In an October 1986 interview with Lee Pappas in ANALOG Computing magazine,

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DAMAGE CONTROL REPORT: PHOTON TUBES DAMAGED

COMBAT AREA        CONDITION RED
   SHIELDS DANGEROUSLY LOW
-=-=-=-=-=-=-=-=-=-

   <*>                   STARDATE  2601
        *                CONDITION RED
                         QUADRANT  6,5
                         SECTOR    2,2
                         ENERGY    2997
                         SHIELDS   0
                    +++ PHOTON TORPEDOES 10
-=-=-=-=-=-=-=-=-=-
COMMAND 5
ENERGY AVAILABLE = 2997
NUMBER OF UNITS TO SHIELDS 200
COMMAND 1
-=-=-=-=-=-=-=-=-=-

   <*>                   STARDATE  2601
        *                CONDITION RED
                         QUADRANT  6,5
                         SECTOR    2,2
                         ENERGY    2797
                         SHIELDS   200
                    +++ PHOTON TORPEDOES 10
-=-=-=-=-=-=-=-=-=-
COMMAND
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Neubauer said that "Star Raiders was to be a 3D version of the Star Trek game played on the mainframe computers of that time. The Star Trek game was all text and not played in real time, but it had the idea of ship damage and sector scanners and charts". And in the 1997 book, Halcyon Days: Interviews with Classic Computer and Video Game Programmers, by James Hague, Neubauer stated "The movie Star Wars had come out right around that time. So I wanted to combine Star Wars with the text-based 'Star Trek' game".
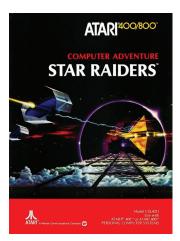
One such early Star Trek game was designed by teenager Mike Mayfield and friends, and programmed by Mayfield on a Scientific Data Systems Sigma 7 computer system at the University of California, Irvine in 1971. Mayfield than rewrote the game for the Hewlett-Packard 2000C computer. This version of the game ended up in the HP shared software library. From there, the game spread quickly. It was ported to various computer systems by various people in various computing languages, with changes being made and features being added along the way. Even the Atari 2600 got an almost direct port with the 1981 Atari-produced, Sears-branded exclusive, Stellar Track. Versions of Star Trek were published in newsletters, magazines, and influential books such as What To Do After You Hit Return, just as the microcomputer industry was beginning to take off with the 1977 "Trinity" release of the Apple II, the Tandy/Radio Shack TRS-80, and the Commodore PET appliance computers, and later, the 1979 release of Atari's own 400/800 8-bit home computers. Many nascent computer programmers cut their teeth, typing in the BASIC source code for Super Star Trek from David Ahl's 1978 book, BASIC Computer Games, myself included. Maury Markowitz's Games of Fame website (https://gamesoffame.wordpress.com/) contains a wealth of preserved information on these early space-based computer games.

Mayfield's version required you, as starship captain, to navigate your ship, chart the galaxy, seek out enemy ships using your short and long range scanners, and destroy them before they could destroy you. You had to manage stardates, ship navigation, shields, phasers, photon torpedoes, and above all, energy usage. Later versions would allow you to repair damage to your starship, resupply at friendly starbases, and more.
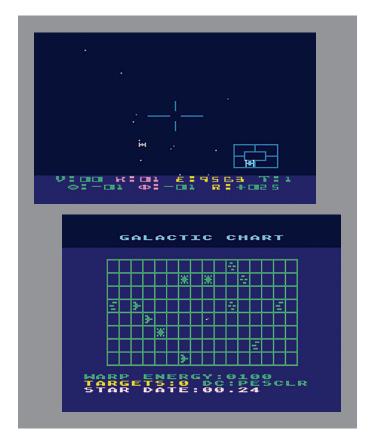
Star Raiders programmer Doug Neubauer took these ideas, removed all of the Star Trek intellectual property references and built an amazing 3D space combat simulator using all of the capabilities of Atari's new 400/800 home computers, which is almost as fun to watch as it is to play. Neubauer did, however, manage to incorporate a few subtle Star Trek and George Lucas references into his game. Also, while Star Raiders is primarily a one player game, two players could play together, with one player controlling the joystick and the second player entering keyboard commands as needed.

In his amazing October 2016 book, Art of Atari, author Tim Lapetino states that "This space combat simulator was first released for Atari's 400/800 computers and critically-acclaimed, serving as one the the 'killer app' games for the 8-bit computer line." The book also contains the brilliant artwork for the Atari 400/800 version of the game signed by an artist with the last name McCormack. This artwork was used on Atari's early large-scale black game boxes and the colorful three-ring binder sized game manuals.

In his March 2017 book, Breakout: How Atari 8-bit Computers Defined A Generation, author Jamie Lendino confirms the "Killer App" moniker, stating that "... game designers could develop complex simulations and role-playing games the likes of which had never been seen before. The first was Star Raiders, introduced concurrently with the Atari 400 and 800 and arguably the killer app for the platform..."

In his November 2018 book, The Nostalgia Nerd's Retro Tech: Computers, Consoles, & Games, author Peter Leigh, calls Star Raiders a "must play" on the Atari 8-bit platform, and that "Image having the freedom to fly through deep space in 1979. If you were brought up with the moon landings and had just watched Star Wars at the cinema, you'll realize how epic 'Star Raiders' was upon its release."

In an article title, The Star Raiders Academy, in the July 1983 issue of Antic magazine, Joe Hafner states that "Star Raiders is a conceptually sophisticated game, involving timing, strategy, and three-dimensional geometry, as well as the usual aiming accuracy and quick reflexes characteristic of most arcade and video games. As such, it is basically a real-time adventure game. For all of its sophistication, however, the game still follows the Atari policy of providing a clear, unambiguous, and responsive control interface between man and machine, which means that it is easy to learn and to play."

The game is simple enough to start playing for a novice, but requires some familiarity with the ten-page Star Raiders User's Manual to understand all of the keyboard keys required to operate Star Cruiser 7, your desktop starship. Going from Garbage Scow Captain to Star Commander requires efficient energy usage, effective combat operations, and lots of practice.

In 1986, Atari released, Star Raiders II, which was originally going to be based on the movie, The Last Starfighter, but the movie tie-in was dropped after the film did poorly at the box office and it became a sequel to Star Raiders instead. Concurrently, a true Star Raiders sequel, including planetary sequences, was being developed at the time by Atari programmer Aric Wilmunder, but was never completed because of the renaming of the movie tie-in game. After 30 years, the code for this unreleased version was found on a floppy disk in Wilmunder garage and, with the help of Kevin Savetz, a co-host of the ANTIC Podcast, the real-sequel-prototype found its way to the internet in 2015.

Star Raiders would go on to be ported to the Atari 2600, the Atari 5200, and the Atari ST family of computers. And, while it borrowed from earlier Star Trek-themed computer games, the original Star Wars movie, the Star Trek television show, and first-person perspective space combat arcade video games such as Starhawk, Star Raiders itself would also go on to inspire future generations of game programmers and video games.

Combining the tactical and strategic elements of Neubauer's Star Raiders, with the economic aspects of Dave Kaufman's Star Trader, another early text-based BASIC computer game, and the ideas found in the space-based science fiction, pen and paper role-playing game Traveller, first published by Game Designers' Workshop in 1977, would go on to create a whole new genre of deeply immersive computer games called the Space Trader/Combat Simulator, where desktop starship captain wannabees have to earn their stripes ... and their ships!

While Star Raiders was a masterpiece for the time (it even holds up well today), and has been included in many "most important video game" lists, it did have some issue. Neubauer also mentions in the book, Halcyon Days, that "I remember having trouble with the explosions ... my signed divide algorithms were terrible, and that's why the game would slow down whenever there was an explosion." In 2015, scanned hard copies of the 6502 assembly language source code for Star Raiders were released and posted on the website archive.org. A dedicated group of fans on the atariage.com forums meticulously recreated machine readable source code from the scanned hard copies and posted it to the github.com source code repository. Others began to tinker with the code, including an attempt to fix the explosion issue mentioned above.

If you get a chance, and you have the hardware (or an emulator), give Star Raiders, Star Raiders II (The Last Starfighter version), and Star Raiders II (the unreleased Wilmunder version) a try. The software, manuals, and more can be found on the Atarimania website (http://www.atarimania.com). Good luck, Captain! 🅖

Convention Update: Nov 2018 - Jan 2019

RETRO GAME CON, RETRO CITY FESTIVAL

By Old School Gamer

RETRO GAME CON
SYRACUSE, NY
BY CONOR O'BRIEN

The sixth Retro Game Con was held November 3-4 at the Oncenter in Syracuse, NY. Despite grey skies and cold rain, hundreds of attendees showed up at the venue. Some attendees came in costume and many were gamer parents with energetic kids in tow.

A gigantic exhibition hall housed all the vendors, a stage, one of the two concession stands, space for tabletop games as well as a corner devoted to arcade cabinets and pinball machines.

The event accommodated people with a competitive spirit by hosting tournaments of Goldeneye 007, Mortal Kombat II, Super Smash Bros, and other, more modern games. Two gentlemen from Quarter Munchers (@quartermunchers) hosted a contest using the Donkey Kong Country Competition Cart. I got fourth place, which is good enough for me. There was also a lonely setup for Nintendo Campus Challenge 1992 waiting for people to sign up. I wish they had chosen a different game for this competition.

Guest appearances and presentations were held in the panel rooms beneath the main hall. Among the guest speakers was Charles Martinet, the voice of Mario. Retro Game Con was excited to have him. Their marketing materials and website were all themed around the Super Mario series. The event program was a fun homage to the cover of Nintendo Power #1, with RGC's mascot in place of Mario.

Across from the panel rooms was a heavenly place: a massive room containing old gaming computers and consoles from every generation. Men, women, and children of all ages crowded around TVs for yards on end. The sounds of dozens of games and voices blended together in a beautiful dissonance.

There, I got to play Donkey Kong on an Atari 400 and the rare SNES title E.V.O. Search for Eden on a...well, OK, an emulator running on a Raspberry Pi, but it was still a great experience!

The game selection downstairs was substantially better than the arcade—which is the only negative thing I can say about the whole event. I could enjoy a couple rounds of Windjammers and T.N.K. III, but beyond pinball machines, I only noticed Roadblasters, Robocop, and Dance Dance Revolution—the last two of which weren't in the best shape, but functional.

If you're in the Central New York area next fall, you should pay Retro Game Con a visit.

retrogamecon.com

RETRO CITY FESTIVAL
POMONA, CA
BY OLD SCHOOL GAMER

Since this issue of Old School Gamer is a little getting out, we are able to bring you coverage of two of my favorite annual events: Retro City Festival in Pomona, CA and the Consumer Electronics Show (CES) in Las Vegas, NV. These two events had me totally living in video game heaven for five straight days as I went from one event straight to the other. Let's start with Southern California and Retro City...

It was the sophomore year for Retro City (and I thought last year was amazing!) and this year they amped up everything and it was a more polished show. They went from having one stage with all of the excitement taking turns to four stages with all of them having activities going on at various times of the day. The competition scene included our friends at the Retro World Series and Classic Tetris World Championship.

