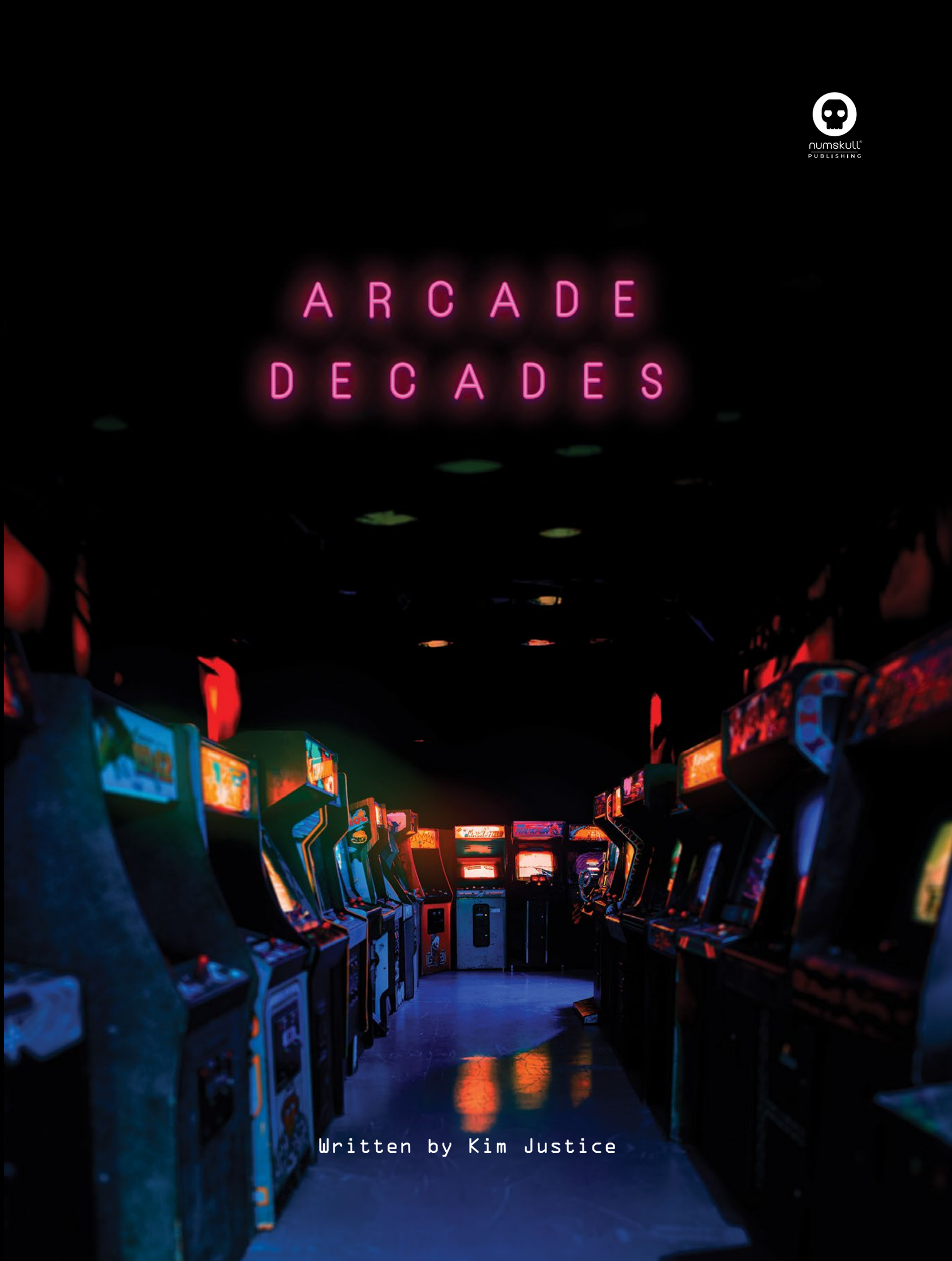
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ARCADE DECADES



Written by Kim Justice


SKATE OR DIE!
SESSIONS




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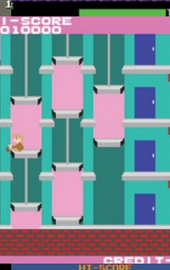


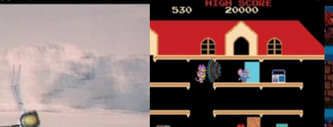
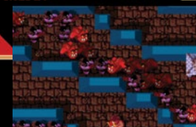


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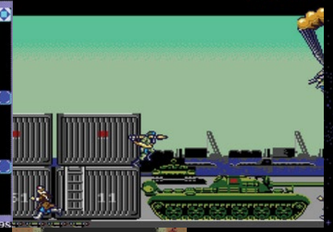






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Arcade Decades: 80s Edition

by Kim Justice

For PatmanQC

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ARCADE DECADES: INTRODUCTION

Growing up in a seaside town comes with plenty of quirks. You may not necessarily feel like you're at the epicentre of what's happening in the world, there's old structures and attractions that haven't exactly been kept in the peak of condition over the years that might occasionally catch fire every once in a while, and there's a good chance that whenever you do see your home on television, someone might be singing about how it's a gloomy town that the Germans forgot to bomb during the war.

Still, none of this matters too much when you're a child – not when there's bright lights, big rides and, of course, arcades. A whole seafront lined with big, enticing buildings that look like they could devour you whole, pulling you in with the promise of fun and games – and back in those days, games were the main thing on my mind.

I'd already played plenty of computer games on my ZX Spectrum before setting foot into an arcade in 1991, and I can vividly remember feeling like I'd just entered paradise. I can remember the first arcade game that I played, Indiana Jones and the Temple of Doom – one that so happens to be featured in this book – and getting a feeling from it that I was actually playing as Indiana Jones that couldn't quite be replicated in the Indy games that were available on my humble Speccy.

The same applied to the likes of Teenage Mutant Ninja Turtles – or rather "Hero" Turtles, seeing as this was the UK – where members of Shredder's foot clan could be sent flying across the screen with a hammer of the big multi-coloured buttons, while the likes of Bebop and Rocksteady provided tougher challenges that might well require the player to tug on their parents' pockets in order to procure another 10 pence piece.

Then there's the likes of OutRun and Space Harrier, games that I might initially have to be helped into, but once I was...forget about the funfair – these rides were a whole lot more exciting than the ghost house and the Ferris wheel.

The world of the arcades, as it was in their heyday, lends itself well to often cliched reverence – the sticky floors and the smoky haze, the change machine and the pounding music, the bigger kids that might hurl swear words at you if you try and challenge them to a 2 player game.

But it's not the only place where arcade games could be found – a lot of my strongest memories of arcade games come from shops where such machines would be operating; "street" locations, as they're known in the industry.

There's the "American" burger bar where I'd play Golden Axe while my dad was waiting for burger and chips to take home, or the video rental shop at the end of my road where we'd never actually rent any videos, but we'd go and play Shinobi endlessly, always losing to Mandara who, at the age of 6, appeared to be my mortal enemy.

Such locations were everywhere, and they'd often introduce you to games that weren't necessarily the newest on the block, but they were still really good, and were often still things that you couldn't fully experience in the home – this was back when conversions of arcade games to computers and consoles were often a test of a coder's skill in discovering and learning all the mechanics of a game through playing it, and then recreating it by hand with no original code or resources to work with, inside a very strict time frame; needless to say the end results could vary wildly, ranging from the confoundingly brilliant conversion that seemingly goes beyond a computer's limits, to the catastrophic misinterpretation and butchering of a beloved machine that you unfortunately just wasted all your pocket money on.

This book is an attempt to cover 100 of the games that made the 1980's arcades so special – whether they were special to somebody who lived through them, or to someone who discovered them later on, whether it was in 1991 or 2021.

What's important when covering these games though, is not to forget where they came from, and who they were designed for – they were meant to be played in an arcade cabinet, and this is something that can often be overlooked these days, when we can now play these exact titles at home through arcade collections and other services.

We will take a look inside the cabinets themselves to find out what makes them tick, we will show original pictures of vintage machines that have certainly had their fair share of love over the years – in other words, they're well-worn, occasionally battered, and actually used – and through covering these 100 arcade games, hopefully we'll find out just what makes an arcade game a classic, because there's always a bit more to it than good graphics and gameplay and the like; for the player there's an attractive quality, an immediacy that makes them walk up to the machine, throw a coin in the slot and spend a couple of minutes bashing away with it, perhaps even going again...

And not to puncture the illusion too much, there's also the qualities of a game for the operator, who's hoping that the shiny new machines they've bought make some money. There are many stories of development worth telling, alongside other curiosities and words that people used to use to describe arcade games 40 years ago that shouldn't be lost to time.

They are games that I've dearly loved over the years in many forms whether it be on the seafront, in the video rental shop, or even in the form of an old computer conversion, and hopefully you'll enjoy this look back at them.

-Kim Justice

A-Z OF COMPANIES

Atari, Inc.

1972-1992
Sunnyvale, CA, United States

Formed in 1972 by Nolan Bushnell and Ted Dabney, Sunnyvale, CA's Atari was the first truly big name in arcade gaming, becoming a monolith throughout the 1970s after being bought by Warner Communications in 1976. The company's profile continued to be incredibly high through the early part of the 1980s thanks to games such as Missile Command, Tempest and Centipede, employing many legendary designers along the way – the list of original Atari alumni includes the likes of Ed Logg, Dave Theurer, Mark Cerny and Franz Lanzinger. However, the North American video game crash of 1983 would see their stock price slide, and in July 1984 parent company Warner chose to break the original Atari apart, selling the consumer products division to former Commodore CEO Jack Tramiel, while briefly retaining a controlling interest in the coin-op division which they rebranded as Atari Games.

Atari Games

1984-2003
Milpitas, CA, United States

Atari's coin-op division, while still struggling to turn profits during the market's contraction in 1983, was less affected than Atari's consumer division – and so Warner largely retained the services of their arcade designers following the 1984 breakup. Namco briefly had a controlling interest in this company following a deal in 1985, but a sale of shares to new president Hideyuki Nakajima in 1987 essentially made Atari Games independent, with no company having a controlling share. Despite all the corporate troubles, Atari Games would continue to produce many successful titles throughout the decade with most of the same people who'd cut their teeth at Atari, Inc., including the likes of Gauntlet, Paperboy, and the arcade version of Tetris, while also innovating with titles like the fully 3D Hard Drivin' and S.T.U.N. Runner. Warner regained its controlling interest in Atari Games in 1993, consolidating it and various other brands under Time Warner Interactive in 1994.



Bally Midway/Midway Games

Bally: 1932-1996
Midway: 1958-2010
Chicago, IL, United States

The original Bally was formed in Chicago all the way back in 1932, spending most of the next four decades creating pinball and slot machines. They purchased amusement manufacturers Midway in 1969, and from there began using the name "Bally Midway" when they started to get into arcade games in the late '70s, striking gold through licensing the likes of Space Invaders and Pac-Man for distribution in North America. Successful original games released under the Bally Midway name include golden age classics like GORF, Spy Hunter and Tron, as well as the likes of the chaotic and irreverent Rampage later in the decade. Bally Midway was purchased by Williams Electronics in 1988, although Midway Games would still be a leading force in the arcade industry through the 1990s and beyond before finally declaring bankruptcy in 2010.



Capcom

1979-
Chūō-ku, Osaka, Japan

Based in Osaka, Capcom was originally founded under the name I.R.M. Corporation in 1979 by Kenzo Tsujimoto when he was still the President of Irem, fully committing to Capcom in 1983 after being let go from the latter corporation. Taking its name from a compound of "Capsule Computers", Capcom released many successful arcades throughout the 1980s, starting with the likes of Vulgus, Commando, Ghosts 'n Goblins and 1942. Later in the decade they would create a standardised platform for their arcade games known as the CP System, through which they would continue to release popular games such as Ghouls 'n Ghosts and Final Fight. Their success would continue throughout the 1990s and into the present day, where they still remain a leading company in the world of video games.

Centuri

1969-1985
Hialeah, FL, United States

Originally founded in 1969 as Allied Leisure, Centuri released various electromechanical video games under that name through the 1970s before the company was taken over by Ed Miller and Bill Olliges, who renamed the company to Centuri. The majority of games released by Centuri in North America were originally from Japan, particularly games by Konami who they had a close working relationship with – successes for the company include Phoenix, Time Pilot, Track & Field and Gyruss. The company closed its doors in 1985.



Century Electronics

1979-1984
Oldham, England

One of the few UK-based developers of original arcade games, Century Electronics was founded in Oldham in 1979 by Peter Robinson and David Jones. They created the CVS system for the release of most of their games, which largely consisted of clones of more successful titles. The likes of Video 8-Ball and Heart Attack earned them some notoriety, but 1983's Hunchback was by far their most successful title, performing well not just in Europe but also in North America. However, the company was not able to capitalise on the game's success, and they closed early in 1984.



Cinematronics

1975-1987
El Cajon, CA, United States

Cinematronics is primarily known as the original publisher of 1983's Dragon's Lair, but the company had several other notable games in arcades through the late '70s and early '80s – primarily vector-based titles such as Tail Gunner, Warrior, and Cosmic Chasm. With both vector-based games going out of fashion later in the decade and the boom in LaserDisc games created by Dragon's Lair being rather short lived, Cinematronics found itself in a bit of trouble come the second half of the decade – in 1987 it was acquired by Tradewest, who changed the company's name to the Leland Corporation.



Data East

1976-2003
Suginami, Tokyo, Japan

Founded by Tetsuo Fukuda in 1976 and based out of Tokyo, Data East was famed for its arcade innovations and Western-focused games. The company created the DECO Cassette System in 1981, the very first arcade system that allowed operators to easily change games out of a single cabinet, and scored hits with a wide variety of games including BurgerTime, Bump 'n' Jump, and Karate Champ. The company's success continued through the decade with the likes of Bad Dudes, Karnov and RoboCop being highly popular in North America as well as Japan (the company had a prominent base in the States as early as 1997), and this would continue into the '90s. However, the company largely stopped selling video games in 1996 before declaring bankruptcy in 2003.



Exidy

1973-1999
Palo Alto, CA, United States

Hailing from Palo Alto, Exidy was formed in 1973 and scored early hits with games like the Breakout-inspired Circus and the rather controversial Death Race from 1976. However, the company is perhaps best known for a run of successful lightgun games, starting in 1983 – oddly, almost all of these games began with the letter C, including the likes of Crossbow, Cheyenne, Combat and the also controversial Chiller from 1986, which flopped in North America due to its torture-based violence and most arcade operators refusing to purchase it. The company dissolved in 1999, although several of its games were made available as freeware in 2007.

Gottlieb, D. & Co.

1927-1996
Chicago, IL, United States

Originally founded by David Gottlieb in Chicago in 1927, most of Gottlieb's existence was spent as a leading name in the world of pinball, responsible for many famous and highly influential tables. It wasn't until the end of the 1970s that they made their move into the arcade game market, scoring a massive hit in 1982 with Q*bert – a title that Gottlieb wasn't ever able to really follow up. Following the acquisition of parent company Columbia by Coca-Cola in 1983, the company was rechristened Mylstar with the intention of focusing fully on arcade games; but the move proved disastrous in the depressed North American market, and they were closed entirely in September of 1984. Following this, a company called Premier Technology acquired the Gottlieb name and brought it back to the pinball market.



SEGA®/Gremlin®

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Gremlin Industries

1970-1983

San Diego, CA, United States

Gremlin was founded in 1970 by a duo named Harry Fogleman and Carl Grindle, and popular games released by them included 1976's Blockade, which was the first arcade to take on the "Snake" formula. The company was bought by Sega Enterprises in 1978, at which point it largely became a distributor for games released by the company in North America, including the likes of Star Trek, Carnival and Zaxxon, as well as titles from other Japanese developers such as Namco's Gee Bee from 1978. Gremlin was another casualty of the North American video game crash – Sega sold the division to Bally Midway in August 1983, while retaining the library of games that had been published under the Sega/Gremlin label.

Ikegami Tsushinki

1946-

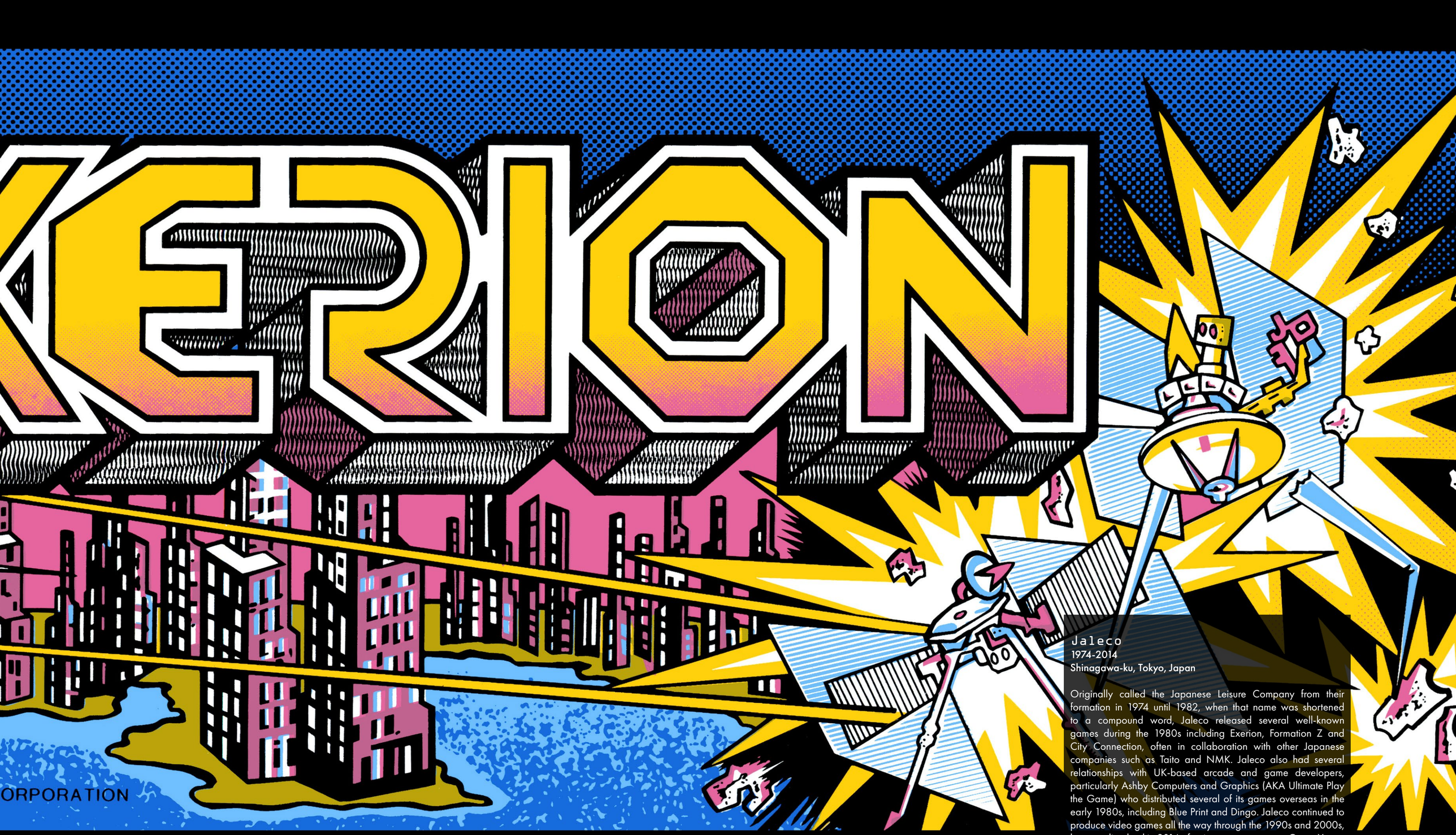
Ōta, Tokyo, Japan

Founded in 1948, Japanese electronics company Ikegami Tsushinki has largely manufactured broadcast television equipment for most of its existence, but it developed arcade games for several companies in the late ‘70s and early ‘80s – in particular for Nintendo, for whom they would code the likes of Donkey Kong, Popeye and Radar Scope in accordance with the designs that the company supplied to them. The relationship between Ikegami and Nintendo fell apart in 1982 after the former accused the latter of reverse engineering their code in order to make Donkey Kong Jr., resulting in a lengthy lawsuit that eventually led to an undisclosed settlement in 1990. The company also developed a couple of games for Sega in the early ‘80s, particularly Zaxxon and Congo Bongo. Ikegami is still around today, although its contribution to video games has largely been excised from the company’s official history.



Irem
1974-
Chiyoda, Tokyo, Japan

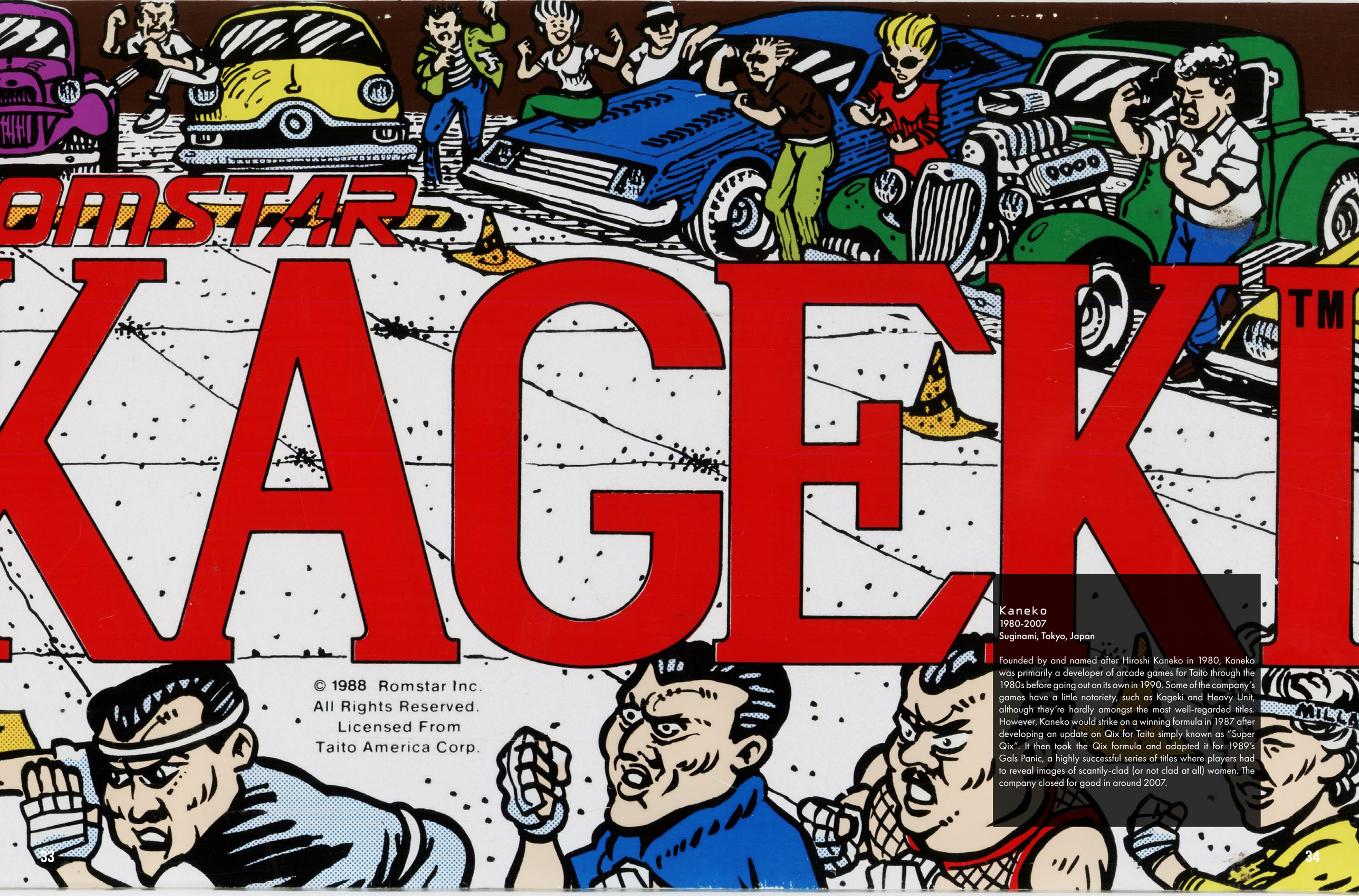
Founded by Kenzo Tsujimoto in 1974 as "IPM" (the name had to be changed to Irem in 1979 after IBM deemed it too similar to theirs), Irem largely started out producing mildly successful Space Invaders and Breakout clone games, but would go on to release some highly successful arcades through the 1980s. The highly influential likes of Moon Patrol and Kung-Fu Master, both of which were designed by Takeshi Nishiyama, are amongst their biggest successes, alongside classic 1987 shooter R-Type, which would become their signature series of titles. Other well-known titles from the decade include Mr. Heli and Hammerin' Harry, and Irem would continue to remain a prominent name in video games through the 1990s. Irem still exists today, although it now exclusively produces slot and pachinko machines.



Jaleco

1974-2014
Shinagawa-ku, Tokyo, Japan

Originally called the Japanese Leisure Company from their formation in 1974 until 1982, when that name was shortened to a compound word, Jaleco released several well-known games during the 1980s including Exerion, Formation Z and City Connection, often in collaboration with other Japanese companies such as Taito and NMK. Jaleco also had several relationships with UK-based arcade and game developers, particularly Ashby Computers and Graphics (AKA Ultimate Play the Game) who distributed several of its games overseas in the early 1980s, including Blue Print and Dingo. Jaleco continued to produce video games all the way through the 1990s and 2000s, but was dissolved in 2014 after its parent company, Game Yarou, declared bankruptcy.



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Kaneko
1980-2007
Suginami, Tokyo, Japan

Founded by and named after Hiroshi Kaneko in 1980, Kaneko was primarily a developer of arcade games for Taito through the 1980s before going out on its own in 1990. Some of the company's games have a little notoriety, such as Kageki and Heavy Unit, although they're hardly amongst the most well-regarded titles. However, Kaneko would strike on a winning formula in 1987 after developing an update on Qix for Taito simply known as "Super Qix". It then took the Qix formula and adapted it for 1989's Gals Panic, a highly successful series of titles where players had to reveal images of scantily-clad (or not clad at all) women. The company closed for good in around 2007.



Konami

1969-

Toyonaka, Osaka, Japan

Founded as a jukebox rental business in 1969 by Kagemasa "Kaz" Kōzuki, Konami started producing arcade games in 1978 and never really looked back, becoming one of the world's most successful producers of coin-op, console and computer games over the course of the 1980s. Scramble and Frogger were amongst Konami's earliest and most influential hits in 1981, while the success of 1983's Track & Field would see them stage, alongside Centuri, the biggest video game tournament ever up to that point – a video game Olympics with over one million contestants. Later in the decade Konami started to produce highly successful games based on licensed products, beginning with 1989's Teenage Mutant Ninja Turtles, and it released many more well-known games over the decade, from Time Pilot to Gradius, Green Beret (AKA Rush'n Attack) to Contra. The company's success would continue, and Konami remains one of the world's biggest producers of arcade games.

Leland Corporation

1987-1997
El Cajon, CA, United States

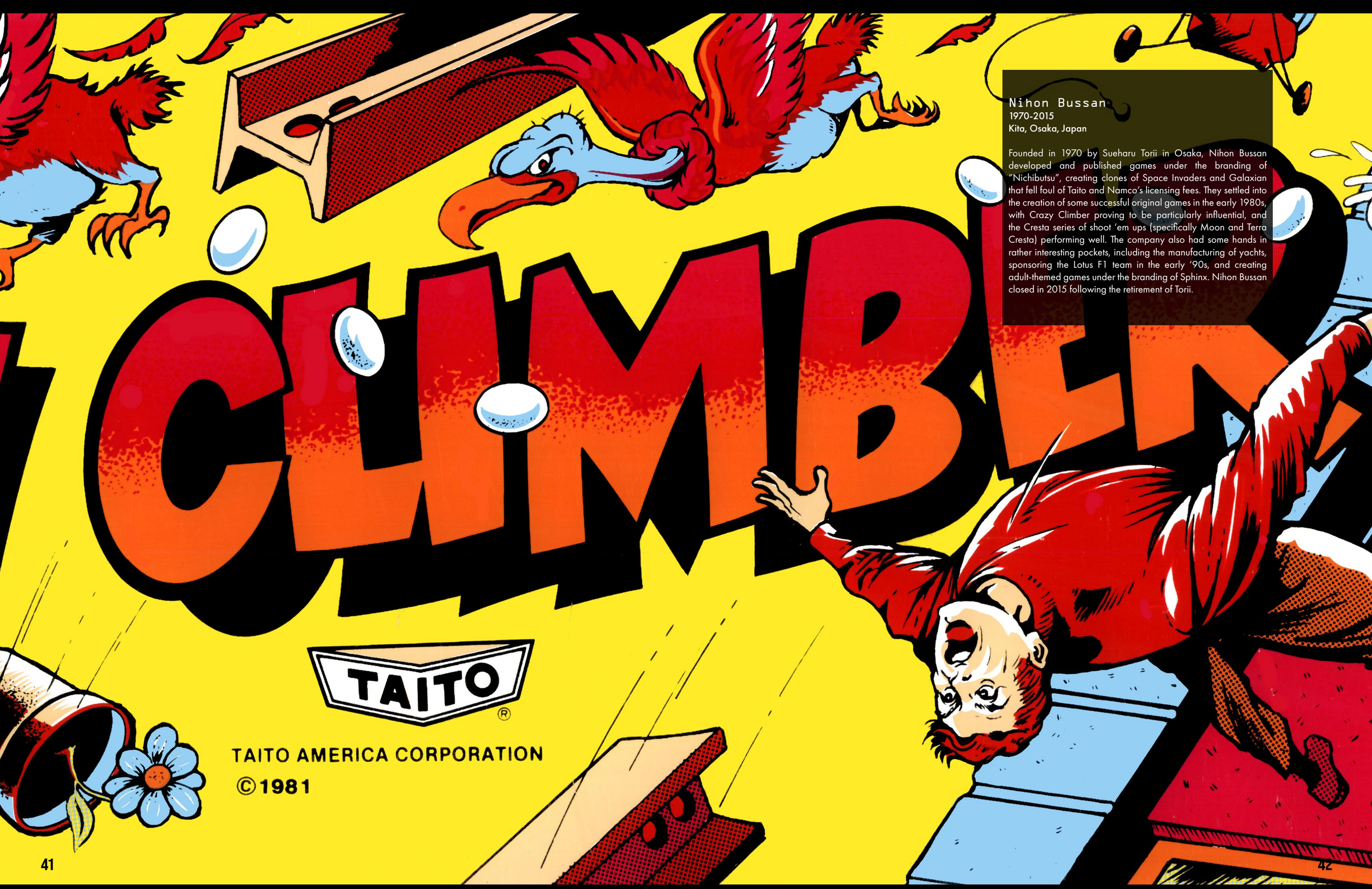
The successors of Cinematronics after Tradewest purchased them in 1987 and named after original Tradewest founder Leland Cook, Leland's star rose when a chance meeting in a California restaurant with a racing champion resulted in 1989's Ivan "Ironman" Stewart's Super Off Road, a big hit that followed – and bettered – the Super Sprint racing formula. John Elway's Quarterback from 1987 was another hit starring a sports star, and the company finally released the sequel to Dragon's Lair, Time Warp, in 1991 after LaserDisc games came back into fashion. In 1994, Tradewest – and by extension, Leland – was acquired by WMS Industries and folded into Williams Entertainment (later Midway Home Entertainment), exclusively producing games for consoles from that point on.



Namco

1955- (merged with Bandai 2006)
Ōta, Tokyo, Japan

In 1955, Masaya Nakamura founded Nakamura Seisakusho, a company that gradually grew by producing amusements such as rocking horses and picture machines for department stores – although the Namco branding had already existed for a few years when the company fully changed its name to it in 1977, concentrating on video games and arcade operation. It then proceeded to break out as one of the world's biggest arcade game makers thanks to Galaxian and Pac-Man, the latter of which would become the most successful arcade game of all time. Many more huge hits would follow, particularly golden age titles like Xevious, Dig Dug and Pole Position, and Namco would ride out the contraction of the market in the 1980s, enjoying a close relationship with Atari and publishing more successful coin-ops including Final Lap, Pac-Mania and Splatterhouse. The 1990s saw the company grow further, particularly thanks to 3D titles such as Ridge Racer and Tekken, and in 2006 it merged with Bandai, the result being the still-prominent Bandai Namco Entertainment.



Nihon Bussan

1970-2015
Kita, Osaka, Japan

Founded in 1970 by Sueharu Torii in Osaka, Nihon Bussan developed and published games under the branding of "Nichibutsu", creating clones of Space Invaders and Galaxian that fell foul of Taito and Namco's licensing fees. They settled into the creation of some successful original games in the early 1980s, with Crazy Climber proving to be particularly influential, and the Cresta series of shoot 'em ups (specifically Moon and Terra Cresta) performing well. The company also had some hands in rather interesting pockets, including the manufacturing of yachts, sponsoring the Lotus F1 team in the early '90s, and creating adult-themed games under the branding of Sphinx. Nihon Bussan closed in 2015 following the retirement of Torii.



Nintendo

1889-

Minami-ku, Kyoto, Japan

Originally founded in 1889 as a producer of hanafuda playing cards, it took over 80 years for Nintendo to start getting into electronic games under the leadership of Hiroshi Yamauchi (great-grandson of company founder Fusajiro Yamauchi), creating everything from Pong consoles to Laser Clay Shooting centres. Its first video arcade games consisted of the likes of Sheriff (designed by a young Shigeru Miyamoto) and Radar Scope, but Donkey Kong was Nintendo's breakthrough hit in 1981, a game that single-handedly made them into one of the biggest companies in the business. Other arcade games such as Popeye, Mario Bros. and Punch-Out!!, as well as the sequels to Donkey Kong, also proved successful. While the runaway success of the NES/Famicom consoles in the home led Nintendo to stop making original arcade games in 1985, the company would still have a large presence in many locations thanks to the VS. System and PlayChoice-10 cabinets that housed and previewed popular NES games.



Sega

1960-
Shinagawa, Tokyo, Japan

A company with roots in Japan and America, Sega formed in 1960 from the ashes of a company called Standard Games (later Service Games) based out of Hawaii that initially distributed amusements for military personnel. They started manufacturing electromechanical games in the mid-1960s under the leadership of Michael Rosen (following a merger of Rosen's business with Japanese company Nihon Goraku Bussan), creating many successful electromechanic and discrete logic games in the '60s and '70s before switching to video games at the end of the '70s with the hit Head-On, and then establishing themselves further with Zaxxon and the distribution of Konami's Frogger. Sega would be at the technical forefront of the arcade in the 1980s with games such as Out Run, Space Harrier and Hang-On – all demonstrations of their Super Scaler hardware – proving as impressive as they were lucrative, while other simpler games released through their various System boards such as Shinobi, Golden Axe and Pengo were also hits. Sega continues to produce arcade games to this day alongside its various hit console and computer properties.

Sente Technologies/Bally Sente

1982-1988

Milpitas, CA, United States

Originally founded in 1982 as Videa by a group of ex-Atari employees including Ed Rotberg and Roger Hector, Nolan Bushnell quickly bought the new company in 1983, rechristening them Sente and using them as a way to bounce back into the arcade game business. Sente would initially create arcades for Bushnell's Chuck E. Cheese's Pizza Time Theatre family restaurants, but after the parent company went bankrupt in 1984, Sente were bought up by Bally Manufacturing and rebranded to Bally Sente. Sente largely specialised in quiz machines, particularly Trivial Pursuit, although other well-known games by them include Snake Pit and ice hockey title Hat Trick. Bally Sente eventually folded in 1988.

© Bally Sente, Inc., 1984



SNK
1973-
Suita, Osaka, Japan

Founded in 1973 by Eikichi Kawasaki as Shin Nihon Kakiku, SNK had several hits during the golden age period – Vanguard in particular was a very successful shooter, and other well-known games included Joyful Road, Marvin's Maze and Fantasy (the first game to have a continue feature). The company struggled for a couple of years following 1983's crash, but the success of Ikari Warriors in 1986 brought it back to prominence, and was followed by hits such as Fighting Soccer and P.O.W.: Prisoners of War. It started developing the Neo Geo MVS in 1988 as a way of featuring multiple games in a single cabinet, and this would be the basis for many more successful games in the 1990s. The original SNK went bankrupt in 2001, but Kawasaki formed a new company called Playmore in order to regain control of SNK's intellectual properties, re-hire the majority of their former employees, and eventually bring everything back together with the formation of SNK Playmore in 2003. Since 2020, SNK has been owned by the Electronic Gaming Development Company (EGDC), a subsidiary of a non-profit organisation owned by Saudi Crown Prince Mohammed bin Salman.

Stern Electronics

1977-1985
Chicago, IL, United States

Sam Stern had spent decades in the pinball business, largely as the president of Williams, before forming Stern Electronics in 1977 after acquiring the struggling Chicago Coin pinball and electromechanical game company. The name of Stern would continue to be largely associated with pinball, but it dived into arcade video games in 1980 and made a huge impact with Alan McNeil's Berzerk, a highly influential top-down shooter. Aside from this game and its 1982 sequel, Frenzy, Stern also distributed several popular Konami games in North America including Scramble, Amidar, Pooyan and Tutankham. The original Stern folded following the 1983 depression in the arcade market that claimed many others, but Gary Stern – Sam's son – remained in the pinball business inside Data East and Sega's divisions, eventually founding Stern Pinball in 1999, a company that still exists today and continues the family line.