It continued with a recreation of the Nintendo World Championship, plus the Battle of the Hungry Wolves, Halo 2, along with Game Crossing bringing back their Super Smash Tournament - now on the Switch. And on the pinball side of things, our friends at Captain's Auction Warehouse ran the Pins and Pirates Pinball Rally and the OC Belles and Chimes group.
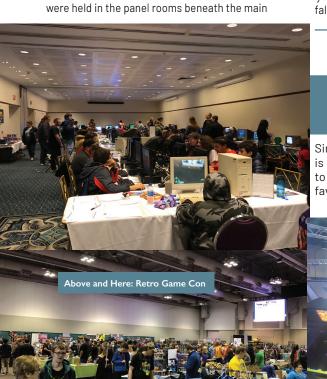
Still inside, the Lost Levels Barcade scene was a cool addition right in between the 125-150 arcade games brought from their various locations in Southern California and from other friends of Retro City. An excellent interactive museum of old school computers and consoles was set up where one could go and play games on his/her own, such as Oregon Trail, Lemmings and much more.

The vendor floor is always a popular area, with local stores, collectors and more bringing their collection out for sale, and I was personally able to find a couple Atari 2600 games I needed for my collection, along with a Pong knock-off

Above and Here: Retro Game Con

Row of Nintendo cabinets at Retro City and the Old School Gamer Booth

that I hadn't seen before. CollectorVision games was showing it's SNES title from a couple years back and its sequel that is coming out later this year on the modern consoles. The outdoor scene was set with some cool retro-themed bands playing all afternoon long, showcasing the beautiful day it was in Southern California.

Honestly, one of the best things for me was happening at our own booth. Billy Mitchell and Walter Day were special guests of Retro City and Billy was taking pictures and after signing autographs, movie posters and hot sauce, he decided he would go after a Pac-Man kill screen. This process would normally take around 3-4 hours as you have to get to the 256th level of the game, but for Billy it took around 6½ hours, about an hour or so after the event closed, but there was a core group that hung on including myself. Seeing him get to that level, and then clear it, was such thrilling end to a great weekend. Other guests at the show included Phil Moore (from Nick Arcade of the 1990s) and several Nintendo World Champions.

Retro City is a great show that you need to attend if you are anywhere near SoCal, or if want to soak in one of the best shows in the country. If you have the ability to travel from further away, we highly recommend it!

retrocityfest.com

CES is massive...for gamers a bit smaller, for retro gamers even smaller, but I was still able to spend a day and a half having a blast on the floor. This 182,000 person event with 2.9 million square feet of floor space centers around a dozen exhibitors or so. For me, when I'm working the show for Old School Gamer Magazine, in between the Automatic Cat Toilets, Mega TVs and sound systems, robots and celebrities, I found the following:

First I spent some time with MyArcade (myarcadegaming.com) where they were showing new games in their Microplayer line, including Bandi-Namco titles and more. Their hottest products appear to be the pocket players that they were now offering beyond just the Pac-Man title last year. My Arcade's best thing, in my humble opinion, was its Retro Champ handheld due out later this year, that has a small formfactor with a 7" LCD,

Retro Champ from My Arcade, Tyler Bushnell of Polycade and the new Pong Table Bar Arcade version

controls, battery and HDMI output. Check out this unit when it hits later this year at an expected $79 price point.

The Atari Pong Coffee Table (tablepongproject.com) that we saw at last year's CES and at a ton of Retro Expos now has two bigger cousins made for the Family Entertainment Center and the Bar Arcades. We can describe this to you, but honestly, the best way is to experience this at a local arcade or find a video online. If you haven't seen it, it's Pong reinvented in a brand new way with physically moving parts controlled by belts and magnets.

Next, down the aisle from the Atari Pong, we found Atari's creator's son showing the latest in home and bar arcade gear at PolyCade (polycade.com). Tyler Bushnell, son of Nolan Bushnell, is making some very exciting units for you to have in your home or on location. His units are PC powered and are extremely elegant. What

made (celebrating the year of their invasion of America).

Home cartridge-based gaming also had some great splashes at CES with our friends from Retro Bit (retro-bit.com) and Hyperkin (hyperkin.com). Retro-Bit displayed their wares right at the opening of the South Hall of CES, near where everything Sega could be found. Through a great licensing agreement, they are recreating controllers from the Genesis and Saturn. We had been given a preview of these last year but saw the final versions that are being manufactured now, including original port versions, USB and wireless incarnations. The hit of their booth was a mockup, though, of a Sega Nomad-type unit that was still under glass but interested tons of us gaming journalists. Hopefully by E3 they will be able to show us more.

Hyperkin was showing some cool tech also. Their Hyperblaster will allow you to recreate the Duck Hunt and Hogan's Alley gaming from the 1980s with lightgun technology updated for the LCD flat screen world. This unit, using its own blaster modeled after the NES zapper, puts a cartridge adapter in between the console and the game, which makes the technology work together seamlessly, which you couldn't do since the days of the tube TV. Hyperkin was showing the SNES DIY kit for modders that want to make their own SNES consoles and some other new controllers.

The hit of CES, for me, was Arcade1Up (arcade1up.com), and how far they've come in the last year since they first exhibited about a year ago this time. They have gone well beyond the half dozen games in the build-it-and-play-it Ikea-style cabinets, to prebuilt wall hanging units, counter top units, cocktail games and tons of merchandise to decorate your arcade, bedroom or man-cave. Final Fight, Karate Champ, Space Invaders, Street Fighter (now in a head-to-head cocktail style game), Golden Tee, and my favorite Mortal Kombat. Look for a piece on Arcade1Up with the Tastemasters CEO Scott Bachrach, also in this issue of Old School Gamer, and more news from the Arcade1Up gang later this year.

During our last visit, it seemed to be geared more for the current gamer, but the possibilities have extended into retro gaming. Gaems (gaemspge.com) was showing its personal gaming environments where you would take your modern console, mount it into a briefcase unit, and take your gaming anywhere. Upon arriving at your friend's house, or a LAN party, you would open it back up, and have everything you need there all together and ready to go, minus electricity. The Sentinal system, currently priced around $349, was my favorite, but the hard core PS4, X Box One people must have been drooling over the Guardian Pro XP that was it's much bigger brother with more power, a massive 24" super-fast refresh screen, pass through HDMI, and a booming sound system.

CES was a blast, as always, for gamers, and look for more product reviews based on what we saw at the show in upcoming issues. OSG

started out as a crowdfunding project of Tyler has blossomed into a company that is now exhibiting at what was Atari's showcase, to a large degree, back in the 1980s.

Right around the corner from Polycade and the Pong Table was Stern Pinball where the Stern (Stern Pinball) crew were celebrating their latest license, the Munsters. I also had a blast playing on their Beatles limited edition game....only 1964 of them are being

2019 OSG EVENTS CALENDAR

MORE DATES ARE PLANNED FOR 2019...

SPRING

MARCH 1-3
Louisville, KY • Louisville Arcade Expo • *epinball.com*

MARCH 9-10
Pittsburgh, PA • Pittsburgh Retro Gaming • *pittsburghretrogaming.com*

MARCH 15-17
Banning, CA • Arcade Expo • *arcadeexpo.com*

MARCH 23-24
Mohegan Sun, CT • CT Gamer Con • *ctgamercon.com*

MARCH 18-22
San Francisco, CA • Game Developers Conference • *gdconference.com*

APRIL 12-14
Milwaukee, WI • Midwest Gaming Classic • *midwestgamingclassic.com*

APRIL 26-28
Las Vegas, NV • Level Up • *lvlupexpo.com*

MAY 18
Cincinnati, OH • Cinciclassic • *cinciclassic.com*

SUMMER

JUNE 1
Seattle, WA • Seattle Retro • *seattleretro.com/events*

JUNE 8-9
Washington, DC • All Star Comicon • *theallstarcomiccon.com*

JUNE 11-13
Los Angeles, CA • E3 • *e3expo.com*

JUNE 21-23
Philadelphia, PA • Too Many Games • *toomanygames.com*

JUNE 28-30
Irving, TX • Lets Play • *letsplaygamingexpo.com*

JULY 12-14
Atlanta, GA • Too Many Games • *southernfriedgameroomexpo.com*

JULY 13
Chicago, IL • Video Game Summit • *videogamesummit.net*

JULY 20
Cleveland, OH • CCAG • *ccagshow.com*

JULY 26-28
Cherry Hill, NJ • NJ Gamer Con • *njgamercon.com*

JULY 27-28
Austin, TX • Classic Game Fest • *classicgamefest.com*

AUGUST 1-4
Pittsburgh, PA • ReplayFX • *replayfx.org*

AUGUST 10-11
Garden City, NY • LIRetro • *liretro.com*

AUGUST 23-25
Minneapolis, MN • 2D Con • *2dcon.net*

FALL

OCTOBER 18-20
Portland, OR • Portland Retro Gaming Expo • *retrogamingexpo.com*

OCTOBER 19-20
Arlington, TX • Retropalooza • *retropalooza.com*

The Darius Series

By Adam Pratt

Instead of trying to cram everything about a genre into one article, this time I am going to focus on a particular series within the realm of the shoot 'em up. It is one that started off in arcades and was done in such a way that the home ports never could capture the full experience due to the hardware configuration required. That series is Darius, by Taito.

The original Darius was released in 1986, a time when Japanese developers were asserting their position within the video game industry at large. Scrolling shoot 'em ups had already enjoyed a bit of success in the business with the likes of 1942 (Capcom), Xevious (Namco) and others; Taito had Space Invaders, although with how technology was progressing, they were looking to impress by doing more than what one would see from a single screen title. And impress they did.

Darius instantly stands out for the arcade cabinet, which has the appearance of using what we would now call an ultra-widescreen display. The arcade allowed them to use the old reflection image trick, where you can set a monitor down on the inside of the cabinet, then using a half-silvered, angled mirror, show the reflection of the image above. By combining this with two other monitors set in place behind the mirror, a unique image was created that ended up being much wider than was possible through the wide CRT tube manufacturing process at that time. While memorable, doing this does make the cabinet bulky and more expensive. However, this also limits competitors trying to do the same thing and leaves home console ports lacking that unique touch.

For the game itself, it was an obvious attempt to compete with the likes of Gradius (Konami), but Darius did enough to stand out on its own. You play as either Proco or Tiat, brave Silverhawk pilots who are the only ones who stand between the evil Belser and the annihilation of the human race. The Belser are hordes of robotic fish you face as the battles play out across the horizontally scrolling environments. This design choice led to Darius becoming known as "that fish shooting game," something that Taito never shied away from. It also supported 2-player co-op, something that was uncommon in an age focused on either single player fun or taking turns. It was also one of the first video games to make use of the popular Branch/Path System, separating levels by difficulty, allowing players to choose an easier or harder path at the end of each level.

To top it all off, Taito had a number of musicians on staff. Their love and understanding of music led them to form an in-house company band, which they named ZUNTATA. Zuntata would produce all of the music for this title along with most of Taito's other game releases over the next couple of decades. Such dedication and professional production paid off, as the entire Darius series enjoys one iconic soundtrack after another.

Three years later, Taito turned Darius into a series with Darius II. Running on the same hardware as Ninja Warriors, Darius II built onto the first by taking the level focus to our solar system; the first level takes place on the Sun, then you work your way to Jupiter. A new power-up system was introduced, as were mid-level bosses. This title features improved graphics and sound, and the cabinet was available in both 2 and 3-screen configurations.

After another brief hiatus, Taito released Darius Gaiden in 1994. While the "canon timeline" for this game falls between Darius and Darius II, it was the fifth game in the series (if you count the unique home releases to use the Darius name). This one eschewed the multi-monitor setup, a decision that certainly lowered the cost and increased the reach of the game. It used a number of interesting graphics effects as well as pre-rendered sprites. It also introduced Smart Bombs as a weapon and allowed players the chance to capture the mid-level bosses and use them as a kind of support weapon.

Another period of three years passed at which point Taito gave the world G-Darius, the first in the series to embrace 3D polygon graphics. This one did not enjoy much of a reach outside of Japan. American arcades just weren't into shoot 'em ups like

Adam Pratt - Owner and operator of the Arcade Heroes news blog and of the Game Grid Arcade (West Valley City, UT) that opened in 2008. He began collecting arcades in 2000 and has done everything in the business; from game sales to writing game reviews, marketing, QA testing, and consultancy, to name a few. He released his first book, The Arcade Experience, in 2013. Adam lives in the Greater Salt Lake City area with his wife and three kids.

they used to be by 1997. That didn't stop Taito from making a great game that was especially enjoyed in Japanese arcades. It was also a prequel to the first game, as far as the storyline goes. It plays much like Darius Gaiden, building on the capture idea with the Capture Ball feature and only using one screen. This allowed players to capture nearly any enemy in the game and turn them into your own weapon.

After that, the series took a break that lasted a little over a decade. The hiatus was finally broken with the release of Dariusburst: Another Chronicle, in 2010. When Taito approached the development of this game, they did so with fans in mind, hoping to bring them back to the arcade, if they had left it in recent years. DBAC, as it would be called, would integrate concepts found in each release from the previous installments, while introducing new ones at the same time. The primary feature is four-player co-op. All players share the same pool of lives, thus putting pressure on everyone to perform their best. If you weren't worried about the score, however, you could insert a few more coins and enjoy the entire game on Infinite Lives mode. Power-ups are also shared, with each upgrade hanging out for a moment, allowing others to grab it as well.

The game design plays much like the previous installments - there is no tutorial and no hand holding. A casual player could come across the game, and if they weren't careful, lose all of their lives within a 20-30 second period. For hardcore gamers, though, it was a refreshing take on gaming, which has become watered down in many ways. Dariusburst is you against the hordes - man vs. machine. If you can't tell by how much text I'm dedicating to this one, DBAC has been one of my favorite games since I came across it in 2011. It is fantastically good.

A new weapon called a Burst Laser was introduced for some extra depth and crowd control, which can be used in three different ways to clear out enemies. You can also pick from four different ships, each with their own quirks and leaderboards. Taito also made this game to draw in crowds of players. The co-op features mentioned above are very uncommon in the genre; this was boosted further by the presence of Chronicle Mode, a special mode that has over 2,000 levels that are unlocked by the community working cooperatively. Each level in this mode has a special requirement that must be met to unlock it (complete the level on one credit or play with 2-players, etc.), giving extra incentive for players to come back and play again.

The DBAC cabinet is striking, easily standing out on its own in any arcade. I should know, as I have the only English version of the game on location within the United States (there are a couple of locations out there that have the Japanese version, but English ones are extremely rare and are only found in personal collections at this point). The cabinet features a wide bench and a canopy, allowing a group to comfortably battle it out with the Belser. A powerful sound system is built into the seat and once again players enjoyed an ultra-widescreen display as it placed two 32" LCDs next to each other using the mirror trick.

While the English arcade version of the game is almost impossible to come across, one can experience most of the game with Dariusburst: Chronicle Saviours on the PC and PS4. That said, if you ever do get the chance to play this (or the other titles) at the arcade, I highly recommend that you do so - not just because I'm an arcade guy, but because this is the kind of game that is much more enjoyable to play when you do so as was intended. **:G**

FACE THE SOVIET CHALLENGE

TETRIS*

At last…a unique game theme to bring in new players

Tetris and Joseph Saelee

COINS DETECTED IN POCKET

By Joel West / Completed by Brian Szarek

Welcome to another installment of a column dedicated exclusively to Old School Gamers and Old School Games from the Golden Age of gaming. These gamers, back in the day, had to physically use a coin or token to start a video game. The earning of these coins was mostly accomplished after some form of work, usually the hard or difficult variety. After earnings were paid to the gamer, there was the trip to the ARCADE. ARCADE is written in ALL CAPS because it is the Old School Gamer's origin and sanctuary. It was, and shall always be remembered, as a hallowed place. Respect your origins.

THE GAME

In 1984, during the height of the cold war, at approximately the same time as President Reagan was making open mic comments about launching nuclear missiles towards the Soviet Union, TETRIS was born in Moscow. The game was invented by Alexey Paijitrion, who worked for Dorodnitsyn Computing Centre of the Soviet Academy of Sciences. According to author Box Brown, he designed the game "for fun" and "he was doing this just do see if he could do it."[1] The game was copied and shared (on floppy disks) between friends across the country and became a smash hit. Ultimately, it ended up on display at software exhibit that Robert Stein was attending, who was the owner of Andromeda Software, Ltd.

The licensing and distribution of the software was in the hands of a new Russian agency called Elektronorgtechnica (Elorg), which was created to oversee the foreign distribution of Soviet-made software. Stein negotiated a deal with Elorg for personal computers only – not coin-op machines, home game consoles or handheld devices. A different company, BulletProof Software, was looking to secure the rights for home consoles and computers, and they looked to US distributor Spectrum Holobyte to do so. Elorg knew nothing of these deals that were being made, however, and Nintendo was looking to cash in on Tetris fever, as they sought to gain licensing rights to the game. While Elorg and the Soviet Union were outraged, they were convinced by Nintendo that there was a fortune to be made by licensing this game for consoles and hand-held game systems. Elorg eventually agreed and signed a deal with Nintendo, who included a copy of Tetris with every Game Boy Nintendo sold. Paijitrion saw no profits from his creation whatsoever. Estimates of lost earnings are in the $40 million range. However, Paijitrion immigrated to the US in 1991, started his own firm, and ended up working for Microsoft. He regained ownership of Tetris after final negotiations with Elorg in 1996, well after the Soviet Union had disbanded.

(Mindy Weisberger, https://www.livescience.com/56481-strange-history-of-tetris.html)

THE PLAYER

Some games are easy to play, some games are hard to play, and some games require a uniquely fast reaction time. New Tetris World Champion Joseph Saelee states that "one must get inside the machine with total concentration" to master Tetris. Saelee is a California resident and had only been playing for 14 months prior to his world championship victory. Here's the big surprise: Saelee is only 16 years old!

Much like "Dr. Kong" Hank Chien of Donkey Kong fame did some years back, he decided after one viewing of "King Of Kong: A Fistful of Quarters", Saelee decided he wanted to be a "great" at Tetris. All it took in Saelee's case was to watch one world championship. He won the very next, as Joseph said "quite unexpectedly and by accident". Humility is a nice thing to see in a young champion. Mission accomplished Joseph!

You might ask why are we covering someone just 16 years old playing an NES version of the game and not an ARCADE version? The NES is now the standard competition version of Tetris. Saelee himself uses the "hyper-tapping" method which moves the pieces from their screen entry down more quickly. It is a risky method as mistakes can occur but it is how Saelee won the World Championship with the added quickness the method provides. Some of these techniques just cannot be performed on the arcade version. In addition, Saelee is an excellent example of a younger individual embracing a 30+ year old game. The e-sport-hobby of gaming is in dire need of new talent to keep future gen-

erations interested and preserve vintage gaming.

Saelee was very humble in my interview with him, which was refreshing. It was great to see someone so young move up so fast and achieve so much. When asked for game tips to pass along to "newbies" Saelee provided the following tips:
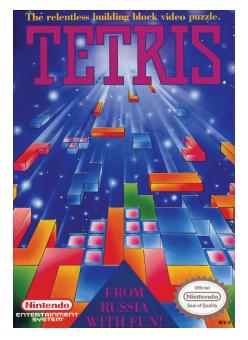
1. Learn to hyper-tap your pieces down.
2. As simple as it sounds, FOCUS.

Saelee was also impressed with the numerous following achievements of Tetris that no other video game can claim. Studies have found:

Playing Tetris 30 min a day for 3 months has been proven to improve cognitive brain function and critical thinking.

Heavy playing reduces glucose levels in the brain to spark increased brain activity.

An Oxford University study notes that heavy Tetris play shortens the memory time of traumatic events.

The relentless building block video puzzle.

TETRIS

FROM RUSSIA WITH FUN!

Nintendo ENTERTAINMENT SYSTEM

Official Nintendo Seal of Quality

REV-A
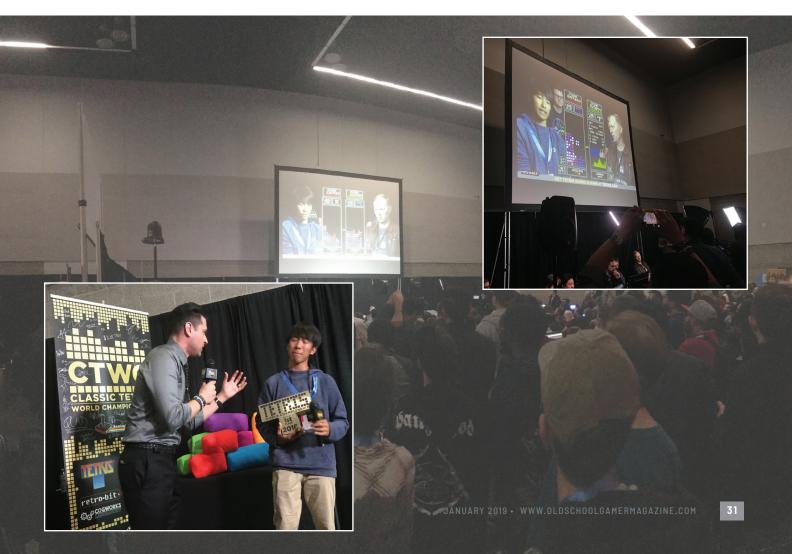
Tetris is also hailed by another study to release endorphins to give the player a "fix" to overcome diet failure, smoking temptations or pre-alcoholism.

A Canadian study shows Tetris playing can improve "lazy eye" better than the usual method of using patches.

All in all, Tetris and the New World Champion Joseph Saelee are a perfect match: both are intelligent, fresh and wonderful components to the gaming world. Joseph has not decided which career he wants to pursue as of yet. Smart money would be to keep an eye (or both) on him. One thing is for sure...with his gameplay, Joseph Saelee is a rising star with many years ahead to thrill us.

Be sure to check out his YouTube Channel: https://www.youtube.com/channel/UC9yubS4W7CdoD5F8RNz4Fuw

Note on the author of this article, Joel West passed away late in 2018 and he will be missed by the retro gaming community for being one of the original competitive gamers.

Golden Era Competitive Gamer Joel West Passes

By Walter Day

On November 28, 2018, the legendary video game champion, Joel David West, passed into eternity.

Though many of his friends knew he was wrestling with health problems aggravated by diabetes, everyone was surprised and stunned when he passed away.

It seems that in recent years he had failed to keep in touch with his family, so it took a while for his loved ones to learn of his death. But, when they did, they rallied around the flag and

He vanished from the world of competitive gaming for decades until the call went out to regroup for a reunion on September 24, 2005 in Laconia, NH -- organized as part of the filming of the documentary film Chasing Ghost:Beyond the Arcade. Though the film focused on nearly one dozen historical superstars, Joel, not surprisingly, emerged as the star of the film as he related his adventures on the path to a new world record on Berzerk. And, in Chasing Ghosts, he delivered his most famous utterance: "You can teach a monkey to play a certain number of rooms, but you can't teach a man to play 'Berzerk'.").