Taito
1953-
Shinjuku, Tokyo, Japan

Originally founded in Shanghai by a Russian businessman named Michael Kogan, Taito's original business lay in products like wigs and floor coverings before the Communist takeover of China forced a move to Japan in 1950. Vodka was also amongst their product lines until the mid-'50s when the company gradually dipped its toes into amusements, eventually diving in with the creation of successful electromechanical games in the 1960s, largely designed by Tomohiro Nishikado. Already a big company in the arcade world before the release of 1978's Space Invaders helped send arcades into the stratosphere, Taito would develop and publish many games across the world through the 1980s, with standouts including Elevator Action, Chase H.Q., Bubble Bobble, Arkanoid, and Operation Wolf. Having previously been owned by Japanese corporation Kyocera since 1986, in 2006 the business was sold to Square Enix, and Taito still exists as a subsidiary of the SQEX empire.



Tatsumi Electronics

1970-
Kashihara, Nara, Japan

Originally founded in 1970, Tatsumi only released a few arcade video games – however, these tended to make a significant impact as they were usually high-quality, high-price items. The company first released games under the label of Tazmi, scoring a hit with TX-1 – a triple-screen Formula 1 racing game that was distributed by Namco and Taito in Japan, and Atari in North America. Buggy Boy from 1985, another triple-screen game, is Tatsumi's most popular title – either in its original form, or in the single-screen cabinet named Speed Buggy that Data East published in the States; while Lock-On and Apache 3 represent other successes for the group. Tatsumi has long since left the video game business, but the name can still be found in Japanese game centers, primarily on its current product lines of print and sticker machines.

Technōs Japan

1981-1996
Nakano, Tokyo, Japan

Kunio Taki, Takashi Hanya and Takeo Hagiwara formed Technōs in 1981 after leaving Data East, developing games for this new, original company after settling a legal dispute over alleged stolen data. Technōs was hugely influential in the world of fighting and beat 'em up games, developing the original Karate Champ for Data East in 1984 and then creating Nekketsu Kōha Kunio-kun – known as Renegade in the west – for Taito in 1986, a very popular game that also gave the company its hot blooded mascot, Kunio. However, 1987's Double Dragon would really put the Technōs name in the spotlight, becoming a commercial and critical juggernaut that made brawlers the hottest thing going on the arcade floor for several years. Technōs scored with several more Kunio-related games and wrestling titles licensed by the WWF, and while the original company declared bankruptcy in 1996, its IP would continue to be maintained first by a company called Million, and then by Arc System Works from 2015 onwards.

Tecmo/Tehkan

1964- (merged with Koei 2009)
Kudankita, Tokyo, Japan

Founded in 1964 by Yoshihito Kakihara as the Imperial Trustee Corporation and originally a combination of two companies based around building maintenance and yachts respectively, the ITC started producing amusements in 1970 and changed its name to Tehkan in 1977, with 1980's Phoenix being the company's first significant arcade video game. The golden age would see Tehkan release Bomb Jack, Tehkan World Cup and Phoenix sequel Pleiades before that name was again changed, this time to Tecmo, in 1986. As Tecmo, the company continued to release arcade games through the 1980s including Rygar, Solomon's Key, Ninja Gaiden and Silkworm. The start of the '90s gradually saw Tecmo move towards solely producing games for consoles, which it would continue to do through the decade and beyond. Tecmo eventually merged with Koei, a company it'd had a long working relationship with, in 2009, creating the still-running Koei Tecmo.



Universal Ltd.

1969-
Kōtō, Tokyo, Japan

Nothing to do with the film production studio, Universal Entertainment started out life in 1969 as an amusement company, and started making video arcades based around more successful machines such as 1977's Breakout clone Scratch. 1980's Space Panic, the first ever platform game, was its first important title; but the company's biggest would be 1982's Mr. Do!, something of a take on Namco's Dig Dug that was often treated like an unofficial and even better sequel, and proved very popular with arcade operators as a conversion kit. Further titles in the Mr. Do! series would follow, but Universal would leave the video game business in 1985 following the contraction of the market, producing slot and pachinko machines from that point on – something that the company still does to this day, previously under the umbrella of the Aruze Corporation and now back under its old Universal name.

Williams Electronics

1974-2016

Chicago, IL, United States

The origins of Williams stemmed from a Chicago pinball company founded by Harry E. Williams in 1943, which was purchased by jukebox makers Seeburg in 1964. When Seeburg went bankrupt in 1980 and was broken apart, a new company named Williams Electronics was formed. It still made pinball machines but also diversified into video games, debuting with Eugene Jarvis's incredibly popular Defender in 1980. Several more successful machines followed in the golden age including Robotron: 2084, Joust and Sinistar, and Williams would acquire longtime competitors Bally Midway in 1988. The Williams name rarely appeared on video games after the golden age, but the company changed its name to WMS Industries in 1987 and would continue to build its portfolio with the purchase of Tradewest in 1994 and Time Warner Interactive (then the home of Atari Games) in 1997. WMS finally stopped making pinball machines in 1999, concentrating on slot machines from that point on until it was acquired by Scientific Games in 2013 and fully merged into the company in 2016.

Williams®

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SKATE OR DIE!
SESSIONS
NEXT PARK TICKET AT 3,000 POINTS
INSERT COIN
HIGH SCORE
CREDIT 00
© SEGA 1983
900
MISSION: 5
FLAG SHIP
BERTHILDAS CASTLE
LEVEL 1
HIGH SCORE
INSERT COIN
27,908
3260 HI 20000 2P
1UP 40450 HI 40450
STAGE
INSERT COIN
INSERT COIN
700 HEALTH
©1985
ATARI GAMES
7345
7500
CARS PASSED
POINT I
TIME 076

ARCADES

1980

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Game Title: **Pac-Man**
AKA: Puck Man (JP)
Genre: **Maze**
Release date: **May 22nd, 1980**
Published by: **Namco/Bally Midway**
Developed by: **Namco**

"The team often wonder if they should add more detail to Pac-Man, but Iwatani holds firm - the moment they start tweaking it, they won't stop"

The game people initially thought would be a modest-earning maze chase, Pac-Man became the golden age's flagship. The compelling, screen-clearing nature of gobbling dots, the character that became gaming's first mascot, the imitable "waka-waka" sound, and many other factors resulted in a game that appealed to everybody. Thanks to the small matter of up to $6 billion in cabinet earnings alone ($18.7 billion in 2023), Pac-Man is the most successful coin-op ever made.

The Cabinet

The Pac-Man PCB is quite simple – a Zilog Z80 running at 3 MHz, very similar to that which powered 1979's Galaxian. The game came in upright, cocktail and mini/cabaret forms – the upright is coloured yellow and has an illustration of one of the ghosts, Inky, chasing a somewhat misshapen and red-eyed Pac-Man about, which is quite different to the original Japanese Puck Man release which features considerably more artwork and a more traditional character portrayal. The game uses a joystick for control with a plate under it that restricts the stick to "cross-gate" movement – up, down, left and right. This configuration is an essential component – eight-way "square-gate" sticks are less precise when it comes to guiding Pac-Man through the maze.

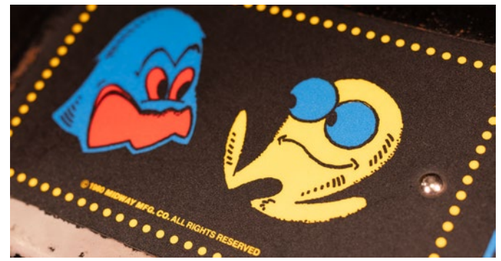
The Arcade Game

In early 1979, Namco employee Toru Iwatani was drinking in Yokohama with co-worker Shigeichi Ishimura when he saw a group of women having a blast at the arcade. Already frustrated by a procession of shooting games that dominated these male-oriented spaces, Iwatani wanted to create a game that would elicit such elation from everybody. On May 22nd, 1980, a game called Puck Man started its first location test in a Shibuya district movie theatre, where it performed decently. Months later at the American AMOA show, the game – now known as Pac-Man – is summarised as a "solid money maker" by Play Meter's Dick Pearson, but it doesn't set the show alight. Elsewhere during the show, Game Plan's Ken Anderson rejects the game in favour of Tank Battalion, and Bally Midway's Dave Marofske ultimately makes a deal to pick it up. One year later, and the world has caught Pac-Man fever – millions are eating dots, scoffing power pills and biting ghosts. The arcade has changed forever.

Leaving aside Iwatani's desire to make a game that men and women would enjoy, the inspiration for Pac-Man comes from a couple of Japanese words – a process he detailed in a 1986 interview for Susan Lammers' Programmers at Work. "Taberu" is kanji for "eat" – something that everyone enjoyed regardless of gender. Then there was "kuchi", meaning "mouth" – while Iwatani often said that Pac-Man resembled a pizza, he was also a rounded version of this kanji character. Finally, the slang "paku paku" – describing the opening and closing of the mouth – is how the game got its name. Working with a team including Ishimura, artist Hiroshi Ono and composer Toshio Kai, the game took form over 15 months, with many Western influences – power pills come from Popeye's spinach, cherries and other fruits are from one-armed bandits, and the relationship between Pac-Man and the ghosts is akin to Tom and Jerry. The team often wondered if they should add more detail to the main character, but Iwatani held firm, believing that the moment they started tweaking it, they wouldn't stop.

Eventually, we have the end product. A load of dots to eat, four ghosts named Pinky, Blinky, Inky and Clyde with their own ways of pursuing Pac-Man, stings of music from Kai that were, according to a 2021 Bandai Namco retrospective, inspired by southern rock – it all comes together. It was neither the first dot-eating maze game, nor the first to include cutscenes – Sega's Head-On and Taito's Space Invaders Part II were respectively first in 1979 – although it was the first game to include a power-up. The timing of when to eat those pills is one of the key strategies – ideally you manipulate the ghosts so that you can bite them all in quick succession, a crucial strategy in later rounds that give you mere seconds of invincibility. As simple as it appears, there is serious depth to this maze – lines and manipulations that the arcade's masters have honed over the years. And yet, for all that, there is still no "perfect" way to play the game.

For Toru Iwatani, that was the point – Pac-Man was meant for everyone to enjoy, and that is what he achieved. The huge audience for the game – over 30 million players in the United States alone at its peak – was split down the middle, and even the wide range of extras that the Pac-phenomenon produced, from the hit song "Pac-Man Fever" to the many bits of merchandise, were enjoyed by all. Today, even a cursory search of Pac-Man into Google brings up a doodle that invites you to have a quick play. Any attempt at summing up this game's legacy is almost bound to fall short as, in the end, it's incalculable – bluntly put, it's the definitive arcade game.









Game Title: **Missile Command**
Genre: **Shoot 'em up**
Release date: **June 15th, 1980**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"The finish comes with a screen-filling explosion and an overlay that doesn't read "Game Over" - instead, it says "The End""

Still one of the darkest and most immersive arcades of them all over 40 years later, Missile Command is a game about a final act of defence against waves of nuclear missiles descending upon your cities, where the only aim is to hold out for as long as you can. Part game and part Cold War commentary, Missile Command is one of Atari's most famous titles and one of their biggest hits – the company produced over 20,000 cabinets.

The Cabinet

Missile Command's board is primarily based around one MOS 6502 running at 1 MHz, and one POKEY sound chip – a light configuration even by 1980 standards. The cabinet has the appearance of a missile battery operator's terminal, with three buttons to fire rockets from the bases and a large trackball that's 4.5 inches in diameter (it's worth noting that before they featured in games, trackballs were largely used in military applications). The cabinet would initially have been much more complex – the prototype features a large panel filled with lights and information on your current game. As flashy as this was, it was too distracting for players, and the decision was made to remove it entirely – only one of these prototype cabinets is now known to still exist.

The Arcade Game

Dave Theurer always seemed to have the same nightmare. He'd be in the mountains hiking, he'd see the missiles coming down over San Francisco Bay, and he knew that in 30 seconds the light would blind him as the vaporising heat took hold. This was a consequence of the game he was creating, invading his dreams and ensuring that even the hours of fitful sleep he occasionally allowed himself ended with a cold sweat. Even before it hit arcades, this was a demonstration of the power of Missile Command – as truly exceptional a game as it is, it's also an important artefact; a portal back into a time when the fear of nuclear annihilation was at the back of everybody's minds.

The idea for the game was clipped out of a magazine by Atari's coin-op president, Gene Lipkin – it was a picture showing a satellite's radar screen, and he thought there was a game in it. The idea of intercepting missile trails was then pitched to Theurer – in a rare interview for a 2013 Polygon article by Alex Rubens, Theurer said that he agreed to the concept on the condition that the game be purely defensive in nature, with no missiles launched "the other way", so to speak. The development of the game would see ideas pass through before ultimately being stripped down further – a lot of concepts, from submarines to railroads and a more accurate radar that swept across the screen were dropped, as was the idea of naming the cities; Theurer thought it better if they were nameless, so that players could imagine they were defending their hometown. Theurer worked tirelessly on the title, barely sleeping at points – no thanks to the aforementioned night terrors that would affect most everyone who worked on the game according to Atari manager Steve Calfee, who originally pitched the idea to Theurer.

You have six cities and waves of missiles are bearing down on them – what do you do? Initially the game feels like sheer panic as players try to save everything, but there are a lot of intricacies – for example, your missile bases actually fire at different speeds, meaning that the slower side bases are best for spreading out fire while the middle "Delta" base fires quicker missiles, and is suitable for precise shots and taking out smart bombs that can easily avoid slow and inaccurate missiles. Another concept that's important to learn is that of sacrifice – as the waves get faster and longer in duration, you're simply not going to be able to save everyone, and you're better off concentrating on a single side. Perhaps even a single city, if things get really desperate. For experts of the game, it's possible to survive for a long time – even going past the kill screen, as evidenced by Tony Temple's long-standing 4,472,570-point world record run of the game. For most, the finish comes with a screen-filling explosion and an overlay that doesn't read "Game Over" – instead, it says "The End".

Back in 1980, Missile Command was – somewhat perversely – the perfect game for a time of fear. Even the earliest home ports tried to defuse its potency, recasting Missile Command as a battle between alien planets – but most knew the real truth of the title, a game where man destroys man in a battle where points are all you can score and, in the end, nobody wins. For Dave Theurer and many others, the nightmares would eventually subside – but for anyone who plays it, Missile Command is exactly as powerful and as perfect a game today as it was back at its release.









Game Title: **Battlezone**
Genre: **Tank combat**
Release date: **November 1980**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"[Battlezone] was playtested eagerly by fellow Atari employees who took the chance to have a go on the game whenever Rotberg was out of the lab"

A big trundle forward for the arcades and games in general, Battlezone was the first game that allowed movement in a 3D environment, and has also been dubbed the first successful first-person shooter. This epic contest between your tank and an endless succession of rival caterpillars and missiles was another big hit for Atari, shifting over 15,000 cabinets.

The Cabinet

The Battlezone upright cabinet is one of Atari's most famous, and one that's quite unique. At over six feet tall, the cabinet is a lot taller than most uprights, and the first run would see players look into a periscope to see the game – a level of immersion comparable to Sega's breakthrough electromechanical arcade hit of 1965, Periscope. The trouble with this setup was that it didn't allow others to see the game, and therefore have their own interest piqued. It was common for arcade companies to offer operators a second monitor on top so that passers-by could see a game being played, and Atari did flirt with creating this option for Battlezone, even drilling holes in the sides for this purpose. The plan didn't go ahead however, possibly because a second monitor might have affected the cabinet's balance, and a hefty lawsuit based on an over-eager player tipping the game onto themselves wasn't exactly a welcome thought. Eventually, a more traditional "full-face" cab was made, without the periscope – this solved the visibility problem while also cutting production costs.

The Arcade Game

It was common for arcade-goers to share some rather fanciful stories about Battlezone. In Van Burnham's 2001 book Supercade, engineer Lyle Rains remembered a letter he got from a fan, saying that a friend told him if you drove forward far enough you could reach the erupting volcano in the background, where there was a hidden castle inside the crater. It's easy to imagine this same story being told in various forms and possibly involving a father who works at Atari, and even if it's total bullshit – sorry to disappoint – it goes to show how this pioneering 3D title stoked imaginations back in 1980. For most people, Battlezone was a completely new experience – it attracted everyone from legions of arcade-goers to retired U.S. Army colonels.

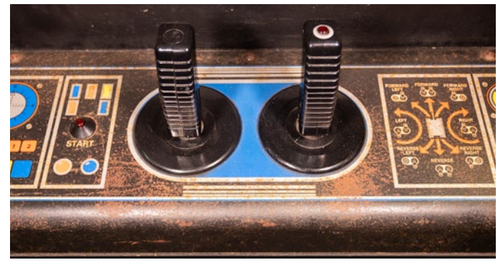
Engineers Jed Margolin and Michael Albaugh got the ball rolling on the hardware that eventually powered Battlezone, designing circuitry for 3D graphics algorithms that was simply known as "the mathbox", which would then be combined with Atari's vector arcade hardware popularised by 1979's Asteroids. Ed Rotberg was the principal programmer with Morgan Hoff as project leader, while the team also included Margolin and Owen Rubin. Their main inspiration was to create a 3D version of Tank, one of Atari's earliest arcades from 1974, but in a more open space. The game took around 15 months to develop, usually playtested eagerly by fellow Atari employees who took the chance to have a go whenever Rotberg was out of the lab. And that memorable erupting volcano was programmed by Rubin, who bugged Rotberg incessantly about making the volcano appear active until Ed finally told him to do it.

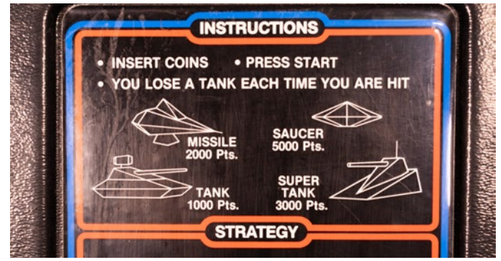
Even though the gameplay of Battlezone might be simple nowadays, it still has almost trance-like qualities – as soon as you hear the radar's beep, it's all about hunting for the enemy tank and carefully moving around, leading them and angling for the right shot. Usually, you've just got to get them before they get you – a fight could be quick or drawn out depending on where they were, while the later missiles do give players more of a sense of urgency. Tanks also get faster and more aggressive as you play, eliminating those who haven't got their vehicle's movement in their bones.

While it might be silly nowadays to call Battlezone a simulation, one group thought it had potential in that regard, namely the U.S. Army. A group of contractors proposed that Atari make a version of the game that would train soldiers in the use of the Bradley Fighting Vehicle, and Atari agreed. Rotberg hated the idea of making a version of the game for the military, coding it under duress (and over three months of crunch) and exclusively on the proviso that nothing like it happened again. The end result, named The Bradley Trainer but commonly known as Army Battlezone, is rather different to the original with helicopters and further military hardware added to the action, and its souped-up controls were carried over into Atari's 1983 Star Wars game and other cabinets.

The fact that the U.S. Army saw fit to co-opt Battlezone in this way speaks to the scary potential that 3D games had, to the point where it even spooked the game's creator. 3D gaming has certainly more than fulfilled that potential in the decades since Battlezone rolled onto the floor and started making tracks, but this original is still strong enough to put your eyes out on stalks and plant them into a whole other world.









Game Title: **Berzerk**
Genre: **Maze Shooter**
Release date: **November 12th, 1980**
Published by: **Stern Electronics**
Developed by: **Stern Electronics**

"Urban legends were even spread that a number of players had died straight after setting a high score on the machine"

Alan McNeil's famed and highly influential maze shooter, where an endless succession of robots gradually hunt you down, was acclaimed as one of the greatest games ever made on release, and its Chicago-based developers Stern sold over 50,000 cabinets to operators. Some people were so enraptured by the game that they legitimately thought it could sense their loose change when the synthetic speech barked "COIN DETECTED IN POCKET" during the arcade cab's attract mode.

The Cabinet

Berzerk uses a standard Z80-based board with one irregular component for the time, the TSI S14001A speech chip, which handles the famous synthesised words (at the time, it cost $1,000 to compress each word using Linear Predictive Coding). The famous art features various depictions of the Cylon-esque robots who are after you and the terrified face of our hero on the bezel, but the most treasured feature of the cabinet is the original optical joystick, a large bat-like creation designed to be fully gripped with your fist. Sadly, this joystick was prone to failure, and Stern replaced many of them with more standard eight-way Wico Leaf joysticks.

The Arcade Game

A lot of golden age arcade games set you a task that is, in the end, impossible – no matter how good you are, eventually you will fail, and the only way to 'win' as such is to be so good that the game crashes because it can no longer chart your progress, producing the fabled kill screen. However, few of these suicide missions have ever felt as intimidating as Berzerk – a game where one man armed with a blaster goes up against a never-ending robot army, fruitlessly trying to escape but, really, merely surviving for as long as he can in a maze of rooms that is, for all intents and purposes, endless. Which is to say that players are incredibly unlikely to see all of the 64,000 randomly generated rooms in the maze.

When creating the game, Alan McNeil took inspiration from an old BASIC game called Robots, where you set a direction and enemies would take the shortest path possible to chase you down. What he envisioned was essentially Robots but in real-time, with the player also having the ability to shoot the robots down. Unfortunately, the robots can easily shoot you, too. Initially, they were too good, zapping poor souls to death almost instantaneously – but the addition of electrified walls and a slight lowering of their competence evened the odds a little bit, with robots capable of accidentally shooting each other or being fried on the walls. Other accidental quirks also helped the humanoid out – in a game that often requires ultra-fast reactions, the most skilled of players could time a move so that a laser would pass through the gap between the stickman's head and neck, something popularly known as the "bow-tie" trick.

Whether you do that accidentally or on purpose, you'll be thankful for any crumb this game offers you – it is legendarily difficult. The robots' speed and proficiency increases with each screen, and every room is another fight for life where you can barely stop to think. The minimal graphics help with this, but the synthesised speech is Berzerk's most memorable touch – classic lines such as "THE INTRUDER MUST NOT ESCAPE" and "SHOOT IT" spew out endlessly, truly making this feel like an epic fight between man and machine. And you daren't try to leave a room without destroying all the robots, lest you get "CHICKEN! FIGHT LIKE A ROBOT!" shouted at you.

But nothing in Berzerk is more intimidating than Evil Otto – the indestructible smiley face that murders anything in its path, particularly dawdling humanoids. Born both out of a hatred of smiley faces being popular in media at the time and an officious security guard who gleefully smiled while locking employees out of the office, Otto is an inspired creation – he also serves as a useful screen clearer for when enemies get spawned in locations where they're unkillable.

Berzerk absolutely caught the imagination of the arcade-going public – this icon of the golden age would remain popular for several years, and urban legends were even spread that a number of players had died straight after setting a high score on the machine (in reality, someone who had died after playing suffered from a heart condition). It influenced other famous games like 1981's home computer hit Castle Wolfenstein and 1982's arcade classic Robotron: 2084, and unquestionably retains a resonance to this day. Playing Berzerk is a shootout against insurmountable odds that feels less like a simple arcade game and more like a fight for your life, as powerful as the best of today's first-person shooters that themselves, generations later, owe a debt to this classic.









Game Title: **Rally-X**
Genre: **Chase**
Release date: **October 3rd, 1980**
Published by: **Namco/Midway**
Developed by: **Namco**

"While Pac-Man did end up leaving Rally-X choking on its own dust, it still made an impact"

Rally-X was one of four games that Namco had flagged as potentially big worldwide arcade hits in 1980 – the other three being Tank Battalion, King & Balloon, and Pac-Man. While there's no prizes for guessing which one of this quartet became the big smash, Rally-X was a very solid hit in its own right, particularly in its home country of Japan, spawning the even more successful sequel New Rally-X in 1981.

The Cabinet

The Rally-X PCB is a slight modification of the board that Namco designed for Pac-Man, with the main modifications allowing the board to support vertical and horizontal scrolling. The original arcade cabinet had a similar form factor to Pac-Man, only it stood out a bit more by being coloured cream, as well as featuring the famous decal of our determined driver leaving his pursuers coughing up a lung thanks to the exhaust fumes. The cabaret version also stands out thanks to a simpler design and a whole lot of woodgrain.

The Arcade Game

Rally-X often feels like a game that was a much bigger hit in the arcades than it actually was. Although the often-repeated urban legend that the game was a big talking point at the 1980 Amusement Music Operators Association (AMOA) Show while Pac-Man was ignored is untrue (neither game made a particularly big splash), at least one person – Midway's then-President Dave Marofske – expected that the speedy driving in Rally-X might have more appeal in the West than Pac-Man's dot chomping, although Midway ended up taking both games and publishing them. But while Pac-Man did end up leaving Rally-X choking on its own dust, it still made an impact – it was one of the biggest games of 1980 back in Japan, after all.

Many new arcade games had been inspired by popular predecessors before designer Hirohito Ito set to work on Rally-X, and the title's influence is quite clear – Sega's 1979 game Head On was a big worldwide hit and also featured a little car travelling around a maze. Still, this isn't a simple clone – Rally-X is a far more advanced game, to the point where you could almost call it an unofficial and souped-up sequel. This game allows you to freely move around a much more complicated maze, and features smooth horizontal and vertical scrolling – none of these things were in the more straightforward, single-screen Head On. Ultimately, Namco's game is probably the more famous of the two, and certainly the easier title to pick up and play nowadays.

The aim of this maze is to capture the flags – you control a blue F1 car, and you've got to pick the flags up as quickly as possible. There are two obstacles against you – rocks that are randomly positioned in the maze, and a number of red F1 cars coming after you. They're pretty tough opponents, especially as they home in on your position and they're faster than you to boot; but you can thwart them with the use of a smokescreen that'll confuse them briefly, albeit at the expense of some fuel. Every third stage is a "Challenging" one where your fuel goes down even quicker and you have to collect the flags before it goes out – only then do the cars come at you, theatrically smashing you to smithereens like the poor, hapless sitting duck you are. This "Challenging" (or "Charanging", as it was originally translated) stage is actually the first one in a Namco game, and it would become a common theme in their classic arcades following Rally-X.

Rally-X is a tough hombre of a game – the sort where a casual play may only last a minute or two if you're lucky, at least until you get used to the game's speed, the need to turn around constantly and the careful use of that smokescreen. Still, even if the game wasn't as huge of a title as Namco hoped it would be in territories outside Japan, the game holds up whenever it's featured on collections of their arcade games. A compelling and charming title that keeps you coming back even after so many spectacular crashes, Rally-X is a game that Namco are undoubtedly proud of, and quite rightly so.









Game Title: **Phoenix**
Genre: **Shoot 'em up**
Release date: **December 1980**
Published by: **Centuri/Amstar/Taito**
Developed by: **Tehkan (probably)**

"The success of Phoenix almost single-handedly turned [[Centuri]] from struggling also-rans to one of the United States' leading arcade publishers"

Primarily known as one of the first shooters to finish with a boss battle, Phoenix was very successful upon its release. The game was initially distributed by Amstar in North America, who then licensed it to Centuri – and they, in particular, would reap the rewards for publishing the title. Arcade historian Keith Smith estimates that Centuri sold between 13,000 and 15,000 upright Phoenix cabinets, making $26 million in 1981 money (equivalent to $85.5 million today).

The Cabinet

Centuri's upright version of Phoenix is the best remembered one – while some of these cabs came with more generic company branding, others feature a side art illustration of the titular bird who hatches out of his egg in the second set of stages. Similarly to Space Invaders, the cabinet does not feature a joystick – movement is handled by a pair of left and right buttons. The cocktail version of the game was manufactured by Amstar, and there also appears to be a wall-mounted version of the game.

The Arcade Game

In the years following Space Invaders, other companies had done a whole lot more with groups of ships and a single screen – Namco's Galaxian had helped take the concept further, with its alien vessels flying in and out of formation, and there had been several iterations since then. Phoenix, from late 1980, is one of the more important ones – it starts with a traditional Galaxian-esque formula before continuing with larger enemies that hatch from eggs and finishing with one of the earliest examples of that all-important climactic moment in a game – a boss battle, where you gradually break down the walls of a mothership in order to get a shot at its core. The game was wildly successful, but details on the game can be quite murky.

It's commonplace for Japanese games from this era to not have any credits for programmers – studios didn't want to reveal the identities of their staff, for fear that rivals would try to headhunt their talent. In the case of Phoenix, it's not confirmed what company developed the game – Taito released it in a couple of territories, but it wasn't made by them. A couple of names have been bandied around, such as T.P.N. – who actually created a bootleg of the title as opposed to the original. Other names include Sun Electronics (later Sunsoft), and Hiraoka, who do appear to have initially licensed the North American release of the game to Amstar. While it's not fully confirmed, it seems likely that Phoenix was one of the earliest video games to be made by Tehkan (later Tecmo) – they developed and published the game's sequel, 1981's Pleiades, and analysis of the ROMs and boards of these titles have revealed notable similarities between the two titles. It's also not clear when the game became named Phoenix. That might have always been its name, but it could have been changed by Centuri, or Amstar – who just so happened to be based in Phoenix, Arizona. Coincidence? Aliens? Who knows.

The progression of Phoenix starts with two Galaxian-recalling waves of enemies, more unpredictable than ever – sometimes they'll fly completely off the screen in an attempt to surprise you from the side, or they'll hang out at the bottom waiting to come back when you least expect it. You get a more theatrical explosion (and a bonus) when you hit them at their most evasive, and the game even gives you rapid fire for the second wave – you can also use a temporary shield to repel the enemy's missiles. In the third and fourth waves, you face the Phoenixes themselves – they hatch from eggs and fly rapidly from side to side, shooting all the way, and the only way to kill them is with an accurate shot to the belly. At last, the mothership slowly descends towards you, and you frantically try to create a hole in its defences so you can get in that final, decisive shot and move on – it's a satisfying conclusion to the game's loop, and you can see why boss fights caught on following Phoenix. The game also has its quirks, such as the choice of soundtracking the action with some rather sedate classical music. But then, why wouldn't you want to blast enemy ships to the sound of Für Elise?

Many companies would benefit from the success of Phoenix, but none more than Centuri – appropriately enough, Phoenix saved them. Having just changed their name from Allied Leisure, the company was running at a loss – but the success of Phoenix almost single-handedly turned them from struggling also-rans to one of the United States' leading arcade publishers, a position they'd retain throughout the golden age. Regardless of the game's unclear origins, it remains one of the finest examples of an arcade shoot 'em up from these glorious times.









1981



Game Title: **Defender**
Genre: **Shoot 'em up**
Release date: **January 1981**
Published by: **Williams Electronics**
Developed by: **Williams Electronics**

"On average it took 37 seconds for players to lose all their lives. But usually, they'd try again - the awesome difficulty encouraged players to keep bashing their head against the wall"

Defender saw Williams – primarily a pinball company – crash into the video game market with a complex, frantic and uncompromising side-scrolling shoot 'em up that, as an experience, was entirely on its own. It was initially feared that the game would fail after 1980's Amusement & Music Operators Association (AMOA) trade show attendees seemed to shy away from its difficulty and very specific controls, but arcade-goers took to it immediately and Williams never looked back. Defender remains the company's most popular game, selling over 70,000 units and returning a revenue of approximately $1.5 billion.

The Cabinet

Defender introduced a standard PCB that was largely universal throughout Williams' golden age titles, based around a main M6809 CPU running at 1 MHz and an M6808 handling sound. The sci-fi decals and marquee on the cabinet tie the game to the vibe designer Eugene Jarvis wished to create – a game where you're unmistakably the good guy, protecting the weak from an imposing alien force. Defender has a very specific control system that takes up the entire panel, with a joystick that only moves up and down, and buttons for everything else – thrusting, turning, firing, smart bombs and the "hyperspace" button in the middle for when all else fails. Eugene Jarvis believes these controls to be one of the game's strongest attributes – a Defender cabinet can't really be converted or made universal without some pretty severe changes.

The Arcade Game

How long does it take to grasp a game's controls? Nowadays, a lot of games feature a complex list of commands, and those who don't play often wonder how players just tend to pick these things up instinctively. But a lot of the most complex games still can't hold a candle to what Defender brought to the arcade at the start of 1981 – when you consider what most games were like before Defender and then take in its wide array of specific buttons, non-players may have thought that it was potentially capable of actual space flight. And yet, people in the arcade quickly got used to it, and they did so in huge numbers – dozens would crowd the cabinets and entire walls of arcades would be lined up with Defenders, making this challenging game an unstoppable juggernaut.

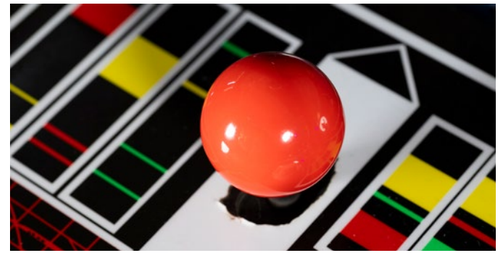
Initially, the game's development had more humble beginnings that referenced Space Invaders and Asteroids; two games that even by this point had become coin-op scripture. The first focus was on a pixel-based recreation of Asteroids, but it lost something without those original vectors. However, the wraparound feature of Asteroids proved to be important; Jarvis and his team figured that by using the wraparound, they could create a play area that scrolled horizontally – something which had yet to be done with a shoot 'em up. By expanding a level along its x-axis, the game's world would always be on show – a line that represents the planet's undulations, the hapless astronauts waiting to be picked up, and the many alien ships that are set on your doom.

Defender's development was intense – in Steven Kent's 2001 book The Ultimate History of Video Games, Jarvis talks about how the pressure made him so burned out that, at many points, he wanted to just put all his stuff in a box and quit. He credits the arrival of new hires, such as 19-year old programmer Sam Dicker, as well as a big collaborative effort from folks like co-designers Larry DeMar and Paul Dussault for being the reasons why Defender was finished just about on time, and for convincing him not to quit video games then and there. When arcade rats got their hands on it, they found something new – blasts of colour and thumping, pinball-esque sound effects assault the player like nothing else. Ships attacked almost before a newcomer had a chance to reach for the laser – in a 2016 Arcade Attack interview, Jarvis said that on average it took 37 seconds for players to lose all their lives. But, usually, they'd try again – the awesome difficulty encouraged players to keep bashing their head against the wall in the hope of reaching a rarefied status in the world of the arcades: to be somebody who'd mastered Defender, the most challenging of all games.

The thought of finally breaking a tough game over their knee is something that still drives players towards these uncompromising experiences today, as much as it encourages studios to make them. Defender was the first example – it showed how difficulty didn't necessarily make a game's appeal limited to experts only, and it pulled the entire industry along with it. When people wonder why games from the golden age are often so challenging, the colossal impact of Defender is probably the best answer – and it's still a title that resonates, just as much as the thump of its laser seems to go through a player's entire body.









Game Title: **GORF**
Genre: **Shoot 'em up**
Release date: **February 1981**
Published by: **Bally Midway**
Developed by: **Dave Nutting Associates**

"Midway trialled GORF at the same time and at the same arcade as Pac-Man, and Fenton's shooter actually earned more money"

A shoot 'em up with multiple levels that almost feels like a condensed history of the genre up to that point, the varied play of designer Jamie Fenton's GORF made it a stand-out title in 1981 – it and Phoenix, released around the same time, were two of the earliest games to feature a final boss battle, and GORF also spoke at you quite a lot thanks to its speech synthesiser. The game was successful in North America, topping Play Meter magazine's arcade chart in September of 1981.

The Cabinet

GORF uses Bally Midway's "Astrocade" board, a Z80-based PCB. Speech is handled via a Votrax synth chip – mocking sentences like "YOU WILL MEET A GORFIAN DOOM, SPACE CADET" making this a famous early example of video game speech. The upright cabinet has a pattern board on the bezel that lights up to inform the player of their current rank, and a huge flight stick for control that's certainly more impressive than a regular joystick! This control panel was built after the real controls for a B-1 Lancer bomber, and it was the creation of game designer George Gomez.

The Arcade Game

Can you become a Space Avenger and destroy the Galactic Orbiting Robot Force? That's the question GORF asks of you, in one of the more varied shoot 'em ups of the early '80s – a multi-levelled title that feels like a tribute to the genre, with some stages being very familiar indeed and others carving out their own direction. A game with an odd name that spawned from GORF initially being a character in Midway's 1977 arcade shooter Desert Gun, and GORF being the reverse of "Frog" (Jamie Fenton's high school nickname), it was almost envisioned as a cinematic experience by Fenton, who'd previously worked on the likes of Amazing Maze and early licenced racer Datsun 280 ZZZAP for her employees, Dave Nutting Associates.

GORF was initially going to be a licenced title, as Fenton recalled when speaking with the Ted Dabney Experience in 2020. The story goes that Paramount had reached out to Bally Midway with the aim of creating a game based around 1979's Star Trek: The Motion Picture, an idea that excited Fenton until she read the script and saw that the movie didn't contain that much action – thus, Trek was abandoned. Still, there is a Trek cameo in the game – both the starship you control and the GORFian mothership you meet at the end do bear something of a resemblance to the U.S.S. Enterprise, almost as if you finish the game by fighting a larger version of yourself.

GORF itself is full of references to famous shoot 'em ups – the game is sometimes erroneously described as featuring levels that "clone" Space Invaders and Galaxian, but it's more accurate to call what GORF did a creative use of agreements that Bally Midway already had with Taito and Namco, obtaining their blessings to feature these homages. The first level, "Astro Battles", recasts the Space Invaders in Earth's atmosphere, and you have a parabolic shield that turns off and on whenever you fire shots. You travel into space and take out the laser formations, and then meet a classic Galaxian wave in Stage 3 – the patterns are prettier and more lethal than ever. Stage 4, "Space Warp", puts you in a wormhole with the best ships of the Gorfian Empire coming at you, before you reach "Flagship", the final stage. The Gorfian mothership has its own forcefield that you need to shoot through, after which you must evade its shots and gradually weaken its defences in order to get one shot through to the core, making the ship explode spectacularly and starting the next loop with a promotion. This final stage is very similar to the ending of Phoenix from December 1980 – however, both games came out in North America at virtually the same time. It's likely both were singing from the same hymn sheet, inspired by Luke Skywalker flying through the trench and getting that one critical hit on the Death Star's exhaust port in 1977's Star Wars.