Joel was chosen to be one of ten gaming legends whose careers were documented on a set of commemorative trading cards created for the Shoe Club at East Jordan Middle School in Michigan. Only 250 copies of these cards were produced and they can only be obtained for a donation from the East Jordan school.

Joel was possibly the most colorful personality in the gaming universe. His presence was felt by everyone, everywhere. He famously argued his Pentacostal religious beliefs daily on Facebook and sincerely strived to "save" other's souls from eternal damnation. He believed the world was 6,500 years old and that the trillions of galaxies seen in our observable universe were mere distractions placed there to challenge our devotion to Christ. But, he had an open mind and admitted he was prepared to

be proven wrong upon leaving the world for the "other side."

supported his memory with immense love and respect.

But, for the first few days, it looked like there would be no obituary or memorial, so I called the newsroom at the Charlotte Observer and told them a local boy had attained legendary status in the video game industry and that he had passed away.

The Observer editor needed to do very little research to confirm Joel was indeed a "legend" in his field. Before long the Observer issued a major story that commemorated Joel's life and contributions to the world of gaming. My worries that Joel would not be honored by even an obituary melted away as the Observer story went worldwide on Star International Online.

Joel was indeed a legend. He appeared prominently on the earliest Twin Galaxies Scoreboard reports as our first "multiple" world record holder - holding the top positions on Pole Position, Berzerk, Frenzy and Rally-X. This high-score dominance led to an invitation to be one of 16 celebrity gamers to appear in the fabled LIFE magazine photograph taken on November 7, 1982 in Ottumwa, Iowa.

On October 6, 2018, he was inducted into the International Video Game Hall of Fame (IVGHOF) as a member of the Class of 2017. It was his proudest moment and it was his heart's desire to share this success with his North Carolina family. His acceptance speech was brilliant and heart-felt and his words inspired everyone with the importance of the historical work that had been undertaken by the IVGHOF. That speech was like a final prayer, thanking and blessing the video game culture for the friendships and happiness he had enjoyed in the course of his time with us.

The world needs more Joel Wests to uplift us and challenge us to become better people.

Thank you for being my friend, Joel. See you soon.

Feeling the Joy(Stick)!

MY INTERVIEW WITH ED KELLY OF EDLADDIN CONTROLLERS

By Brian Szarek

OSGM recently had the pleasure of meeting with Ed Kelly, creator of Edladdin custom vintage console controllers and adapters, as he hand-delivered my third Edladdin Joystick, a Super CV (classic ColecoVision) stick (which includes an integrated number pad).

His company launched in November 2014 with a full line of arcade controllers for the Atari 2600/7800, plus the Seagull 78, an adapter that allows you to play any Genesis controller on your 7800 with full two-button capabilities. In 2016, Edladdin captured $12,302 in pledges on a goal of $9,650 in a Kickstarter campaign to launch a multi-console arcade controller that would serve both the original and Flashback ColecoVision. This project would give birth to four new arcade controllers and a multi-console controller adapter, with gameplay delivered to the Atari 2600/7800, classic ColecoVision, Flashback ColecoVision, and Edladdin's first USB controller. Edladdin also offers(Stick) circuit board I/O kits that make it easy to create your own controller for the Atari 2600/7800 or the classic ColecoVision.

OSGM: *Ed, thank you so much for taking the time to speak with us. Please, tell us a bit about your background and what gave you the idea of creating joysticks for vintage consoles?*

ED: I've loved video games from the beginning. I was born in '69, so I was the perfect age to witness the rise of the Golden Age of video games, the arcade explosion, and the appearance of the very first handheld electronic games and home video game consoles. It was an incredibly exciting time!

When I was just shy of five years old, the family moved from Burlington, Wisconsin to Columbus, Ohio. During that trip, I would be exposed to video games for the first time (that I can remember). The first was Stunt Cycle by Atari – the classic Bronze-era game with the red, white, and blue cabinet and the handlebars – a naked ploy to cash in on the Evel Knievel craze that was sweeping the nation. When we first arrived in Columbus, we spent about a week in a motel where I saw another astonishing thing – an electro-mechanical ball bowler stuck in a lonely stairwell at the far end of the motel. Almost immediately my crafty older sisters figured out how to put the machine on free play. The trip ended with one more motel, which had the great Bally Sea Wolf, with its immersive periscope control

scheme, appropriately placed in the pool area. I can't remember ever seeing anything like these games before making that move to Ohio, but after that the genie was out of the bottle.

My very first piece of electronics was a handheld Mattel "Battlestar Galactica: Space Alert" game that I got for my birthday in 1979, followed by an "Einstein", which was a Simon knock-off (which I was excited to have the opportunity to repurchase recently)! I hadn't seen one in real life in at least 35 years! Next up was a Coleco Telestar "Ranger" that my dad picked up at a yard sale, which was a pong machine with an added light gun – a great first generation console.

I really liked all those games, but my real love arrived with my Atari VCS in 1981 – a Taiwan Light Sixer that I saved for all summer at the age of 11 by working for $1/hour in an ice cream shop my mom was running at the time. That console was my best friend for years to come. The focus of every birthday and Christmas was getting new carts as gifts, plus whatever money I could manage to scrape up on my own now and again. My favorites at the time were Air-Sea Battle, Space Invaders, Berzerk, Defender, Missile Command, Ms. Pac-Man, Breakout, and then the Activision classics like Pitfall!, River Raid, Starmaster, and Robot Tank. When my step-dad Bert came onto the scene, I got access to his collection of earlier text-label classics, like Adventure, Bowling, Flag Capture, and sweet, sweet Circus Atari.

During this era I also found Electronic Games magazine for the first time and had my eyes opened to a much larger world than what I found at the Atari kiosk at K-Mart. Back then, there was almost no other way to get information about what hardware and software was in development, let alone finding out about obscure tech like the Starpath Supercharger or the countless third-party controllers that were briefly available. EGM was my very first magazine subscription. I loved poring over every issue. I love that OSGM is here to fill the print void now.

My next console was a four port Atari 5200, which immediately blew me away. Mine was late enough in the run that Super Breakout had been replaced by Pac-Man as the pack-in. I was in love from the first time the arcade-quality title screen lit up. Yeah, the CX-52 controllers we weird at first, but pretty soon I got the feel for them and played countless glorious hours of the great ports of Gyruss, Moon Patrol, Qix, and Space Dungeon before I went off to college in 1986. During my college years, I had easy access to actual arcades, so my home play migrated to PC gaming. Atari was on the back burner until Stella arrived, where I had a lot of fun exploring the library of ROMs for hidden gems like CommaVid's Room of Doom. But I didn't think about my original consoles until my Light Sixer reappeared from a storage building after my father passed away in 2004. My original 5200 was never found.

But for years, most of my gaming was still on the PC – Railroad Tycoon and the progression of first person shooters, from Wolf 3D to Portal. My greatest claim to fame? For one glorious week in the heyday of Half-Life deathmatch, I was ranked 93rd in the world out of a pool of roughly 14,500 players, playing as [Essential] SgtEdRock.

The one exception was when I picked up a Playstation 1 from a workmate for $50, which my wife and I have only ever used to play Tekken, Mortal Kombat, and Gran Turismo. Despite my tiny engagement with the PS1, it provided a key link to the birth of Edladdin thanks to the purchase of a pair of really great microswitch arcade controllers for the system called - the Psychopad K.O. from Act Laboratory. That thing is great and plays beautifully with fighting games. It was a pivotal lesson for me in how much difference a high quality arcade controller could make, instantly taking gameplay to the next level.

The seeds of Edladdin Controllers were planted in 2014 after I got my first Atari 7800 from a seller on eBay. The 7800 was completely off my radar when it got its wide release in 1986, so thirty years later I was excited to see how many of my favorite Golden Era arcade games were in the catalog, and how great they looked. My excitement turned to dismay as soon as soon as I hooked it up. The first game in the slot was Joust, which is one of my all-time favorites, and was the only vintage arcade cabinet I have owned. Within minutes the beat-up CX-42 "Pro-Line" controller that came in the lot was earning its "Pain-Line" nickname, with its terrible ergonomic design, made worse by crusty old electrical connections in all the switches. The 2600 had enjoyed support with seemingly dozens of third-party controllers, and even the 5200 had Wico, so I was shocked to go back to the Internet and find out that there was literally nothing available for the 7800 – no controllers besides the NES knockoff "Europads" that Atari Corp. produced themselves for the overseas market.

So I set off to build a controller using arcade parts from GroovyGameGear.com and FocusAttack.com, plus a wiring schematic I found on AtariAge. The first time I plugged it in, Joust became a fantastic port with the exact same light touch and responsiveness on the "flap" button that I knew so well from the arcade machine. It was great! I immediately wanted other hard-core Atari fans to be able to have the same great experience with the 7800, and since we were already in the electronics and web/mail order business, adding a new product was not a tough leap to make.

OSGM: *I know that you have other businesses. How much time do you spend creating and producing these joysticks versus your primary business operations?*

ED: Our core business is "BETAR USA" (www.betar.com), which produces a line of focused vibroacoustic sound therapy systems for spas, resorts, and body workers, as well as a few esoteric brainwave entrainment devices to encourage relaxation and sleep. We also provide design and build services to third parties who want to produce small runs of new electronic products or devices from scratch. My father started the company in 1978. I took over in 2006, to be joined by my sister a few years later.

My activities vary considerably from week to week. BETAR USA and the third-party contracts tend to run in bursts of activity as projects are landed, built, and then shipped or installed. We tend to squeeze the Edladdin work in around these and the related travel, with my sister and I sharing the load. At this point, she mostly builds the Seagull 78 adapters and books the sales, while I build out the controllers and manage the parts procurement. We have three other employees who stay focused on the non-Edladdin parts of the business.

OSGM: *Of all of the sticks and adapters that you have created so far, what is your favorite, and in what variation? Mine would definitely have to be my All-Leaf: Supreme 78. It has plenty of room on both sides to lay your palm down if you'd like, and you can switch handedness depending on the game. Additionally, the leaf sticks you use are as smooth as silk. Let's hear yours!*

ED: I'm there with you! My All-Play 4/8: Supreme 78 is my daily driver for all things Atari, as well as for many of
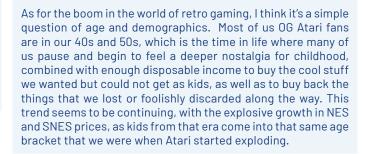
the Atari 5200 games with the help of a vintage Masterplay adapter. It has the same heavy oak case and punched steel control panel as your All-Leaf, but uses microswitch controls and a hard restrictor plate on the joystick. You can lift the hinged lid and switch back and forth between a 4-way setting for maze games and "horizontal sliders" (eg: Space Invaders), and the 8-way diamond setting needed by most games.

OSGM: *Obviously there are plenty of vintage consoles that people still care about and enjoy playing. There has been a lot of ingenuity in the market, with people creating everything from their own console modifications, console SD card readers for .rom files, and game pads (or modifying existing pads). What made you get into this market, and what do you think is the reason for (what appears to be) this sudden influx of interest in the market?*

ED: There were a few things that pushed me forward to launch Edladdin as a brand. First was the discovery of the first two podcasts I'd ever heard: ANTIC – The Atari 8-bit Podcast and then Ferg's 2600 Game-by-Game Podcast. While I knew from the AtariAge forums that there was a real Atari community out there, having them in my ears for the first time made me think that the retro movement was gathering rather than losing momentum. The next was attending the inaugural Southern Fried Gaming Expo in Atlanta. It was eye-popping to see whole ballrooms full of people, young and old, having a blast playing video games and pinball machines that I had not seen in decades. These experiences convinced me that there really was a market for exactly the level of hand-crafted, boutique production that has been our bread and butter all along. And since the solvency of the company was not hinging on Edladdin, it would be perfectly fine if the sales were absolutely tiny. As it's turned out, we've shipped 233 arcade controllers and 268 controller adapters over the last four years. That's still pretty small, but that's a lot of people having a lot more fun with their Ataris and ColecoVisions, and I really love that.