GORF was destined to be a hit as soon as it entered location testing – Midway trialled the game at the same time and at the same arcade as Pac-Man, and Fenton's shooter actually earned more money on the floor, even if Pac-Man achieved broader appeal on wide release. A sequel was planned at one stage that would have been called Ms. GORF, and it would have also had a multi-level shooter formula, with certain parts paying homage to the likes of Robotron: 2084 – however, development was cancelled during the 1983 North American video game crash. GORF isn't just a great tribute to what the shoot 'em up genre had already achieved – it's a legend in its own right that looked forward to what was to come, and it's as worth playing today as it ever was.









Game Title: **Scramble**
Genre: **Shoot 'em up**
Release date: **February 1981**
Published by: **Konami/Leijac/Stern**
Developed by: **Konami**

"Scramble was a game of firsts that laid the groundwork for nearly every game in the genre going forward"

A new step forward for shoot 'em ups, Scramble was the first horizontal shooter that took you on a journey through several levels, moving relentlessly forward on your mission towards the enemy's base. The game was Konami's first major arcade hit, particularly in the States, where it became regional publisher Stern's second-most-successful title, beaten only by Berzerk. In the March 1990 issue of American magazine RePlay, Konami founder Kagemasa "Kaz" Kōzuki said that Scramble was the most important game that the company had released up to that point.

The Cabinet

Scramble uses a Z80-based board that can be found, with some variations, in a great deal of Konami's early '80s arcades – including Amidar and this game's spiritual sequel, Super Cobra. The upright cabinet features an angled screen that the player looks down upon, and a very wooden aesthetic, with an airbrushed illustration of the pilot on one side and Stern's logo on the other, and the rather loud and muffled sound emanates from a single speaker angled below the marquee. One big issue that the game had, however, was that Konami only included very basic copy protection in the code – there were quite a lot of bootlegs and hacks of Scramble as a result.

The Arcade Game

Having originally started out life in 1969 as a jukebox rental company operating out of Osaka, it took until 1978 before Konami's founder, Kaz Kōzuki, decided that arcade games were the way forward – and a couple of years later, they achieved their first significant hit. More importantly, Scramble was a game that transformed the shoot 'em up genre in a way that even Williams' seminal Defender, released only a couple of months previously, had not managed to do. Scramble was a game of firsts that laid the groundwork for nearly every game in the genre going forward, undoubtedly one of the most influential games released in one of the arcade's most popular styles.

As is frustratingly the case with a lot of early arcade games, the individual creators of Scramble are unknown. But their approach to shoot 'em ups differed from older games by adding forced horizontal scrolling – you're always moving to the right through levels that are actually connected to each other, different to something like Defender where levels wrap around and exist entirely in a vacuum. The six sections of Scramble all offer a different challenge, with the one constant being fuel drums that you have to shoot in order to refuel your ship. Aside from that, this is a wide-ranging, multicoloured journey – you'll blow up missiles from the ground, go through tunnels guarded by UFOs, and evade a barrage of shots from the base. When you get to the fifth stage, surprisingly you won't find any enemies at all – instead you'll have to fly through incredibly narrow corridors, testing your piloting skills to the extreme. Lastly, the Konami sign signals the arrival at the heart of the base – and while it's not a full-on boss, it's a flashing installation guarded by terrain, requiring a very well-aimed bomb in order to destroy it. One quick congratulation message later, and you'll repeat the whole thing over again on a harder difficulty until you eventually succumb.

This sort of journey, while it lasts for less than five minutes on a complete playthrough, is not only one that'll take a good few tries to get through, but was also something incredibly uncommon at this stage of arcade history – not many games had an actual finish. As a result, Scramble's adventure tore up the rulebook – it wasn't just shooters that would follow this game's example but platformers too, starting with the release of Jump Bug later in 1981. Other titles would copy Scramble much more directly – the game's weak copy protection meant that there were a lot of bootlegs, and many clones of the game came out on home systems and in the arcade. One in particular, titled "Scramble 2" and coded by Omni Software, caused Konami and American publishers Stern to spring into action, defending their copyright in the courtroom.

The immediate ubiquity of Scramble, both in official and unofficial form, caused Konami to quickly follow-up on the title – Super Cobra, the game's larger and much more challenging semi-sequel, was released in Japan just a couple of months later in March, and was also very successful worldwide. The game also inspired the company's later huge hit Gradius from 1985, to the point where some people consider Scramble to be something of a precursor to that title. However, Scramble is more than that – this was a game-changer for all forms of shoot 'em up whose importance cannot be overstated, as it was the title that ensured these journeys through space and sky would go on forever.









Game Title: **Centipede**
Genre: **Shoot 'em up**
Release date: **June 6th, 1981**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"The game's elements fit a basic criterion for a title that has wide appeal - it has an attractive new look, it's simple yet satisfying, challenging yet fair"

A game where blasters are much more effective than bug spray, Centipede ditched the traditional space shooter formula for a mushroom-covered field where you had to do away with spiders, fleas, snails and the titular multi-segmented creature. The result was one of Atari's biggest arcade hits – a big game in 1981 and 1982, particularly in North America. The game was created by Ed Logg and Dona Bailey, and was noted alongside Pac-Man for its broad appeal – the player base for both games was pretty evenly split between men and women.

The Cabinet

Like many of Atari's games of the time, Centipede relies on a MOS 6502-based PCB – Centipede's configuration was also used in 1980's Warlords, as well as 1982 sequel Millipede. The upright cabinet is primarily noted for its famous side art – the illustration of a huge centipede crawling its way around the mushrooms, being zapped all the way, is an enduring image of the golden age of arcades. The game is controlled by a relatively simple optical trackball, chosen for its ease of use, and other elements of the cabinet generally come in brighter colours than other arcades of the time – there are several variations of Centipede's upright, usually with minor artistic tweaks such as changes to the bezel's colour. There were also cabaret and cocktail versions, as well as a candy cab that was specific to the Japanese territory.

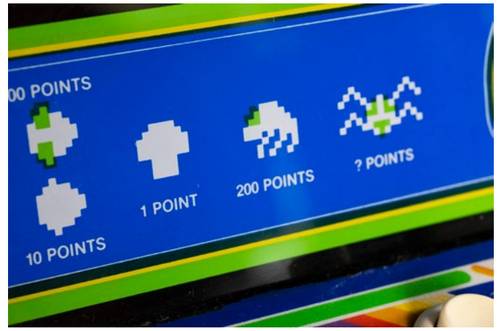
The Arcade Game

Software engineer Dona Bailey described her arrival to Atari in 1980 as the closest she'd ever come to being in a fraternity – of the 30 designers and engineers who were working in the company's coin-op division at the time, she was the only woman. A background in assembly language at General Motors and a fascination with games spurred by the Pretenders song "Space Invader" guided her to the company, and while her time at Atari was brief, it was marked by the creation of a huge hit – Centipede, produced in collaboration with Ed Logg, was a different sort of Atari game that captured a much wider market than their usual titles, being equally attractive to men and women.

The initial idea for Centipede came out of one of Atari's brainstorming notebooks – in a 2017 Arcade Attack interview, Dona recalls that the simple sentence "A multi-segmented insect crawls onto the screen and is shot, segment by segment" stood out, perhaps because shooting a bug was different to shooting a spaceship. The idea was given the greenlight, and Ed Logg – co-designer of 1979's Asteroids, amongst other titles – assigned Bailey to work on the project. Seeing as this was Bailey's first game, Logg was initially supervising her, but soon opted to take a more direct role in Centipede's creation, working alongside her and primarily focusing on the game's mechanics, while Bailey was instrumental in the game's presentation and coding.

Centipede wasn't specifically built to appeal to the female market – rather, it was built to appeal to everybody. The game's look was something new – whereas a lot of arcade games had more muted colour palettes, Bailey wanted Centipede to stand out, opting for bright hues that would sharply contrast with the black field of play, reasoning that this would make the game "glow" in a dark arcade hall. The mechanics of the game would evolve, although there would always be the idea of keeping it simple – you have a centipede to shoot down, ideally concentrating fire on the head segment to score more points; mushrooms that spawn and can be shot or used as cover by the insects; and everything is in the service of keeping players coming back for more. In Richard Rouse III's 2005 book Game Design: Theory and Practice, Ed Logg stated that the game's elements fit the basic criterion for a title that has wide appeal – it has an attractive new look, it's simple yet satisfying, challenging yet fair. This sort of analysis perhaps stands up better than something more hokey along the lines of "a woman made Centipede, therefore women enjoyed it".

The success of Centipede didn't necessarily make Dona Bailey's time at Atari any easier – in a 2007 Gamasutra interview with Leigh Alexander, she said that if anything it attracted surlier attention from co-workers who felt that her success was a fluke, and Centipede would end up being her only released game before she left the industry in 1985. Still, one game can be enough to create a legacy, especially when it's a game that damn near everyone played. Dona Bailey's status as a trailblazer in a male-dominated industry is more than justified, and her bug-infested creation is as compelling today as it was over four decades ago.









Game Title: **Donkey Kong**
Genre: **Platformer**
Release date: **July 9th, 1981**
Published by: **Nintendo**
Developed by: **Nintendo R&D1/ Ikegami Tsushinki**

"Donkey Kong was a foundation that they built upon, ultimately resulting in Mario becoming the world's most recognisable video game character"

One of the most important arcade games ever made, Donkey Kong helped to popularise the platform genre, being the first game to include jumping. It created a cast of characters, from Mario to the titular gorilla himself, that remain amongst the most famous in gaming; and it was the first game to be designed by Shigeru Miyamoto, who'd later go on to lead the making of Super Mario Bros. and The Legend of Zelda (among many other Nintendo hits). Donkey Kong's US cabinet gross had passed $280 million by 1982 (equivalent to around $868 million today), and it helped to position Nintendo as a gaming industry leader.

The Cabinet

Donkey Kong's board and cabinet is very similar to an earlier Nintendo title called Radar Scope from 1980 – this Galaxian-esque shooter was a moderate hit in Japan, and Nintendo of America CEO Minoru Arakawa ordered 3,000 Radar Scope cabs to be sent to the States. However, the game flopped despite positive test receptions, and Arakawa demanded a new game that unsold Radar Scope cabs could be converted into – and Donkey Kong was the result. Available in upright, cocktail and cabaret forms, the pale blue upright cab features cartoon representations of the game's cast of characters – nothing special these days, but then Donkey Kong was one of the first arcade games to have any characters at all.

The Arcade Game

It's impossible to overestimate the impact of certain seminal games, and in the case of Donkey Kong it's hard to picture just what the world of video games would look like without it. Quite simply, it's that important and influential. Several of gaming's most recognisable icons were essentially born here, and some of gaming's most fundamental mechanics – most notably the simple act of jumping over a gap – can be traced back to Donkey Kong. As with many things, the road to such a classic wasn't necessarily straightforward – the need for the big N's young American subsidiary to get a hit quickly in order to avoid going under led to company CEO Hiroshi Yamauchi ordering a Nintendo-wide search for new ideas and concepts, with eyes eventually falling on the pitch of a young man named Shigeru Miyamoto.

Even an early game like this one has some roots, and the design for Donkey Kong is an evolution in many ways of Universal's Space Panic from 1980, the "first" platform game. The big difference is that you couldn't jump in Space Panic, instead relying on ladders to move up and down – but in Donkey Kong, the character of Jumpman (initially unnamed on the Japanese release, and later renamed Mario worldwide) could leap over barrels and gaps, scoring points by doing so. The game would also have a narrative, and characters of a sort – in the original Japanese version, Donkey Kong himself was the only properly named character, while the player-controlled mustachioed everyman had to rescue the so-called Lady that Kong had captured (later renamed Pauline). This trifecta was based on the classic comic strip Popeye, something that Nintendo had wanted to licence out but had at that point failed to do so (something that would change following Kong's success). Comparing the two, Kong is Bluto, the Lady is Olive Oyl, and Jumpman is, naturally, the spinach-chewing sailor man himself.

Miyamoto had little technical experience, but a team of developers from Japanese company Ikegami Tsushinki were able to convert his ideas into code, despite the occasional misgiving. Each level of the game consists of up to five stages, taken from a pool of four – the two constants are the initial "Girders" stage and the final "Rivet" stage, where you send Kong plummeting to the ground. The other two stages, "Elevator" and "Conveyor Belt" are added to the mix on the second and third go-round respectively. Some at Nintendo worried about the game being too repetitive, but Miyamoto held firm. The game always had one eye on the West, and when it finally came time to bring the game over the Pacific, it was down to Nintendo of America to give the characters the names we know today, with Pauline and Mario named, respectfully, after the wife of an employee and, on the suggestion of Nintendo of America president Minoru Arakawa, the Italian-American landlord of NoA's Seattle area warehouse, Mario Segale.

It didn't take long for Donkey Kong to become a worldwide juggernaut – the 2,000 previously unsold Radar Scope cabinets that were converted sold out fast, with Nintendo of America quickly expanding so they could make their own. Almost overnight, Nintendo was transformed – previously they were a decently successful Japanese company with a struggling international division, and now they were an undisputed industry leader. More than that, they were just getting started – Donkey Kong was a foundation that they built upon, ultimately resulting in Mario becoming the world's most recognisable video game character. So, as successful as Donkey Kong was, in many ways it was just the beginning. While Nintendo had existed for nearly a century before the arrival of Donkey Kong, this is where the company's dominance of video gaming truly started.







Game Title: **Frogger**
Genre: **Action/"Climbing"**
Release date: **August 1981**
Published by: **Konami/Sega/Gremlin**
Developed by: **Konami**

"The cutesy nature as well as the amphibian protagonists were initially something that made execs unsure about the game"

Frogger was one of Konami's breakthrough arcade hits, coming a few months after Scramble. While Sega and North American co-publishers Gremlin were initially worried about the game's potential earnings, Frogger's mass appeal meant that it was enjoyed by everybody, capturing a similar wide market to 1980's Pac-Man. It was cited by Ken Horowitz in 2018 that Frogger cabinets earned over $135 million in North America alone, equivalent to around $444 million in today's money.

The Cabinet

Frogger uses a Z80-based board featuring the "standard" Konami wiring pinout that they used on most of their arcades until 1987, making it relatively easy to convert one Konami arcade board to another in the days before the introduction of the JAMMA standard. Available both as an upright and a cocktail cabinet, the art is quite spartan – the main feature is a big tyre track that runs from the marquee all the way down the bezel, representing exactly what our brave frogs need to avoid.

The Arcade Game

Created by an unknown team, Frogger was one of several games that helped to establish Konami as a big name in the relatively new world of the arcades. The cutesy graphics, jolly music and personable frogs meant that it appealed to people who weren't looking for a more conventional arcade experience, such as a shooter – specifically, women and children. As described by Gremlin's director of video game sales, Jack Gordon, in a 1982 Cash Box article, it was a "novel" game that most definitely "filled a void" for some arcade goers, in much the same way as Pac-Man had.

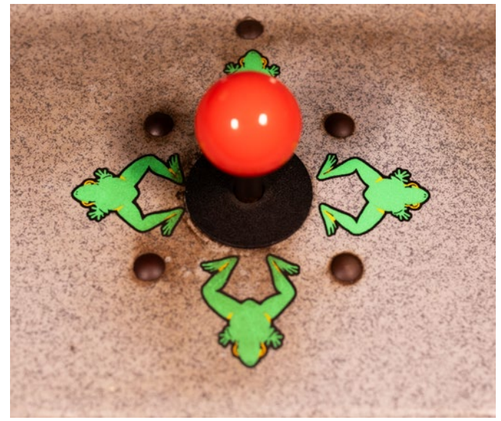
Frogger in many ways operates in a similar vein to another popular contemporary, Nintendo's Donkey Kong, in that you start at the bottom of a screen and have to reach the top – Steve Bloom classifies this sort of title as a "climbing" game in his 1982 book, Video Invaders. In this instance, you control one frog at a time and you need to get them to their home, eventually getting five frogs safely to the top before going on to the next stage. To do this, you'll first have to cross a busy road filled with cars and trucks, and then navigate a river that's also got its share of traps and obstacles – it's far from an easy journey. Indeed, despite the cutesy aesthetic, there's actually a ton of ways to die in Frogger, particularly for an early arcade game – you can be flattened by a car, eaten by an alligator, drowned by a diving turtle, bitten by snakes, and lots more besides. Even the edge of the screen can kill you – unlike Pac-Man and various other early '80s games, the screen doesn't wrap around.

Of course, all of these deaths are still done in a rather jolly way, further adding to the game's appeal – it may even be one of the first games to make the loss of a life somewhat funny and celebratory, rather than just a generic explosion. Its cutesy nature and amphibian protagonists, however, initially had execs unsure about the game, particularly those at North American arcade studio Gremlin, who distributed the game in the territory with Sega (Sega made a deal with Konami to manufacture and publish the game worldwide). Part of this was due to Gremlin having a previous frog-based failure in the arcade with 1978's Frogs (better known as its 1982 Atari 2600 clone, Frogs and Flies), as well as a bias against games that perhaps held more appeal for women and children as opposed to traditionally male arcade-goers. Still, one location test in San Diego was enough to change those minds – the game proved so popular in this one spot that distributors far and wide immediately demanded to buy their own units.

Another part of Frogger's popularity was the ability to play it in the home – sort of, anyway. Coming out right at the start of the boom in microcomputers, and with licensing not being so hard and fast in those days, meant that a huge stream of Frogger clones emerged for the likes of the Commodore 64, Atari 8-bit and ZX Spectrum, all of varying quality. Indeed, there were so many that the eventual official home port of the game in 1983, published by Sierra on various micros, kind of got lost in the midst of all the clones that were already out there. But the amount of people who wanted to play Frogger any way they possibly could, whether at the arcade or in the home, speaks to just how popular the game was with everyone – it's one of the best-known games of the golden age, a name that's still marketable today, and something that's often referenced in popular culture.









Game Title: **Galaga**
Genre: **Shoot 'em up**
Release date: **September 1981**
Published by: **Namco/Midway**
Developed by: **Namco**

"Galaga's challenging stage was actually the result of a game bug discovered by programmer Tetsu Ogawa"

The sequel to Namco's first major arcade hit, 1979's Galaxian, Galaga adds more to the original's formula – not just in terms of increased enemies, but also greater firepower for your craft, particularly with the new "dual fighter" mode that you earn when you rescue a captured ship. Often thought of as the first real arcade sequel, Galaga wasn't as big of a hit as its predecessor but had incredible staying power, featuring on top-selling cabinet lists for several years after its release.

The Cabinet

Originally set to use the same board as the earlier Galaxian, Galaga was eventually designed with a new PCB, the Namco Galaga, that would later turn up in games like Dig Dug and Xevious. The upright cabinet features many era-defining examples of arcade art – rather than opting to include a diagram of how to play on the control panel, director Shigeru Yokoyama decided to feature previews of the game's unique mechanics, such as the tractor beam and dual fighters. Other facets of the cabinet – such as the bezel littered with the various enemy fighters and the huge bug-like alien ship staring back at you on the side art and kick panel – are amongst the most iconic pictures on any '80s arcade cab.

The Arcade Game

Creating a sequel to a game as popular as Galaxian is no easy task, but with the experience of follow-up megahits like Pac-Man and Rally-X at their side, Namco proved they were up to the challenge with 1981's Galaga. It's a game that took the key elements people loved about the original and added so much more, creating an experience that was still very familiar, but much more accessible and a great deal deeper.

The core of Galaga remains the same as its predecessor – alien ships in formation breaking off to try and destroy your fighter, the Gyaraga. However, the process is much longer here – ships now fly into formation, ducking and diving in ways they never did before. The enemies now have names like Goei and Zako, and they're headed up by the Boss Galaga ships that take two hits to kill, and are flanked by their own guards. This core of the game is a little deeper, but not too different to Galaxian – indeed, this was essentially the original concept for Galaga before Shigeru Yokoyama decided to add more to the experience.

The main difference between Galaga and Galaxian lies in the capabilities of your fighter – the first game is more defensive, and it takes a lot longer to take down a wave due to your slow rate of fire. In comparison, the sequel is far more offensive – you fire much quicker, and experienced players can take down waves in a very short time (popular hacks of the game increased the fire rate even further, essentially making it rapid). Also, there's the ability to acquire twin fighters – if a Boss Galaga captures your ship with its tractor beam, you can rescue it by destroying the enemy, giving you two fighters at once. While this naturally makes you a larger target, the number of shots you can lay down more than make up for it, and the dual fighter is essential for later stages and high scores. The idea of an enemy ship capturing your fighter with a beam came from a scene from an unknown sci-fi film that Yokoyama recalled during development, and remains one of the game's most famous sequences.

Also fondly remembered is the "challenging stage" that occurs every couple of levels – something that had to be included following the cutscenes in Pac-Man and the initial bonus stage in Rally-X. Galaga's challenging stage was actually the result of a game bug discovered by programmer Tetsu Ogawa, where waves of enemies would appear and just fly off without arriving at the top of the screen. With Yokoyama struggling to include a bonus stage, this bug proved useful – now the fighter has to take out as many of these aliens as they can before they fly away, with bonuses aplenty for those who can wipe out the whole lot. Again, a dual fighter is handy for this part.

The road to success for Galaga was bumpy – it didn't make a notable profit during location testing, and some executives demanded changes as a result. However, Yokoyama stuck to his guns – Galaga is actually far more casual than its predecessor, with play sessions lasting for a good seven to eight minutes on average. The huge success of Namco's previous arcades ultimately allowed them to take more of a risk here, and the result was a game built to last, a universally loved title that's considered one of the best arcade games ever made for good reason. Even now, over 40 years later, it's hard to imagine an arcade that doesn't have a Galaga in the corner, inviting all comers to take on those waves and embark on a still thoroughly thrilling space ride.









Game Title: **Tempest**
Genre: **Tube shooter**
Release date: **October 1981**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"[Dave Theurer] constantly had nightmares where monsters were coming out of a hole in the ground, and he had to kill them before they reached the surface"

One of Atari's most popular, revered and influential arcade games from the golden age, Dave Theurer's Tempest, a game inspired by his own nightmares, was like nothing else in the arcade both technically (it was Atari's first full colour vector game) and from a gameplay perspective. The game shipped approximately 28,600 arcade units, making it a far bigger hit even than Theurer's first game, Missile Command. In 2022, Atari co-founder Nolan Bushnell said that Tempest was his favourite game that the company published, even though it came out a couple of years after he'd left Atari.

The Cabinet

Like many other Atari games, Tempest uses a MOS 6502 as its main chip. The colour vector graphics required a new CRT – the Color-QuadraScan or "6100", created by arcade monitor manufacturers Wells-Gardner. However, this monitor had issues – the game's attract mode in particular would make the display run very hot, to the point where solder points on components would melt and the monitor would fail (several guides on how to fix these problems have been written over the years). The cabinet features many memorable illustrations – the marquee, side and control panel are all rightly famous examples of cabinet art. The game's precise controls are achieved with the use of a rotary knob, as opposed to a more traditional joystick.

The Arcade Game

In the hedonistic yet intense atmosphere of the Atari coin-op division's prime years, it was considered uncommon for a programmer's first attempt at a game to even be published, let alone be a hit. That was, at least, until Dave Theurer created Missile Command in 1980, earning Atari millions of dollars. It'd perhaps be even more uncommon for the same programmer's second game to be an even bigger hit, but that's what Theurer achieved in 1981 with Tempest, one of the most celebrated games in the entire Atari library. A tube shooter that's still highly influential to this day, seen in everything from blockbuster movies like Ready Player One to New York City's Museum of Modern Art, the game's stellar reputation is more than deserved – it's as fascinating as it is difficult.

A lot of ideas for Atari games came from a well-thumbed catalogue of uncredited single line concepts, and such was the case with Tempest: Theurer landed on a sentence that simply said "first-person Space Invaders", and in a couple of weeks he had a working demo. However, it quickly became clear that Space Invaders in first person simply wasn't fun, and he was asked by management if he'd like to kill the project and move on. In interviews for 1996's Atari Collection 1 compilation, Theurer remembers his next thought – he constantly had nightmares where monsters were coming out of a hole in the ground, and he had to kill them before they reached the surface. With this in mind, he changed the play area to a circle that initially rotated around the player – after this made everybody sick, the circle was fixed in position and the player character, the "blaster", would move around its edge.

The final result, also known as "Aliens Vector" and "Vortex" at various stages of development, is as frantic to play as it is striking to look at. It requires players to move the blaster with speed and precision over the lanes – something that really can only be achieved by a rotary knob – in order to protect the tunnel's edge from the likes of flippers, spikers and fuseballs, all of which have wildly different forms of attack alongside traditional bullets. You can destroy all enemies with a superzapper once in every level, but even this only ever seems to offer a brief respite, and the play is filled with remarkably tense moments – any time that you have to deal with a flipper that's moving around the edge of the stage is a major concern, and even the end of a level is peppered with spikes that'll kill you and force you to repeat the warp. The game accommodates various skill levels by offering different starting points – beginners can commence from the very start, while advanced players can choose later levels. In the end, it's a question of how long you can survive – the game's 16 levels loop forever, getting harder and even becoming invisible at one point.

Even before Tempest entered location testing, Theurer had to stop crowds of Atari employees coming to the lab just to play the game – it was clearly going to be a massive hit. The huge popularity of Tempest is one part of its legacy, but in the main it's a timeless title that's influenced many other games, as well as entire careers. The series continues to this day under the kaleidoscopic custodianship of Jeff Minter, and it remains highly relevant over 40 years after its original release – in the end, very few games can match this one's staggering achievements.









Game Title: **Turbo**
Genre: **Racing**
Release date: **18th October, 1981**
Published by: **Sega/Gremlin**
Developed by: **Sega**

"The game's settings can change rapidly - you'll start on a straight track, then suddenly you'll be turning around a blind corner by the sea"

A forefather not just of the Super Scaler games that would define Sega in the second half of the decade but of 1980s racing games as a whole, Steve Hanawa's Turbo was a very popular title. The most successful CPU-based racing game in the days before Namco's Pole Position, the game had legs (well, wheels) well into 1983, where it was still making appearances in the top five of monthly arcade charts in Japan 18 months after its initial release.

The Cabinet

Turbo uses the "VCO Object" board, an 8-bit Z80-based precursor to the 16-bit Super Scaler hardware that was also used in Buck Rogers: Planet of Zoom, and was the first CPU-based board to be used for a full-colour sprite-scaling arcade game. The game is available in upright and cabaret cabs that include a single pedal and gear shift, but there is also a deluxe sit-down cabinet designed to feel much more like being behind the wheel of a racing car, a concept inherited from 1979's Monaco GP. The arcade cabinet also features three speakers, although the game's fearsome engine sound uses discrete audio circuitry that's separate from the main PCB.

The Arcade Game

Turbo wasn't the game that made Sega the kings of the road in the arcade – really, they were already at the head of the pack. However, their previous successful games in the racing genre had come in the shape of discrete circuitry-based arcade games, the sort that were commonplace in the 1970s (Pong being the most famous example). With these logic chip-based games largely on the way out at the start of the 1980s, Sega needed a racing game for the CPU-based generation – and Turbo would eclipse any effort that came before it with a new and colourful perspective on racing that no other arcade game could match.

As far as the game goes, Turbo is a combination of Sega's two most successful discrete logic racers – 1976's Road Race (also known as "Fonz", after Sega licensed the popular Happy Days character), and 1979's Monaco GP. Road Race would provide the game's third-person perspective – this early game already used a view that took you behind the player's motorbike, although the game itself was in monochrome while Turbo would be a full-colour title. And while Monaco GP was a full-colour game, it used a more common top-down perspective. This latter game would, however, provide a lot of the structure for Turbo – you score points by overtaking as many cars as you can, there are various surfaces you have to race on including snow and gravel (as well as night and day racing), and regardless of skill level you'll still be able to get a good couple of minutes of play out of the game, as you only get a lives counter after the first round's finished. All of these components would end up featuring in Turbo, and the new game would do a fine job of implementing them.

While the game's form of scaling sprites might look crude nowadays, it still provides a good sense of speed – there are many other cars on the track, and making your way around a few of them in quick succession is satisfying. The game's settings can change rapidly – you'll start on a straight track, then suddenly you'll be turning around a blind corner by the sea. There are dark tunnels where the cars don't appear until they're right in front of you, and icy roads where you'll slip and slide all over the place.

And as the game's title suggests, all of these things happen very fast – while later racing games would have you take on parts of a course over a minute or so, stages in this game take place over mere seconds. A "turn" may not necessarily feel like you're actually turning the car, but the twitchiness of the controls and the number of obstacles in your path (or behind you, in the case of the ambulance), mean that there's certainly enough to be getting on with.

Turbo would be a triumph for Sega, cementing their place as a leader in this new gaming form. For the game's designer, long-time Sega employee Steve Hanawa, it would be a more stressful experience – in an interview for fansite Sega8bit, Hanawa revealed the crunch needed to get the game finished put him in the hospital, such was the pressure on him to deliver the title. As the manual for the game said, Turbo was the result of "hundreds of hours of work, design, research, experimentation and more work" – but the final product was a racing game that changed the way others would look at the genre, inspiring all that came after it and building a solid foundation for the 1980s arcade racer.









Game Title: **Bosconian**
Genre: **Shoot 'em up**
Release date: **November 20th, 1981**
Published by: **Namco/Bally Midway**
Developed by: **Namco**

"It didn't take long for other shooters to riff on Bosconian's formula - arcade hits like Konami's Time Pilot and Williams' Sinistar may not have existed without this title"

Another high-quality space shooter from Namco, Bosconian is also the first shoot 'em up to allow players to move in eight directions as they hunt for the Bosconian empire's space stations. The game was released at around the same time as Namco released Galaga, with the two games almost being in competition with each other – in Japan, Bosconian was commercially neck-and-neck with Galaga, becoming the seventh-highest-grossing arcade game of 1981 according to Games Machine. However, Galaga performed significantly better in the U.S. and Europe – to the point where a lot of unsuccessful Bosconian units were converted into Galaga cabinets.

The Cabinet

Bosconian largely runs on the same hardware that powers Galaga – both games use three Zilog Z80 microprocessors for speed, sound and graphics, each running at around 3 MHz. However, Bosconian has a couple of additions – the game features a second I/O controller that handles the game's speech samples, and it also uses the same video board as Namco's 1980 maze-racer Rally-X. The upright cabinet features a great deal of illustrations demonstrating the might of the Bosconians, with the monitor being centred right in the middle of one of their Orbital Space Stations. There is also a cocktail cabinet version, which is likely how you'd find the game in Japanese game centers.

The Arcade Game

When it comes to Namco's shoot 'em ups that came after the 1979 hit Galaxian, it's 1981's Galaga and 1982's Xevious that are most likely to be singled out as being equally impactful on the genre. However, there is also an argument for Bosconian being up there. It might not have been as commercially successful, but it introduced a new form of gameplay to the genre where the player's ship had eight-way movement and was positioned at the centre of the stage with enemies coming from all directions. This meant players had to actively search out their targets as opposed to them automatically heading straight for their starfighter.

Designed by Seiichi Sato as his first project for the company, the various components of Bosconian come together from a group of previous Namco hits – their proficiency in the shoot 'em up genre has already been mentioned. The game takes a lot of elements from Rally-X – it has largely the same layout, with a radar that shows players the position of the star bases you have to destroy relative to the player. These similarities between the games means it's not surprising to see that a few Namco staff members, including programmer Kazuo Kurosu, worked on both titles. Another novelty for the time is how Bosconian talks to you – you get several speech samples, ranging from the opening "BLAST OFF!" to warnings like "BATTLE STATIONS!" and "CONDITION RED!". This wasn't the first Namco game to feature speech – 1980's King & Balloon, a fantasy-based riff on the Galaxian formula, also featured a couple of samples – but Bosconian expanded the number significantly.

As a game, Bosconian is a title that allows for a couple of different approaches – one based on speed and survival, and another purely based on accruing points. Your starfighter fires both from the front and rear, and you must find and destroy several space stations in each level while also facing off against mines, asteroids, and enemy ships. These stations consist of a core and several pods, and they can be taken out in two different ways – a shot directly at the core will blow the whole thing up immediately, while destroying each pod is slower but earns more points overall. A simple core shot is hardly worthless – there's an alert system in place that goes from Green to Yellow to Red, and taking out these stations decreases the level. When you're in Red Alert, taking out a base as quickly as possible is a great way to give yourself a breather, look at your radar and find the next target, and ultimately it'll help you live longer. As is often the case, the action continues until you finally run out of lives – although later games in the series such as Blast Off and the PC Engine's excellent Final Blaster do give you a chance to take down the Bosconian empire for good.

Xevious usually gets mentioned as one of the first shooters to feature any kind of significant backstory, but Bosconian deserves a mention with its talk of the "Rock War", and enslaved earthlings searching for revenge. Mechanics-wise, it didn't take long for other shooters to riff on Bosconian's formula – arcade hits like Konami's Time Pilot and Williams' Sinistar may not have existed without this title. Even if worldwide sales don't necessarily reflect its status, Bosconian clearly had a key part to play in the history of what is arguably the definitive arcade genre.







1982

Game Title: **Zaxxon**
Genre: **Shoot 'em up**
Release date: **January 1982**
Published by: **Sega**
Developed by: **Sega/Ikegami Tsushinki**



#Zaxxon

"Zaxxon helped to put Sega not just at the commercial front of the arcade, but to single them out as being technolo-gically advanced"

After previously being amongst the industry leaders in the days of the electromechanical arcades, the isometric shooter Zaxxon was one of Sega's first big video arcade hits, particularly in North America. Technically one of the most advanced games of its time, a hefty advertising campaign – including a TV commercial – helped the game become one of the USA's top five highest-grossing arcades in 1982. The advanced nature of the game also made it difficult to port accurately – versions of the game for the Atari 2600 and Intellivision had to use a completely different "behind the ship" viewpoint, as both consoles struggled to handle isometric graphics.

The Cabinet

A new and rather sizeable Z80-based dual PCB set was created specifically for Zaxxon, with future isometric games such as Congo Bongo and Future Spy using modified versions of the same layout. The game was available as an upright, cocktail or cabaret cabinet, with the title being front and centre on the marquee and side art, which also features an illustration of the gameplay. Some versions of the original upright cabinet feature an oversized joystick in the centre of the control panel that's similar to a flightstick, with two fire buttons on the left and right of it – this is commonly known as an "ambidextrous" layout, designed for both left and right-handed players to be comfortable.

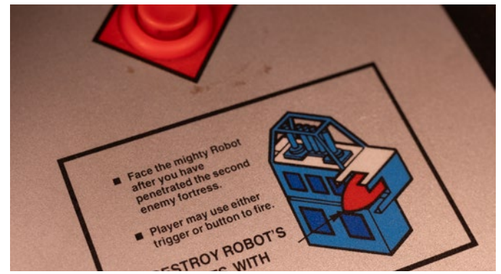
The Arcade Game

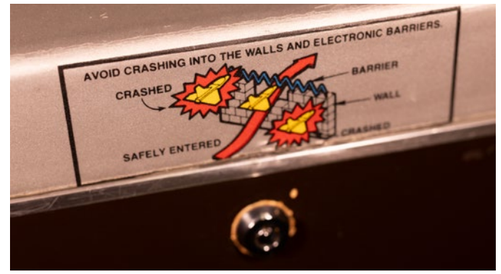
"The one video arcade game that soars a dimension above the rest!" – that was how arcade goers in the States were introduced to Zaxxon when it appeared on televisions across the country, becoming the first arcade game to be advertised on TV. This was a new step forward, befitting a game that Sega wished to present as something entirely different – a shoot 'em up that you'd never seen before where you moved in three dimensions, far more advanced than any boring old 2D title. And it worked – coming after hits such as 1979's Head-On and 1981's Frogger (a game Sega only published), Zaxxon helped to put Sega not just at the commercial front of the arcade, but to single them out as being technologically advanced, a reputation that they'd keep through their later Super Scaler machines and beyond. As the advert put it, they were the arcade's "master design engineers" – although parts of the game were also outsourced to Ikegami Tsushinki, the company who had previously done similar work for Nintendo on Donkey Kong and other titles.

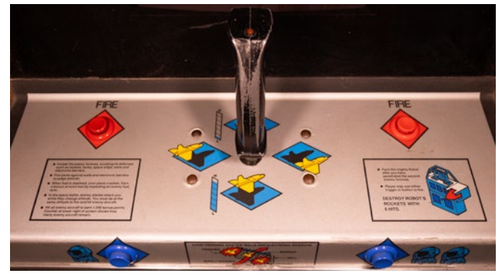
While it's also the name of the big robot that you have to destroy at the end of each level, Zaxxon also gets its moniker from "axonometric projection", the term used to describe the game's graphics – isometric projection being a subset of this which is commonly used in engineering due to its uniformity of angles. Zaxxon was not actually the first game to employ this viewpoint – Data East's Treasure Island did so in 1981, but Zaxxon was the first to be released internationally and, it has to be said, does a much cleaner job of presenting this new form, with the game's movement being considerably smoother.

How do these graphics translate to gameplay? In many ways, the game is an isometric take on Konami's Scramble from the previous year – not only do you have to deal with enemy ships in front of you, but there are also missiles coming up from below. Judging your altitude is very important – even though brick walls and barriers are indestructible, it helps to fire at them so that you know where you are. You also have to watch your fuel gauge – much like in Scramble, the perverse act of shooting fuel drums helps you stay in the air longer. While the game could have potentially been complex, Zaxxon gives players more than enough info so that they know what they're doing, from altimeters to crosshairs that appear on fighters that you can shoot. And shoot you must, because Zaxxon has a homing missile at the ready for players who dawdle and don't bother to blow anything up.