And the last thing? Frankly, I was quite tickled with the idea that Edladdin would be the world's first third-party controller company dedicated to serving the Atari 7800. As an 11-year old, the idea of working in the world of video games was a crazy dream job, so it was very enticing to have the chance to be directly connected to the legacy of old Atari greatness in this small way.

As for the boom in the world of retro gaming, I think it's a simple question of age and demographics. Most of us OG Atari fans are in our 40s and 50s, which is the time in life where many of us pause and begin to feel a deeper nostalgia for childhood, combined with enough disposable income to buy the cool stuff we wanted but could not get as kids, as well as to buy back the things that we lost or foolishly discarded along the way. This trend seems to be continuing, with the explosive growth in NES and SNES prices, as kids from that era come into that same age bracket that we were when Atari started exploding.

OSGM: *You've created a wonderful variety of sticks for the 2600, the 7800 and the ColecoVision. There appears to be a missing link in the Atari console lineup for you. Do you care to comment on that?*

ED: The Atari 5200 is next up to bat. The "Super 52" will feature an ambidextrous layout, with a self-centering, analog joystick and a pair of fire buttons on either side, plus a custom membrane keypad for the number pad and control functions, and a potentiometer-driven paddle controller for playing single-axis games like Pole Position, Super Breakout, and Kaboom! If we can make the numbers work, I'd love to replace the potentiometer with a true optical spinner, a single-axis version of the hardware found in Dan Kramer's legendary CX-53 Trak-Ball, plus a bit of logic to allow that control to switch back and forth between paddle and spinner modes. We're also looking to equip the Super 52 with a "MasterPlay" circuit that will allow you to use any Atari 2600, Atari 7800, or Sega Genesis controller with your non-analog 5200 games. Of course, the 2600 joysticks will only support the single-button 5200 games, but that's the majority of them. I have another surprise that I'm hoping to bring to this project, but its too premature to talk about. This project is moving to our engineer next week for the development of the first EZ-52 input/output/control board. I hope to deliver a finished Super 52 by Christmas of this year.

OSGM: *What systems do you currently own? Which is your favorite and why?*

ED: The prize in my collection is definitely my original Light Sixer, which I had stereo and AV modded by Electronic Sentimentalities. So amazing to hear a 2K 2600 game in stereo! Almost everything else has come from eBay and game shops, though a dear friend gave me her childhood ColecoVision, which Ruggers Customs returned to working order and modded it to modern standards.

Right now I have replaced that long-lost Coleco Telstar Ranger, an Atari 5200 (one two and one four port), three 7800s (one at home and two in the workshops), two ColecoVisions (one at home and one in the workshop), an AtGames repo Sega Genesis, a Sony PlayStation 1, a Sega Dreamcast, a red Wii, and I just got a Vectrex with a Sean Kelly multicart.

My favorite is the 5200, which has so many of the Golden Age arcade ports that I love so much. It has superior sound/music thanks to the onboard Pokey chip. After that, my 7800 gets the most play, a mix of actual 7800 games and 2600 games, mostly through a Harmony Cart. The more modern consoles come out of the cupboard to play very specific games, like Tekken and Gran Turismo on the PS1, or Soul Caliber and Sega GT on the

Dreamcast. I try to be open minded about the newer stuff, but its the Golden Age games and systems that really sing to me.

OSGM: *Tell us a little bit about your creative process... How do you decide which console needs a stick next? How do you decide what kinds of parts will be used in its creation?*

ED: My core design ethos is to create the most awesome controller I would personally want to own, no holds barred.

THE Super Twin 78 is an example of this. It certainly works as a pair of solo controls in one box, but the driving factor was to be able to play an arcade quality game of Robotron 2084 since the 7800 port is so awesome. So even though there was only that one dual-stick game for the 7800 at the time, it was worth it to me to properly support it. Likewise, right in the middle of our Kickstarter campaign to launch the ColecoVision and multi-console Super Arcade Controllers, we figured out a way to simulate the thumbwheel control found on the original Super Action controller. Even though this control was only used in Super Action Baseball, Football, and Soccer, I thought it was cool enough to pay for a PCB revision to have that feature added. I'm not a big sports game fan, so it's not a feature I will ever use, but I know somewhere out there is a superfan of these Coleco sports games, and I want that guy to lose his mind when he gets his hands on a Super Arcade Controller.

As for the parts, early on it was a matter of play-testing various components to find the perfect mix of quality, price, and feel, with an emphasis on capturing that Golden Age arcade experience. My first choice will always be concave 1-1/8" buttons and ball top joysticks, so if you want a 90s bat top stick or some giant domed Japanese-style fire buttons, you'll need to purchase one of our controller I/O board kits and build your own.

OSGM: *I've noticed on your Facebook entries for Edladdin Controllers that you travel quite a bit, both for work and family, and you frequent local gaming stores as well as local arcades. Which is your favorite and why?*

ED: I feel very fortunate to be able to visit so many great arcades and game shops around the country while traveling. You certainly can't discuss arcades without mentioning monsters like the Pinball Hall of Fame in Las Vegas, Galloping Ghost in Chicagoland, or Fun Spot in New Hampshire, but there are many more all over the country. Portland and Seattle both have fantastic arcade scenes. One of my favorites is the 8-Bit Arcade Bar in Renton (Seattle), which has a great mix of pinball, video, and even 60s EM games. I also can't fail to mention the many happy nights I had playing at one or the other Pinballz locations in Austin. And, of course, I have to give a shout-out to my hometown posse at Portal Pinball in Kennesaw (Atlanta), Georgia.

For game stores, the truth is that I find as many carts at larger chains like 2nd & Charles in the East and Game Over Video Games in Texas, but my heart lies with the little Mom 'n Pop shops, and the funkier the better. A few of my favorites are Pixel Palace Games in Powell, Ohio; the Fallout Games shops around Phoenix; Lost Ark Video Games in Greensboro, North Carolina; and Trade N Games in Fenton (St. Louis), Missouri.

OSGM: *What sets your joysticks apart from the rest of the products on the market, including those being sold by other individuals on AtariAge forums and other smaller shops?*

ED: The elements that I am most proud of are the singular focus on comfortable ergonomics and authentic arcade gameplay. Our enclosures are large and heavy, made from aluminum, oak, and steel, and will rest comfortably in your lap or sit still on the table so you can keep a finger-light touch on the controls. Likewise, the use of tight wiring with all connections soldered and shrink-tubed; no danger of a spade connector vibrating off while the controller is on the UPS truck. And while its impossible to look too far into the looking glass, 2019 is the 41st year in business for BETAR USA, so the odds are good that we are going to be here to support our customers for years to come rather than fading away after a project is complete.

OSGM: *Aside from the forthcoming Super 52, is there anything else in the creative queue that we can look forward to?*

ED: After the Super 52, I want to build an arcade controller for the Vectrex. The "Super VX" will include the same analog joystick and onboard paddle controller as the Super 52, and built in the same sloped aluminum case that defines the "Super" line. I thought the Vectrex was amazing when I first saw it in Electronic Games magazine all those years ago, so you know I really want to be able to play those games the way they were meant to be played, too!

OSGM: *It has been an absolute pleasure getting to know you over the past year and a half, both online and in person. We here at OSGM wish you continued success with your wonderful lineup of products. Where can our readers find out more about your products and order them?*

ED: Thank you for your kind words, Brian. The feeling is mutual! When I was a kid with my Light Sixer, I didn't know anyone who was as much of an Atari nut as I was, so one of the huge unexpected gifts of launching Edladdin Controllers has been the new friendships I have made throughout the community, and the opportunities to share these experiences together. I never would have dreamed that I would be standing at the doorstep to 50 years old with more Atari, ColecoVision, Vectrex, and Intellivision fans than I can count as personal friends, and more Atari t-shirts in my dresser than I ever had as a kid. The Golden Age is right now!

The Edladdin home base is our online shop at: http://www.edladdin.com. And we're extremely proud to be represented in the AtariAge store, where we were recently elevated to have our own category in the main storefront navigation. You can find us there at: http://www.atariage.com/store

Thanks again, Ed! Keep in touch and hope to speak with you soon! 🎮

Oh My Gosh, They Are So Small!

TINY ARCADES FROM SUPERIMPULSE

By Paige Burger

Recently, there has been an influx of miniaturized versions of arcade classics. For example, I can collect small arcade machines and fit them all in my spare bedroom. For example, I have Frogger, Galaga, Dig Dug, Pac-Man, Ms. Pac-Man, Galaxian and Space Invaders...all of these wonderful games and they cost less than $100 for all of them. The key is that their compact size allows me to be able to fit them on my spare bedroom bookshelf. Yes, these are the Tiny Arcades with screen sizes just under 1.5", with the whole game coming in under 4" tall. Amazingly, they are fully functional, albeit tough to play for competitive scores or even for more than about 10 minutes at a time. They appear to be using the original rom files/games and the cabinets are decorated with graphics styled after the original arcade cabinets. At this size and price point, I don't know how they could get more authentic.

Super Impulse's World's Smallest Series of Toys include everything from Hot Wheels, Lite Bright and Tinker Toys, all the way up to last year's arcade games. This line of toys is perfect for places like Walmart, where you can pick one up for approximately $15 in the video game display area, and have the appearance of a (mini) vintage arcade machine. These fully functional arcade games are geared as keychains but are really a bit too bulky for that. However, they are perfect for video game collectors that want to have a bit of their hobby on display at their desk at work. While daydreaming of their yesteryears of their local mall arcade in the 1980s, they can pick one up and eat some dots and power pellets playing Pac-Man or kill some aliens on Galaga or Space Invaders.

If you are like us at Old School Gamer, you have to pick up all seven for the collection and be anxiously awaiting the release of more before Christmas later this year. Check them out at Walmart, Amazon, ThinkGeek, or find out more at SuperImpulse.com.

Jason Knigge

A COMPLETIST FROM THE CHICAGO AREA

By Todd Friedman

I am a huge video game collector. I have about 3,500 individual games and 26 consoles and handhelds. I always knew people had a bigger collection than I did, and I knew a lot of people had more complete collections as well; but years ago, I met a person who lives about 20 minutes away from me that blows my collection away. His name is Jason Knigge. I deiced to do an article about how his collection became one of the most impressive collections in the Chicagoland area if not the Midwest. Jason turned his basement into a blast from the past GameRoom.

Before we talk about his collection, we should know a little about Jason and his family. Jason grew up in Hoffman Estates, IL. The last 15 years he has lived in Island Lake, IL with his wife and two sons, Jacob and Matthew. He has been working for UPS for about 26 years, the last 20 as a UPS driver.   He loves fishing, and any activates that involve his boys including video games.   After all, Jason has a few video games for them to play.

As of December 3rd, 2018, when this article was done, Jason had 5,850 individual video games. These games range from Magnavox Odyssey to PlayStation 2. His ultimate goal for collecting now is to reach 6000 games and only to buy games he knows, and he wants to play someday. Jason's collection is more about the retro old school games (before the year 2000) than the current systems of today like Xbox One and PS4. He does, however, have a few of those games. If you include handheld systems, Jason has 64 workable systems in his collection. This breaks down to 44 consoles and 20 handhelds. Also, in his collection are 20 tabletops (mini games) a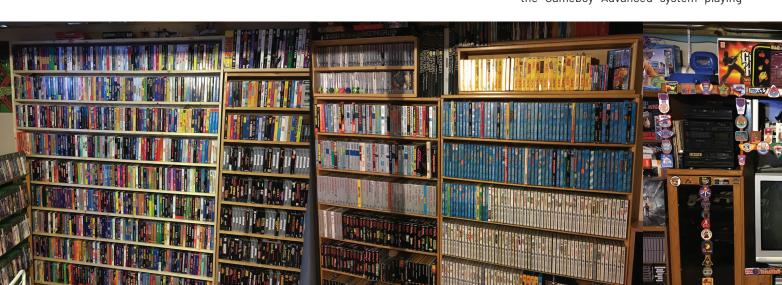s well as 26 Game and Watch systems.   Jason's family is supportive of his collection. Jason has a complete NES collection minus Stadium Events and also a complete Sega CD collection. His wife is not a gamer and stays out of the scene when Jason travels to different gaming events. His friends are very impressed with collection. Jason's kids love showing their friends the collection when they come over to the house.

Jason remembers seeing his first console video game in the early in early 1980s at his best friend's house. The game was Pac-Man for the Atari 2600. From that point forward Jason spent a lot of time playing these home consoles at his friend's houses. Jason began collecting video games back in the late 1980s when the Sega Master System came out. He would play games and would not trade in or sell the game which was something most kids did back in the day. Instead, Jason kept the original games throughout the years and has them currently in his personal collection. His next phase of collecting games came in 1999 when he wanted to get the older master system games he never owned. Jason would shop at FuncoLand and other gaming stores to get as many games as he could. But the biggest era of collecting is when he attended the Classic Gaming Expo in Vegas and found the "Collectors Guide" book, Part 6. This book showed what games you needed to fill anyone's gaming habit, then his collection kicked into high gear.

Jason's favorite portable system is the Gameboy Advanced system playing

such games as Metroid and Advanced Wars. His favorite video game character is Samus from Metroid. Jason's ultimate goal is to get completed sets or as close to it as he can. His biggest completed set is the Sega Master System and he is very close to having the complete NES set (box and manual). Jason takes pride in getting the complete collection of games with the systems. Box, Manual and game intact and playable make the completed game collecting experience. His current complete collections of games include Action Max, Adventurevision, APF MP-1000, Arcadia 2001, Atari 7800, Channel F, Sega Master System, Microvision, Nuon, Odyssey, Odyssey 2, RCA Studio 2, Sega 32X, TelStar Arcade, Vectrex and Virtual Boy. Some of the systems he is close to completing are NES, Sega Saturn and Sega Master System.

Some of Jason's favorite games of all time are Super Metroid, Phantasy Star for the Sega Master system, Fantasy Star II for the Sega Genesis and Lunar for Sega CD. Notable mentions for Jason are The Legend of Zelda for the NES and Phantasy Star which is one of Jason's favorite genres, Role playing games. The systems Jason seems to play the most are the Sega Genesis and the NES system.

So what games are out there that Jason would love to add to his collection? One that comes to his mind is Mario Party 3 for N64, which is the only Mario Party Jason does not own in the series. Others that he would love to get his hands on are The Punisher, Uncharted Waters and Gemfire for the Sega Genesis, Sunset Riders, Knights of the Round and R-Type 3 for the SNES, Mega Man 8 for the Saturn and Legend of Hero Toma for the Turbo Grafx-16.

I asked Jason where he typically gets his games in his collection. He tells me he used to be an avid EBay shopper back in prime of EBay but now Jason attends many

JASON'S COMPLETE COLLECTION OF CONSOLE GAMES

Action Max
Adventurevision
APF MP-1000
Arcadia 2001
Atari Jaguar CD
Atari 7800
Channel F
Sega Master System
Microvision
NES (Minus Stadium Events)
Nuon
Odyssey
Odyssey 2
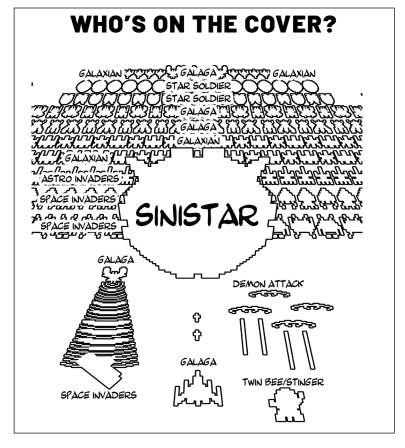RCA Studio 2
Sega CD
Sega 32X
Tel-Star Arcade
Vectrex
Virtual Boy

conventions to find hidden treasures he needs for his collection, along with some Garage sales and Thrift store shopping. Jason also has a YouTube channel that

he displays his finds on and has a good following of gamers who let him know of finds in the area and other ways to obtain game he is looking for.

Jason has considered selling his collection when retires to downsize to systems he prefers to keep and play. However, that will not happen anytime soon as he still loves the collecting experience. His kids will possibly take over the collection one day if they choose. He would love one day to start a small arcade machine collection as well as pinball if he ever got more space.

The next 20 years of gaming, Jason predicts everything going digital, which is a shame for a collector who enjoys the physical hardware of the item. One day we may not see games in stores to purchase, everything will be downloaded to a hard drive. This will make the original games from the 1970's, 80s and 90's more valuable in the future. Jason's collection has plenty of room to grow so you will see him at events and conferences for a lot more years to come. He always has space in his GameRoom for more.

Please subscribe to Jason Knigge's YouTube channel by searching his name. He would love some more collectors to chat with and trade.

WHO'S ON THE COVER?

The History of Starpath Corporation and the Supercharger

By Eugenio Angueira

The Atari 2600, or Video Computer System (VCS), as it was originally known, first launched in 1977 in North America (1978 in Europe), and was among the first consoles to use cartridges to allow owners of the system the ability to play different games on the same console. Until that time, most video game consoles only had one playable game. In spite of the ability to play a variety of games, Atari planned for the console to be sold for just a couple of years, since they believed they could create newer systems with new technology once they made money from the 2600. Given this planned obsolescence, Atari did all it could to keep the costs related to manufacturing the console as low as possible.

Since both RAM and ROM chips were expensive at the time, Atari designed the 2600 to only have 128 bytes of RAM and for the greater memory allocation to be part of the cartridges themselves. Though the plan was to use no more than 4 KB of ROM in cartridges, most of the early titles released for the system were actually only 2 KB in size. The system also used a chip called the TIA to produce both video and audio output and a 6507 chip as its processor. These gave the system the ability to have a playing field of 40 x 192 pixels and ball and missile sprites of 1 x 192 pixels. If these seem rather limited, that's because they were. Atari intended for the console to be used to play simple variations of Pong or games with limited objects on screen like Combat.

While these limitations worked well for the games that were originally intended for the system, they severely hindered programmers. With so little RAM and such limited video and audio capabilities, the system could only handle a limited number of variables at one time. As arcade games became more popular and people wanted to play those games at home, Atari faced an increasing challenge to be able to adapt those arcade games to the 2600. Programmers had to learn new tricks to get the console to perform beyond what was expected. The need for programming tricks increased as the 2600 became highly popular thanks to Atari's licensing of Space Invaders.

Among the tricks that programmers developed was one called bank switching. Bank switching helps address one of the limitations for the system: ROM. With bank switching more data can be included in the cartridges (above 4K) and the software can be programmed to select a different bank of data at any particular moment to allow for larger and more sophisticated games. Bank switching can be in 1K, 2K, or 4K blocks, depending on how the games are programmed. Unfortunately, bank switching only addressed the issue of ROM. So what about RAM? The 2600's limited 128 bytes of RAM could not be expanded in the console, but could there be ways to do it? After all, if games had both additional RAM and more ROM through bank switching, that would give programmers a chance to include more variables for the console to handle, and this would, in turn, make the games even more advanced. One company decided they would create a piece of hardware that would increase the RAM of the 2600 to let them do just that. That company was Arcadia Corporation.

ARCADIA/STARPATH CORPORATION AND THE SUPERCHARGER

In June 1981 a company called Arcadia Corporation was created by Alan Bayley, Robert Brown, and Craig Nelson in Livermore, California. This company decided to create a special cartridge for the Atari 2600 that would increase the RAM in the system to allow for games with better graphics and more advanced gameplay. This cartridge, which was released in August 1982, and was aptly called The Supercharger, increased the 2600's RAM from its paltry 128 bytes to a whopping (for the time) 6,272 bytes (6 KB)! This represented a 49-fold increase in memory for the console. The Supercharger was significantly larger than the typical 2600 cartridges sold at the time. It was designed with a long body that was narrow at the front (where it had to connect to the cartridge port of the console), widened and then narrowed in the back with a handle and a cable in the end. A cable, you wonder? This cable was part of the wonder that was the Supercharger. This cable was to be connected to a tape player from which the games could be loaded to the Supercharger and played on the 2600. Using tapes with computers was nothing new but it was certainly something that had not been done with the 2600 or any other console at the time. Though the Supercharger itself may not have been an inexpensive bit of hardware, the games for it could certainly be as tape medium was much cheaper than cartridges.

Using both the added 6 KB of RAM and a method of bank switching called FE, the programmers at Arcadia found themselves with far greater freedom when developing games for the 2600. These games could have more and complex variables that would let them make games with better graphics than seen before with the system. It's important to understand that the improved graphics allowed by the Supercharger were not because of added video hardware but because of the added RAM and the software tricks used.

The ability to program games that could be loaded via tapes also afforded the programmers a rather unique ability: they could make very large games. This was accomplished by allowing multi-loading of the games themselves. Games could be of almost any size (say 6, 12, 18, 24, etc., KB), since all the player had to do was load more of the game once they reached a certain point during gameplay. So, if the initial load size was 6 KB, and the player reached the end of that section of the game, they could simply load the next 6 KB and continue to play. This could be repeated as many times as the tapes being used allowed. The programmers at Arcadia did take advantage of this feature and five of the games released for use with the Supercharger used this multi-load feature.

The Supercharger was designed to

be compatible with all models of the Atari 2600 that were available in 1982: the heavy sixer, the light sixer, the four button woodgrain, the "Vader" and the Sears Video Arcade. It would be safe to assume that it would have worked with the Japan-only Atari 2800 console as well. Owners of the ColecoVision's Expansion Module 1, which allowed for 2600 games to be played through that console, were not able to use the Supercharger; not because of internal hardware issues but due to the shape of the Expansion Module. The Supercharger just could not be plugged into the cartridge port of the Module. However, Coleco did provide owners of the Expansion Module 1 who requested them a special port extender that would let the Supercharger fit into the Module 1. The Supercharger was compatible with the Atari 2600 Jr that was released in 1986 as well. Atari 7800 owners who got their consoles early had no compatibility issues but any later release 7800 consoles did not work due to issues with the FE bank switching used with the Supercharger. Later 7800 consoles had to be modified to fix a compatibility issue with the 2600 version of Dark Chambers and that "fix" broke the compatibility with the Supercharger.