The legacy of this game is certainly cemented by a new approach that the majority of arcade-goers hadn't seen before, but another nod must go to its advertising, and commercial – the brainchild of Sega chairman David Rosen and produced by Jerry Kramer Associates, Zaxxon's advert hugely increased the arcade game's profits in every city it ran in, helping the game become all the rage for a time. It was a regular feature on the almighty Starcade TV show, referenced in movies such as Friday the 13th: The Final Chapter, and there was even a popular Zaxxon-based board game from Milton Bradley. While later isometric games from Sega never quite managed to hit the commercial peak of this one, Zaxxon's innovations would set the company up for even more technological successes in a couple of years' time with the introduction of the Super Scaler games.









Game Title: **Ms. Pac-Man**
Genre: **Maze**
Release date: **January 13th, 1982**
Published by: **Bally Midway**
Developed by: **General Computer Corporation/Bally Midway**

"Namco themselves have given mixed signals about [Ms. Pac-Man's] success over the years - original Pac-Man creator Toru Iwatani has never commented on the game"

With women constituting half of Pac-Man's huge player base, it certainly made sense to develop a version of the game where you play as his wife, complete with eyes, make-up and a bow. But Ms. Pac-Man is so much more than that. A fully-fledged sequel with new mazes, unpredictable ghosts and a whole load of other changes, it's often considered to be even better than the original – and Namco only had to sign off on it. Over 130,000 Ms. Pac-Man cabs were sold, making it one of the most successful coin-ops to be developed in North America.

The Cabinet

Unsurprisingly, Ms. Pac-Man's board is very similar to that of the original game. Also like the original, it can accommodate an addition that was very popular with operators – the speed-up chip, a modification that made Pac-Man (or Ms. Pac-Man) move at double the speed. In fact, this "Pac-Man Fast" hack proved so popular that Bally Midway ended up releasing an official version of the chip! Available as both an upright and cocktail machine, the cabinet is in an appropriately garish shade of pink – although the made-up and posing Ms. Pac-Man, the "new femme fatale of the gaming world", certainly looks better than the original North American cabinet's take on her husband.

The Arcade Game

Pac-Man may have taken the arcades to new heights, breaking all records in the process... but nothing is forever. Even while the game was doing so well in 1981, Bally Midway's thoughts were turning to the next big thing, hoping that Namco would come up with a bit more magic – however, the Japanese studio weren't currently thinking about a sequel, let alone making one. But just as Midway were starting to worry that the huge production line they'd set up for the original would eventually have to be scaled back, along came this enhancement kit from a group of MIT students – the fully-fledged sequel that they wanted. Ms. Pac-Man would take the series to even greater heights than before – now the husband-and-wife team would continue to dominate the arcade floor through 1982 and beyond.

The studio behind Ms. Pac-Man, General Computer Corporation (GCC) were primarily known for enhancement kits for existing arcade games. These mods were quite popular with operators simply because they breathed new life into titles – crude though some were. GCC prided themselves on high-quality enhancements, and their one for Missile Command – Super Missile Attack – was very successful. Atari weren't best pleased and initially tried to crush these young scallywags in court – but because these hacks were in a legally grey area as no piracy was involved, GCC withstood it and Atari eventually settled, hiring them soon after. On the other hand, Midway were very pleased with the Pac-Man hack they'd created, originally known as "Crazy Otto", and they quickly reached out to GCC, wanting to take the enhancement and turn it into a full sequel. As for Namco, they were happy to give their blessing, with president Masaya Nakamura even offering feedback on the new character (she initially had hair, which Nakamura disapproved of) – as long as they got their royalties, Midway were free to go ahead.

There are many changes in Ms. Pac-Man beyond the character, of course. The game now cycles through four different mazes, the graphics have been given all sorts of tweaks, bonus fruits now bounce around before disappearing, and our heroine theatrically swoons when the ghosts catch her as opposed to folding in on herself. The biggest change by far, however, is in the behaviour of the ghosts – they're designed to be a great deal more unpredictable. When speaking to Julian Rignall for a 2016 retrospective on USGamer, programmer Steve Golson said that a lot of people had figured out the original four ghosts, and from an operators' perspective they were spending too long on the machine. The ghosts now head to random locations as opposed to fixed areas, a seemingly minor change that still totally broke the regular patterns – although while the title was harder as a result, it was still balanced so as not to be completely unfair.

Ms. Pac-Man caught serious fire on release – Midway boss James Jarocki commented in a July '82 Play Meter article that in six months they'd produced 91,000 Ms. Pac-Man cabs, a figure that the original took nearly 15 months to achieve. Like her husband, Ms. Pac-Man would be a huge figure in popular culture, as now there'd be a whole Pac-Man family. Namco themselves have given mixed signals about her success over the years – original Pac-Man creator Toru Iwatani has never commented on the game, and recent royalty disputes have even kept her out of some official retrospectives and compilations. However, none of this changes her status as a legend on par with her husband – she is still, as Midway dubbed her in 1982, the first lady of video games.









Game Title: **Dig Dug**
Genre: **Maze**
Release date: **February 20th, 1982**
Published by: **Namco/Atari, Inc.**
Developed by: **Namco**

"When Namco went back to the maze game genre, it was important for them to do something that wildly differed from previous successes like Pac-Man and Rally-X"

An entirely new sort of maze game from the masters of the genre, Namco's Dig Dug allowed players to dig up their own maze and had the surprisingly sadistic aim of inflating each of a stage's enemies until they popped. These playful bouts of extreme violence would be a key feature in one of the biggest games of the golden age – Dig Dug was Namco's second most successful arcade game ever, beaten only by the original Pac-Man. By the end of 1982, the game had already earned $46.3 million in North American cabinet sales alone, equivalent to over $143.5 million in today's money.

The Cabinet

Dig Dug uses the same Z80-based hardware that was originally introduced for Galaga, and can also be found in Bosconian and Xevious. The game's upright cabinet is coloured white and gives the impression of a bunch of kids' drawings, particularly the side art illustration depicting our hero blowing up an enemy Pooka, while the bezel prominently features sketches of the game's characters. The game is controlled via a four-way joystick and a button each for players one and two that's simply marked "Pump".

The Arcade Game

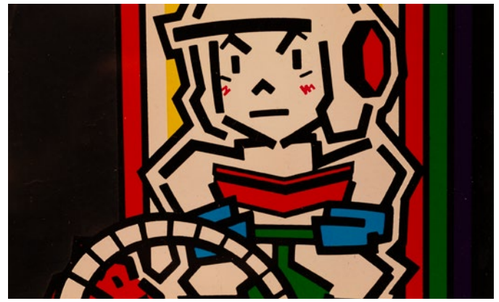
The huge success of 1980's Pac-Man inspired a number of other developers to create their own maze games, many of which were specifically aping the gameplay of Namco's title and were known as "dot eaters". Some of these, such as Data East's Lock 'n' Chase, managed to gain their own footing in the arcades, while others like A-1's Mighty Mouth were blatant enough clones for Pac-Man's U.S. publishers Midway to successfully take them to court. For their next maze game, however, Namco themselves wanted to go into a different direction – rather than having a fixed path through a level, a player would now be able to make their own through relentless digging. The resultant game, Dig Dug, would be another huge success for the Tokyo-based company, with Atari also reaping the rewards through publishing the game in North America.

The process behind Dig Dug is an example of Namco's philosophy at the time – what Shigeru Yokoyama, who oversaw the project, described as a part of the company's essence in a 2011 interview. Namco never wanted to simply rehash a successful title – to quote Yokoyama, "If you do something unique that others haven't done, you'll find your market there." And so, when Namco went back to the maze game genre, it was important for them to do something that wildly differed from previous successes like Pac-Man and Rally-X. Masahisa Ikegami was the man with the idea for what Namco would end up calling a "strategic digging" game, one where players earned points for making their own path through layers of soil and taking out Pookas and fire-breathing Fygars to advance.

Dig Dug may look like quite a straightforward game on paper, but there are actually a few key ways to play when it comes to succeeding in the later rounds and earning high scores. Fygars, for example, only breathe fire horizontally – it is therefore tempting to start inflating them vertically from the side, but you earn a lot more points by confronting them head-on. The biggest scores, in fact, require you to drop the air pump and instead use the rocks dotted around the stage, digging under them at just the right time so they fall on the heads of enemies – this is the only way to spawn bonus items, along with simply being a lot more lucrative points-wise than regular old inflation. Dig Dug (as that's also the player character's name in Western releases) also provides the music on his own – he creates the game's catchy jingle as he moves, something that composer Yuriko Keino devised as a replacement for regular old footsteps.

The huge popularity of Dig Dug quickly saw it spawn its own set of imitators – one in particular, Universal's Mr. Do!, almost ended up taking the place of an unofficial sequel even though Namco had nothing to do with it (Namco's actual sequel, 1985's Dig Dug II, wasn't nearly as successful). The game has had a lasting influence, particularly on Namco itself – their popular Mr. Driller series of the late '90s and 2000s was envisioned by Hideo Yoshizawa as a direct descendent of Dig Dug, and it may have subconsciously influenced the inflating mechanic in his classic PS1 platformer, Klonoa: Door to Phantomile. While Dig Dug hasn't been directly revisited too often, it's certainly made quite a few cameos over the years, enough for it to be clearly considered by Namco as amongst their greatest arcade works.









Game Title: **Robotron: 2084**
Genre: **Multidirectional/Arena Shooter**
Release date: **Summer 1982**
Published by: **Williams Electronics**
Developed by: **Vid Kidz**

"In-your-face sound effects are a common feature of Williams' arcade games, but Robotron is possibly the most aggressive out of them all."

A frantic game that was designed to be tougher even than the majority of golden age titles, Robotron: 2084 was a significant success for Williams, spending several months in North America's top 10 arcades lists in 1982 and shifting over 19,000 units. Created by Eugene Jarvis and Larry DeMar, the game was critically lauded for its precise controls and the feeling of panic it induced in players – Robotron continues to directly influence arena-based dual-stick shooters to this day.

The Cabinet

Robotron: 2084's board is the first revision of their Motorola 6809 based line that had previously been used in Eugene Jarvis's previous titles, Defender and Stargate. The upright cabinet is fairly simple – a suitably futuristic marquee, a representation of the screen's border on the bezel, and "2084" painted onto the sides. The game is controlled through two joysticks – the left joystick is for movement, and the right is for firing in a direction. Robotron wasn't the first dual-stick game, but its popularity meant that its approach became the standard for such games – earlier titles such as Taito's Western Gun from 1975 had movement on the right stick and firing on the left.

The Arcade Game

Generally speaking, golden age arcade titles of the early 1980s are difficult – games of survival where you'll ultimately lose in the end, but ideally you'll take as many of them (whoever "them" may be) with you as you can on the way and earn lots of points. Few games represent this vintage challenge better than Robotron: 2084 – Eugene Jarvis, the man behind the famous and incredibly tough Defender, has a whole new task awaiting those who dare to take it on. Can you save Mommy, Daddy and Mikey, the last human family? Seeing as you start every wave by being plonked in the centre of a screen chock-full of enemies who are singularly dedicated to your annihilation, the answer is assuredly no – but that doesn't mean you aren't going to try and try again.

Similarly to Defender, rescuing humans is a big part of Robotron's theme – although in this game they're a lot more recognisable. Rescuing humans gives you bonuses, and letting enemy bots touch them makes the game squeak out a little yelp of death. The legions of enemies are varied and get strong very quickly – Ground Roving Unit Network Terminators (G.R.U.N.T's) don't do much, but soon you'll be up against Spheroids that spawn energy-blasting Enforcers, Brains that possess humans and fire awkward missiles that zig-zag in your direction, and unkillable Hulks. Stopping simply isn't an option – if you hesitate, you die. The fast dual-stick controls give you a strong weapon at least – they were inspired by Stern's Berzerk, a game that Jarvis greatly enjoyed but struggled to play while he was recovering from a hand injury. For Jarvis, the free movement and firing that the sticks allowed was the solution, and in a 1997 interview for James Hague's digital book Halcyon Days, he cites the controls as the thing that gave Robotron its "magic" – the thing that really tied the game together.

Along with the large number of enemies that must be killed as quickly as possible, Robotron also fosters a state of urgency in the player with its presentation – the clean graphics flash multiple colours at you, and the game's sound is as loud as an arcade's ever been, with your blaster on its own sounding like a distorted electronic snare. Such in-your-face sound effects are a common feature of Williams' arcade games, but Robotron is possibly the most aggressive of them all. The title also contributes to the futuristic dystopia – there's certainly a hint of 1984 there, although Jarvis and DeMar decided to add a century to George Orwell's novel, as "Robotron: 1984" wasn't exactly a realistic prospect in 1982. Meanwhile, the "Robotron" part did attract the ire of Disney, who sued Williams based on its similarity to Tron – however, Williams won the case.

The game's success made it a money-spinner, but Robotron: 2084 has inspired many others since its arrival – following an initial wave of microcomputer clones (including the ZX Spectrum's shockingly close Wild West Hero from 1983), the game would take on a life of its own. Eugene Jarvis himself would evolve the concept further with 1990's Smash T.V., while Jeff Minter – who classed the original as a seminal favourite – made 1991's Llamatron as his own strange take on the title. There would be a huge revival of the dual-stick genre a decade or so later following the success of 2003's Geometry Wars, and modern indie success stories like 2022's Vampire Survivors still have a great deal of Robotron in their DNA. However, the original game itself is a timeless affair – for an arcade that originally came out in 1982, it feels like it could have been released yesterday.









Game Title: **Moon Patrol**
Genre: **Shoot 'em up**
Release date: **May 8th, 1982**
Published by: **Irem/ Williams Electronics**
Developed by: **Irem**

"The [parallax scrolling] effect adds a great deal of depth to Moon Patrol's graphics, giving the impression of a bustling space colony, or of highly treacherous terrain"

A different take on the shooter genre that incorporates platforming elements and a graphical depth that had yet to be seen in the arcades, Irem's Moon Patrol put you in the shoes of the greatest cop in Sector 9, on the lookout for the galaxy's toughest thugs. Moon Patrol was Irem's first major original hit, spending several months inside top ten lists for arcade and street locations.

The Cabinet

Irem's M52 board was first used in Moon Patrol and featured a Z80 as the main CPU alongside an M6803 for sound and other functions – enough for the game's parallax scrolling. Cocktail and candy cab versions of Moon Patrol exist, although most North American players would have played the game on an upright – this cab was made and distributed by Williams, and is actually quite similar to their own Joust, with a familiar chunkiness and form factor. Joust and Moon Patrol were released within weeks of each other in the States, so it would make sense for the machines to share some similarities.

The Arcade Game

Back in the late 1970s, Irem – an Osaka-based company that initially built cotton candy and pachinko machines – were like a lot of other studios, in that they were trying to get a foothold in the arcade market through following in the footsteps of Taito's Space Invaders and other successful games, essentially creating clone titles. As we get into the early '80s however, the likes of IPM Invader and Head-On (a clone of Sega's 1979 game down to the title) aren't enough to sustain a business in the golden age, and it's down to new employees like Takashi Nishiyama to create the successful, original experiences that players demand. Fortunately, the young Nishiyama created Moon Patrol – an exceptional title that represents one of two major works he made for Irem before jumping to Capcom.

Strictly speaking, Moon Patrol wasn't the first arcade game to use parallax scrolling – Alpha Denshi's Jump Bug from 1981 used a cruder form of parallax where a night sky stayed fixed in place with clouds slowly moving over it, while the main layer moved at a quicker speed. The scrolling in Moon Patrol is more complicated – you have two detailed background layers moving at different speeds behind the main play area, and these become more or less obscured depending on the undulations of the surface you're travelling on. The effect, which would become more common in games through the decade, adds a great deal of depth to Moon Patrol's graphics, giving the impression of a bustling space colony, or of highly treacherous terrain. Yoshiki Okamoto commented on this sense of depth in a 2021 YouTube interview with Nishiyama, also highlighting the colours becoming lighter as you progress through the zones, giving the game a real sense of taking a long journey.

As a game, Moon Patrol is a title that older magazines would refer to as "cross-country", where the focus is less on earning points and more on taking a journey, quite literally in this case, from point A to point Z. Your buggy drives through five different zones, each comprising several lettered checkpoints, and with different themed obstacles – minefields, for example, start appearing from J onwards. There are also craters that you have to jump over, as well as UFOs and tanks that can attack from the front, up above, and even behind in later stages and loops – some of these can also make craters on the fly with missiles, and you have a vertical and horizontal shot to deal with them. This type of shooting gameplay does make Moon Patrol a proto-version of the horizontal run 'n' gun play that would be later seen in the likes of Contra, and it also accommodates those players who aren't quite able to get to the end in one go – Moon Patrol isn't the first game to allow the use of continues, that being SNK's Fantasy from 1981, but it is one of the earlier examples of a game that allowed you to see the end if you were simply willing to keep at it and put enough coins in to get there.

Moon Patrol proved to be popular – plenty of its own clones would make their way to arcades and computers over the next couple of years, and it would certainly be influential on the run 'n' gun genre. However, it was surely most influential on Nishiyama himself. His next game, 1984's Kung-Fu Master, would see him attempt to create a beat 'em up with the flow of a shoot 'em up, based on his experiences with this title – and in doing so, he essentially created a whole new genre of arcade game based on fists and feet. With this in mind, the two games make great companions – and together, they set Nishiyama on a course that would redefine the arcade even further later in the decade.









Game Title: **Jungle Hunt**
AKA: Jungle King (NA)
Genre: **Action**
Release date: **June 23rd, 1982**
Published by: **Taito**
Developed by: **Taito**

"You control an unnamed hero with long dark hair and a loincloth who likes to yell a lot and is totally not similar in every way to Tarzan"

Inspired by Donkey Kong's approach of staging levels as scenes and one of the first games to feature parallax scrolling, Taito's Jungle Hunt was one of the biggest successes for the company since Space Invaders, although a copyright dispute did threaten to derail the game. The title was a big success in North America, selling over 19,000 cabinets and topping the charts in various magazines such as Electronic Fun and RePlay.

The Cabinet

Jungle Hunt uses the same Taito SJ System hardware as games like Elevator Action – a Z80-based board that runs at 4 MHz. The cabinet for the original release, Jungle King, naturally goes heavy on the theme with various pictures of the unnamed hero around the bezel and a suitably tropical panel, while the hastily rebranded Jungle Hunt version is considerably more barren, scrapping the bezel and panel art completely. The game features ambidextrous controls – a joystick in the centre, and two fire buttons on either side that perform the same function.

The Arcade Game

It was often the case in the early years of the arcade, and of video games in general, that companies would play a bit fast and loose when it came to matters of copyright. There would be games that came out both in the home and arcade that were clearly heavily inspired by popular movies and characters, or just ripped them off wholesale, but they would often fly under the radar of those who made said originals. However, as games became ever more lucrative, IP holders did gradually start to take more and more notice – and the handlers of Edgar Rice Burroughs' estate certainly paid a lot of notice to Taito's Jungle King when it was released in 1982 and became a smash hit in arcades across America.

You control an unnamed hero with long dark hair and a loincloth who likes to yell a lot and is totally not similar in every way to Tarzan through four separate and very playable scenes. In the first, you swing on vines over a pit before you reach the water, where you dive in and stab crocodiles, making sure to rise to the surface periodically and catch some air. The third scene sees you run up a volcano and dodge molten rocks, while in the fourth you rescue an unnamed girl (totally not Jane) who's hanging over a boiling pot guarded by cannibals. Afterwards, the scenes naturally repeat at a higher difficulty with a couple of colour changes and the odd spear thrown in. The game was actually called "Jungle Boy" in the prototype stage (apparently named after a 1960s episode of Gilligan's Island) but after the game didn't test well under that name, it was rechristened Jungle King – if anything bringing the title even closer to its inspiration.

Jungle King is a very well-made title that received strong notices from contemporary magazines such as Electronic Games, one that quickly became an arcade smash in the United States – and that soon came to the attention of the estate of Edgar Rice Burroughs, Tarzan's original creator. The estate was generally quite protective of the Tarzan IP, having launched several cases already to protect the trademark, and they quickly took legal action against Taito. This wasn't the first case of its kind related to games – also in 1982, Williams nearly fell foul of Disney over the name Robotron: 2084, and MCA had taken action over Apollo's Atari 2600 game Lochjaw for its similarity to Jaws, eventually getting that name changed to Shark Attack. While Taito spokesman Marv Weiss protested that the company hadn't borrowed from Tarzan's character, it was pretty clear that the Burroughs estate had a case.

In the end, the agreement that Taito reached with the estate didn't require them to pull any existing Jungle King cabinets – however, the game was quickly rebranded as Jungle Hunt, with Tarzan replaced by an explorer, vines replaced by ropes and absolutely no yelling whatsoever. Pirate Pete, released later in 1982, would also be much the same game as Jungle Hunt only with completely changed and suitably nautical graphics. Despite all this kerfuffle, the legal case didn't really affect the game's commercial performance – if anything, the publicity that the controversy generated saw even more people play the title, making it a far greater hit than a lot of other games that were aping Donkey Kong's "scene" formula. The legal imbroglio is certainly an intriguing part of the game's story, although the title itself remains swingingly good fun.









Game Title: **Donkey Kong Jr.**
AKA: Donkey Kong Junior (NA)
Genre: **Platformer**
Release date: **June 30th, 1982**
Published by: **Nintendo**
Developed by: **Nintendo R&D1/ Iwasaki Electronics**

"The majority of Nintendo's early video arcades, including the original Donkey Kong, were outsourced to an electronics company named Ikegami Tsushinki"

The inevitable sequel to Donkey Kong sees a reversal of roles – Mario has now kidnapped Donkey Kong, and you play as Kong's son, with the job of rescuing your papa by obtaining the keys to his cage. While the game wasn't nearly as successful as the original, it still performed well – particularly in Japan. Worked on by Shigeru Miyamoto, lead engineer Gunpei Yokoi and another young designer named Yoshio Sakamoto, it also has the distinction of being Nintendo's first fully "in-house" arcade game, although this would prove to be controversial.

The Cabinet

Donkey Kong Jr.'s board and specifications are very similar to that of the original game – both games use a Z80-based PCB with a pinout that Nintendo often used in their early '80s arcade titles. The cabinet is also quite similar, with a new orange paintjob and the tell-tale mono speaker still present under the left side of the control panel. Seeing as climbing is the primary gameplay mechanic of this sequel, the theme of the bezel and artwork is based around the vines and trees that our simian sprog's going to have to climb up and down on.

The Arcade Game

It's almost impossible to see Mario as a villain of any sort, but he did take the role for this one arcade game (two Game & Watch titles based around Donkey Kong also cast Mario as the bad guy). Donkey Kong Jr. sees Nintendo's mascot take his revenge on the big ape, the antagonist of this game's predecessor, by putting him in a cage, leaving it up to the son of Kong to rescue him. Indeed, seeing as there are apparently two Marios seen pulling the gorilla's cage up in the intro, perhaps this game could also be the unofficial debut of Luigi? It's fun to speculate, but while creating a sequel to the game that made Nintendo an arcade leader was an obvious thing to do, the sides being switched in such a way was definitely a unique way of going about it.

Still, the game's layout is pretty similar to the original – there are four total stages, and each of them features the younger Kong climbing to the top of the screen while avoiding or jumping over the obstacles Mario sends at you, ranging from big-fanged Snapjaws to lines of flying, bird-like Nitpickers and electrical Sparks. The first level only consists of the opening and closing stage – "Vine" and "Chain" respectively – with the other two, "Jump Board" and "Mario's Hideout", being added in the second and third loop. Once you complete the Chain stage by pushing all the keys to the top, Kong's free to give Mario a big old boot up the bottom before the next loop begins. So much for everyone's favourite Italian plumber.

Behind the scenes however, Donkey Kong Jr. was something of a first. The majority of Nintendo's early video arcades, including the original Donkey Kong, were outsourced to an electronics company named Ikegami Tsushinki, who would code the games based on Nintendo's design. This game was different – after the success of Donkey Kong, Nintendo decided to start coding in-house. But in order to do this, they contracted another company, named Iwasaki Electronics, to reverse engineer the original game so that they could obtain Ikegami's source code. Ikegami were furious when they found out and sued Nintendo in 1983, claiming copyright over their code, while Nintendo argued that Ikegami had already been paid and thus the code was theirs. Although Japanese magazine Game Machine described the case as a "nuisance tactic", it would drag on for seven years before the two companies settled out of court in 1990. This part of the game's history, as detailed by Nintendolife's Damien McFerran and other resources such as the GDRI (Game Developer Research Institute) remains somewhat murky – Ikegami still exists as a company, although they appear to have airbrushed any relation at all to video games entirely out of their history.

Donkey Kong Jr. didn't have the impact of the original, although it certainly did well – enough for another sequel to be made, 1983's Donkey Kong 3. While this sequel also suffered from diminishing returns, the original antics of Donkey Kong were fondly remembered enough for Nintendo to stage a revival, alongside Rare, in the 1990s with the highly successful Donkey Kong Country series of platformers on the Super Nintendo, forever cementing an entire family of apes as an important franchise for the big N. When everything's added up, Donkey Kong's games have apparently sold a combined total of over 82 million units, with the franchise's golden age arcade success remaining a big part of that.





Game Title: **Tron**
Genre: **Action**
Release date: **July 10th, 1982**
Published by: **Bally Midway**
Developed by: **Bally Midway**

"a big seven-week Tron tournament held across Bally Midway's 400 "Aladdin's Castle" arcade locations was one of the first notably successful major video game contests"

Based on Disney's sci-fi film of the same name, Tron brings various action scenes from the movie under your control in a series of minigames featuring laser cycles, I/O towers and plenty more. Despite only having a short time to make the arcade, Tron was a big success for Midway – they sold 10,000 cabinets and made $45 million from the game, which is actually far more than what the movie itself made in North American cinemas.

The Cabinet

Tron uses hardware engineer Atish Ghosh's Bally Midway MCR-II, a line of Z80-based boards that the company used for a couple of years – it's also in games like Satan's Hollow and Journey. The game's cabinet is highly sought after by golden age collectors – it's uniquely symmetrical from the side, has a light-up joystick, and features a couple of blacklights on the control panel. As a result, this machine would literally glow in a darkened arcade, emulating the aesthetic of the movie, and it's considered one of the quintessential '80s arcade cabinets. The game's control system, with a big joystick for movement and a rotary dial for aiming, was first seen in Midway's Kozmik Krooz'r from 1982.

The Arcade Game

Tron may not be the first game licensed from a movie, but it probably has a good case for being the first video game from a movie that was inspired by video games. Tron represented the biggest synergy between the two mediums to date – the film had the tagline "See the movie. Play the game" and the game portion was represented by this arcade as well as three games for Mattel's Intellivision console, all of which came out in 1982. Of these, the arcade experience is surely the best remembered: while the film itself may have initially been a financial disappointment at the box office, this game most certainly wasn't one for Midway, selling plenty of beautiful glow-in-the-dark cabinets.

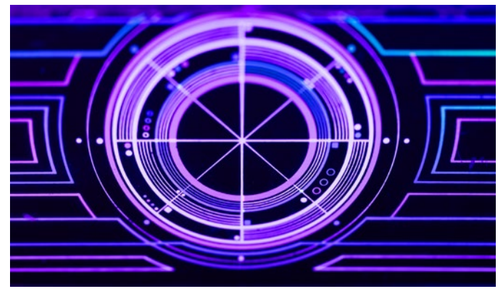
Tron had quite the hectic production cycle. From the time that the licence was acquired, Midway had all of four months to produce a completed game, and they had two ideas to choose from. Dave Nutting Associates wished to make a 3D vector game, while the in-house duo of Bill Adams and George Gomez pushed for a series of mini games. Midway's bosses went for the latter, thinking it would take less time. There were initially six proposed mini-games, although only four made the cut – one of them, initially called "Rings", would be the basis for next year's arcade sequel, Discs of Tron, while the other, "Paranoia" – where you'd build a bridge of spiders over to an island – was cut completely. These spiders, known as Gridbugs, would end up being the enemies in the "I/O Tower" game, and prominently featured in the early movie script Midway were working with – they only ended up appearing for two seconds in the released film. In fact, according to a 2020 interview with George Gomez for Retronauts, the Gridbugs only appeared at all in the film thanks to the development of the game – they'd been cut completely until Gomez informed Disney that there was a whole level based on them.

Although Tron's four mini-games are quite simple, all are very appealing. You start in a quadrant that's named after a programming language (such as COBOL and FORTRAN), and you pick which part of the quadrant you want to go to – you don't know what game you're playing until you enter, and it's randomised each time. "Light Cycles" pits you on a Snake-like race against three other riders where you have to avoid their light trails and survive until they crash; you shoot a descending multi-coloured cone of blocks in "MCR Core"; clean up those pesky Gridbugs to reach the entrance of the I/O Tower; and, finally, you clear up a maze filled with tanks. None of this quartet misses the mark, and the appearance of the game, with brightly coloured sections on almost entirely black backgrounds, is rather striking; especially when paired up with the game's glowing cabinet.

Bally Midway had a few other tricks in order to make Tron a success, in particular a big seven-week tournament held across the company's 400 "Aladdin's Castle" arcade locations that was one of the first notably successful major video game contests. That aforementioned line of arcades also helped – they were, for a short time at least, the only places where you could find a Tron cab in the States, much to the displeasure of their rivals. Such stories are a reminder of how cutthroat the glory days of the arcades could be, although none of it mattered to those who played the game – whether it was on a stage at Madison Square Garden or casually in somewhere far more nondescript, playing Tron made people think that a portal had suddenly opened straight into the heart of Flynn's Arcade.









Game Title: **Joust**
Genre: **Action/Flying**
Release date: **July 16th, 1982**
Published by: **Williams Electronics**
Developed by: **Williams Electronics**

"There's a lot of judgement and anticipation involved, as well as the need to be quick and not draw out the pterodactyl"

A rather peculiar game that was purposefully built to be unlike any of its contemporaries, the avian-tastic action of Joust proved to be a critical and commercial hit. As much as the game has an odd concept, designer John Newcomer built the game to be something with a broader appeal than more typical spaceship shooters of the time, and Williams' decision to go with his vision worked out – the company shipped over 26,000 cabinets, and the game has been recognised as hugely influential by many industry professionals over the years.

The Cabinet

Joust's board is the standard first revision of Williams' M6809-based PCB, also used in golden age games such as Robotron: 2084, Defender and Sinistar. The Joust upright cabinet goes heavy on the fantasy theme with its illustration of an enemy knight riding atop his buzzard, while the joystick on the control panel only moves horizontally – vertical movement is, of course, handled with the big button marked "flap". There is a rarer cocktail cabinet variation of the game which differs somewhat from most cocktails, as it is designed for two players to sit side by side rather than facing each other.

The Arcade Game

If, back in 1981, you asked the 26-year-old John Newcomer what he thought the main appeal of arcade games was, he'd have probably told you that they gave people the ability to fly. Never mind the shooting down of other spaceships and the like – the simple action of being in control of your own ship as it glided through the air, something most people could only dream of doing, was a unique selling point of the arcade, and of games in general. However, Newcomer was a bit frustrated that most games used this to follow a simple template – one where you're in space, and you're blasting other ships. He wanted to make something different that he felt might have a broader appeal, and the result of that would be Joust, one of the greatest games of the arcade's golden age.

Newcomer, a toy designer before joining Williams in 1981 (according to an interview for Retro Gamer in 2009, a C.V. stuffed inside a rubber chicken sealed the deal), was initially tasked by the company to devise new ideas for the company's development staff – they were a little in need of them after a few of their hotshots, such as Eugene Jarvis, had left to form new companies. Newcomer's favourite ideas were Joust, and a game based on War of the Worlds – however, the latter idea proved to be technically unfeasible, and a team led by Newcomer including programmer Bill Pfutzenreuter and artist Jan Hendricks set to work on a title that Newcomer characterised, first and foremost, as a "flying" game – most certainly not a "shooting" one. Tim Murphy and John Kotlarik also supplied the sounds, which – as with a lot of Williams games – are loud and frequent, demanding the player's attention.

The play in Joust is a recreation of Newton's law of action and reaction – you play as a knight on an ostrich, and you must duel with various classes of enemy knights riding on buzzards, ranging from generic Bounders to lethal Shadow Lords. The duel happens when the player and the computer collide with each other – whichever has the higher ground wins the joust, and if they're on equal footing they bounce away in the opposite direction. Rather than simple joystick movement, you get higher than your enemy through hitting a button to flap your wings, but it's far from mindless hammering – there's a lot of judgement and anticipation involved, as well as the need to be quick and not draw out the pterodactyl, who can only be defeated with a precise lance to the mouth. There are platforms to land on as well, although they gradually disappear with each wave – and you best not get too close to the lava. If this all sounds rather novel for the time, that's because it was – there was nothing else around even remotely like Joust back in 1982.

The various strange ideas, from the fantastical medieval pageantry to the use of birds, had various roots ranging from mythology to comic strips, and even to movies – Newcomer cites the race of Hawkmen in Flash Gordon, both the movie and comic, as being the main inspiration behind choosing these flying creatures for the game, so feel free to shout "DIVE!" as much as you want while playing this, in classic Brian Blessed fashion. There was the odd question raised about some of the game's wilder touches, but the management at Williams chose to embrace and nurture Newcomer's vision – in the end, their trust in the Joust team paid off with a game that was in turns bizarre and yet memorable, and frighteningly replayable. Perhaps the core appeal of gaming does, after all, lie with the ability to spread your wings.









Game Title: **BurgerTime**
AKA: Hamburger (JP)
Genre: **Platformer**
Release date: **August 25th, 1982**
Published by: **Data East/Bally Midway**
Developed by: **Data East/sAs Co., Ltd.**

"As Video Games magazine put it in March of 1983, you couldn't get people off of (BurgerTime) with a crowbar"

Peter Pepper has a novel way of making burgers – he climbs up ladders and stomps down the toppings, all while eggs, pickles and hot dogs are trying to chase him down. Dubbed the "stupidest, silliest game ever" by Video Games magazine on its 1982 AMOA debut, BurgerTime is one of Data East's most successful titles – an instant hit on its release in both Japan and North America, the game would be converted to just about every console and computer going; there was even a version for the short-lived Mattel Aquarius.

The Cabinet

The MOS 6502-based hardware running this game is commonly known as the "Data East- Burger Time", although strangely it wasn't used first in Peter Pepper's game – instead, it made its debut in 1981's Lock 'n' Chase. BurgerTime is the most famous game to be distributed as part of the DECO Cassette System range – these cassettes were a cheaper alternative to buying a new cabinet, although they did tend to wear out rather quickly. BurgerTime also has a cabinet of its own, featuring a rather eye-catching piece of side art – an illustration of Peter Pepper dominates the entire side of the cabinet, and the tops of the sides are cut around his toque.

The Arcade Game

Lock 'n' Chase, one of Data East's earliest hits, wasn't exactly the most original game – it clearly took a lot of inspiration from Namco's Pac-Man. Still, it was different enough for it to be a commercial success, and that surely encouraged Data East to continue to look for inspiration from big hits – in the case of BurgerTime, they found that inspiration in Nintendo's Donkey Kong. Again, BurgerTime was different enough in both gameplay and presentation for it to stand out from its inspiration, and the result was the company's biggest arcade hit – another game that, like Frogger and Pac-Man before it, appealed to everybody. As Video Games magazine put it in March of 1983, you couldn't get people off of the cabinet with a crowbar.

As is often the case with older Japanese arcade games, information on BurgerTime's development is a little hazy. However, crucial nuggets of info have come to light in recent years – according to former Data East employee Akira Sakuma, the man who planned BurgerTime was Yuji Gondo, who had previously directed Lock 'n' Chase, would also work on the later likes of B-Wings and Last Mission and even had another game he worked on named after him in the States – 1987's Gondomania. The similarities with Donkey Kong go beyond the game, as the coding of BurgerTime was also outsourced to an electronics company, that being sAs, who operated out of Tokyo's Akihabara district – an sAs employee named Ken Obara led the programming for the game. Much like Donkey Kong coders Ikegami Tsushinki, sAs are still around today and they're still involved in games programming, largely for medal-based arcade games and entries in the Theatrhythm series.

Playing BurgerTime is all about constant movement – Peter can't jump in this original incarnation, and so he often has to make use of the ladders on each of the game's six boards to get away from the ingredients that are chasing him. Still, he has ways of handling the frenzied foodstuffs – they'll be defeated if Peter's able to stomp a topping down to the next level and an ingredient's also on it, and any other ingredient that's under a topping when it falls will be crushed under it. In times of desperation, he can also use his trusty pepper to stun the enemies, which often helps with getting them in a position to either be dropped or crushed – Peter only gets a few goes with his pepper shaker, but these can be replenished if he reaches bonuses before they disappear. The goal is to pound those patties, buns, and slices of lettuce and tomato into a full burger at the bottom of the stage, and while these levels take a bit longer to complete than the arcade norm, the action never stops and it's a game that always brings you back for another go, helped on by simple yet effective graphics and one of the golden age's most hummable short music loops.

The legacy of BurgerTime is evident not just in how many conversions it received or blatant clones it inspired, but in the many other versions of it over the years – whether they be faithful sequels such as 1990's Super BurgerTime, or instances where the game's been licensed out to other franchises such as The Flintstones. Strangely, it took until 2024 for an actual fast food chain to officially obtain the BurgerTime license – the American restaurant Chili's used it for their Chili's Big Smasher BurgerTime browser game. While such tie-ins may wildly vary in quality, the class of the original will never be in doubt – a great early example of riffing on a wildly successful formula and turning it into something that was entirely Data East's own gem.









Game Title: **Mr. Do!**
Genre: **Maze**
Release date: **September 1982**
Published by: **Universal/Taito**
Developed by: **Universal**

"The attractive nature of the game for arcade operators certainly helped Mr. Do! to become a success, with many choosing to replace older machines with the game's conversion kit"

A very important arcade game both in terms of commercial success and how it changed the way that arcade games were sold, Mr. Do! was initially set to follow in the footsteps of another successful game in the shape of Dig Dug, but became so popular that people treated it almost like an unofficial sequel of sorts, and a considerable amount of people believe Mr. Do! to be the better game. With the help of Taito's publishing behind it, the game would be a big success in Japan in late 1982, before selling over 30,000 copies in the United States in 1983 according to Universal's regional sales manager at the time, Joe Morici.

The Cabinet

Mr. Do! has a pretty generic PCB, based around a Zilog Z80 CPU that's common in many other titles. This was a vital part of the game's appeal – Mr. Do! was largely sold as a conversion kit that operators could use to replace cabs that had stopped performing, and was a considerably cheaper option than buying a dedicated cabinet. The game was the first arcade to be sold in this way, and many others would follow in its footsteps.

The Arcade Game

Tokyo-based company Universal weren't necessarily famed for producing original games – their 1980 title Space Panic, one of the foundations of the platforming genre, was a blip in that regard. Initially, they'd earned a name through clones such as 1977's Scratch and 1978's Cosmic Monsters, riffs on Breakout and Space Invaders respectively, and other games were less direct but still heavily inspired by more popular titles. Designer Kazutoshi Ueda, who'd previously worked on 1981's Lady Bug – a maze game inspired by Pac-Man but with some distinctive mechanics – was given a straightforward instruction by company president Kazuo Okada, to make his next game with Namco's Dig Dug in mind. Mr. Do! was the result, and the game's quality would be enough for it to gain a huge following of people who preferred the title to Namco's effort.

Rather than simply making a total clone of Dig Dug, Ueda studied Namco's title extensively before figuring out where he could make his game different. In the end, the games share two main elements: digging your way around a stage and creating a maze for monsters to get lost in, and being able to use rocks – redesigned as apples in the case of Mr Do! – to crush any "creeps" who are following you. After that, the newer game goes in other directions – the goal of a level is to pick up all the cherries rather than rid the screen of enemies; the game has several different ways of obtaining bonuses, whether by hitting letters that spell out "EXTRA" or finding a rare diamond in one of the apples; and there are further additions like spawning the "Alphamonster" when you eat the food in the centre of the level, freezing the regular creeps.

Mr. Do!, the clown at the heart of the action, does have another trick up his sleeve aside from crushing enemies with Granny Smiths – he has a powerball that can zig zag through tunnels, taking out the first enemy it comes across before returning to Mr. Do's hands. The inspiration for the powerball came from an odd place – according to a 2018 interview with Ueda from Akiba PC Hotline that was translated by Source Gaming, it happened during a trip to Universal's toilets when he saw a Super Ball toy that was stuck in a next-door neighbour's gutter. Other tricks include being able to push apples off an edge as opposed to just digging under them, and making sure to collect all the groups of cherries in one go to obtain more points. With all of these changes, Mr. Do! certainly ends up being markedly different from its inspiration, even if the core mechanics are similar to those of Dig Dug.

The attractive nature of the game for arcade operators certainly helped Mr. Do! to become a success, with many choosing to replace older machines via the game's conversion kit. It also helped that Namco didn't create any kind of sequel to Dig Dug straight away – in many ways, Mr. Do! feels like the "unofficial" Dig Dug II, containing so many upgrades to the game's mechanics that you might have seen in a more traditional sequel, while the game's success would soon result in it getting some clones and bootlegs of its own. While Universal's flirtation with arcade games was fairly brief with them leaving the industry to concentrate on pachinko and slot machines in 1985, there was still time for a whole series of Mr. Do! titles to be released, and it's by far the company's most famous product.









Game Title: **Pole Position**
Genre: **Racing**
Release date: **September 16th, 1982**
Published by: **Namco/Atari Inc.**
Developed by: **Namco**

"Pole Position feels like an entirely new experience where judging a turn's apex and being able to make the most careful adjustments in order to hold it are an essential skill."

Perhaps the most important and influential racing game ever made, Pole Position was probably the most-advanced arcade game ever seen at the time of its release, and had taken its team three years to develop. The effort was absolutely worth it – there was nothing like this in the arcade, not just as a technical achievement and a simulation of racing, but as a commercial juggernaut too. Pole Position was the top-grossing arcade in Japan in 1982, and topped the charts worldwide in both 1983 and 1984. The game would eventually be the third most successful of all Namco's arcades in the 1980s, only beaten by Pac-Man and Dig Dug.

The Cabinet

For 1982, Pole Position is a monster – the board uses two 16-bit Zilog Z8002 microprocessors. While it's up for debate as to whether this makes the game a "true" 16-bit title and thus the first 16-bit arcade game, Pole Position was the only arcade to use these chips. The game is usually presented in a sit-down environmental cockpit cabinet complete with a huge screen, steering wheel, twin-position gearshift, and pedals for accelerating and braking – and while it's not the first video arcade to be presented this way, it's one of the most famous. A simpler upright cabinet is also available with most of the cockpit's features, although it only has one combined gas/brake pedal to be used with your right foot.

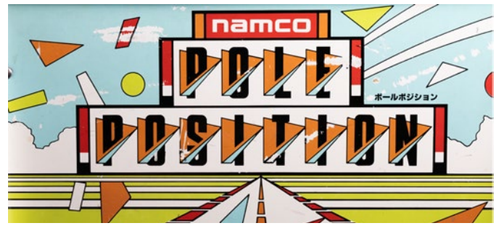
The Arcade Game

Back in the days of electro-mechanical arcades, Namco scored a huge hit in 1976 with a game simply called F-1 – the first Formula 1 game ever, it was also the biggest arcade worldwide in 1976 and 1977, before Space Invaders took over the mantle in 1978. Several years later, Namco wished to repeat the trick with a video arcade, enlisting original F-1 designer Sho Osugi and a new team including Shinichiro Okamoto and Galaxian's creator Kazunori Sawano to make the game that would become Pole Position – a huge leap forward for the racing genre, and the first racing game that could really be considered a "true" simulation.

The aim for the Pole Position team, simply, was to be as accurate as possible to the F1 driving experience – and the team did not wish to sacrifice this accuracy, as much as they could, for arcade sensibilities. The game's certainly fast, but the real difference is in the turning – when you spin that wheel, you'll be shifting across the track very quickly. It's realistically ultra-sensitive, and as a consequence the turns of the Fuji Speedway are something that need to be learnt, rather than just taken on the fly. On the first few plays of Pole Position, you will undoubtedly crash every time – but like a real F1 driver, the more that you learn the track, the better you become. These turns are the huge difference between this and earlier games – even Sega's Turbo from 1981, the previous king of the racing games, features more of a visual representation of a turn, where there's not a lot of difference in-game between making a turn and going in a straight line. Comparatively, Pole Position feels like an entirely new experience where judging a corner's apex and being able to make the most careful adjustments in order to hold it are an essential skill.

Presentation and familiarity were also very important – a depiction of the real-life Fuji Speedway was chosen as the game's track because it would be something that the audience were familiar with from television. There are real-life advertising billboards for you to crash into as well – featuring familiar brands like Pepsi and Canon, as well as the (then) F1-ubiquitous Marlboro cigarettes. The layout of the game is also very much like a race weekend – this is the first racing game to feature qualifying, where you need to complete a lap of the track in under 73 seconds just to get on the grid, and then take on four laps of the course in the race itself. Billboards, puddles of water and the various other drivers will all get in your way, and while it doesn't take too long to get back on the track after a crash, it's still far from ideal.

When all of this comes together, it makes for a game that sets the blueprint for basically every serious racing game going forward. It's almost entirely made up of firsts, and there was nothing like it in the arcade – a huge success for Namco and Atari, who published the title in the West (Bally Midway were actually first given the choice to publish the game, but opted for Mappy instead). Whether it's Sega's arcade Super Scaler titles like Out Run and Super Monaco GP, or the serious sims like Geoff Crammond's Revs, just about every racing game from Pole Position onwards has this game as its forefather, undeniably making it one of the greats of the golden age.









Game Title: **Pengo**
Genre: **Maze**
Release date: **September 26th, 1982**
Published by: **Sega**
Developed by: **Coreland**

"There's plenty of whiffs of Pac-Man about - the maze, the equally bright Sno-Bees you have to crush, the little interludes where penguins dance about every second stage"

Another in a string of highly popular maze games that followed in the wake of Pac-Man, the icy adventures of Pengo proved to be very popular in the arcades, becoming one of Japan's top five highest-grossing games of 1982. The cutesy game was also popular in other territories, selling 2,000 cabs in the United States and being tipped by UK magazine Computer and Video Games as a big hit for 1983.

The Cabinet

Sega's Z80-based hardware was the foundation for Pengo, as it was for other early Sega video arcades such as Bank Panic and Ali Baba and 40 Thieves. It was also the hardware used for games that Sega and Gremlin published in North America, even including an early Nintendo arcade named Space Firebird. The upright cabinet has a suitably wintry theme – finished in ice blue, some snowy scenes on the bezel, and our red hero penguin on the side – and the game has an ambidextrous control design with buttons on each side of the joystick. It was also available as a cocktail cabinet, primarily in Japan.

The Arcade Game

Following the success of Pac-Man in 1980, it wasn't just the case that studios wanted cutesy games – they needed to make room for them, and many a maze game starring some brightly coloured smiling creature, nondescript blob, or shoehorned-in TV personality would follow in Namco's wake. While plenty of these games are forgotten to time (some rightly so), there are certainly ones that stand out for being excellent in their own right – and Sega's Pengo is a great take on the formula, rising above the rest with some novel ideas that went on to inspire several other famous games.

The game itself was developed by Coreland, a studio that Sega often outsourced games to back in the early 1980s – indeed, Pengo was the first game that they worked on for Sega, and it would be the biggest too. While we don't usually know who developed a lot of '80s Japanese arcades (companies often forbade coders to include credits for fear that rivals might pinch their employees), a hidden set of credits reveals that a three-man team consisting of director Nobuo Kodera, programmer Akira Nakakuma and designer Shinji Egi worked on Pengo, although none of the three have ever spoken about the game's creation. With that said, there's plenty of whiffs of Pac-Man all over the place – the maze, the equally bright Sno-Bees you have to crush, the little interludes where penguins dance about every second stage. With this in mind, it's easy to imagine that Sega tasked Coreland to make a game that tried to emulate Namco's success.

Pengo, however, does come with a lot of new twists – the most exciting of all is that through playing it, the maze ends up getting severely re-arranged, and the playing area becomes more open. You have to push ice blocks as quickly as possible in order to crush a set number of those pesky Sno-Bees that gradually spawn in the level, beating them to the punch before they destroy the blocks and get at you. Unbreakable diamond blocks serve as a bonus if you're able to push them into a line, and the whole delightful yet violent escapade is soundtracked by a version of Hot Butter's "Popcorn", which only adds to the game's one-more-go qualities (a second version of the game removed "Popcorn", presumably because the use of the song was not licensed). Flattening the Sno-Bees at speed not only awards you a big bonus for your efficiency, but being a slowcoach will result in the same enemies morphing into much faster and deadlier Blobs.

For Sega, Pengo was another hit to add to a burgeoning video arcade portfolio that included the likes of Turbo, Zaxxon and Frogger, and the game was directly referenced in 2001's Segagaga for Dreamcast. Additionally an unused 3D Pengo model was found in the 1996 arcade game Sonic the Fighters, where he would have made a cameo appearance. Hudson Soft's Bomberman, another game where you rearrange a set maze through wanton destruction, certainly had some Pengo in its DNA. Pengo is still appealing today, whether played in the original form or in later updates like the Japanese-only Mega Drive title Pepenga Pengo – a fun game that's undoubtedly going to drag you back in more than once for some cube-pushing Antarctic antics. The only real problem is that it'll put the ridiculously catchy "Popcorn" in your head for a couple of days afterwards.









Game Title: **Q*bert**
Genre: **Action/Puzzle**
Release date: **October 18th, 1982**
Published by: **Gottlieb**
Developed by: **Gottlieb**

"Q*bert even says "BYE BYE!" when the game's over, which is about as coherent a sentence that Gottlieb could get out of the speech synth"

He's round, he's got a big nose, and he turns the air blue whenever he gets caught – Q*bert is the titular hero of this rather abstract isometric puzzle game where you jump from cube to cube and turn them to the right colour, while being chased by the evil Coily and his friends. Gottlieb were primarily known for their pinball and electromechanical arcade games through most of their existence, but Q*bert would be their major contribution to the golden age of video games, reportedly selling around 25,000 cabinets and earning the company millions of dollars in revenue.

The Cabinet

Q*bert's PCB was based around an Intel 8086 CPU, a slightly less common choice of processor in golden age arcade games compared to the Zilog Z80 and MOS 6502. A Votrax SC-01-A produces the game's famous and somewhat-garbled speech, which was the result of engineer David Thiel struggling to get coherent sentences out of the synth and opting instead for random phonemes. This nonsensical cry, represented by a speech bubble containing "@!#?@!", would become Q*bert's trademark, and it's even illustrated on the upright cabinet's side art and marquee. One of the cab's most unique features is the "knocker" coil – a pinball solenoid that triggers whenever Q*bert or Coily fall off the stage, making a rather loud thump.

The Arcade Game

Q*bert, it has to be said, is quite a strange game. There are many things that make it unconventional – the big-nosed hero who shouts obscenities when he dies, the fact that it was at one stage known as "Snots and Boogers" during development, and the arcade machine occasionally making a loud sound like it's just about to blow up. All of these oddities come together to make something very well remembered indeed – a hero of the golden age that could have almost given big old Pac-Man a run for his money at one stage, Q*bert struck a chord and was omnipresent almost from the moment it arrived onto arcade floors.

The game's creation was very collaborative – according to designer Warren Davis's article for CoinOp.org, people from just about every rung in the company had a good idea for Q*bert. Initially inspired by an M.C. Escher-esque drawing of hexagonal cubes, artist Jeff Lee created the game's various characters, with Davis choosing the rather sad-looking orange one as the game's hero. The mechanic that made Q*bert into a full game – having to change the top colour of each cube when you step on it – was suggested by Ron Waxman, Gottlieb's VP of Engineering. An unknown person had the idea of combining "Cubes" and "Hubert" (the character's original name), to create Cubert, which would later be changed further to Q*bert. This was certainly a better title than "@!#?@!" – that's what Howie Rubin, VP of Marketing, came up with despite people protesting that it would be tough to sell a game with a name that was impossible to pronounce.

Still, that censored profanity would be a big part of the game's personality. The "Q*bert-ese" that Q*bert spouts whenever he gets caught is the sort of thing that everyone would try to imitate – including, reportedly, legendary actor and avid games player Robin Williams, who could be seen playing the arcade in 1984 film Moscow on the Hudson. As much as the game is just some cubes, sprites, and a couple of elevators, it makes the most of everything – it's great to use that elevator to send Coily plunging off the stage, especially when combined with the bang of the cabinet's knocker. Q*bert even says "BYE BYE!" when the game's over, which is about as coherent a sentence that Gottlieb could get out of the speech synth (alongside "HELLO, I'M TURNED ON" when the game's powered up). The game was championed for its differences and for not fitting into the more generic pool of arcade genres, and there was even a big effort to take Q*bert beyond games with a whole load of merchandise; everything from frisbees and plushies to board games and t-shirts would be made with the character slapped onto them.

Q*bert's success was more short-lived than some other arcade icons; no follow-up could ever match the original juggernaut, whether it was official sequel Q*bert's Qubes from 1984 or the superbly titled Faster, Harder, More Challenging Q*bert – a proposed update to the game that ended up being cancelled, but has since been leaked onto the internet by Davis himself. That doesn't stop him being well remembered though – of the many licensed video game characters that featured in the 2012 film Wreck-It Ralph, Q*bert has the most screen time, which surely says something positive about his status as a bouncy and slightly sweary gaming legend.









Game Title: **Bump 'n' Jump**
AKA: Bānin Rabā (Burnin' Rubber) (JP)
Genre: **Vehicular combat**
Release date: **November 1982**
Published by: **Data East/Bally Midway**
Developed by: **Data East**

"The best methods of obtaining high scores in the game don't actually involve any bumping - if you get through a stage without smashing any rival cars, you'll earn a 50,000-point bonus"

A jolly bout of car combat where you race other cars to the finish line while trying to smash them into walls or flatten them, Bump 'n' Jump takes you through four seasons of racing, with plenty of rocks to avoid and wrecked bridges to leap over. A lighter take on the more serious likes of the later-released Spy Hunter, the game was more successful in Japan than in North America, where it placed ninth in Game Machine's top ten highest-grossing games of 1982.

The Cabinet

Bump 'n' Jump is a MOS 6502-based game running on the second version of their BurgerTime hardware – this PCB actually halves the CPU's speed to 750 kHz. Like a lot of early Data East arcades, Bump 'n' Jump was available as part of the DECO Cassette System range – marketed by the company as "the system that lets you put dollars into new games – not new cabinets". Games in the range came on large cassettes which could be quickly taken in and out of a main cabinet, thus allowing for one cab to run several titles. Each game would take roughly two minutes to load into the board's memory when the machine was powered on, and would stay playable with no further loading needed until it was turned off, and quite a few Data East titles were only available in this form – although this one was popular enough for its own cabinet.

The Arcade Game

Since the dawn of the arcades there had been racing games where the point wasn't necessarily to overtake other cars, but to crash into them. Exidy's Destruction Derby from 1975, based on Atari's discrete logic hardware, was perhaps the first to encourage all kinds of fender-bending action, and the same developer's hugely popular 1976 title Death Race was one of the first games to create all sorts of controversy about violence, seeing as the aim was to run over "gremlins" that looked quite a lot like humans. Compared to these pioneers, Bump 'n' Jump is a cutesier and more colourful take on car combat – but the principle of sending your opponents into a wall and oblivion remains the same, and a lot of players got a good kick out of it.

Known as Burnin' Rubber in Japan, the game puts you in the boots of Jumpin' John – a daredevil racer who's willing to do anything to achieve a victory. It's a typical sort of arcade plot in that there is none, although the later NES port of the game recasts you as someone looking to rescue your girlfriend from a gang called the "Jackals" – it is, after all, more family friendly to have a justification for sending all these other cars to a fiery death. Like a lot of golden age Japanese games, the people behind the game are largely unknown – the only hidden credit on the game is for Tsuyoshi Kitazawa, who worked on the sound driver. With that said, it seems rather likely that popular late '70s and early '80s car-related comedy movies such as Smokey and the Bandit and The Cannonball Run served as inspirations for this title.

Despite all of the talk about crashing into other motors, the best methods of obtaining high scores in the game don't actually involve any bumping – if you get through one of the seasonal stages without smashing any rival cars, you'll earn a 50,000-point bonus, likely more than you'd get from trashing as many vehicles as you could. The road you're on is largely straight, but the jumping isn't just used for flattening your rivals – you'll also need it for crossing gaps and avoiding obstacles in a pinch. Another trick to the game is that it's a "wraparound" title – if you were to jump on the left as far as you could go and continue in that direction, you'd end up coming back on the other side of the screen, and this can also be useful in certain situations. Still, while these tricks are handy for expert players, the game's a casual one – cars and trucks are all over the shop, the bumping itself is chaotic and can result in you going faster or slower (or indeed, putting yourself into a wall), and hanging behind a truck could possibly gain you an extra life, but more than likely will result in them dropping a lethal obstacle in your way.

Data East's arcade history is peppered with games that have a touch of the unconventional about them – they might be a surreal twist on a pretty standard job à la BurgerTime, something like Lock 'n' Chase where you're playing as a thief or some other miscreant, or they could be thoroughly off-the-wall affairs like Trio the Punch. And Bump 'n' Jump fits neatly into this unconventional category – its incessant earworm of a musical accompaniment and wide variety of bright, almost Choro-Q-like opponent vehicles make it stand out from a lot of other top-down racers, even ones that are perhaps a bit more polished.









Game Title: **Time Pilot**
Genre: **Shoot 'em up**
Release date: **November 1982**
Published by: **Konami/Centuri**
Developed by: **Konami**

"[Time Pilot] goes beyond the rather basic graphics to actually make you feel like you're in an epic dogfight"

A game that very possibly wouldn't have been made if it wasn't for the bullheadedness of youth, Time Pilot would be a big smash in 1982, ranked by Japanese arcade industry paper Game Machine amongst the year's top five earners and also enjoying success outside of Japan in 1983. It's one of the first games designed by arcade legend Yoshiki Okamoto, and one of only two that he would create for Konami, the other being 1983's Gyruss.

The Cabinet

Time Pilot is one of Konami's Z80-based games, using dual Z80 microprocessors to handle horizontal and vertical scrolling. The upright cabinet is absolutely decked out in art – everything from the sides to the kickstand is plastered with depictions of the eras of planes you'll be fighting against, instructions on how to play, and an agreeably chunky title on the marquee. The arcade flyer says that the game will give you a chance to fulfil your dream of journeying through time, and the art certainly attempts to set that mood.

The Arcade Game

Yoshiki Okamoto has a whole list of legendary arcade games to his credit – at Capcom he was heavily involved in the likes of Street Fighter II, Final Fight, Gun.Smoke and 1942, just to name a handful. It's a C.V. that puts him right up amongst the arcade elite, and he managed to hit the ground running just a year into his career. Initially hired by Konami as a graphic artist, he was very quickly roped into game design, and in 1982 he made his debut with Time Pilot, generating the first of many big hits. Funnily enough, this game could have been something entirely different if Okamoto had followed his boss's instructions a little more closely.

As detailed in a 2019 interview with Electric Playground, Konami initially set Okamoto to work on an arcade where you went to driving school and completed tasks to get a licence. Okamoto didn't much care for the idea, so he thought about it and instead proposed that he create a flying game that was based somewhat on Namco's 1981 multidirectional shooter hit Bosconian, but his manager at the time immediately shot the idea down. For a lot of people, that might have been that – but the 21-year-old Okamoto was a little bit more obstinate. He really didn't want to work on that driving licence game, after all.

Instead, Okamoto set to work on his flying game. The result would be a game where you play as a pilot in a futuristic ship capable of travelling through the ages, saving other pilots in peril. You start by taking on biplanes in World War II, you go through the Jet Age, and eventually you'll duel with UFOs in the future. Each stage plays like an arena – you shoot down a quota of enemy planes, avoiding their shots and missiles and rescuing pilots as they parachute down for a bonus. After downing enough enemies, you take on a time-appropriate mothership at the end – such as a Zeppelin, or a Bomber – before moving on to the next era. As for how Okamoto worked on this despite being told not to by his superior? He did so by showing his manager the driving game he was supposedly working on every time he passed his desk, while at the same time giving code on the flying game to his data entry clerk.

When Okamoto eventually revealed that he'd been making Time Pilot all along, his manager was expectedly furious – but Okamoto persuaded him to do a location test, and after a positive reception the rest was history. Time Pilot would continue to get a warm welcome on its full release, earning Konami a substantial profit in the process. Even Okamoto's superior eventually had to concede that the young man had done the right thing – although that didn't stop him from taking all the credit in front of the company's President. In the end, it's clear to see that all the behind-the-scenes struggle was worth it – Time Pilot is a tremendously replayable game that goes beyond the rather basic graphics to actually make you feel like you're in an epic dogfight that spans the course of an entire century. It may well be corny to say that the game is timeless, but it unquestionably fits that description.









Game Title: **Millipede**
Genre: **Shoot 'em up**
Release date: **November 12th, 1982**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"Making a sequel to [Centipede] could have been an intimidating task, but 1982's Millipede is the sort that takes the original's core play and improves it tenfold"

A sequel that very much falls into the "bigger and better" category, 1982's Millipede retains the core gameplay of the original Centipede but makes a great deal of changes – everything from more insects to shoot to mushrooms that grow based on cellular automatons. There was clearly an appetite for more bug-blasting action, and Millipede would go on to be one of the most successful arcades of 1983.

The Cabinet

Millipede uses the same MOS 6502-based board as Centipede, although it is capable of more colours – 256 compared to the original's 16. Converting a Centipede board to Millipede would be tricky as a result, although nowadays arcade enthusiasts have an option called "Multipede" – an adapter for a Millipede board that allows players to switch between both games with the press of a button. The Millipede cabinet is also pretty similar to the original, with the same form factor and another big illustration of the main insect on the side, although there is one notable difference – the trackball on Millipede is larger than the one on Centipede, and a lot of people tend to find the bigger version easier to use.

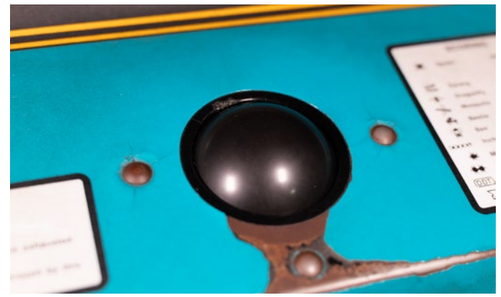
The Arcade Game

If you wanted a quick list of the golden age's biggest games, you could do a lot worse than to look at the track listing for Buckner and Garcia's 1982 album Pac-Man Fever. A lot of people already know the title track seeing as it became a hit single, but the album includes seven other video game-themed songs including "Froggy's Lament", "Do the Donkey Kong" and "Goin' Berzerk", as well as the mysteriously titled "Ode to a Centipede" – clearly, Ed Logg and Dona Bailey's 1981 game was important enough to be included in this short list of arcade immortals. Making a sequel to such a game could have been an intimidating task, but 1982's Millipede is the sort that takes the original's core play and improves it tenfold. Centipede may be the better-known title culturally, but Millipede is usually the game of choice for connoisseurs.

Dona Bailey was busy working on an eventually unreleased title named Weather War when this sequel was in development, meaning that Ed Logg largely worked on Millipede solo with assistance from Franz Lanzinger (later of Crystal Castles), and a 17-year-old Atari newcomer named Mark Cerny. Logg has stated that due to his previous successes at the company he pretty much had the freedom to do whatever he wanted on this title, although he didn't opt to make any outlandish changes – this is a game that iterates further on the original design. There is one rather high-concept addition, however – whereas mushrooms in the original Centipede tended to grow randomly, Mark Cerny suggested that they spawn in a pattern similar to mathematician John Conway's 1970 cellular automaton "The Game of Life". Logg agreed to this, primarily as it would give the young Cerny something to do.

With the original's Bug Blaster now replaced by an arrow-firing elf, the game throws a great deal more insects at you this time around along with a much faster titular creature snaking its way down the screen. A lot of these insects are tasked with spawning more mushrooms and making the millipede's path a lot trickier to figure out, plus they can create indestructible flowers and "poisoned" mushrooms which will send the multi-segmented creature straight down to your area. There is one new thing to help the player – a "DDT bomb" which you can shoot to destroy just about everything that happens to be in its poisonous cloud. Bonus levels also break up the action, and the whole thing ends up feeling more challenging than the original – Centipede was frantic enough, but the variety of enemies in Millipede are likely to make a player's head spin, and it'll take a good amount of playing before you see them all. Much like Tempest, the game allows players to start at later waves with a bunch of points already in the bag – for Ed Logg, a change like this was actually made in order to increase the arcade's earnings seeing as a game started on 45,000 points would be a lot harder and therefore potentially quicker, although it rewarded skilled players with heavy scoring from the moment they hit start.

The arrival of Millipede represents the apex of this particular bout of insectageddon – there was no further sequel after this one, although it's tough to see how much more Ed Logg and company could have added without making wild changes. Much like Pac-Man and his wife, Centipede and Millipede complement each other perfectly – and while two 3D re-imaginings of the concept from 1998 and 2011 got a few minutes in the sun, they were soon forgotten in favour of the original titles that remain in people's memories, still thoroughly enjoyed after all these years.









Game Title: **Popeye**
Genre: **Platformer**
Release date: **November 18th, 1982**
Published by: **Nintendo/Atari Inc.**
Developed by: **Nintendo R&D1**

"[Popeye] features other faithful parts such as the ability to drop a bucket onto Bluto's head, as well as cameos for Wimpy and Swee'Pea."

It took quite a while for Nintendo to convince King Features to allow them to make a game based on the almighty Popeye, but they finally gave the big N the licence following the huge success of Donkey Kong in 1981. Co-designed by Shigeru Miyamoto and Genyo Takeda, the game was very much focused on the Western market, coming out in North America before it arrived in Japan. The arcade Popeye was a moderate success, but a port of the game was also one of the Famicom's three launch titles in Japan.

The Cabinet

Popeye is a Z80-based arcade game, with a pinout and specification very similar to other early Nintendo arcades, including Mario Bros. and Donkey Kong. As is often the case, the game was more commonly found as a cocktail cabinet in Japan, while Western releases of the game are almost exclusively upright – one with a baby blue colour and lots of illustrations featuring Popeye, Olive Oyl, Bluto and the rest of the characters that even trespass into the edges of the screen on the bezel. Nintendo made a deal for Atari to publish the game in the United Kingdom and Ireland – these cabinets are barer, with the game's title only covering half of the marquee.

The Arcade Game

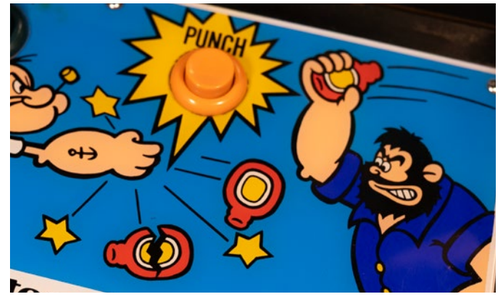
Even before the release of this game, the cob pipe-toting and spinach-downing Popeye had already been a huge influence on the development of two of the biggest arcade games – Namco used the special powers he got from eating spinach as an inspiration for the power pellets in Pac-Man, and Nintendo's Donkey Kong was at one point set to be a game based on the comic strip, with Mario, Kong and Pauline ultimately stand-ins for Popeye, Bluto and Olive Oyl respectively. It was the huge success of Kong that eventually convinced King Features, custodians of E.C. Segar's sailor since his debut in 1929, to licence out Popeye to Nintendo after they'd previously been reticent, and the end result is a solid game that's very much in the Donkey Kong formula.

Popeye consists of three stages that play out like vignettes, coming together to form a kind of narrative. In each stage, Popeye must prove his love for Olive Oyl by collecting objects that drop from the sky – hearts in the first stage on the docks, musical notes in the city, and finally letters that form H-E-L-P on the ship. Naturally the big lug Bluto will chase him all over the shop, but Popeye does have a great equaliser – if he eats his can of spinach, he can chase Bluto and knock him flying, taking him out for a short time. Popeye's other enemy, the Sea Hag, also runs interference – throwing beer bottles that Popeye will need to punch, and deploying her vulture to also chase the sailor man around in later stages.

Popeye is very faithful to the comic strip it spawned from, perhaps the result of Shigeru Miyamoto essentially looking at various classic cartoons starring him frame by frame to make sure that his movement and style was thoroughly authentic. It features other faithful parts such as the ability to drop a bucket onto Bluto's head, as well as cameos for Wimpy and Swee'Pea. Much like Donkey Kong, Miyamoto didn't have the ability required to actually code this title – indeed, Nintendo as a whole were reliant on a somewhat shadowy electronics company named Ikegami Tsushinki, who received game designs from Nintendo and then did the actual coding. A 2018 article by Damien McFerran on the website Time Extension uncovered the crucial role Ikegami had in Nintendo's early video game years, and Popeye is possibly the last game to be made through this arrangement before it fell apart in acrimonious fashion (see: Donkey Kong Jr.). They were certainly competent, building Miyamoto and co-designer Genyo Takeda's ideas into a fluid and entertaining arcade game.

Nintendo would get a fair bit of mileage out of Popeye, even if this arcade wasn't nearly as big a smash as their previous title had been. It was a hit in the States, peaking in April of 1982 when according to Play Meter, the game managed to top the charts for "street" locations (bars and clubs, as opposed to dedicated arcades), and Nintendo would soon add a version of Popeye to their successful Game and Watch line of handheld electronic games. It was perhaps most important of all as a launch title on the Famicom, where the port of Popeye would be hyped up by Nintendo as the sort of highly accurate conversion you could only get on the console, with Donkey Kong and Donkey Kong Jr. completing the launch trio. Keeping all of this in mind, licensing Popeye was definitely a success for Nintendo, and a swarthy sailor who'd already had a considerable impact on the evolution of gaming got the title that he most definitely deserved.









Game Title: **Xevious**
Genre: **Shoot 'em up**
Release date: **December 10th, 1982**
Published by: **Namco/Atari**
Developed by: **Namco**

"The number of aliens in your way actually depends on how well you're playing"

While Xevious was a decent hit in the West when published by Atari, Namco's shoot 'em up was a juggernaut in Japan, becoming the most popular arcade cabinet since Taito's Space Invaders and creating a community all of its own. The port of the game to the Famicom was also a big part of the console's success – the Japanese magazine Gameside estimated in 2003 that it was responsible for bumping up sales of Nintendo's machine by nearly two million units.

The Cabinet

Xevious uses the Z80-powered Namco Galaga board for its PCB, originally devised for the 1981 shoot 'em up of the same name. While the game was just about exclusively available in cocktail cabinet form in Japan, Atari went all-out when it came to producing an upright version for the Western market – the cab is absolutely packed with art, and the primary feature is a huge bezel representing the control panel of the player's Solvalou spaceship where you might expect a screen to be. The screen itself is sloped downwards, designed so that the player looks over it.

The Arcade Game

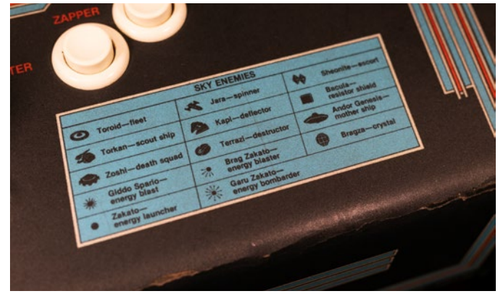
Xevious is a game that consists primarily of arcade firsts, or near-firsts – it's one of the first games that presents itself as a single continuous level, one of the first that comes with an extensive storyline that goes beyond what's simply on the screen, one of the first to come with a TV advertisement in which Atari proclaimed that this was "the game you cannot play at home", and a lot more besides. It's one of the most important games in shoot 'em up history, one of the first to reach beyond the single-screen likes of Space Invaders, Galaga and Phoenix, and unquestionably one of Japan's most celebrated games. Not bad for a young designer by the name of Masanobu Endo who essentially learned how to code on the job, and made this as his first game.

When Endo was hired by Namco in 1981, he had no experience in game design, but was inspired by watching the development of games such as Dig Dug and Pole Position to start learning, and learning quickly. With Namco initially instructing its coders to create a shoot 'em up that could match the success of Konami's Scramble, Endo set to work on presenting a game that changed some of the core mechanics of the genre – something where enemies would have more functions than charging and shooting at you, and where there was even a consistent and in-depth world bringing all the elements together. The initial design was known as "Cheyenne" and was based around the Vietnam War, but ultimately Namco opted to go with something more universal that had a big slice of sci-fi about it.

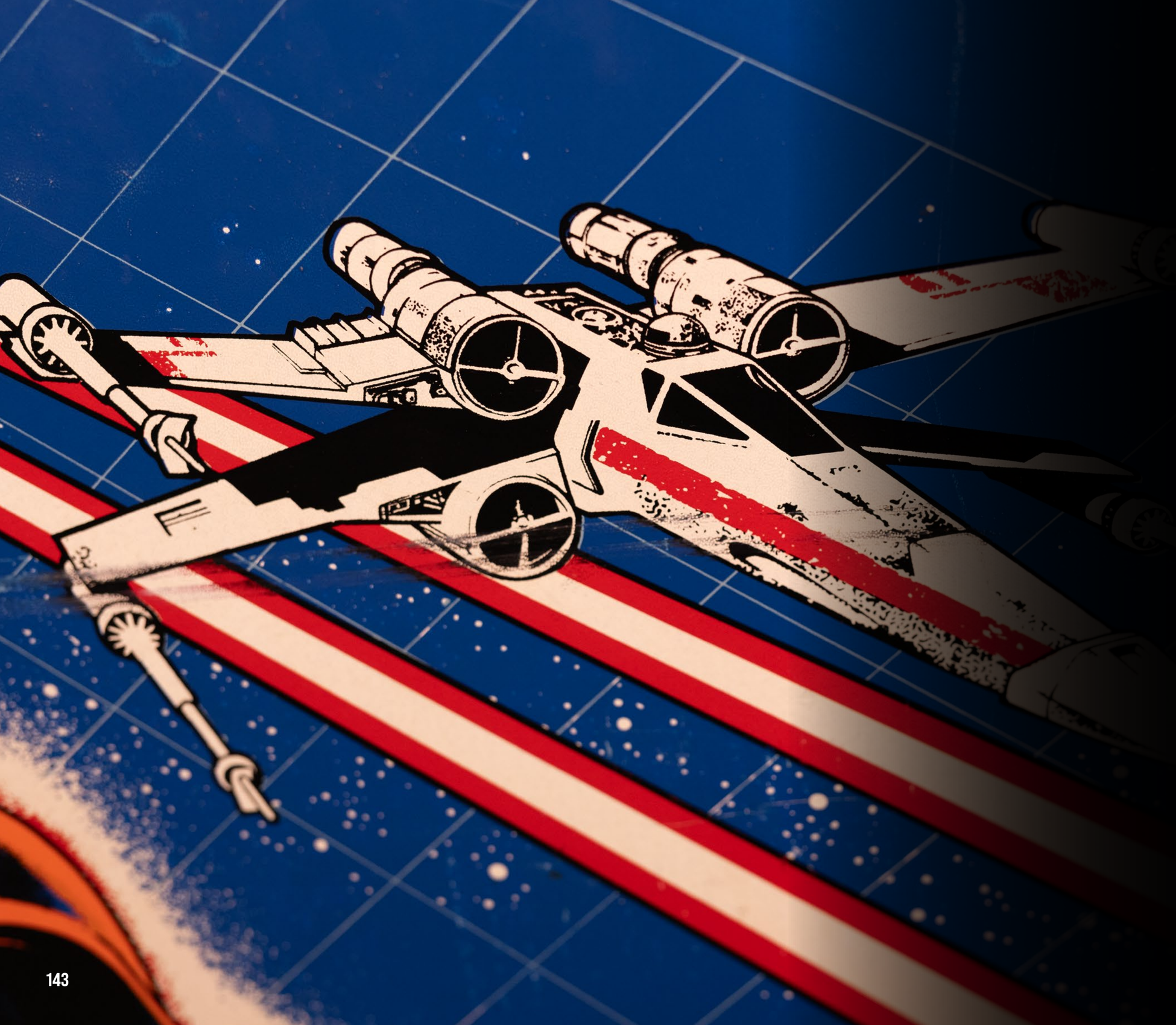
Much like Konami's Scramble, Xevious has two fire buttons for guns and bombs respectively – but that's largely where the similarity ends. You control the Solvalou (a ship with a design based on Alien's Nostromo) through a continuous level consisting of 16 areas, all of which feature various different enemies thematically connected by their shades of grey – this was one of the first games to use pre-rendered graphics, and the grey allows for quite a lot of variation in the ships. The number of aliens in your way actually depends on how well you're playing – the difficulty is dynamic and the game gets tougher the longer you survive, although you can bring the difficulty back down by destroying enemy radars with your bombs. You occasionally fight a large mothership known as the Andor Genesis at the end of certain areas (nicknamed "Gofuru" by the staff for its resemblance to the popular Gaufre cookie), and there's also hidden bonus secrets to be found through repeated bombing of the ground, from "Sol Citadels" to flags that were ripped straight out of Rally-X.