Shortly after the release of the Supercharger, Arcadia Corporation decided to change its name to Starpath Corporation in order to avoid any litigation from Emerson Radio Corporation. Emerson had released a new video game console called the Arcadia 2001 and the owners of Arcadia were concerned about possible trademark violations. The name change meant that early production Superchargers were sold under the Arcadia brand. To avoid problems, a sticker was placed on the boxes that contained the Supercharger and its games that clearly stated "Starpath Corporation (formerly Arcadia Corporation)" using the same text font and type.

THE GAMES

A total of twelve games was released by Starpath for the Supercharger during its commercial run. Ten of these games could be purchased at stores, with the last two only being available through mail order directly from Starpath. These last two games were sold after the company had filed for bankruptcy and were sent to consumers

as just a tape in a simple plastic case with an equally simple game manual. These manuals were small and mainly had text in them (the only artwork was for an Atari console with a Supercharger plugged) but followed the same format of other manuals. They were printed either on green or blue paper depending on the game. The games that did come in boxes were identified with a number that matched their order of release. The box designs changed with later releases, with these having the correct Starpath name on them without having to use stickers to hide the Arcadia name. The following are all the original commercial release games with a brief commentary:

1. Phaser Patrol: This is the pack-in game that came with the Supercharger (and sold for $69.95). This game is Starpath's take on Star Raiders but with superior graphics and sound. Instead of requiring a special controller, though, it takes advantage of the various buttons and switches on the console for ship functions (i.e., you check the galaxy map by moving the "Left Difficulty" switch and activate shields with the "Color-B/W switch"). It also has a nice status display indicator and radar that is very useful. One of the coolest features is seeing the shields go up and down! I don't think this effect could have been done without the extra RAM from the Supercharger.

2. Communist Mutants from Space: This game is a vertical shooter that could be considered a clone of Galaxian. It does, however, include so many new options that it surpasses anything Galaxian ever offered. When the game starts, you are greeted with a settings menu where you can select the number of players (up to 4!), the level of difficulty (1-9), whether the shields or time warp are available or not, having penetrating fire, and/or having guided missiles. You can also alter your cannon's motion with the difficulty switches (A for slow, B for fast). Once the action starts, the Mother Creature starts laying "eggs" that hatch into the mutants who will attack you frenetically. Destroy them all before they destroy you!

3. Fireball: This game takes the formula from Breakout to a new level by adding complexity to the gameplay and to the visuals. Instead of the simple linear brick walls from Breakout, this game has bricks organized into fireball traps, marching blocks, migrating blocks, and even a cascade that traps five fireballs! You control a juggler who can hold up to two balls at once (giving you the opportunity to better target them). This character is nicely animated and you can even tell when he is holding onto a ball and throws it! It is also quite fun to see him getting pulled "off stage" by a hook if he fails to capture any of the fireballs.

4. Suicide Mission: This game is, for all intents and purposes, a nicely done clone of Asteroids that shows off what the Supercharger can do. The graphics create pseudo-vectors of your ship and your enemies that would not have been possible otherwise on the 2600. The virus particles slither about the screen and change shape rather impressively, adding to the visual quality of the game. Your ship can fire salvoes or single torpedoes, depending on the difficulty switch setting and it is also equipped with shields. The shields, though, heat up the ship's systems and can make the ship blow up so you have to be careful when using them. Because you're in the blood stream, the background color changes and the ship's forward motion does not have momentum.

5. Escape from the Mindmaster: This has to be one of the most

impressive games for the Supercharger. In this game the player is immersed in a world of 3D mazes played in first-person perspective. The game requires multiple loads as the player advances through the mazes and passes the "tests" of the Mindmaster. The graphics are smooth and nicely animated. The sound effects are effective and are part of the game itself (e.g., you need to pay attention to the sound the alien makes to know if it is nearby or far away). When you finish the game, the Mindmaster then ranks your intelligence based on how well you have performed. Of course, if you die early, he won't rank you very well.

6. Dragonstomper: This game is an RPG with three stages and is one of the multi load games for the Supercharger. Like Atari's Adventure, you control a white dot who must travel the countryside collecting treasure, purchase items and get help to slay the dragon, and then face the dragon itself at its lair. Each of these areas represents a new game load from the tape. You control actions through a text menu at the bottom of the screen. The game has some very nice graphics and is a fairly impressive RPG for a console that was meant only play Pong games. The dragon's lair, in particular, has some really impressive cave walls with a level of detail that is not seen in other 2600 games, and the dragon itself is very well drawn even if it is only in one color.

7. Killer Satellites: This game is a clone of the arcade game Defender. The story of the game states that a network of killer satellites that was placed in Earth orbit for its defense has become self-aware and is now attempting to destroy all life on Earth. You must pilot a rocket ship and eliminate the satellites before they can destroy your town. Destroying the satellites poses its own challenge, but the meteorites that slowly fill your space make that job more challenging as they cannot be destroyed. Killer Satellites has nice, flicker-free graphics thanks to the Supercharger. The rocket ship is solid red and you can even see its rocket exhaust as you move about. Its laser shots are also sharp. The satellites are rendered in multiple colors and the town itself has different buildings under the protective shield. The problem with this game, though, is that when the screen gets filled with meteorites, moving about is quite difficult and slows down the action. It's unfortunate you cannot destroy those meteorites.

8. Rabbit Transit: Though an original title for the Super Charger, Rabbit Transit is a game that borrows elements from two well-known arcade games: Frogger and Q*bert. The goal of the game is quite simple, survive the Mysterious Meadow and Land of Ledges so you can do what rabbits do best, make baby rabbits! In the Mysterious Meadow you will be reminded of Frogger, though here you move down the screen instead of up. You must cross the meadow by jumping toward a turtle that waits for you in the river below while avoiding snakes, butterflies, and choppers. If you reach the turtle, it takes you to the Land of Ledges. Here the game resembles Q*bert as you jump from ledge to ledge to change their colors so they are all the same. Your enemy here is a farmer who must hate bunnies, because he keeps throwing rocks at you! Despite being derivative, this is a fun game with nicely animated graphics.

9. The Official Frogger: Thanks to a loophole in the licensing of Frogger to Parker Brothers, Starpath was able to secure the magnetic media rights for the game which gave them the ability to create their own version of Frogger, which took advantage of the capabilities of the Supercharger. This version of The Official Frogger has multicolored sprites, animated characters, and music that plays

throughout the game (including more than one tune, at that!). The game is so well done that it matches or is better than versions done for more advanced systems of the era. The only thing missing is an appropriate title screen but this version is as arcade perfect as it gets on the 2600.

10. Party Mix: This is another original title for the Supercharger that is really five different games in one. Party Mix uses the paddle controllers and pits anywhere from two to four players against each other. The games are Bop-A-Buggy (where players race avoiding obstacles), Tug-Of-War (yep, just like the name suggests), Wizard's Keep (wizards shoot targets across the screen), Down The Line (players have to pick up packages of one color and hand them to the other player who must then place them in the correct conveyor belt in the opposite side), and Handcar (a game where players must control a two-man railroad cart). These games are plenty of fun and make for excellent party games to enjoy with friends.

11. Swords of Saros: In this original title for the Supercharger, you are an adventurer who must escape a dungeon while avoiding an evil wizard and collecting the pieces of the magical Sword of Saros. You must traverse seven different levels, each with eight different rooms, and pick up gold pieces and other items that will be useful as the game advances. In the final stage the gold you have collected is vital, as it is the only way to bribe the monsters to leave you alone so you can find the magical door that leads to your freedom. The game has two main screens: a maze and the rooms within the maze. In the maze you must avoid the wizard and his bat or they will just follow you everywhere you go. In the treasure room you must avoid monsters that move randomly to protect the treasure within. Should the wizard reach you, he will send skeletons to defeat you. Avoid these so you can face the wizard himself. This game does have nice visuals, but the action is slow and the control does have issues. This is not a game everyone will enjoy.

12. Survival Island: This is an original title for the Supercharger that finds the player controlling a survivor who is floating at sea and who must pick up supplies while avoiding dangers before reaching the eponymous survival island. Once on the island, you must collect items and find a temple while avoiding the many traps and dangers along the way. If you reach the temple, you will enter a maze rendered in first-person perspective. Here you have to pick up certain items in the various rooms found within th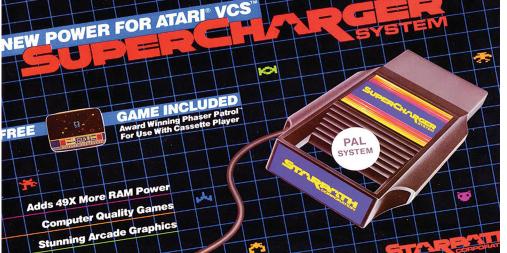e maze. Once you pick up all the items, you can leave the island and then you are ranked based on how quickly you finished the game and the items you have left. Survival Island takes advantage of the multi-load function to make each of the areas you must survive through expansive. The graphics are nicely done and the survivor you control looks great in the second level as he is a large character done in multi-colored sprites. The enemies, items, and even the walls in the maze are very well done and, in many instances, also use sprites with multiple colors. The game does play slowly, so it is not for everyone. It does have a password feature, though, which is helpful so you can continue your game later if you can't play it all at once.

RECEPTION AND THE VIDEO GAME CRASH

The Supercharger was well received by gamers of the time and had positive reviews in several video gaming magazines. Phaser Patrol received a Certificate of Merit in the category of "Best Video Game Audiovisual Effects" at the 4th Annual Arkie Awards from

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Electronic Games magazine. In BYTE magazine, a reviewer for Phaser Patrol stated that "the hyperdrive simulation is very addictive... Scoring well in this game is a combination of skill and strategy." In Creative Computing Video & Arcade Games, Danny Goodman praised the high resolution of the game's instrument panel which were a clear example of the Supercharger's excellent graphic capabilities. Despite its good reception, the Supercharger was not to have a long future in the marketplace.

As with many other companies of the time, Starpath Corporation fell victim to the North American Video Game Crash. This meant that the number of games released for the Supercharger remained limited, particularly since only Starpath was making games for the add-on. In 1984, Starpath filed for bankruptcy and merged with Epyx. After this, several prototypes of various games were released in some manner or were just discovered. Three of these titles were early versions of games that had been commercially released and included Labyrinth, Meteoroid, and Excalibur. Labyrinth was an early version of Escape from the Mindmaster, Meteoroid was an early version of Suicide Mission (and was meant to be more accurate version of Atari's Asteroids), and Excalibur was an early version of Dragonstomper. A fourth prototype also exists for a game titled Sweat: The Decathlon Game, a game that was likely a take on Track & Field. A binary of this game is available and there are some videos posted on YouTube that show what had so far been done by Starpath with this game. Visually the game looks quite impressive with large, multicolored and nicely animated human figures, detailed backgrounds and smooth action. It is unfortunate that Starpath went bankrupt because it would have been interesting to see what else they could have done with this add-on. It is conceivable they could have secured tape rights for more arcade titles and released "supercharged" home versions much like they did with Frogger, or continued to create clones of existing games but with more advanced graphics.

In 2004 the rights to the Starpath games were obtained by a religious multimedia company called Bridgeston Multimedia. This company still holds the rights to the games today, and they have not decided to make any kind of release of the games that could appear in retro systems like the Atari Flashback.