All of these extra parts were important for Endo, who concentrated on building a world for the game much to the chagrin of his boss, Pac-Man creator Toru Iwatani, who didn't consider it relevant to the design. When the game became a massive hit however, Xevious almost took on a life of its own – while bits and pieces of the world can be found in the game, a whole world of extended media, including books and an animated feature film, would sprout up over the years, while on the arcade front 1984's Super Xevious gave the original game a neat upgrade. Starting with a long line of imitators that tried to follow in its wake (examples include Capcom's Vulgus and Sega's Regulus), the game's impact on the shoot 'em up genre was incalculable – it became the bridge between the more condensed style that had started with Space Invaders and everything that was to follow. For a game that's not talked about a great deal in the West, it's unquestionably one of the most important entries in the whole of this book.









1983



Game Title: **Hunchback**
Genre: **Platformer**
Release date: **February 1983**
Published by: **Century Electronics**
Developed by: **Century Electronics**

"It's not long before you start having to dodge arrows and fireballs from off-screen trebuchets as well as pikemen who'll spear your nether regions if you aren't careful"

Quite possibly the most successful arcade game to come out of the United Kingdom, Hunchback casts the player as Quasimodo, who must rescue Esmeralda – located in her tower a fair few screens to the right, on the other side of a whole load of fire pits, pikemen and other obstacles. One of the few Century titles to not be a clone of another game, Hunchback was a big hit in European arcades, but also scored well in the United States, reaching as high as number two on RePlay Magazine's software charts.

The Cabinet

Hunchback uses three Signetics 2650 processors, a chip that wasn't often used in arcade games after the 1970s. Hunchback was mostly sold as a convertible game in North America – it was a part of Century's "Convertible Video System" line, a range of titles that shared a main board and cabinet and were then swapped out via a daughterboard or other form of media, such as a cassette (similar to Data East's DECO Cassette System). There were also conversion kits featuring the game, with flyers from 1984 proclaiming that an operator could re-use an old Galaxian or Scramble board and convert it to Hunchback – these kits were released after Century's original British operation had shut down, but while their U.S. branch was still going.

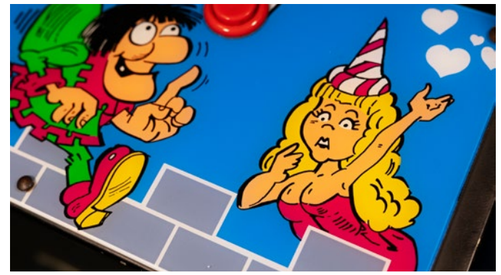
The Arcade Game

While arcades were as big in the United Kingdom as they were anywhere else, the country doesn't have a rich history of creating arcade games. Successful companies like the London-based Electrocoin were far more concerned with the distribution of popular American and Japanese titles than the making of them, and other fragments of arcade history are more akin to pieces of trivia, such as the Stamper Brothers working on games such as Dingo for Zilec before forming Ultimate Play the Game (and later founding Rare). However, Century Electronics' Hunchback is one of the few British-made arcades to break through internationally, finding fans in the States after becoming a huge success in Europe – and justifiably so, as it's a rock-solid multi-screen platformer.

A lot of Century's arcades took heavy inspiration from more successful titles, and Hunchback isn't necessarily an exception – the game does play like an arcade version of Pitfall!, complete with ropes to swing on and projectiles that are fired at you from off-screen, although there's enough of a twist here for the game to stand out as more original than Century's other works. Initially, the game would have you play as Robin Hood, moving over the castle walls to rescue Maid Marian, but this was changed in the middle of development – when speaking to Paul Drury for a 2017 Retro Gamer article, company co-founder Peter Robinson said that the setting changed when someone suggested the inclusion of a bell sound to indicate the end of a screen. That set the spark, and a few weeks later Robin Hood had transformed into Quasimodo – although he'd still end up stuck with Robin's green tunic.

The game presents new challenges at a steady pace – the early screens start off with a handful of gaps and ropes to swing on, but it's not long before you start having to dodge arrows and fireballs from off-screen trebuchets as well as pikemen who'll spear your nether regions if you aren't careful, and eventually you're dealing with various mixes of these obstacles on every screen. Quasimodo must consider his movement carefully, but not too slowly – there's always going to be a soldier climbing up the battlements ready to knock off those who dawdle. Still, you're definitely rewarded for keeping the hero alive – you get a "Super Bonus" if you complete five screens in a row without dying, and once you make it to the tower you have a final screen that's similar to Donkey Kong's "Rivet" stage where you remove the plugs in the floor and, at last, rescue Esmeralda at the very top. This slight change-up in gameplay was, amusingly, reason enough for Ocean Software to split the game in two when creating their hit computer port of the arcade – the original Hunchback port featured the majority of the arcade, while Hunchback II: Quasimodo's Revenge started with the final screen before introducing some original vertical challenges.

Unfortunately for Century, the success of Hunchback didn't last too long – they simply weren't able to produce another hit game. The character did end up in two other 1983 releases – H.E.R.O. (Hunchback Esmeralda Rescue Operation) and the rather odd H.B.'s Hunchback Olympics (a Track and Field clone), but neither game was a hit. Almost a year after the game's release and hardly helped by the weakened arcade market, Century Electronics fell into liquidation. But even if Hunchback was something of a one-hit wonder, it still stands as one of the UK's few successful arcade games – possibly the only one that people even remember nowadays.









Game Title: **Sinistar**
Genre: **Shoot 'em up**
Release date: **February 1983**
Published by: **Williams Electronics**
Developed by: **Williams Electronics**

"[Sinistar] was a challenge that seemingly relished the thought of chewing you up and spitting you out, and it certainly made for the arcade floor's most intense space mining job"

"BEWARE, I LIVE!" Sinistar is the golden age arcade that roars at you and features one of the era's most memorable villains, the skull-faced galactic leviathan that's entirely built for the purpose of accelerating your violent end. Another challenging title from Williams, the game was enjoyed (if also feared) by arcade-goers, but like a lot of 1983 titles the North American video game crash did affect its numbers. Its co-designer Noah Falstein estimated in a 2014 Retro Gamer article that the game shipped around 5,000 units, but this represented a significant drop from the sales achieved by titles such as 1982's Joust, which had shifted over five times as many.

The Cabinet

Sinistar uses the same hardware as other Williams golden age titles, with one crucial addition – the Harris 55564-5 CSVD, a chip that handles Sinistar's voice. The upright cabinet features the expected illustration of the fearsome Sinistar, but it also features a high-definition optical joystick that's capable of 49 positions – this joystick can fail over time, although canny operators could fix it with a rubber band. There was also a sit-down cockpit version of the game – the big difference here was two separate sound boards and speakers on the front and back, making it the first true stereo arcade cabinet.

The Arcade Game

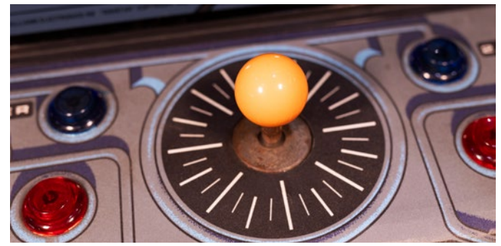
From Berzerk's smiley yet invincible Evil Otto to the callous and fearsome Singe of Dragon's Lair, the golden age certainly has its fair share of memorable and imposing monsters. None of them, however, are quite as feared as Sinistar. When this product of a fleet of worker ships woke up with a shout of "I HUNGER!", players needed to be either ready or run like hell, lest they be sucked into a vortex and eaten alive with a deafening roar. It was a challenge that seemingly relished the thought of chewing you up and spitting you out, and it certainly made for the arcade floor's most intense space mining job.

Sinistar had a couple of custodians before all of its pieces came together – programmer Sam Dicker had the barebones of a multi-directional spaceship and an open space, and alongside co-designer John Newcomer this was expanded into a concept called Juggernaut. As retold to Paul Drury for Retro Gamer in 2014, Juggernaut had a lot of the mechanics that eventually made up Sinistar, along with some that didn't, such as a warlord who, once his ship blew up, would have to be chased across the galaxy at speed and destroyed for good. When Noah Falstein was hired by Williams in May 1982, he became project leader and this team – including future Amiga designer RJ Mical – set about beating the design into a sleeker and more streamlined end product. As for the voice, that idea came from Ken Fedesna, Williams' head of engineering – the company created several pinball tables in the early 1980's such as Black Knight and Jungle Lord that used speech boards, and Fedesna thought that it would be good to do the same for a video game.

The final result is a game of two parts. In the first, Sinistar is being built and your ship has to mine crystals from planetoids, which turn into Sinibombs and are the only thing that can actually damage the main vessel. All the while, worker and warrior ships run interference – some workers build Sinistar while others steal crystals, and warrior ships either attack you or protect Sinistar. They go on to even sacrifice themselves by diving in front of Sinibombs in the second part of the game, where the war machine that lends the experience its name springs to life. Sinistar is made out of 20 pieces, and 13 Sinibombs are needed to destroy it – usually while it's chasing you. If you do this, then there are four other zones to take on, all featuring an abundance of a certain ship with the exception of the barren Void Zone – and hopefully you've got a good stock of bombs for that. Sinistar can be dodged, but the chaos of the playing field makes your death virtually certain if you're unprepared, and that voice is designed to put the fear of God into players. Most of those immortal lines, from "RUN, COWARD!" to "I AM SINISTAR!" were recorded by a Chicago radio DJ named John Doremus, with one exception – he couldn't do a roar. According to Patrick Hickey's 2021 book The Minds Behind Shooter Games, sound engineer Python Anghelo had to go to Chicago Zoo and record the sound of a lion to get something appropriate.

Sinistar was well-received, but the team behind it had one regret: the game was too difficult. It was well balanced for most of its development, but Williams executives thought that players were staying on too long during location testing, and demanded a difficulty increase. In a 2005 interview with fan website "I AM SINISTAR", Noah Falstein believed that RJ Mical had the only existing set of original "balanced" Sinistar ROMs, but they are still yet to be found. But even if the game wasn't the fairest, it's still highly memorable, and it contains another cultural icon of the early '80s arcade.









Game Title: **Congo Bongo**
AKA: Tippu Tappu [Tip Top] (JP)
Genre: **Platformer**
Release date: **February 14th, 1983**
Published by: **Sega/Gremlin**
Developed by: **Sega/Ikegami Tsushinki**

"One might wonder why Nintendo didn't take legal action against Sega over the title - there is an answer, however, in the legal threats that Nintendo were dealing with from Ikegami Tsushinki"

Congo Bongo is usually simply described as "Sega's isometric answer to Donkey Kong", but the story behind the game's creation is somewhat more complex. That said, it's still a game based around multiple single-screen levels where you chase a large ape around, so it's not like the similarities are hard to spot. The game was something of a slow burner in arcades – it struggled initially to get going on the floor, but a positive showing at the 1983 Amusement Operators Expo (AOE) in Chicago gave it a great deal more momentum. However, the 1983 crash of the video game market in North America severely limited the sales potential that this game had.

The Cabinet

Congo Bongo uses a modified version of the arcade board that powered 1981's Zaxxon, with the addition of an extra Z80 processor, as well as an extra sound chip – the game uses a mixture of traditional sound effects and samples. The upright cabinet naturally has a jungle theme – there's an illustration where our intrepid hunter's about to hotfoot it after Bongo, while the bezel and control panel are covered in foliage and vines. Two players can take turns to have a go at the game, with each having their own fire button and sharing a joystick in the centre of the panel.

The Arcade Game

Sega and Nintendo have often been defined as companies that were against each other – a reputation that began in the 8-bit generation with the Master System going up against the NES and reached fever pitch in the '90s, where the battles of Sonic vs. Mario and the Mega Drive vs. the Super Nintendo caused many arguments in playgrounds around the world. However, roots of this rivalry go back further, as one of the first shots that Sega fired across Nintendo's bow came in the shape of Congo Bongo, an arcade game from 1983 that has quite a lot in common with the big N's 1981 megahit Donkey Kong, even though it's presented from a different perspective. That, and they made it with the help of a company that already had some pretty significant history with Sega's great rival.

Congo Bongo puts you in the khakis of an unnamed hunter who's having a little snooze when an ape named Bongo, for no real reason other than to be an arse, takes his torch and sets his feet on fire. You pursue the ape through four levels, starting by jumping over water and dodging boulders that Bongo throws at you, before making your way across platforms filled with snakes. Hide from the charging rhinos in the third stage before everything comes together in the final level – riding on the backs of hippos over ravines and, at last, getting revenge by taking the sleeping Bongo's torch and bringing it to his feet. A couple of Congo Bongo's elements may have a bit more in common with Frogger, but plenty more parts of this game are clearly taken from Donkey Kong.

While there were a lot of games that riffed on Donkey Kong in the wake of the game's success, Congo Bongo is certainly one of the more blatant ones – the isometric perspective that Sega popularised with Zaxxon is the only major difference, and while it makes for impressive graphics, one might wonder why Nintendo didn't take any legal action against Sega over the title. There is an answer, however, in the legal threats that Nintendo were dealing with from Ikegami Tsushinki, the company that had worked behind the scenes on games such as Donkey Kong, and were now suing Nintendo over Donkey Kong Jr. infringing on their code (see that entry for more details).

After falling out with Nintendo, Ikegami started getting work from Sega, and it's clear that the company worked on Congo Bongo – its logo can be found inside the game's tileset. In his book The Sega Arcade Revolution, Sega expert Ken Horowitz wondered if Congo Bongo was made by Ikegami almost as a way to taunt Nintendo, and that Nintendo decided not to take further action against Sega because its tense situation with the company, as well as another dispute they had with Universal over Donkey Kong's resemblance to King Kong (later resolved in Nintendo's favour), may have led them to question if they really had any ground to sue their competitor.

Although Congo Bongo is certainly not the most original game ever made, it is still a game that plays very well, has an amusingly perverse sense of humour, and is one of the first isometric platformers out there – that, and it has a significantly more complex layout than earlier isometric titles like 1982's Q*bert. It is unquestionably a title of high quality, made by experienced coders – even if Ikegami worked behind the scenes without any company credit, they certainly had a pedigree. For all that the title may have nicked from a highly successful competitor, Congo Bongo is still a game that deserves recognition.









Game Title: **Gyruss**
Genre: **Shoot 'em up**
Release date: **March 1983**
Published by: **Konami/Centuri**
Developed by: **Konami**

"Gyruss was designed to be a take on Galaga complete that had a tube shooter element so you wouldn't get trapped"

Konami takes you on an epic journey through the solar system in this tubular shoot 'em up that's certainly inspired by Namco's Galaga, but presents the action in a wholly different perspective. Designed by Yoshiki Okamoto (later of Street Fighter II fame, amongst many other hits), Gyruss was a decent-sized hit for Konami, primarily in Japanese arcades, and a remake of the game for the NES/Famicom also sold well despite coming five years after the original's release.

The Cabinet

The Gyruss board uses a Motorola 6809 as its main CPU, but it also makes use of a Zilog Z80 for the graphics as well as another Z80 for sound, a setup that it shares with the 1983 shoot 'em up Mega Zone. Available in both upright and cocktail form, the upright cab is suitably space-themed – the side art is a representation of the tube shooter form that the game takes, and the bezel is very prominent, being a lot wider than most and featuring the planets you'll be travelling through. As is fairly common with shoot 'em ups, the control panel is mocked up to look like the controls of a spaceship, with big labels marked "CONTROL" and "FIRE" standing out.

The Arcade Game

Following the success of his previous game, 1982's Time Pilot, and the lengths he had to go through in order to hide that title's development from his bosses, Yoshiki Okamoto didn't have to do the same thing when it came to Gyruss – he and his team were happily able to work on their next project more openly. While Gyruss would be Okamoto's last title for Konami – he was let go not long after its creation over a pay dispute, and thereafter went to Capcom – he still managed to create two well-loved arcade classics in the short time he was there, although parts of this game do come shrouded in a bit of mystery and urban legend.

Two games can be looked at as Okamoto's inspirations for Gyruss. The tube shooter format where your ship moves around in a circle and fires at enemies further down, in the centre, was prominent in Atari's highly popular Tempest, but Okamoto's main inspiration actually came from Namco's Galaga. The game was one of his favourites, but if there was one thing that annoyed him about Galaga, it was getting trapped on the edge of the screen by enemy ships and bullets. Gyruss was designed to be a take on Galaga that had a tube shooter element so you wouldn't get trapped – waves of the IDEOCLAN's ships swoop in and out of formation, firing at you all the way, whilst you control the titular spacecraft which can also be powered up with twin shots. Asteroids, space stations and laser beams will also get in your way, while "chance stages" break up the action once you reach another planet – as in Galaga, you destroy as many of the ships as you can while they fly in fancy patterns. The ship's journey from the outskirts of Neptune all the way to Earth is remarkably intense, and also has some great aural qualities – the game had stereo sound, which wasn't hugely common in 1983. The music itself is a rendition of Sky's "Toccata" from 1980 – a rocky take on Bach's "Toccata and Fugue in D Minor" – and it sounds very sonically advanced for the time.

The development of Gyruss appears straightforward, but the game is subject to an interesting urban legend – the idea that it was developed in secret by Tim and Chris Stamper, founders of legendary UK studio Ultimate Play the Game and the guys that would later establish Rare. While this has been debunked – journalist Jack Yarwood asked Okamoto and others directly about it for a 2022 Time Extension article where it was flatly denied, and hidden credits on the game clearly show that it was made by the Time Pilot team – the legend appears to come from a 1985 Commodore User article that credits the Stampers with making the game for Konami whilst working for the UK arcade game studio Zilec, possibly a misconception based on the Stampers working on a similarly themed arcade shoot 'em up called Saturn in 1983.

In many ways, the history of Gyruss is similar to that of its primary inspiration – much like Galaga, Gyruss was a successful arcade game but not a commercial juggernaut by any stretch. But, also like Galaga, it's a game that has more than endured over the years to become a respected and influential part of arcade history, one of the most loved shooters of the golden age. It certainly helps that it's an early entry into the oeuvre of an arcade great like Yoshiki Okamoto, but this adventure down the tubes full of enemies, with its planet-hopping and classical rock sonics, is still a force to be reckoned with.









Game Title: **Mappy**
Genre: **Platformer**
Release date: **March 1st, 1983**
Published by: **Namco/Bally Midway**
Developed by: **Bally Midway**

"[Shigeki Toyama] said in a 2011 interview that the original Mappy robot could complete a maze in one minute, when other teams still needed several to reach the finish"

One of the arcade's most enduring cat and mouse tales, Mappy puts you in the shoes of the police force's top rodent on a quest to retrieve stolen goods from Nyamco and his gang of evil felines. The game didn't get noticed an awful lot when released internationally, but was a big hit in Japan – as a result, every other game in the Mappy series has never left the country, including arcade sequel Hopping Mappy and several console-only titles.

The Cabinet

Mappy uses an M6809-based PCB that was first introduced in Super Pac-Man, although this version has an upgraded video board that supports horizontal scrolling – this configuration can also be found in The Tower of Druaga and Dig Dug II. Mappy was only ever released as an upright cabinet, coloured white and featuring various illustrations of the cop and the gang; and the most interesting thing about the cab is its slightly unconventional shape, including an uncommon square marquee as opposed to a rectangular one. The control features a simple two-way joystick and a button marked "Jump" on either side of it which you'd actually have to hold down when Mappy uses one of the various trampolines.

The Arcade Game

In some parts of the world, Mappy is often regarded as a forgotten name in Namco's golden age portfolio – he doesn't hold the same status as the likes of Pac-Man or Dig Dug, perhaps because his first game barely made any impact in the United States or Europe. In Japan however, it's a different story. Mappy may still be down the table from the previously mentioned icons, but he's not that far off, with several successful games to his name, both classic and modern, as well as toys and animations. His original game from 1983 is excellent no matter what, and the character himself does have quite a colourful history.

Both Mappy and his adversary, the big "Boss Bit" cat Nyamco (also known as Goro), didn't start out in games – they actually began life as robots. Namco had a team dedicated to making robots for exhibitions and competitions that were popular in Japan in the early '80s, and in 1980 they made Nyamco, or the Goro Robot, for a cat-based competition – he could move various parts of his body. In 1981, they created Mappy – a micromouse built for competitions that involved the robo-rodents making their way through mazes as quickly as possible. Namco designer Shigeki Toyama worked on the Mappy robot, and in a 2011 interview he said that Mappy could complete a maze in one minute, when other teams still needed several to reach the finish. This proficiency, as well as his striking design, certainly made Mappy a good candidate for a game – and this would happen thanks to designer Hideharu Satou, composer Nobuyuki Ohnogi and legendary pixel artist Hiroshi "Mr. Dotman" Ono.

The game sees Mappy enter the mansion of the criminal Meowkie gang and take back the various artefacts they've nicked. These are dotted all over six floors, which you travel between using trampolines, and you get a bonus multiplier for retrieving items in pairs. Like many of the time's platform heroes, Mappy is fast yet fragile – you may think that he could use a truncheon to give those Meowkies a clout, but it's useless. His main abilities are that he's totally invincible when bouncing on a trampoline – handy seeing as he doesn't have a conventional jump – and that he's very good at opening doors. He's so good, in fact, that pulling a regular one open can stun an enemy behind him due to recoil, and using special doors produces a microwave that traps any Meowkie in its path. The game is all about moving up and down and timing your jumps carefully – you want to use your cunning to fool cats rather than have them chase you, especially seeing as they become faster than you in later stages. Mappy may be a weakling even when compared to the likes of Pac-Man, but as you play the game you acquire a certain intelligent and considered way of moving through the mansion that makes completing levels quite satisfying, especially when you lure a load of Meowkies and Goro to one of those sonic blast doors.

It seems as though when Mappy was given a Western release, it never stood a chance – it came out in a market that was already full of similarly cutesy heroes, and the North American arcade bubble had also burst by the time it arrived. It's a shame, as it's a title that exudes quality – the simple yet pretty graphics show the quality of Hiroshi Ono's work, and Nobuyuki Ohnogi's soundtrack is actually very full and layered for a 1983 arcade game – one that has been cited by other video game composers as influential. If Mappy isn't a Namco title you've played or know all that well, then it really should be.









Game Title: **Star Wars**
Genre: **Rail shooter**
Release date: **May 5th, 1983**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"The [Star Wars] sit-down cab is justifiably legendary - styled after an X-wing cockpit with a 25" Amplifone monitor and tested by George Lucas himself"

It took six years from the release of Star Wars in 1977 for it to come to the arcade, but Atari's vector shooter was certainly worth the wait – a game filled with classic lines, epic TIE fighter battles, and one of the arcade's greatest ever explosions. Star Wars was the struggling Atari's highlight of 1983 – they sold over 12,000 cabs, and it was their top-grossing arcade of the year.

The Cabinet

Star Wars uses two MOS 6502s, four POKEY chips, and a TMS5220 that generates the game's speech and a great deal of the other famous sound effects. The upright cabinet is just about covered in artwork everywhere with even the doors surrounded by Death Star schematics, while the sit-down cab is justifiably legendary – styled after an X-wing cockpit with a 25" Amplifone monitor and tested by George Lucas himself, going the extra mile on this cabinet was one of the things that really helped the game succeed despite the large costs involved in creating it. The game features an impressive yoke with thumb buttons that would be found in several later titles, adapted from the "Bradley Trainer" version of Battlezone made for the U.S. Army in 1981.

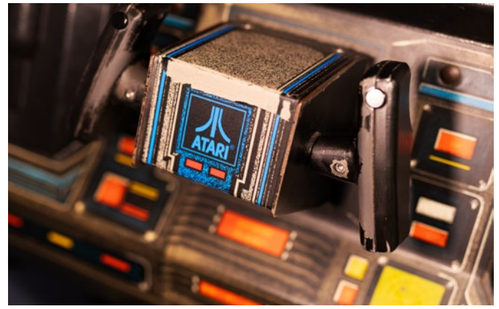
The Arcade Game

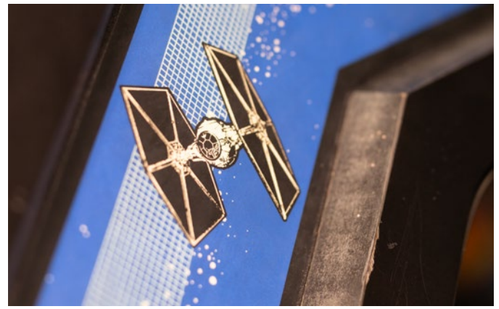
In one of his final interviews, Don Osborne – Atari's then Marketing VP – sat in a Star Wars cockpit and defended releasing the game in a depressed arcade market, saying that this was a chance for people to "be" Luke Skywalker that couldn't be found at home. Looking at the final product, from an initial idea to Atari's $1 million acquisition of the licence and a team's desire to make it the best it could be, it's hard to disagree. This was as close as people could get to the movie, and the game's huge success reflects on just how well designer Mike Hally and his team managed to nail Star Wars down.

The idea that sparked Star Wars dated back to 1979 and came from engineer Jed Margolin, who wanted to do a 3D Space War game. The hardware provided a base for Ed Rotberg's Battlezone, and the space combat title was called "Warp Speed" – but unfortunately the idea didn't quite translate into a full game and was cancelled in 1979. However, the project was alive again when Atari acquired the Star Wars licence in January 1982, and the decision was made for Warp Speed to be shifted into Star Wars, with Hally as project leader and a team including Margolin and programmers Greg Rivera and Norm Avellar. It took another 18 months or so for Star Wars to come to life with Lucasfilm keeping tabs at every step, either giving their blessings or mandating changes. The pressure from inside Atari for the game to be a hit was also significant, but Hally and his team held firm in the face of howls of outrage from resource departments and anyone who wished to cut corners, ultimately achieving the vision they'd set out.

The final result is a speedy vector shooter based around the film's final battle – Red Five (Luke, of course) starts on the approach to the Death Star, blasting TIE fighters that shoot fireballs rather than lasers, giving you a chance to parry them. On the first loop, you go straight to the trench – turrets try to stop you, but you reach the end and, with a shout of "You're all clear, kid!", an expert shot enters the exhaust port and the game pans out to the Death Star blowing up in spectacular fashion. This first loop is easy, designed so that players of most skill levels at least get to see that explosion once, and the game immediately hardens from that point – more TIE fighters, a new stage where you take out bunkers and laser turrets on the Death Star's surface, and catwalks in the trench that must be dodged. Throughout all of this, iconic speech samples play – it was a joy for arcade-goers to hear authentic music, voices and lines from the movie, with Obi-Wan's "Use the Force!" being the most famous. This line in particular is a hint for a pacifist-style bonus – if you complete the trench without shooting anything except the exhaust port, you earn a ton of points for pulling off the mission in true Jedi fashion.

Star Wars was a phenomenon, even in a tough time – if it weren't for Dragon's Lair coming a couple of weeks after its release, its sales might have been even more impressive. It was such a hit that when a conversion kit was released in 1985 that turned the game into The Empire Strikes Back, a lot of operators rejected it because the original was still making money. It's one of the original Atari's legendary titles, and to paraphrase Obi-Wan's quote at the end of the game: the Force will be with it, always.









Game Title: **Elevator Action**
Genre: **Shoot 'em up/Platformer**
Release date: **May 23rd, 1983**
Published by: **Taito**
Developed by: **Taito**

"Apparently, [Elevator Action] was the result of Taito employees staging elevator races during a particularly boring sales conference"

Something that differed from the more common spaceship-based shoot 'em ups of the age, Elevator Action was a game that Taito expected to be a big hit, with Mike Von Kennel of Taito America calling the game a "top test piece" when interviewed for Cash Box in August of 1983. The game ended up surpassing expectations – it was the highest-grossing arcade game in Japan from September to November, and it was particularly successful in "street" locations (e.g. bars and restaurants) in the United States.

The Cabinet

Elevator Action is part of a line of Z80 boards that Taito dubbed the SJ System, that also includes games such as Jungle Hunt and Front Line. Some of these titles, including Elevator Action, also use a Motorola 68705 microcontroller, primarily for protection. The upright cabinet has a different sort of aesthetic – the marquee and bezel both go heavy on the '60s spy thriller theme, and the side art with Taito's logo appears to be styled like the folders of confidential documents that you're supposed to grab.

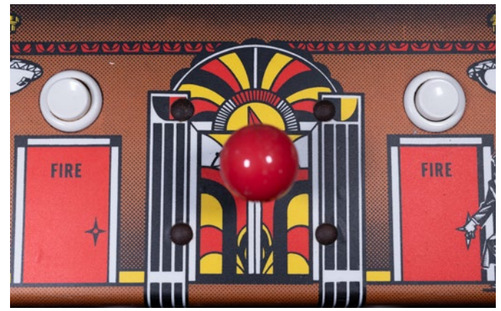
The Arcade Game

In arcade gaming's golden age, the majority of shoot 'em ups overwhelmed you with sheer numbers. These were games where you had to rely on your reflexes in order to avoid the bullets coming your way, and where your finger would just about always be hammering the fire button. As satisfying as this was, May of 1983 would see Taito come along with something a little bit different – a game that didn't just combine shooting with platforming, but also encouraged you to take things a bit slower and use your cunning in order to defeat the enemy. Elevator Action was a new experience, and one that holds up to this day.

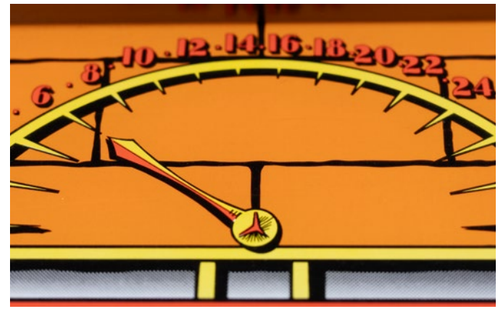
While earlier platform/shooting hybrids like 1981's Jump Bug gave you big shells and a vehicle that bounced automatically, Elevator Action gives you a spy named Otto armed with a handgun, making it somewhat more grounded. Otto starts off at the top of a 30-floor building, and his mission is to retrieve confidential documents hidden behind the red doors on his way down, chased all the way by the black-clad enemy agents who pretty much have the same abilities that you do. Elevators and escalators are how you make your way down the building in order to reach your car in the basement, and you need to be fairly brisk about it – if you dawdle too long, an alarm will go off. Apparently, this whole idea was the result of Taito employees staging elevator races during a particularly boring sales conference, and the game was designed almost as a reverse version of Nichibitsu's highly successful Crazy Climber from 1980 – instead of going up a building quickly, you've got to make your way down.

While handguns and spies may not necessarily be novel attractions, Elevator Action is a game that makes you use your brains. The best way to deal with enemy agents is to get the drop on them, shooting them before they even know you're there. You do this with careful use of the elevators, occasionally riding on top of them (although mind that you don't get crushed by the ceiling), shooting out lights to mask your approach, and attacking at just the right time. Otto can also use a jump kick at close range, and he can jump over shafts if there's no elevator about. This more considered approach becomes ever more important as the game goes on – while there's only one building, later loops pack it with more red doors and even more aggressive agents. It's a mark of the game's quality that exchanging fire still feels like a good shootout – bullets can get intercepted by a well-timed door, and getting a shot through the moving elevators is always satisfying.

After completing a successful mission in arcades through 1983 and 1984, Elevator Action would become an inspiration for many other games to follow – the likes of Namco's Rolling Thunder and Sega's Shinobi were greatly influenced by the title, as were computer games such as Epyx's Impossible Mission. It continues to be a source of pride for Taito, often taking centre stage in their many arcade compilations, and received a thoroughly amped-up and high-quality sequel with 1994's Elevator Action Returns. When critics cover these compilations, they're often surprised at just how playable Elevator Action remains – the slower pace perhaps makes it a bit easier going than other golden age games, while the ridiculously catchy music gives it a bit of a light-hearted touch that stands out from the relatively nondescript space shooters. Elevator Action's reputation as a special and important title is no less than it deserves.









Game Title: **Mario Bros.**
Genre: **Platformer**
Release date: **June 1983**
Published by: **Nintendo**
Developed by: **Nintendo**

"Donkey Kong might be better known, but if the Mario of Donkey Kong had made his way to Super Mario Bros., the game would have been completely different"

While Mario was officially introduced in 1981's Donkey Kong, 1983's Mario Bros. is not just the first title to bear his name, but the first game in which a lot of the things that make the character who he is emerge – from his much-increased jumping skill, to his job as a plumber and the pipes that he goes into. Initially a slow burner, Mario Bros. would be a big arcade success despite the tightening of the U.S. market in 1983, with Nintendo shipping out 3,800 cabinets in North America alone.

The Cabinet

The Mario Bros. board is largely built around a Zilog Z80, with an M58715 chip handling the game's monaural sound. A lot of Mario Bros. machines were conversions of old Donkey Kong Jr. and Popeye cabs – Nintendo offered a service to operators called the "Nintendo-PAK" where authorised Nintendo distributors would come to your arcade and transform these older games into Mario Bros. in less than an hour, proclaiming (incorrectly) that this would ultimately render do-it-yourself conversion kits obsolete. As the game was largely envisioned as a two-player affair, Mario and his brother Luigi get an equal amount of space on the cabinet's marquee, bezel and side art – Mario has the blue half of the control panel, and Luigi has the green half.

The Arcade Game

The Mario that first appeared in Donkey Kong is actually a greatly different character to the one who'd become an icon later on. To begin with, he was a carpenter rather than the traditional plumber, and he used his hammer to deal with enemies rather than jumping on them. He also wasn't very good at falling – the slightest plunge from any level would be the end of him – and he didn't have much in the way of momentum when he moved. The character who appeared in 1983's Mario Bros., however, would be a lot closer to the one that'd become gaming's most recognisable face – he's got his plumbing job, he uses his jump as a weapon, he can fall anywhere, and he's also brought his brother Luigi along for the ride.

A great deal of the changes made to the Mario character were at the suggestion of one of Nintendo's most experienced employees, Gunpei Yokoi. Yokoi initially hired Shigeru Miyamoto, who had supervised the designing of Donkey Kong, and they worked together on this game. Yokoi suggested that Mario's jumping be improved significantly, and that he should be able to fall from any height – and while Miyamoto was initially unsure about this, it made sense in the design of a game where you had to first flip enemies from below, and then go up to the platform to actually defeat them. With Shellcreepers and Sidesteppers being faster than anything in Donkey Kong, it also made sense to speed Mario up – he would now have momentum, starting off at a slow pace before gradually running. As for his new job, that was a consequence of the game's setting – Mario Bros. is set in the sewers of New York and he has to deal with the monsters crawling through the pipes, so it made sense to make him into a plumber. Plumber is easily Mario's most identifiable profession, although in truth he tends to take on whatever role best fits the game he's in, with other appearances depicting him as a doctor, an athlete, or even a boxing referee (as in Punch-Out!!).

All of these new traits come together in a wraparound single-screen game that's primarily based around anticipating where the various monsters are going to go, and where is the best place to bump the platform they're walking on. Initially this seems straightforward when you only have a couple of Shellcreepers (proto-Koopas) to deal with, but it quickly gets complex, seeing as enemies automatically turn around whenever they hit each other, or if they hit a bonus coin. Once an enemy is bumped, Mario needs to touch them to take them out – similarly to Joust, they only stay immobile for a limited time and become faster on their return, while the last enemy in a stage gets a similar upgrade. There's a limited-use power block that'll flip everyone in a pinch, and the nature of the game makes it ideal for two players – one player could then concentrate on flipping the enemies, while the other one touches them out.

The original Mario Bros. is hardly as well remembered as its sequel, Super Mario Bros. on the NES – but people perhaps forget that it was one of the most successful arcades in a year when that business took a downturn, and this translated to millions of ports being sold on platforms like the Atari 2600 and Famicom. Also, so many staples of the series originated here: familiar enemies, coins, skidding around. Donkey Kong might be better known, but if the Mario of Donkey Kong had made his way straight to Super Mario Bros., the game would have been completely different, making this title a crucial step in the evolution of gaming's most famous moustache.









Game Title: **Zoo Keeper**
Genre: **Platformer**
Release date: **June 1983**
Published by: **Taito America**
Developed by: **Taito America**

"The key is to herd the animals in such a way that they're all together as one big, jumpable blob - if you do this, it's possible to earn over a million points from a single jump"

Behind the cheap and cheerful graphics of Zoo Keeper lies one of the speediest arcade experiences around, a game where you endlessly jump over herds of animals whilst trying to keep them enclosed. Zoo Keeper earned many positive notes from arcade magazines of the day such as Play Meter, and was a popular game as a result of that. However, co-designer John Morgan believed that it would have been an even bigger success if it hadn't been released right at the end of the golden age.

The Cabinet

Zoo Keeper's PCB is virtually identical to that of Qix, with the small addition of a coin processor board that acts as a form of copy protection. The game came out at the same time that Taito started selling their own conversion kits for hit titles, presumably as a way of giving arcade operators cheaper options in the midst of the North American video game crash, and Zoo Keeper's flyers specifically marketed the game as a way to bring life back to an idle Qix cabinet. While most Taito games from this time feature generic company branding on the side, Zoo Keeper actually has proper side art – an illustration of the mighty lion with an interesting orange and blue colour scheme.

The Arcade Game

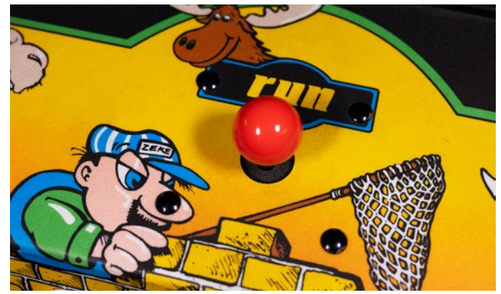
In the July 1983 issue of American magazine Video Games, John Holmstrom bemoaned the majority of new arcade games coming out, summing up many as "a Donkey Kong-type game" or "a Pac-Man rip off", before praising the refreshing nature of Zoo Keeper, which he didn't believe was like anything else he'd played before. And indeed, just how many games are out there where you frantically run around and try to keep animals enclosed in an area by laying bricks at a ridiculous rate? Zoo Keeper's originality certainly helped the game to stand out, and it's a shame that the title's not significantly better known.

The initial idea for the game came from long-time industry veteran Keith Egging, who'd got his start in the amusement industry from his father back in the 1950s by operating gumball machines and, as of 1983, was Taito America's "Director of Creativity". He thought of a game where a crab would run around a rectangle and jump over tadpoles that hatched from eggs, and the tadpoles would also take bites out of the rectangle that had to be repaired through shooting lines. This idea was then refined by John Morgan and his team – the shooting lines were replaced by laying bricks automatically to fix the rectangle, while the crab and tadpoles were switched out for Zeke the Zookeeper and various animals. For Morgan, the initial crab/tadpole mish-mash was, perhaps, a little too goofy.

The game begins simply enough with just a few animals, and a fuse that runs down the time you need to survive and marks out when bonuses are going to appear – items like the root beer and trophies simply give you points, while the net allows you to recapture animals on the outside. Every two levels, you get a platform stage where you rescue Zelda – Zeke's wife – from a big gorilla throwing coconuts down at you, and there's a bonus escalator stage where you jump over animals to reach her, earning a bonus keeper in the process. As the game gets more frantic with a maximum of around 16 animals appearing on the screen at once (including the ultra-fast lion from the fifth level onwards), the main way of accruing points is jumping over as many animals as possible, ideally several of them in one go for a big multiplier. According to a 2001 article for Giant List by John Morgan, the key is to herd the animals in such a way that they're all together as one big, jumpable blob – if you do this, it's possible to earn over a million points from a single jump. Accordingly, the top scores for the game are incredibly high – at the time of writing the Zoo Keeper world record on Twin Galaxies, set by Bryan Wagner in 2021, stands at 78,117,500 points.

One of the few things that held Zoo Keeper back somewhat is that it's not too polished in the graphical department – although it certainly moves quickly and has some loud sonics to go with the intense bricklaying action. Another thing that also held it back was being released right in the middle of the North American video game crash – with arcades closing down across the country, there weren't as many spaces for the game as there should have been, although it still performed well considering the market's depressed state. While Zeke only ever featured in one other title – Zeke's Peak, a family-friendly version of the mechanical game Ice Cold Beer – this highly appealing title is still one that Taito have often brought back for their various classic arcade compilations.









Game Title: **Spy Hunter**
Genre: **Vehicular combat**
Release date: **June 11th, 1983**
Published by: **Bally Midway**
Developed by: **Bally Midway**

"[Spy Hunter] is probably the arcade's definitive attempt at recreating James Bond's adventures, perhaps only matched by Data East's Sly Spy from a few years later"

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One of the first arcades to give you a chance at being a hero who may just be a little bit like James Bond, Spy Hunter pits you against many dangerous vehicles on a road that never ends, giving you a few sneaky ways to deal with them along with the regulation machine guns. The game was a big success for Midway, earning lots of money through 1984 and into 1985. It has been referenced many times in popular culture, and there were even plans for a film adaptation in the early 2000s.

The Cabinet

Spy Hunter uses a Z80 board known as the MCR Scroll – for no other reason than it's a vertically scrolling game. The sound chip for this game and other Bally Midway titles have strangely descriptive names, and Spy Hunter's is known as "Cheap Squeak Deluxe". The upright and cockpit cabinets have some unique features, such as the flashing display you get on the bottom of the bezel that indicates what weapons you currently have at your disposal, as well as if a weapons van is currently nearby. All of these weapons, plus the steering, are controlled using a yoke with five buttons on it to go along with the gas pedal and a high/low gear stick on the cabinet.

The Arcade Game

In an ideal world, Spy Hunter would have been called James Bond, or something else related to the British superspy. Spy Hunter wasn't the first arcade to use Bond as an influence – Sega's 005 predates it by two years – but the speedy driving in an immaculate sports car (the fictional G-6155 Interceptor) that happens to have extras like twin machine guns, oil slicks, smokescreens and missiles at its disposal probably makes it the arcade's definitive attempt at recreating his adventures, perhaps only matched by Data East's Sly Spy from a few years later. The arcade-going public certainly responded to it, with the arcade being a success despite the precarious state of the market in 1984.

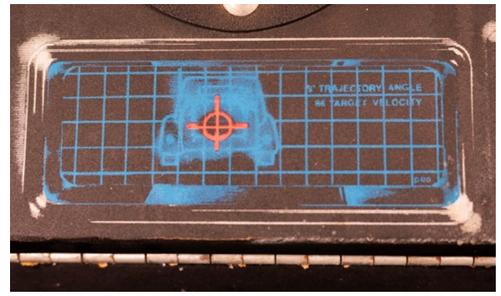
The main reason why Midway staff members Tom Leon and George Gomez wanted the Bond licence was for the music – they thought it was the perfect fit, but they couldn't get it and opted instead for a version of Henry Mancini's Peter Gunn theme, using a "real-time jazz randomiser" that slightly changes the track with each playthrough. In a 2009 interview with writer Mike Bevan for Retro Gamer, team member Brian Colin called the design an "evolution of the gameplay made popular in Space Invaders and Galaga" – meaning that the game's enemies largely fall towards you – and he also revealed some of the strange names the game had during development, including "Startkey & Clutch" and "Rush-Hour Avenger". While a helicopter, the Mad Bomber, does feature in the game as an enemy, there were also plans at one stage for the hero to control a chopper – however, memory limitations wouldn't allow it.

Spy Hunter puts you on an endless road with a timer ticking down – the clock only functions as a period through which lives are unlimited, giving you some time to get used to the game. You'll need more than just your guns to defeat enemies – some like the almighty Road Lord cannot be shot, and a lot of villains wielding spinning blades, shotguns or other weapons come from the rear, which is certainly a weak spot if you don't have an oil slick from the weapons van. Shifting between low and high gears is important, either to get a burst of speed away from enemies or to quickly slow down and draw them to the front where they can be shot. The game's not just about raw speed, and there's a lot of innocent cars and bikers that you should try to avoid shooting or ramming. Another big difference is when the bridge is out and you have to go into the water, where suddenly your car turns into a boat – new enemies exist on the river, but the boat has the same tricks as the car and can even jump over certain islands at full speed in a little homage to the 1973 Bond movie Live and Let Die.

Spy Hunter's success made it so ingrained into American popular culture that it's been referenced in car commercials for Pontiac, and it even helped Jessica Fletcher solve a case in Murder, She Wrote. One of the only regrets, perhaps, is that Midway never quite followed it up – there was a sequel, 1987's Spy Hunter II, but it didn't review well and flopped on the floor. Similarly, a film version was in development back in the early 2000s, but was also cancelled with the only remnant of the production being a bad console game, SpyHunter: Nowhere to Run, starring a rather unenthusiastic Dwayne "The Rock" Johnson. Thankfully, a classic arcade like the original Spy Hunter is more than capable of standing up to this sort of mistreatment.









Game Title: **Dragon's Lair**
Genre: **Interactive Movie**
Release date: **June 16th, 1983**
Published by: **Cinematronics**
Developed by: **Advanced Microcomputer Systems**

"The initial preview of Dragon's Lair had the press saying that it made every other game appear obsolete"

Dragon's Lair was a revolution that, for a while, looked as though it was going to change arcade games forever. Huge lines of people waited for a crack at taking unlikely hero Dirk the Daring on a quest to defeat the dragon Singe and rescue Princess Daphne, bedazzled by Don Bluth's top-quality animation. The arcade made back its $3 million budget through pre-orders alone and sold over 8,000 cabinets, earning roughly $32 million through 1984 (the equivalent of $92 million in 2023).

The Cabinet

Dragon's Lair originally used either a Pioneer PR-7820 or LD-V1000 LaserDisc player, but both were prone to failure – the amount of seeking needed to jump from scene to scene and the lengthy operational times usually meant that either the laser assembly or the spindle motors would burn out, necessitating a replacement. Nowadays, aficionados can equip their cabs with Dexter, a solid state solution that emulates many LaserDisc players and eliminates the wear and tear that killed so many original machines by Matt Ownby, who also created the DAPHNE LaserDisc game emulator. The cabinet itself features appropriately lovely illustrations, a PCB display for the score, and a three-sided marquee – big enough for operators to rig up TVs on top so that people waiting could preview the action.

The Arcade Game

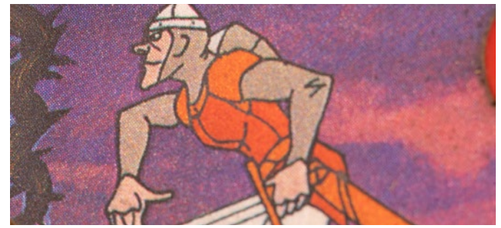
From a proof of concept that displayed hand-drawn images on a roll of paper to the final product featuring over 50,000 cells of animation, Dragon's Lair took approximately four years to come to fruition. The story of the game's creation is one of knock backs, lucky coincidences and serious crunch, and the final result is an arcade experience like no other – its initial preview at March 1983's Amusement Operators Expo had the press saying that Dragon's Lair made every other game at the show appear obsolete. While the boom in LaserDisc games it inspired didn't end up lasting long, the game rightly has a place amongst the most famous titles of the 1980s – the definitive example from a road that, ultimately, video games didn't end up taking.

Rick Dyer, the game's creator, was passionate about his initial concept – an adventure titled Secrets of the Lost Woods. But this was largely made up of static images, making it tough for Dyer to convey his vision to others. The 1982 animated film The Secret of NIMH inspired him to get in touch with its director, ex-Disney animator Don Bluth, and his team, who happened to be looking for work after industry-wide strikes had wrecked Bluth's studio. In a 2002 Digital Press interview with Ted Boyke, Bluth remembered that working on Dirk's various deaths excited him the most about the project – specifically, the ways that he could make death amusing – and once Bluth's studio was on board, they began to put together the game's various scenes. Dyer detailed the process in a 2021 YouTube interview with Matt Ownby – how Bluth's animators and Dyer's team pitched and pulled apart individual scenes, often in brutal fashion, all while the animation itself was happening on the fly. The scenes and game took seven months to make, a lightning-quick time frame only possible thanks to a large number of available animators – working on video games wasn't covered by the ongoing strikes, meaning that a lot of people were interested in a job on Dragon's Lair.

Time was so tight on Dragon's Lair that the majority of the game didn't feature professional voice actors, with one exception – the attract mode's voiceover from Michael Rye that's etched on many a player's heart. The gameplay of "the fantasy adventure where you become a valiant knight" is simple enough – a series of 39 vignettes, mostly chosen at random and occasionally flipped, consisting of quick-time events where you either move Dirk or use his sword at the right moment. The timing can be tight, but the number of elaborate ways that Dirk can die almost makes failure fun – this is one of the first games where death is presented as comedic. While it wasn't the first widely available arcade LaserDisc game – that honour goes to Sega's Astron Belt, which Dyer was inspired by after seeing it at a 1982 expo – Dragon's Lair enticed so many players that it almost felt like the genesis of the form. And the increased cost didn't put players off either, the charge of 50 cents per play rather than the traditional quarter having no impact on the flow of coins into the cash box.

Even at the game's peak, some operators sounded a warning that eventually, once everybody had figured out Dragon's Lair's quick-time moves, they'd stop playing it. And this proved true for the LaserDisc craze as a whole – Bluth and Dyer's follow-up of late 1983, Space Ace, wasn't anywhere near as successful; and while production on Dragon's Lair II: Time Warp had started in the aftermath of its predecessor's success, it was curtailed until the game was picked up by Leland in 1991 when LaserDisc came back into fashion. But even if LaserDiscs were something of a fad, Dragon's Lair remains immortal – even the old unreliable arcade version can now last forever with modifications, and the game's easily available on all modern platforms. It has to be experienced at least once.









Game Title: **Crystal Castles**
Genre: **Maze**
Release date: **July 8th, 1983**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"The game's aesthetic is still something that holds up today - Crystal Castles is still almost as pretty in action as the illustrations all over its cabinet"

A sizeable hit for Atari in 1983, Crystal Castles was an innovator. It was one of the first really clean 3D maze games, one of the first arcade titles with an ending, and one of the first to actually include credits for its makers. In a Digital Press article from 2003, lead designer/programmer Franz Lanzinger recalls recently stumbling across a Crystal Castles cab that had over 100,000 quarters put into it over its lifetime, idly musing that if all the other 5,000 cabs that Atari manufactured had done those numbers, the game could have possibly earned over $100 million in its lifetime. While the actual number is surely a lot less than that, it was certainly a success.

The Cabinet

While the Crystal Castles board uses a standard MOS 6502 chip, the makeup of the PCB is pretty unique, meaning that you'd have a hard time converting the game to anything else. Lord knows why you'd want to, mind – the upright Crystal Castles cab is nothing less than a work of art. Stunning illustrations of the gameplay are all over the marquee, side art, bezel and kickplate, and the game is controlled through a jump button and a unique trackball that blinks red – the LETA chip, created by Scott Fuller, is a trackball controller that was initially created for this game. Crystal Castles is commonly regarded as one of the best-looking arcade cabinets of all-time, and for good reason.

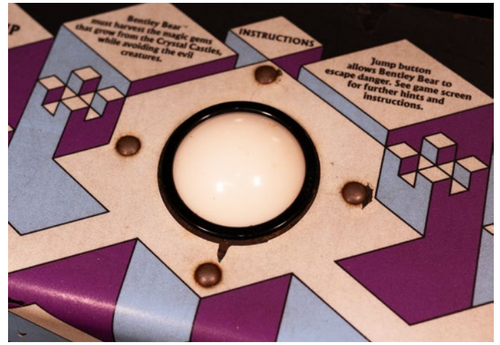
The Arcade Game

Atari's experiments in 3D gaming largely consisted of successful vector-based titles such as Red Baron and Star Wars, alongside highly ambitious failures such as 1984's I, Robot – the first fully 3D arcade game, but one where the success sadly didn't match the title's innovation. Crystal Castles, however, represents a different approach – one where the focus was on clean graphics based on a trimetric projection of a stage's multiple levels, an approach arcade-goers would see again in 1984's Marble Madness. This style was more playful, and ultimately more appealing than the darker likes of I, Robot.

The topographic map stylings of Crystal Castles were always a part of the game's design, although initially it was set to be more derivative – the team's first idea was a game called "Toporoids", where you would have had controlled a spaceship and shot down asteroids in a 3D maze. It was a riff on Asteroids, Atari's 1979 arcade monolith. However, this idea ultimately didn't take hold – the overriding theme became one of fantasy, and the spaceship was changed to a bear named Braveheart; although when Native American groups objected to this name, the hero became officially known as Bentley Bear. Rather than shooting down space rocks, our ursine protagonist runs around a maze, avoiding enemies and trying to collect all the gems – ideally he collects the last gem before the enemies hoover them up in order to get a bonus.

The game's aesthetic is still something that holds up today – Crystal Castles is almost as pretty in action as the illustrations all over its cabinet, with a style that sticks out purely by being so different to its contemporaries. There are a lot of nice touches in the gameplay, too – Crystal Castles is one of the first games to feature special warps to later stages; there are plenty of easter eggs; a hat that allows you to take out the evil witch Berthilda; and a very cool touch where the (unreachable) structure of the game's first level is based on the initials of whoever holds the current high score on the machine (this defaults to "FXL", standing for Franz X. Lanzinger).

The myriad of secrets that this game holds, including other developers and arcade luminaries subtly appearing in initial form throughout the game, as well as the sheer challenge of getting through its 37 levels, meant that Crystal Castles had a pretty decent lifespan back in the golden age – not one of the most successful arcades, but certainly a critically acclaimed one that stood out. At the end of a post-mortem talk about the game at the 2013 Game Developers' Conference, Lanzinger stressed how important and satisfying it is to invent your own ideas and explore new directions, rather than copying others – and when you look at a title like Crystal Castles, it's easy to see how that tougher approach can end up bearing fruit.









Game Title: **Track & Field**
AKA: Hyper Olympic (JP/EU)
Genre: **Sports/Athletics**
Release date: **September 1983**
Published by: **Konami/Centuri**
Developed by: **Konami/Centuri**

"[Track & Field] was the package that brought button bashing and Olympic-style ceremony together in perfect harmony"

Released a few months before the 1984 Olympic Games in Los Angeles, Track & Field would be one of the biggest arcade games of the whole year – a gigantic hit in all territories, with millions of players bashing those buttons to bits with their fingers. And that number's far from an exaggeration – the success of the game culminated in an event that saw over a million contestants take part in a championship that was, for many years, the largest organised video game competition of all-time.

The Cabinet

The Track & Field PCB is a relatively simple affair, primarily centred around a MOS 6809 chip – similar to other games like Gyruss, Road Fighter and Circus Charlie. The upright cabinet is also pretty straightforward – only the American Centuri version features anything in the way of naturally Olympic-themed side art, whereas other cabs feature little except the marquee and its Stars-and-Stripes-styled title. The most notable feature is that there's no joystick as the game is purely controlled using buttons. Track & Field was also available as a cocktail cabinet.

The Arcade Game

Few things are quite as satisfying, or as simple, as hammering a set of buttons (or waggling a joystick) as hard as you can for a few seconds in order to set a 100 metres time that might be considered the world's best, or to throw a javelin so high that it flies off the screen and takes out a bird on its way to the world record. Track & Field wasn't the first game of this type by any stretch, but it was the package that brought button bashing and Olympic-style ceremony together in perfect harmony, becoming one of the most popular and most important sports games ever released.

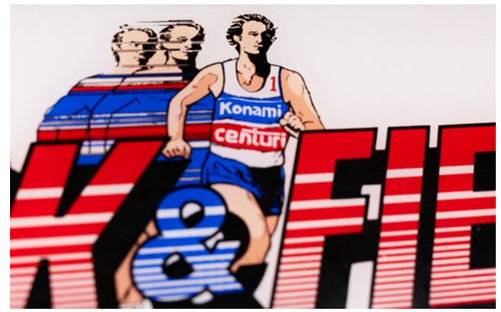
With the 1984 Games in Los Angeles not just being the Olympics' return to the USA, but the USA's return to the Olympics (they and 65 other countries had boycotted the 1980 Summer Games in Moscow), it promised to be the most high-profile Games for some time, and Konami's title ended up perfectly poised to take advantage of that, featuring six of the most popular stadium events: 100 metres, long jump, javelin, 110 metres hurdles, hammer throw, and high jump. In every event there's a qualifying time, height or distance you need to achieve in order to move on, but as you might expect the game keeps records of the best performances, visible throughout each event, as well as a points tally that can be increased further by finding the game's secret bonuses (such as the aforementioned off-screen bird in the javelin). The arcade was built for a party – although the cabinet was only normal-sized, up to four players could take part in a game of Track & Field, performing the field events individually and the running events as pairs, with both players having their own fire button.

Particularly in the States, Konami and partners Centuri would take even more steps to make the game a proper competition. They had a promotional program for arcade operators that encouraged them to keep track of the machine's scores and then award players actual trophies from Centuri for the best weekly and monthly scores on the cab. But in early '84, Konami would go several steps further with an event known as the "March of Dimes International Track & Field Challenge". Players across America and Japan took part in order to be amongst three finalists who'd go to a final in Tokyo on June 10th, where the top prize was eventually taken by a man named Phil Britt. The event raised over $100,000 for the March of Dimes charity and an estimated one million people took part – by far the most major arcade event that had ever taken place. Indeed, The Guinness Book of Records would cite this as being the largest ever organised video game competition until 2017, when the mark was finally beaten by EA's FIFA Interactive World Cup.

As a game, Track & Field had a phenomenal legacy. It inspired a succession of other athletics games, including Epyx's Games series and Ocean's Daley Thompson's Decathlon (as well as Hyper Sports, Konami's own sequel from 1984); and was a huge shot in the arm for the sports game genre in general. It even influenced titles from outside the genre, such as Namco's 1984 game Pac-Land, which used its own button-mashing mechanic. The game remains popular in arcades to this day, and there are still lots of people trying to set a world record for the game on sites like Twin Galaxies. For 40 years, it has remained one of gaming's premier competitions, and playing it is still as pleasurable as it is taxing on the fingers.









Game Title: **Juno First**
Genre: **Shoot 'em up**
Release date: **December 1983**
Published by: **Konami/Mylstar Electronics**
Developed by: **Konami**

"The game looks and plays like an enhanced version of Nintendo's 1980 arcade title Radar Scope with more in-depth gameplay, superior controls and thumping Williams-esque sonics"

ts Reserved D. Gottlieb & Co., Licensee

On one hand, Juno First is a solid space shoot 'em up – notably, it's a Japan-developed game that's very clearly influenced by an American arcade, that being Defender. On the other hand, it perhaps wasn't necessarily the sort of game that people were looking for in late 1983, and the game's failure to get a great deal of traction due to behind-the-scenes chaos and a lack of interest from much more careful operators, is emblematic of the state of affairs during the North American video game crash. The game was not a particularly big hit, but it has retained a cult following over the years.

The Cabinet

System 16, an online database of the various PCBs that arcade companies used, describes Konami's approach to hardware as significantly less organised than that of other companies, saying that it almost felt like they made hardware based on what chips they primarily had in stock. Juno First is a good example – only one other game, 1982's Tutankham, shares its PCB, which is called the "Framebuffer" – primarily because there's no sprites and the display is bitmapped. The upright cabinet is pretty simple – it's primarily an illustration of said bitmap, alluding to the three-quarter viewpoint that the game utilises.

The Arcade Game

In the early 1980s, space shooters were all the rage in arcades – the likes of Defender, Galaga, Phoenix and GORF were all very popular, and Konami were at the forefront of that, largely thanks to 1981's Scramble. By late 1983, however, there were an awful lot of these games kicking around, to the point where magazines clearly found it harder and harder to get excited by another battle between starships and alien fleets. That, and in the North American market, everyone from studios to arcade operators were dealing with the effects of an industry crash. Companies were in a state of turmoil, arcades were closing their doors every week – and it's this situation that perhaps explains why a shooter like Juno First could slip through the cracks.

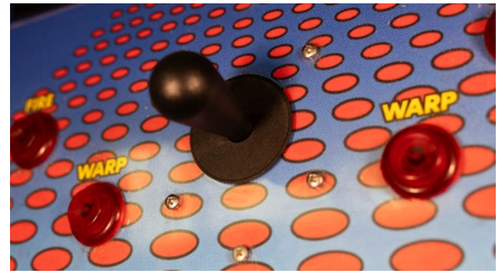
The game itself is certainly engaging – it feels like Konami trying to make a game inspired by Williams' arcade hits, particularly Defender. You have a three-quarter view just behind your ship, and you're flying over a bitmapped field, aiming to take down waves of aliens in as little time as possible. Like Defender, you're not just going forwards – you can put the afterburners on and move backwards, which is handy both for cleaning up waves and evading homing missiles, while a limited supply of warps is helpful in a pinch. A lot of points can be earned by shooting an asteroid and rescuing a human, which pauses enemy fire and allows you to score double points for each ship you destroy in the bonus period. The game looks and plays like an enhanced version of Nintendo's 1980 arcade title Radar Scope with more in-depth gameplay, superior controls and thumping Williams-esque sonics.

It's a fine game, but contemporary reviews indicate that there might not have been an appetite for it. In December 1983's Video Games, John Holmstrom criticises the "dated" play action, and says that shooting targets at the top of a screen has been "done to death". It does perhaps feel a couple of years older than the time it came out – even compared to other Konami shooters like Gyruss from a few months earlier in '83, Juno First does feel behind the times. However, a strong campaign for the game could have helped it out – and that was something Gottlieb, the game's North American distributors, simply couldn't provide. Famed for both pinball and Q*Bert, Gottlieb's parent company Columbia Pictures was bought out by Coca-Cola in 1982, and they changed Gottlieb's name to Mylstar in the middle of 1983. The aim was to turn Gottlieb entirely into a video game company, and they pulled the trigger at precisely the wrong time – right when the crash hit hard. Chaos reigned as the company looked for hits that never came, and a frustrated Coca-Cola closed Mylstar in September 1984, bringing a sudden end to an entertainment company that had existed since 1927. Looking at this bigger picture, it's clear that a perfectly serviceable game like Juno First simply never stood a chance.

Despite all of this drama, the game itself hasn't been completely forgotten. Konami themselves would revisit a similar three-quarter viewpoint for their hit SNES shoot-'em-up Axelay in 1992, Jeff Minter paid homage to it with 2020's typically psychedelic Moose Life, and there are also homebrew tributes such as the vector-based Hera Primera, naturally on the Vectrex. If Juno First had been released in 1982, the game would probably be much better remembered – but it does rightly have a fair share of fans, including those who've discovered it over the years through scouring the likes of MAME.







1984



Game Title: **Firefox**
Genre: **Rail shooter**
Release date: **January 1984**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

"[Firefox] came out just as arcade-goers started to tire of the limited gameplay that LaserDisc games offered, and its failure was another signal of the original Atari's impending implosion"

Atari's only released LaserDisc game, based on the 1982 Clint Eastwood blockbuster, was a shooter where you controlled the titular plane on treacherous missions through the Soviet Union, using hours of first-person action footage shot for the movie. Atari hoped that their contribution to the LaserDisc craze would boost the flagging company, but it came out well after other games had been released with much the same gameplay. Ultimately, it was a failure that the company could ill afford.

The Cabinet

Aside from the LaserDisc hardware, Firefox uses a great deal of processors, from the MOS 6502 to four of their POKEY sound chips. The LaserDisc hardware itself does not have any controls – according to Jed Margolin's website, this was done so that if a thief broke into the cabinet and stole the player, they would have little more than an unusable brick. The upright and cockpit cabs are both beautiful – matte black with stripes and mock dials, full of edges and with a big yoke for the game's controls. After Firefox failed, there was initially a plan to make a conversion kit that would switch the cabinet to a game based on Battlestar Galactica, but after this project was cancelled a number of spare cabs were used for I, Robot. The attract mode features a dedication to Don Osborne, Atari's VP of Marketing who passed away suddenly in December 1983 of a heart attack, aged only 40.

The Arcade Game

A lot of detail on the making of Firefox comes from the website of Atari engineer Jed Margolin, who detailed the game's rather disastrous production in 2001. Firefox was supposed to be turned around in a matter of months, with Mike Hally leading the project and an unnamed engineer in charge of hardware and design (Margolin replaced this engineer midway through development). This engineer's lack of experience showed, and a much-hyped appearance of Firefox at the AMOA show in October 1983 proved to be a damp squib – the cabinet was there, but the game wasn't working. A major crunch followed over the next three months, with the team from Atari's Star Wars moving over to work on the game, finally getting it ready by the end of the year. But even then, the final product always had issues for operators when it came to hardware failure, particularly on the LaserDisc itself.

The game takes the form of a rail shooter – you blast down enemy planes and missiles, and also shoot fuel dumps to keep your energy up. You can choose the difficulty level of your mission, and every so often you can change altitude – the sky conserves fuel, while the ground offers better protection as well as the potential to destroy secret bases for more points. For the most part you simply shoot everything you see and try not to be detected; but while it looks the part, the gameplay is typically shallow and not hugely different to the likes of Mylstar's M.A.C.H 3, or Sega's Astron Belt. It had a premium price tag too – the cockpit machine cost almost $14,000, and as impressive as it may have been, it was a price many struggling operators could ill afford.

Atari were bullish on the game's release, organising a gala launch where Clint Eastwood himself played the game in March 1984, and promising further LaserDisc titles – and indeed, several others were worked on including Road Runner, Knight Rider and Malibu Grand Prix. But the glitz couldn't hide the cracks in a company that had lost almost $500 million in 1983 and were laying off many employees – and just three months later, the original Atari was split up by parent company Warner Communications. LaserDisc games would have something of an arcade resurgence a few years later thanks to the likes of 1990's Mad Dog McCree, but the failure of Firefox marked a final end to any idea of the new technology being a silver bullet for the crash in the video game industry.







Game Title: **Punch-Out!!**
Genre: **Sports/Boxing**
Release date: **February 17th, 1984**
Published by: **Nintendo**
Developed by: **Nintendo R&D3**

"The opponent's eyes are your main guide - they flash whenever they're about to attack, and it's important to use them rather than reacting to an opponent's moves"

One of Nintendo's final original arcade games, Punch-Out!! is unquestionably more famous today for its 1987 home version on the NES – but that port wouldn't have happened without an already successful arcade where an unnamed boxer takes on a cast of ever larger and more intimidating foes. The game sold over 10,000 units in only a few months according to RePlay magazine, making it one of 1984's best performers.

The Cabinet

On the inside, Punch-Out!!'s Z80-based PCB isn't anything out of the ordinary – but it's certainly different on the outside, seeing as the cabinet has two monitors. Nintendo's decision to make a twin-screen game was based on an overabundance of the displays that had originally been purchased for Donkey Kong cabs, and the end result is a stacked pair with match information on the top and the boxing action below, rather like a larger version of their contemporaneous Vertical Multi-Screen Game & Watch handhelds. According to Ken Horowitz's 2020 book Beyond Donkey Kong, there was an idea at one stage to have players put on boxing gloves and actually throw punches for the controls, but this idea was dismissed as the resulting machine would have been hard to maintain and keep clean.

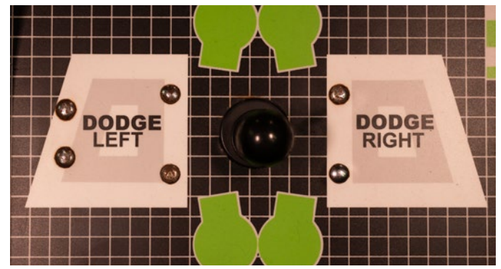
The Arcade Game

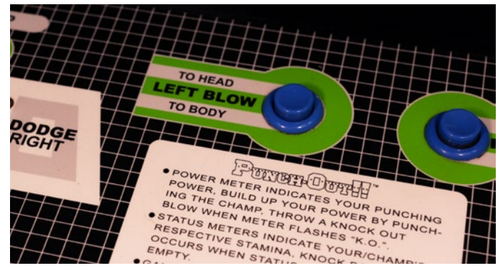
By and large, Nintendo's response to the 1983 depression in the arcade market was to gradually make their way out of the arcade business, at least when it came to games specifically for the floor. They would still have a strong presence with simpler NES-based hardware systems like the Nintendo Vs. and its successor, the PlayChoice-10, but the Punch-Out!! series would be their last group of dedicated arcades. Nevertheless, they would prove to be successful titles indeed, and they would eventually pay off big in the form of one of the NES's most popular games.

Punch-Out!! was largely the work of veteran employee Genyo Takeda – responsible for EVR Race, Nintendo's first arcade game from 1975 – and Shigeru Miyamoto, who designed most of the characters. Initially they contemplated making a LaserDisc game, but past experience with the aforementioned EVR Race – a horse racing game that used videotape and broke down often – gave them second thoughts. A vehicular racing game that would use monitors side-by-side was abandoned as their hardware wasn't up to it, and so they decided to zoom a single character in and out. An opposing boxer was a good fit for this sprite, so work began on a game originally known as Knock-Out!! until late in production. The large sprites necessitated a lot of detail so they were outsourced to a studio named Junio, run by former Toei animator Takao Kozai, with each character based on Miyamoto's initial designs. Meanwhile, the game's jolly music (based on a 1940s radio jingle) was created by one Koji Kondo, marking the Mario musician's first project for the company.

An important tip in boxing is to always keep your eyes on your opponent, and the same is very much true of Punch-Out!! where your adversary's eyes are your main guide, telling you when to block and when to dodge. Your rival will flash whenever they're about to attack, and it's important to use these tells rather than trying to react to an opponent's moves. The game's a matter of finding openings for your jabs and building up to big hooks and uppercuts, which gives the game a surprising amount of depth for an early boxing title. It means all of the opponents, from perennial loser Glass Joe to the fearsome Mr. Sandman, are almost like puzzles, with different behaviours and weaknesses that your wireframe fighter needs to seek out. Indeed, the moment where an opponent seems at their strongest and ready to launch their most powerful attack is the time to land a perfectly timed punch that'll send them crashing to the canvas – a mechanic that would usually be repeated at least once or twice in the other Punch-Out!! series games. As for the second, top-positioned monitor, it doesn't add a lot – but it does allow the fighting to take centre stage without scoreboard clutter, and gives the game a certain glitz that people would associate with the sweet science.

The success of Punch-Out!! would see Nintendo go on the offensive, producing a sequel – Super Punch-Out!! – around nine months later, featuring new abilities and new challengers including the likes of Super Macho Man and Vodka Drunkenski, and the same hardware would also be used for Arm Wrestling, a self-explanatory and popular 1985 game featuring a couple of the game's fighters. Two years later, the arrival of the game on the NES, complete with that dream fight against World Champion "Iron" Mike Tyson, would sell in the millions – and by that point Nintendo were no longer making original arcades. As far as final bows go, this series of pugilistic masterpieces make for a pretty good sign-off from Nintendo to the arcade floor.









Game Title: **Return of the Jedi**
Genre: **Shoot 'em up**
Release date: **September 1984**
Published by: **Atari Games**
Developed by: **Atari Games**

"The second and third stage occur concurrently, cutting between an AT-ST dodging logs on the way to destroying the shield generator, and the rebel strike team taking on the Star Destroyer"

Atari's second Star Wars game is, perhaps confusingly nowadays, based on the third movie. Return of the Jedi takes a different approach to the first, opting for a Zaxxon-inspired isometric viewpoint to showcase the action scenes and using some impressive hardware. While not as successful as the original Atari vector game, Return of the Jedi still received a warm reception – reaching as high as second place in Play Meter's North American arcade performance polls.

The Cabinet

Jedi uses similar 6502 "Colour Raster" hardware to the likes of Crystal Castles, but there's one considerable difference – the "Pixie" board, created by engineer Lyle Rains. This board gives the game a form of anti-aliasing, using dithering to smooth out the graphics – something of a first for the era. Another intriguing part of the board is that it's "switchless" – while most settings for arcade games were changed using DIP switches on the PCB, Jedi's settings are modified entirely through a setup menu. The game came as an upright and deluxe cockpit cabinet – the cockpit is very similar in design to the one used in the original Star Wars, while the upright sees Atari reuse the design of the Firefox cabinet (possibly repurposing old cabinets along the way). The game also uses the same boxy Atari-branded yoke with thumb triggers that was found in both Star Wars and Firefox.

The Arcade Game

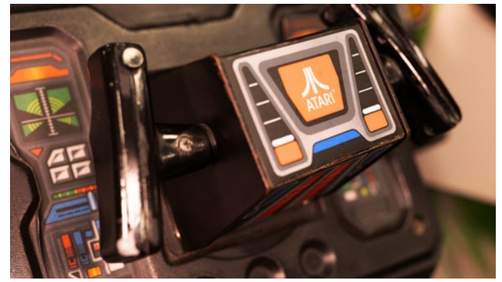
Return of the Jedi is something of a milestone for Atari – while it was mostly developed before the company was split up, it would be the first arcade released following the coin-op division's rechristening as Atari Games in July of 1984. The game would take something of a risk – while the original Star Wars vector game had been a huge hit, Return of the Jedi changes things completely, presenting a raster title with an isometric viewpoint, but still trying to touch on the movie's biggest action scenes. It was developed during a chaotic period for the company, with a very short six-month production cycle, and all things considered the arcade game didn't turn out too badly.

Designer Dennis Harper made the decision to switch things up for the sequel for several reasons – Lyle Rains' "Pixie" board and its smooth dithering was one, and while the methods the board used to achieve anti-aliasing would be considered inefficient nowadays, it was very impressive at the time (this board would have also been used for an arcade game based on E.T., which was then likely changed to a game based on Gremlins, and was then cancelled altogether). Mainly however, Harper wanted players to be able to see the vehicles they were controlling, and to properly differentiate between space and land settings – neither of these things were really doable in a first-person vector game, and Jedi featured a much wider variety of vehicles. He had a lot of support from Lucasfilm for the game's creation, even being able to read the script – although in a 2010 interview with writer Craig Grannell for Retro Gamer, he said that the script he read purposefully had an entirely different and nonsensical ending that, thankfully, he didn't include in the final game.