THE SUPERCHARGER TODAY

The Atari 2600 has one of the most prolific homebrew communities out there and these folks have even made sure that we have new games made specifically for the Supercharger. Though it is possible to play these games using other hardware (i.e., the Harmony cart), it is definitely cool to be able to load a game using a tape player to the Supercharger and play on real hardware. As of this writing, there are four homebrew titles that have been released for this add-on. These games include KC Monster Maze, StarBlitz, Starfleet Simulation, and

Warp Drive: Starfleet Simulation II. These are all original titles that have been inspired by other games for the Atari 2600 or other retro consoles. Though there are not a lot of new games for the Supercharger, who knows what the future holds?

Collecting for the Supercharger today can be a rather expensive endeavor. As of this writing, there are two collections being sold (and they've been on sale for some time) on Ebay for asking prices of $1000 or more. These are indeed complete collections with the original boxed releases and the two unboxed ones along with the Supercharger cartridge, but that seems to be above market value based on the amount of time they've been sitting. Even some of the individual games can be rather expensive, but, surprisingly, there is still new "old" stock to be found.

An alternative to get a complete game collection for the Supercharger in one stroke is to find the audio CD Stella Gets a New Brain. This CD was released in two versions by Cyberpunks in 1996 and 1999. These CD's contain all the commercial releases as well as prototypes for the Supercharger. These did have a limited release, so they are not so easy to find. On Ebay, these have been known to sell for as much as $400 but, even at that price, they are less costly than the collections previously mentioned.

If you just want to play the Supercharger titles, the easiest way to do this is to obtain the game ROM's (which have been converted to binary files) so you can play the games through emulation on a computer (with Stella or the emulator of your choice), or on real hardware by means of a Harmony cart. The Harmony cart even works with the multi-load games and lets you experience these games without having to break the bank. If you would prefer to play using the actual Supercharger hardware but don't have the game tapes, you may yet be able to play using MP3 versions of the game binaries. The MP3 files can be loaded into any audio player and then the games can be loaded easily into the Supercharger. This method is even practical for owners of Supercharger games on tape as it saves the tapes from damage and wear.

CONCLUDING COMMENTS

The Supercharger was a cool piece of hardware for its time that did something remarkable for the Atari 2600 by allowing players to use games released on audio tapes with the console. The additional RAM was another cool feature, but one that was later used in standard game cartridges as well. In fact, the combination of added RAM and unique bank switching techniques became the standard that allowed the Atari 2600 to live into the 1990's with commercial game releases. For all intents and purposes, the capabilities of the Supercharger were surpassed with new hardware additions to cartridges made for newer games. Regardless, today the Supercharger remains an interesting piece of hardware with a small but fascinating game library that is unique unto itself. That alone makes this add-on worth having. If nothing else, it lets you play the most impressive version of Frogger that you will ever find for the 2600. For those who, at the very least, want to experience what Starpath accomplished with that extra bit of RAM for the 2600, take the time to check out the Supercharger's game library, even if only through emulation. You will not regret it. ██

Arcade 1UP

By Michael Thomasson

Coin-op nostalgia was in full swing this past holiday season, and odds are that your heart was elevated when you first gazed upon the ¾ scale arcade cabinets by Arcade 1UP in your local mall. My initial impression was that they were made for small people or children, but founder Scott Bachrach explains some of the thinking behind their micronized design.

"I absolutely remember where I played, Brooklyn's Famous Pizza in Beverly Hills and another called Regular John's Pizza in Westwood, California. I played everything from Pac-Man, Asteroids, Centipede, Millipede – basically all the old-school arcade classics. We'd go there, and we'd sit for a couple hours at a time. You probably did what I did. You took your quarters and you put them on the top, remember? So that you guarded your space in case anybody was going to come and try to play the next game."

Of course we all remember stacking quarters. It was the norm of the time, now a ritual long passed. We all wanted the true arcade experience at home, but the 4K of addressable memory of the Atari 2600 just couldn't deliver the real deal.

"I was an at-home gamer with the Atari, but I was actually way more into going to the arcade. I was fifteen years old and I was letting my cigarettes burn off the edge. I was spending three, maybe four hours on these really cool, fun, and addictive games."

Even almost four decades later we still desire it. Retro gaming items have been in vogue the last few years. As a result, such products have moved from specialty novelty stores and into mass-media storefronts. From plug-n-play controllers housing games to miniature cabinets that fit in your hand we all want the arcade experience at home".

"Years ago, I was walking in Urban Outfitters, bought such a device, went home, plugged it in, played it, and loved it. For about five seconds it took me back to being 14 years old. It was fun and I played it for twenty-five minutes. However, a year and a half later it's still sitting in the exact same place. Why? Because I didn't just want to play the game – I wanted the entire experience of returning to Regular John's Pizzeria."

So, rather than sitting idle and just dreaming, Scott decided to try and make his desire a reality. "I sat with the development team and asked if we could give somebody such an experience but in their own home. That is where the whole inspiration started – how do you take the magnificent experience of an arcade game – that cool feeling, the way the control panel works, the sound, the imagery of that old-school flavor and bring it home? That drove us ultimately to Arcade1Up, the ultimate at-home, true arcade experience." The end result is the ability to relive the glory days of arcade gaming in the comfort of your own home.

Of course, some concessions had to be made. To buy a new arcade cabinet with the classics preinstalled, it can run you several thousand dollars. Some older machines, depending on the title and condition, can be pricey as well. The Pac-Man's

Arcade Party – 30th Anniversary edition coin-op retailed over three grand. That is not a financial reality for most homes. By shrinking the unit to ¾ scale, it reduced the price 1/6th, making it a mass market product within reach of many more consumers.

"I was pretty good at Asteroids. I would stand there for up to an hour and a half playing the game. Now I'm 49 – I don't want to stand for that period of time anymore." The reduced height is the perfect size/fit for bar stool sitting to enjoy the games. "But if you want the genuine standing experience, a separate riser is available that adapts the game to the original height level."

Furthermore, the traditional weight of a coin-op is approximately three-hundred pounds. Hardcore collectors may be willing to haul such a beast, but the casual player much prefers the more manageable 62-pound Arcade 1UP unit. This is the arcade experience at home without the headaches – heck, it only requires a single screwdriver to set-up!

It may not be exactly the same, but "if you're playing Asteroids, you're playing Asteroids just like you played it at Chuck E. Cheese, Regular John's Pizza, or any other corner shop. You get the same experience."

During the brainstorming sessions about the project, one of the team members nonchalantly stated,"Scott, I don't care what you do to this thing. It's a great piece of furniture just to have in my room." We wholeheartedly agree. Scott followed it up with, "It's like having a piece of art in your room. I mean, it really is. It's the ultimate collectible." It certainly is a conversation piece!

The demographic for the Arcade 1UP initially seemed to be geared towards the aging retro gamer, thirty-five to forty years removed from the classic arcade experience. But that impression may prove to be a fallacy. Scott tells the story of when he was playing with his 17-year-old son... "We were on the seventh level or something like that, and he cleaned my clock. I looked at him and asked, 'how do you know these games?', and he replied that he played them at Dave & Busters." It is almost as if the arcade experience has gone full circle from one generation to another. The Arcade 1UP is a family gaming experience. Scott continued, "I sat there for an hour and ten minutes with my teenager and played the game. Let me tell you something, my 17-year-old usually doesn't want to hang out with me for anything close to an hour. Similar to a great film, or great music such as the Rolling Stones or whomever, good content – which these games are, are still easy, fun, and addictive at any age – at age seventeen or forty-seven."

What is the official Old-School Gamer stance on the Arcade 1Up units? Well, we "Get it!" If you are on a budget, you can't get a better experience for the dollar. If you reside in a small living space, or are buying it for your kid, the Arcade 1UP "fits" the bill!

Arcade 1UP Specs

- Classic upright "Cabinet" design
- Dimensions: 45.8 H x 22.75 L x 19 W
- Weight: 58.5lbs
- 17" Color LCD screen
- Authentic arcade controls (Joysticks, buttons, trackball, and control knobs)
- Commercial-grade construction
- Original Artwork
- Coinless operation
- Adjustable volume
- On Screen Game Selection Menu
- Plugs into an AC outlet
- 3/4 Scale Arcade Cabinet - Play Seated or Standing with sold separately riser

Compilations

The Arcade 1UP is available in many flavors. We especially like the themed units that compile vector games, multi-player, and the trackball titles together.
Pac-Man / Pac-Man Plus
Galaga, Galaxian (Walmart Exclusive)
Rampage / Gauntlet / Joust / Defender
Asteroids / Major Havoc / Lunar Lander / Tempest
Centipede / Missile Command / Crystal Castles / Millipede
Street Fighter II Champion Edition / Street Fighter II The New Challengers / Street Fighter II Turbo

When we inquired what Scott had planned for the future, he replied, "We have an entire new line coming out including 'Capcom Classics'", so it looks like other favorites such as Ghosts 'n Goblins, Strider, 1941, Final Fight, and more are in our future! Data East is also in the game with Burgertime, Karate Champ, Caveman Ninja, and Bad Dudes. Expect to see Mortal Kombat and Golden Tee collections to debut as well. These latest incarnations of Arcade1Up were announced at the Consumer Electronic Show this January along with Cocktails units, wall hanging games and more!

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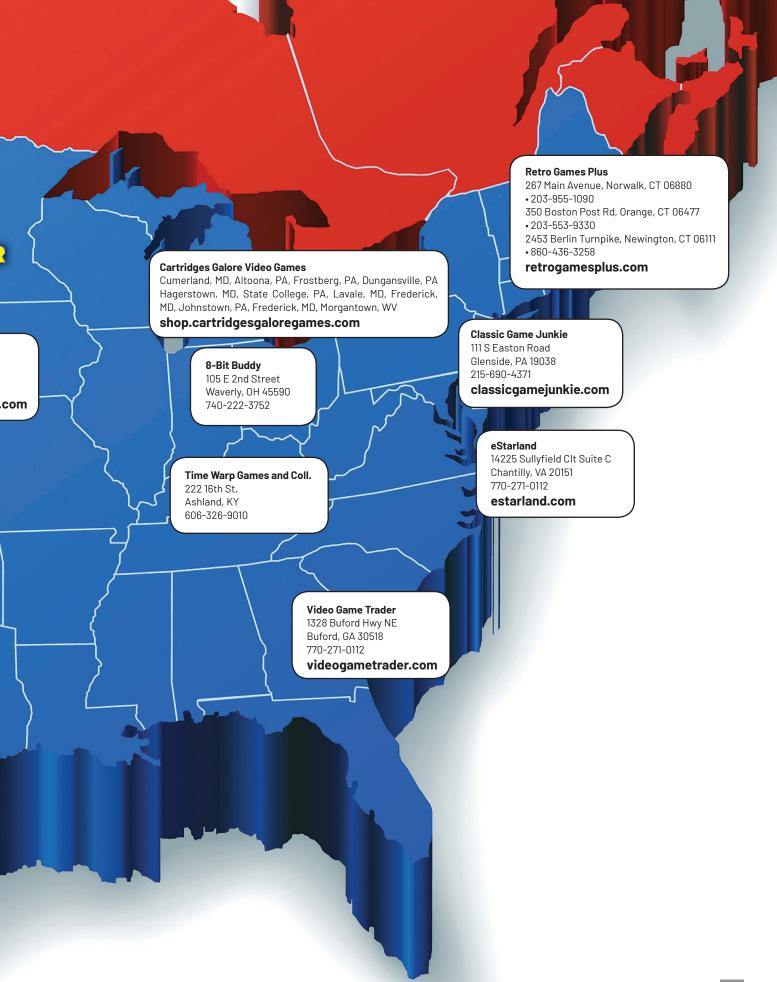657-845-4119
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