The action in Jedi consists of four stages. In the first, you ride through the forests of Endor with Leia on a speeder bike, chased by stormtroopers, dodging trees and setting off the Ewoks' traps to get rid of your pursuers. The second and third stage occur concurrently, cutting between Chewbacca commandeering an AT-ST and avoiding logs on the way to destroying the shield generator, and the rebel strike team in space taking on the Star Destroyer – it's a rather novel presentation that only appears after the first loop. Finally, Lando Calrissian runs through the Death Star's trench in the Millennium Falcon, destroys the reactor, and escapes before it all blows to kingdom come. This setup, including stages that don't appear until after you've done one loop, is pretty similar to the first game – largely designed so that most players could get at least one crack at blowing up the Death Star, although the speedy ducking and diving through trees does make Jedi's first loop a bit tougher than the original. Jedi also retains the large amount of speech from the original – "Wait for me!" and "Here goes nothing!" being particular favourites.

While some may have preferred Jedi to retain the original's vector graphics and viewpoint, technical limitations probably would have severely cut the game down – going isometric was likely the right decision, allowing for the satisfaction of bumping a stormtrooper into a tree, or weaving through barriers while a massive wave of fire is chasing you out of the Death Star. In the end, what's here is a worthy addition to the Star Wars video game library, and a gem from Atari's troubled period.









Game Title: **Pac-Land**
Genre: **Platformer**
Release date: **October 29th, 1984**
Published by: **Namco/Bally Midway**
Developed by: **Namco**

"In a move inspired by the success of Konami's Track & Field, there's no joystick - instead the player uses left and right buttons for movement"

Pac-Man ventures outside of the usual maze for this platformer, where he guides fairies back home and makes sure to have plenty of breaks through the journey. Pac-Land stood out from previous platformers due to the high quality of its animation and depth-filled graphics, complete with trees occasionally blocking your view. This title would be one of 1985's top-grossing arcade games across the world, and it would prove to be hugely influential.

The Cabinet

A new board was created for this game, imaginatively titled the Namco Pac-Land. This features an M6809 as its main CPU, but also includes a Hitachi HD63701 as a sub-processor which allows the game to perform dual-layer scrolling. After Pac-Land, this PCB was also used in the likes of Baraduke, Sky Kid and Metro-Cross. The upright cab takes on the already classic Pac-Man form, with the yellow colour and happy dot-eating icon you'd expect, although those who aren't familiar with the game might wonder why there's no joystick at all on the control panel.

The Arcade Game

It goes without saying that the huge success of Pac-Man and Ms. Pac-Man made the little yellow pizza the undisputed champ of the arcades. However, these two games were followed by a succession of diminishing returns. Pac-Man creator Toru Iwatani headed up the next game, Super Pac-Man, where you could end up with a character bigger than the maze – but he eventually felt that it missed the mark and was a bit boring. Pac & Pal changed the formula to include the turning of cards; GCC and Midway's Jr. Pac-Man featured a scrolling maze; and Baby Pac-Man was a strange hybrid between video game and pinball machine. All three of these series entries were commercial failures, and something drastic was needed to stop the rot. Thankfully, Pac-Land came along in 1984 – an excellent and beautiful platformer that would steady the ship, and quash any rumours of the king possibly falling off his perch.

Iwatani would stay on as producer for Pac-Land, but here he was more of an overseer – Tsukasa Negoro designed the game, and Yoshihisa "Kissy" Kishimoto programmed it. In a 2021 interview with historian Florent Gorges, Kishimoto believed that Midway made the request to Namco for a Pac-Man game that was closer in style to Hanna-Barbera's popular American cartoon – a regular old maze wasn't going to cut it, seeing as Pac-Man would need to be bigger in order to pull off animation similar to that of the TV show. A look at a sheet by Spriters' Resource contributor Techokami reveals that this game's Pac-Man alone has over 50 unique frames of animation to accommodate his various movement speeds – this is at a time when most platform heroes didn't break out of single figures in the animation department. The use of dual-layer parallax – as seen previously in Irem's Moon Patrol – was also aimed at making the game more cartoon-like, adding some necessary depth to the play area and giving the various forest, town and mountain stages a very defined and clean look about them.

Despite all this talk about graphics, Pac-Land's most unique feature is the unconventional controls. In a move inspired by the success of Konami's Track & Field, there's no joystick – instead the player uses left and right buttons for movement. Pac-Man runs fast if you hammer a button – which you'll need to do as every trip has a strict time limit – but he'll also walk slowly if you hold a button, and there's a few other speeds in between. Levels are usually short and there's always a bit of "BREAK TIME" at the end of them, but mastering the button-mash is essential – huge ponds that require springboards to jump over can be seriously challenging, while the super-fast fairy boots you get for your return home are fun, but potentially lethal if not handled with care. The mashing certainly gave the game an addictive quality – when interviewed by John Szczepaniak for his 2015 book The Untold History of Japanese Game Developers, Vol. 2, Kishimoto remembered that even the hardest parts of the game would keep players at the machine during location testing, inserting more coins in an attempt to clear them – at that point the game's hit status was virtually assured.

A tricky yet impulsive game, Pac-Land was a big influence on a lot of other platformers. Wonder Boy and Ghosts 'n Goblins certainly have it in their DNA, and the game's style even influenced Shigeru Miyamoto's creation of Super Mario Bros. – when he saw Pac-Land, he thought it would be much better to set the game during the day and have a blue sky, rather than a more traditional black background. Iwatani calls it his favourite game in the whole Pac-Man series, and it set the ball rolling on the character making many more appearances outside of his traditional maze over the years.









Game Title: **Kung-Fu Master**
AKA: Spartan X (JP)
Genre: **Beat 'em up**
Release date: **November 24th, 1984**
Published by: **Irem/Data East**
Developed by: **Irem**

"Kung-Fu Master was one of the biggest arcades of the entire decade, and one of the most important."

The game that pioneered the side-scrolling beat 'em up genre, Kung-Fu Master was a worldwide smash for several years after its release – an omnipresent game in the arcades through to 1986 and beyond. Nintendo considered an accurate port of the game to the NES so crucial to the console's success that they handled it themselves, eventually selling 3.5 million copies on the machine.

The Cabinet

Kung-Fu Master uses the M62 hardware, a Z80-based board that would also power Lode Runner and Spelunker, amongst others. The marquee features a neat summary of the game's plot – Mr. X has kidnapped Sylvia on one side of the title, and Thomas is busy putting a boot in a henchman's face on the other side. The bezel and side art feature more examples of Thomas in action, as well as a preview of the enemies you'll be up against.

The Arcade Game

When Spartan X (known as Wheels on Meals elsewhere) hit Japanese cinemas in August 1984, few might have known that soon they'd be able to play an arcade game based on Jackie Chan's tale of selling fast food and rescuing a woman named Sylvia from a castle of evil villains. Fewer still might have known just how big a deal that game was going to be – Kung-Fu Master, released as Spartan X in Japan, was one of the biggest arcades of the entire decade, and one of the most important. Developed by Takashi Nishiyama for Irem, the game would be the first in a new genre, the side-scrolling beat 'em up, where rows of enemies suddenly rushed you and ideally got kicked or punched in the face for their trouble.

When Nishiyama developed the title, he had several inspirations in mind – Karate Champ, Data East's hit arcade from earlier in 1984, was an obvious one seeing as it had popularised the one-on-one fighting genre. But while Nishiyama knew that he wanted to have Thomas, the titular Kung-Fu Master, fighting against various guardians, he wanted to build up to those big fights and give them more importance. And so, he looked to his earlier arcade hit for Irem, the side-scrolling shoot 'em up Moon Patrol from 1982 – in a 2021 discussion with fellow arcade legend Yoshiki Okamoto, he described Kung-Fu Master as more of a "rhythmic shooting" game where enemies come at you in much the same way as ships would in a shoot-'em-up; the main difference is that they get a lot closer to you before you take them down with a well-timed strike.

The thought of Kung-Fu Master being based on the mechanics of shooters certainly makes a lot of sense – Thomas, our hero, has to punch and kick his way through the five levels of the "Devil's Temple" to rescue Sylvia from Mr. X's clutches, a loose adaptation of the ending of Spartan X that's probably more indebted to the pagoda in Bruce Lee's Game of Death. A whole range of henchmen are in your way, from the more basic grippers that try to push you off the platform and die in one hit, to slightly stronger ones that require a couple of hits such as the knife throwers, and eventually you meet a more complex guardian at the end of the level. This structure also gives Kung-Fu Master a narrative drive – even if the plot is rather simple, not many arcade games had any kind of story at all in 1984, and that also helped the game to stand out.

The importance of Kung-Fu Master can hardly be overstated – in creating the side-scrolling brawler, it provided the base for so many other games from Renegade to Double Dragon, Final Fight to Golden Axe and far beyond, the sort of title that would be dominant in the arcade by the end of the 1980s. Its influence spread out far beyond games, even – Akira Toriyama cited Kung-Fu Master as a major inspiration for the "Red Ribbon Army" story arc in his popular Dragon Ball anime and manga, and it would later influence Nishiyama himself when daydreaming about his past work in a dull meeting for Capcom led to the inspiration for the original Street Fighter. This is most certainly one of those games where truly, had it not existed, the world of video games as a whole would be an entirely different place.









Game Title: **Marble Madness**
Genre: **Platformer/Maze/Racing**
Release date: **December 15th, 1984**
Published by: **Atari Games**
Developed by: **Atari Games**

"It was almost too abstract for Atari - they pushed at one point to give the player's marble a face or anything at all"

Mark Cerny's trackball-based game of guiding a ball carefully yet quickly through a set of isometric mazes had little in common with the sort of arcades that were generally popular at the time, but it managed to achieve a decent level of success in early 1985, primarily in North America. The game's influence goes far beyond its commercial achievements, and traces of Marble Madness can be found in a whole line of quirky yet precise platformers and racing games.

The Cabinet

Marble Madness uses the Atari System 1 PCB that can also be found in RoadBlasters and Peter Pack Rat, amongst other games. As befitting the style of the game, the upright cabinet is very minimalist, consisting primarily of a few bright colours and the blue and silver striped Atari logo as side art – nothing on the bezel or kick plate. The control panel consists of two optical trackballs, the rollers on which would wear out and become less responsive over time, requiring replacement. Initially Mark Cerny wanted to include a motorised trackball that would automatically move with the marble's momentum, but this proved to be unfeasible and broke down far more even than the more standard trackballs that the game eventually used.

The Arcade Game

Mark Cerny's ideas for the game that would become Marble Madness were certainly more unconventional than the traditional arcade inspirations that could normally be found in sci-fi and action movies. Instead, he found his muse in the calculated and clean art of M.C. Escher, and the idea of making a game where the contours of a level would greatly affect the movement of a player. While his goal of making what he called the first "solid and clean" 3D graphical game was actually achieved first by another Atari arcade title, 1983's Crystal Castles, Marble Madness would strike out a path all of its own, one that still informs games today.

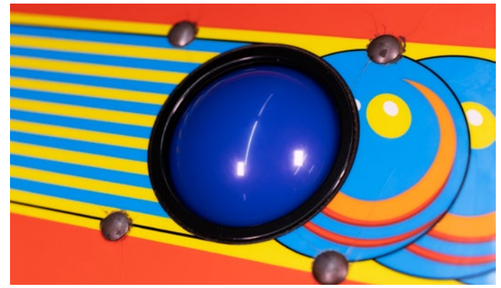
The road to the game had its own contours – at first, Cerny and colleague Bob Flanagan proposed a minigolf-style game, an idea that was flatly rejected by Atari management. Next, they put more of an emphasis on two players racing against each other, but this didn't end up fitting in with the abstract direction that Cerny wanted to go in (although there is an element of racing in the final game's two-player mode). In the end, Marble Madness is a game that came together through the stripping out of ideas as opposed to the addition of them – traps and enemies that chased the player were largely abandoned, as were various puzzle and support elements in the stages, with the finished product having a remarkably abstract look about it. It was almost too abstract for Atari – they pushed at one point to give the player's marble a face or anything at all, but Cerny held firm, only conceding to the "allusion" of a smile that looks more like the reflection of light on the marble.

Still, this final result is a game that takes quite a bit of time to master – the ultra-clean look and orchestral music don't have a lot in common with other contemporaries, but the feeling of moving that trackball and trying to defeat the six courses as quickly as possible became very attractive to players. Some of the more extravagant set-pieces stick out, such as the waves in the third stage, but the simple movement is the main appeal of Marble Madness, as is the moment when everything's turned on its head in Stage 5 – the "Silly" stage – simply by having to go up instead of down. It's short even for an arcade game – the six stages are not long at all, and Cerny said in his GDC 2011 post-mortem about the game that it was, essentially, a four-minute game once mastered. He would have liked to have added more stages to make it an eight-minute game, but after 10 months of development there simply wasn't any more time to do such a thing.

The short length of Marble Madness did limit its commercial success a little – it was a huge hit for a few weeks but gradually sank down as players mastered it. But it was enough time for the game to have a sizeable impact – firstly with lots of ports that could never quite emulate the original arcade's controls, and then with games such as Spindizzy and Snake Rattle 'n' Roll that were heavily inspired by it. Sega's smash hit Super Monkey Ball series owes a significant debt to Marble Madness, and really, any platform-styled game that requires precision in its movement has this title in its DNA. For Mark Cerny, this was his first major step in a legendary career that would see him go on to senior roles at Sega, PlayStation, and beyond – and for gaming, this was a first look into a world where, as the Silly stage said, everything you knew previously was wrong.







1985





Game Title: **Paperboy**
Genre: **Action**
Release date: **February 1985**
Published by: **Atari Games**
Developed by: **Atari Games**

"[Dave] Ralston initially wanted the obstacles in Paperboy to be weirder and supernatural, but focus group testing convinced him to make the game a bit more ordinary"

One of the most famous games ever to be based around a mundane profession, many an arcade-goer enjoyed taking this rather chipper kid around Easy Street, Middle Road and Hard Way, throwing newspapers vaguely in the direction of houses while trying not to lose subscribers, get slimed, or get the sack. Atari produced just under 3,500 Paperboy units, and they ended up making quite a lot of money.

The Cabinet

Paperboy uses Atari's System 2 hardware – a system that stands out due to its higher resolution graphics, and would also feature in Dave Ralston and John Salwitz's next game, *720°*. The cabinet's star is the controls – a set of handlebars that look so authentic, they could have been sawed off of a child's bike. The handlebar control is a version of the yoke used for Star Wars with two buttons located on the back for throwing papers, and you push, pull and twist it to move the paperboy. The game was sold in a unique way – Atari proposed a profit-sharing arrangement in which operators wouldn't buy the cabinet outright, but would split the profits down the middle with Atari. When Paperboy became a hit, this arrangement helped Atari earn way more cash than they'd have done through simply selling the cabinets, although they never repeated it as the business model infuriated distributors.

The Arcade Game

One of the many things unique to video games is that a twisted take on a rather dull job can, it turns out, be much more exciting than taking on a fleet of alien ships or embarking on some other heroic quest. Players can drive taxis, collect bins or assemble burgers in a way that's thoroughly engrossing and stimulating, even if the same behaviour would probably get them sacked from doing the real thing – and in Paperboy, a lot of players got a big kick out of delivering the Daily Sun. This slice of Leave It to Beaver-like picket-fenced American suburbia, complete with drunkards, tornadoes and even the Grim Reaper himself attracted arcade-goers like nobody's business, delivering some amazing profits for Atari.

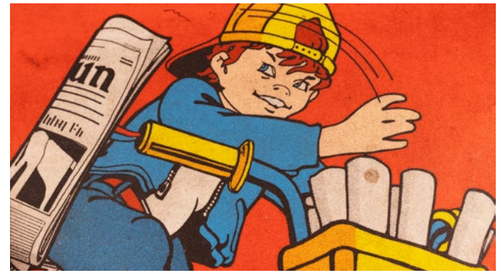
The original idea for Paperboy came from Dave Ralston, who delivered papers himself growing up, and he primarily worked with main collaborator and best friend John Salwitz. The game took two years to develop – while Salwitz initially desired to make a more traditional shooter in the vein of Akka Arrh, the cancelled project the pair worked on previous to this, the idea soon came together both with his involvement and the introduction of Doug Snyder's medium-resolution System 2 board that was integral to the game's crisp graphics and style. Other big overhauls during the game's development included the switching out of a traditional joystick for the famous handlebar yoke, and the title actually becoming more mundane – Ralston initially wanted the obstacles in Paperboy to be weirder and supernatural, but focus group testing convinced him to make the game a bit more ordinary (Grim Reaper excepted).

Even if our hero's dodging workers and kid-controlled RC cars as opposed to mummies and zombies, the game still has a touch of the strange about it – if only because of what you're doing. The game takes place over seven days, and sees you ride down the same street chucking papers at houses. Ideally, those who subscribe to the paper get it nicely delivered to their doormat or mailbox and you don't throw it through their window, causing them to stop subscribing. However, if a house isn't signed up to your service? Feel free to smash up their windows as much as you like – you get points for it, after all. Papers can also stun a lot of what's in your way – which is important because the road gets a lot busier as the week goes on. Getting knocked over is somewhat amusing, resulting in a dramatic fall and a quote such as "Of course you realise, this means war!" (The voice is a recording of marketing executive Don Traeger.) The end of each day has the player complete a quick bonus section on a bike course, flying over ramps and hitting targets with the papers you've got left – this extreme finish is something the team would have liked to expand upon, although it does subtly point to the direction that they'd go in for their next game, *720°*.

A week in the life of a paperboy certainly has its ups and downs – you may earn new subscribers if you perform well, although there will always be a few houses marked with "KEEP OUT!" signs – which of course, means you're entirely justified in breaking their windows again. Paperboy has a certain playful malevolence about it that not only makes it an entertaining arcade, but also one of the funniest ones out there, particularly when you read the final paper that either says you're the worst to ever do the job, or says you're a hero to young and old while also reporting on all the mysterious vandalism that's going on.









Game Title: **Commando**
AKA: Senjō no Ōkami
(Wolf of the Battlefield) (JP)
Genre: **Run 'n' Gun**
Release date: **April 2nd, 1985**
Published by: **Capcom/Data East**
Developed by: **Capcom**

"The cab might have been tricky to see because of the camo, but somehow that didn't stop lots of people playing it"

After turning some heads with early titles such as 1984's Vulgus and 1942, Capcom looked to the West when they made Commando in 1985, creating one of the most influential top-down run 'n' gunners ever made. The game sold hugely in all territories, to the point where Computer and Video Games proclaimed it "The No. 1 Arcade Game in the World" in November 1985, and the one-two punch of this and Ghosts 'n Goblins (both of which were designed by Tokuro "Professor F." Fujiwara) firmly established Capcom as an elite arcade game studio.

The Cabinet

Capcom created the Commando PCB specifically for this game, and it would remain in use for a couple more years, powering the likes of Black Tiger, Side Arms, and 1943: The Battle of Midway, as well as the Western-themed spiritual successor Gun. Smoke from later in 1985. The game was housed in a standard upright cabinet, with the art and decals having an appropriately military aesthetic – it's decked out in protagonist Super Joe's badges and tiger stripes. The cab might have been tricky to see because of the camo, but somehow that didn't stop lots of people playing it.

The Arcade Game

A lot of things may have been different in this book if a man named Kenzo Tsujimoto hadn't been booted out of the company he initially created, Irem, after taking responsibility (willingly or not) for the poor performance of their early, Space Invaders-inspired games. Unbowed, he brushed himself off and took Capsule Computers, originally part of a separate company called I.R.M and soon to be shortened to Capcom, on a path that would lead to the top of the arcade world. He coaxed some young game designers to the new company, mostly from Konami – both Yoshiki Okamoto and Tokuro Fujiwara had already tasted arcade success with the likes of Time Pilot and Pooyan respectively, but Capcom would be where they'd do the majority of their great work, including 1985's Commando, Fujiwara's ultra-fast-paced and still remarkable top-down run 'n' gunner.

Even the most pioneering of arcade games usually has an earlier title to look back on, and it's clear that when Professor F. was creating Commando that the aim was to realise an update on Taito's Front Line from 1982 – one of the first arcade run 'n' gunners in this vein, a game that featured rotary dial controls, grenades, and vehicles that the soldier could get into, mechanics that would also inspire SNK's Ikari Warriors in 1986. Commando actually strips a lot of these mechanics out – it offers only traditional joystick and button controls and no vehicles, just one lone soldier with a big gun and lots of grenades.

That lone soldier, Super Joe, has a simple task – break through the enemy lines. He does so one section at a time, avoiding an endless hail of bullets and shooting or blowing up anything that's in his way. You've got to think fast in Commando, and the key is to never stop moving – don't get bogged down trying to create the perfect path, otherwise you may end up getting swarmed. You've got to take those risks, push through those treacherous bridges and trenches, and ideally put a bullet in the enemy general's gullet at the end of each stage. Joe will take a well-earned smoke break between levels, one of the few times that smoking's been depicted in an arcade game – but then, things were a bit different in the 1980s.

One of the surprising things about Commando, and the workload of Tokuro Fujiwara, is that he actually worked on this game and Ghosts 'n Goblins concurrently – they were both created in the span of around three months, and they'd both be hugely important titles for Capcom. Of the two, Commando was certainly the bigger arcade hit – especially in Europe where it would be Capcom's signature title for years, helped along by some impressive home computer conversions. It was certainly important in the run 'n' gun genre, both for top-down and side-scrolling variations – the likes of Konami's Green Beret and Contra owed a debt to Commando, even if they changed the perspective. The high speed of play still makes it a very worthwhile game – it's a short experience, but one that's a Rambo-esque hail of bullets and body count from the helicopter dropping you off to the inevitable game over.









Game Title: **Gradius**
AKA: Nemesis (Europe)
Genre: **Shoot 'em up**
Release date: **May 1985**
Published by: **Konami**
Developed by: **Konami**

"Gradius added so much to the genre, whether it be a whole new approach to power-ups, a wider variety of levels, or a different take on the scope of an arcade game as a whole"

A spiritual successor to 1981's Scramble, Gradius would be just as important to the evolution of the shoot 'em up as the earlier game. The Vic Viper's battle against various alien armadas proved to be hugely popular everywhere – one of 1985's top five games in Japan, Electrocoin's most successful arcade cabinet of the year in the UK, and a million-selling title when it was ported over to the Famicom later in 1985.

The Cabinet

The original Japanese release of Gradius uses rather interesting hardware – the Bubble System was Konami's first 16-bit PCB, and their first attempt at creating a standardised kit that used bubble memory cartridges. These carts have to reach a temperature of between 30-40 °C before they can work, and an original piece of music called the "Morning" theme plays while it warms up. The Bubble System was a failure, unfortunately – operators complained that electromagnetic interference would wipe the ROM, and in the end it was only used for a handful of titles including TwinBee and Galactic Warriors. Western releases of Gradius used a regular PCB, and the cabinet for Nemesis, the European version of the game, is a bit more colourful than that of the original.

The Arcade Game

The space shooter was one of the reasons for the arcade's explosion in popularity, and we've already seen the genre go through some ups and downs, with periods where it felt as though the general mood was against them – that there were too many unoriginal blasters out there featuring ships plowing through a space armada. But then, something comes along that breaks the mold once again, and brings the shooter right back to the forefront – and that's what happened when Konami released Gradius in 1985, a game that added so much to the genre, whether it be a whole new approach to power-ups, a wider variety of levels, or a different take on the scope of an arcade game as a whole.

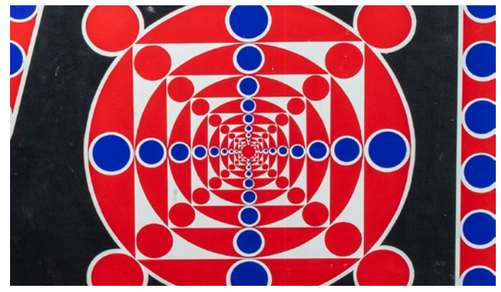
Hiroyasu Machiguchi, the game's director, was initially tasked with making a direct sequel to Scramble that could compete with the hottest shooter around – which would have still been Namco's Xevious. In a 1999 interview with Game Hihyou magazine, he said that he wanted to expand on the areas where Scramble had broken new ground – the different sections that made up the Scramble ship's journey were expanded into stages that represented different alien worlds that would all feature their own individual guardian. Despite this, the game still takes place as a continuous journey, with plain space sections between the worlds that often give the Vic Viper a chance to stock up on power-ups – and it's here where Gradius really changed the game, giving you a gauge that you fill by collecting those power-ups. Using the power-ups in the meter allows you to speed up and unlock multiple "Option" satellites that increase your firepower, but it also allows you to choose between three weapons – a missile, a double-shot, or a laser. This power-up system is Gradius's main innovation, one that would be found on many other games – the likes of Capcom's Side Arms from 1986 show just how quickly the power-up gauge took hold.

Gradius also signalled a different approach to length and depth, one comparable to adventure-based arcades such as Namco's Tower of Druaga. This game wasn't designed for players to spend a couple of minutes on in the pursuit of a high score – it was made for them to get as far as possible in the story that the game was trying to tell, to see how many alien worlds they could explore, complete with strange features that would become series trademarks such as the Moai heads (which appeared first in Pandora's Palace from 1984). While the likes of Scramble or Moon Patrol were also based on journeys, Gradius dramatically expanded the concept, and in doing so created a whole level of challenge – if the Vic Viper loses a life, it reverts back to its default weak state, making it especially vulnerable in later levels, and there is no continue feature; you can't just throw coins at it. To reach the journey's end, you have to master the game completely – and while not many other arcade games would be quite so unforgiving in this regard, Gradius was still a title that helped expand the scope of the arcade game beyond it being a relatively short experience.

As a result of this, Gradius was pretty well suited for the home, where conversions of the game to the likes of the Famicom and the MSX would be very successful. Believe it or not, there was even a board game based on Gradius. But more than that, there were a whole load of games inspired by it to go along with further entries in the series where Konami would continue to explore new worlds in the shoot 'em up genre, along with popular spin-offs like Salamander and Parodius. Even now, this original is still one of the best in the genre – it's as playable today as it always was, and it'll still take even the most skilled of pilots an awful lot of effort to conquer.









Game Title: **Peter Pack Rat**
Genre: **Platformer**
Release date: **July 1985**
Published by: **Atari Games**
Developed by: **Atari Games**

"A lot of credit goes to artist Debbie Hayes for the game's personality - she previously worked for Ralph Bakshi and Hanna-Barbera before joining Atari, and that experience shows"

Something of a misfit in Atari's library, Peter Pack Rat is an early game from the coin-op division's post-split era – a platformer that almost seems like it was meant to introduce a new mascot or character for a cartoon, but nothing like that ever materialised. The game wasn't a huge success, although Atari only made it in limited quantities – there were 160 cabinets, and 538 conversion kits.

The Cabinet

Peter Pack Rat is an Atari System 1 game, and possibly one of the first in the line – although the title wasn't released until 1985, it has a copyright date of 1984. The cabinet doesn't come with much in the way of specific art beyond the control panel and marquee, although the game could apparently be quite a pain for operators in several ways. Firstly, it's a very loud machine in attract mode, with near-constant music – System 1 cabs were often loud due to their stereo speaker setup, and people complained that they could hear the strains of Peter Pack Rat from the other side of an arcade. The game also has a notoriously fragile baby-blue joystick with a thumb button for jump – it's been said that the stick was repurposed from old Battlezone cabinets, although in truth only the joystick's grips are similar.

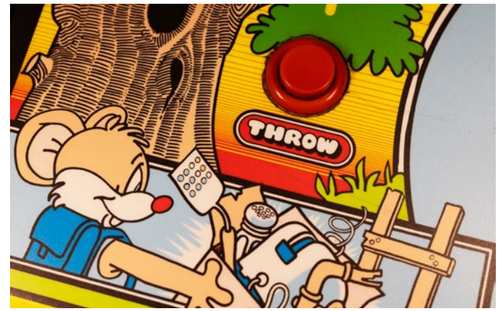
The Arcade Game

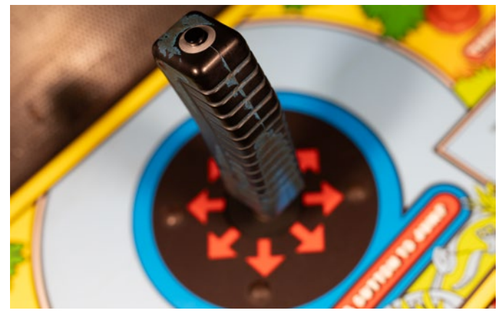
Peter Pack Rat is the sort of character you'd expect to find in a Hanna-Barbera cartoon – this rather strange rodent who, for no real reason, loves to go around collecting trash no matter how useless it is. There's also a gang who are out to stop Peter's hoarding, again for unclear reasons – all of them have names like Clawd the Cat, Al the Alligator, and Diamond Jim the Snake. Perhaps there was once an idea that Peter could be the next big thing – a TV star, a merchandise mover, a franchise player. But none of these things happened and the game is now an obscurity from Atari's mid-'80s line-up, although it's certainly weird enough to warrant a mention.

One of the most curious things about Peter Pack Rat is the long delay between the game's creation and its release – the game has a copyright date of 1984, but didn't actually start appearing in arcades until the summer of 1985. In fact, it doesn't appear to have had a proper launch until the autumn of that year, when it was featured at the AMOA show alongside other System 1 titles like Indiana Jones and the Temple of Doom. It's unclear as to why there was such a delay, although there may have been a change as to just who the game was aimed at – some of the outlines for objects that Peter needs to pick up don't match the object that's there, and keen observers have spotted outlines for items that are clearly packs of cigarettes and lighters. This begs the question as to whether Peter Pack Rat was initially supposed to be an adult-orientated title, and a decision was made to make it more family friendly.

Peter Pack Rat only has three looping stages – a junkyard, a sewer and a tree – although the layouts and objectives of these levels do change considerably every time you return to them. The goal is to pick up all the bits of trash and take them back to Peter's nest, and you get bigger scores if you're able to take multiple pieces back at once (or better still, all of the rubbish). If Peter gets clobbered by any of the other animals, he drops the items where he falls – although for protection he has other objects that he can throw to stun enemies. Peter has a lot of abilities: he can slide, swim, crawl through pipes, grab onto stunned flying enemies, and even stun and ride alligators – he's certainly tougher than a lot of other arcade heroes. The game has plenty of animation, particularly for Peter himself, including victory dances and some rather amusing deaths – this, combined with the earworm music and detailed graphics, does make for a rather charming title on the whole. A lot of credit goes to artist Debbie Hayes for the game's personality – she previously worked for Ralph Bakshi and Hanna-Barbera before joining Atari, and that experience shows in the game.

The rather odd history of this title continued into the home – there were no immediate ports of Peter Pack Rat, but it suddenly resurfaced in 1989 for 8-bit microcomputers, released as a budget title by Silverbird and something of a strange addition to a line that contains the legendary likes of Ninja Scooter Simulator. A PC Engine version of the game was even previewed as late as 1992, although this was cancelled. It feels as though Peter Pack Rat was destined for a lot more, although his one game is worth a go just for being a unique take on the art of rubbish collection.









Game Title: **Hang-On**
Genre: **Racing**
Release date: **July 2nd, 1985**
Published by: **Sega**
Developed by: **Sega AM2**

"while Suzuki later found out that the technique the game's based around is actually called "hang off", the slightly inaccurate name of "Hang-On" would persist"

Hang-On was a pivotal title for Sega, and not just because the deluxe cab saw players leaning from side to side on a rideable motorbike. This was the first Super Scaler Sega arcade release, using new hardware that was designed to handle sprite-scaling and pseudo-3D effects better than anything that came before it. The result would take over Pole Position's mantle as the arcade racing king. Immediately proclaimed one of the best arcade games ever on release, Hang-On was Japan's highest grossing arcade game in 1985, and in the United States it was the highest grossing arcade game in 1985 and 1986.

The Cabinet

The Sega Hang-On board pulls off its sprite-scaling tricks with the help of 2 MC68000 CPUs and a separate video board that handles the real-time scaling of sprites and textures. The Super Scaler wasn't the only innovative thing about the game – with Hang-On's deluxe cabinet, you controlled the game by leaning left and right on a motorbike, meaning that you were essentially riding on top of the game's joystick. This was an arcade first, and Hang-On started a new trend of arcade games known as "taikan", or body motion, that relied on motion-controlled hydraulics. Standard and Mini cabs were also available for those who didn't fancy getting on the bike – or indeed, those who were too small to actually tilt it enough.

The Arcade Game

Yu Suzuki's first game for Sega, Champion Boxing on the SG-1000, impressed people at the company so much that Sega stuck an SG-1000 into an arcade cabinet and started selling it to operators. His second game, however, would be a much more significant success. The fluid graphics and physical nature of playing Hang-On would strike a chord with mid-'80s arcade goers, and it created a part of the market that for a time was entirely Sega's own – the super scaler arcade game, a pseudo-3D affair where sprites and roads could be processed and manipulated at a speed other arcade titles couldn't match.

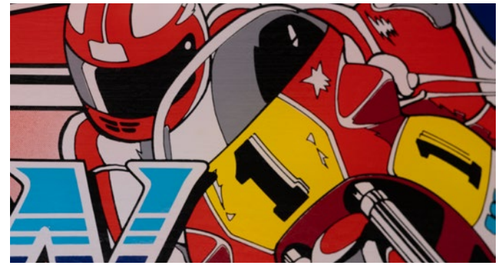
Yu Suzuki himself didn't come from a gaming background – designing wasn't something he really got into until he joined Sega, and the impetus for him to take a lead role in Hang-On was based more on him being an avid bike rider than anything else. As detailed in interviews for Eurogamer and the 2021 book SEGA Hard Historia, he initially wished to create an off-road racer based on the Paris-Dakar Rally, but it was decided that road racing would have more commercial appeal. He studied the techniques of bike racing intently, specifically honing in on the style of Freddie Spencer, one of the leading motorcycle racers of the early '80, and soon he had a design for the game based on that research. The design was initially totally 3D, as that was what Suzuki envisioned in his mind's eye – however, the arcade's Super Scaler technology allowed Suzuki to recreate this design fully in two dimensions. The study of professional biking also gave the game its name – while Suzuki later found out that the technique the game's based around is actually called "hang off", the slightly inaccurate name of "Hang-On" would persist.

The amount of speed that Hang-On's able to generate, especially for a game that's pushing 40 years old, is still remarkable – the game has a kineticism about it that clearly puts it ahead of the 1985 pack. An authentic 500cc engine note certainly helps, as does an appropriately driving soundtrack – Hang-On was the first game that legendary composer Hiroshi "Hiro" Kawaguchi worked on with Suzuki, and Suzuki asked him to create music for the game that a band would play, resulting in an OST that had much more in common with radio rock than traditional chiptunes. If Suzuki had fully had his way, the game may have been even more authentic – initially he wanted the cabinet's bike to be gyroscopic so it could simulate acceleration and braking, and he even toyed with the thought of including a 50cc engine in the cab for a very realistic note. However, the expense of a gyroscopic cabinet and worries about pumping exhaust gas into game centers understandably nixed both of these ideas.

The success of Hang-On made Sega crazy about bikes for a time – there was a stripped-down version called Hang-On Jr. that ran on hardware similar to that which powered the Master System console to go alongside the original's cabs, while Yu Suzuki was even able to execute his initial dirt bike vision with 1986's Enduro Racer, a game that was designed to be an offshoot of Hang-On only with different surfaces and lots of big jumps. All of these games, as well as 1987 sequel Super Hang-On, have their own appeal – but the initial Hang-On was the one that lit the blue touch paper. Sega were back at the forefront of arcade innovation once again, and many more Scaler classics would follow this title onto the floors.









Game Title: **Ghosts 'n Goblins**
AKA: Makaimura (Demon World Village) (JP)
Genre: **Platformer**
Release date: **July 7th, 1985**
Published by: **Capcom/Taito America**
Developed by: **Capcom**

"If [Fujiwara] noticed that players were breezing through certain parts of levels, he felt compelled to take the whole game back to development so he could make that part harder"

A game that struck fear into the hearts of even the most experienced arcade players, the immense difficulty of Ghosts 'n Goblins didn't stop the game from becoming a big arcade hit for Capcom, earning a place as one of 1986's top ten highest-grossing arcade games in both Japan and the United States. The game was a bit slower to become a success in Europe, but it gradually gathered momentum there, too.

The Cabinet

Ghosts 'n Goblins was one of only a few Capcom arcade games to use an M6809-based PCB, with others including 1984's SonSon and 1986's Speed Rumbler. The upright arcade cabinet's art is somewhat different to the style that later games in the series would take on – the game's title is formed out of tree branches on one of the game's marquees, while the other original marquee has more of a spectral aesthetic (this marquee also slightly changes the game's name, calling it "Ghost 'n Goblins"). Sir Arthur, our hero, does make an appearance on the side art surrounded by various illustrations of the game's monsters.

The Arcade Game

Tokuro Fujiwara, one of the great designers of the arcades, started out life at Capcom by creating Vulgus in 1984 – a competent and successful take on Namco's almighty Xevious. From there, he took something of an unusual step, with 1985 seeing him take on two projects at the same time – one being Commando, and the other being Ghosts 'n Goblins. The games could hardly have been more different from each other, but Fujiwara enjoyed the chance to switch from one title to the other through the three months he and his team spent creating the pair, and the big success of both titles would help Fujiwara become classed as one of the foremost names in gaming. But while Commando arguably shifted more units, Ghosts 'n Goblins – a game that was almost purposefully designed to make customers suffer – was Fujiwara's personal favourite of the pair.

The basic structure and story of the game is a pretty traditional damsel-in-distress affair – Sir Arthur, the knight, must rescue the superbly named Princess Prin Prin, who has been kidnapped by Astaroth and taken to the Demon World (the original Japanese name of the game, Makaimura, roughly translates to "Demon World Village"). Arthur must fight a Demon Army through forests, graveyards and towns before reaching the castle, only to be told that he's got to do it all over again before he can finally take on Astaroth. With a whole load of enemies that tend to appear at random, including some of the toughest seen in any game to date, Sir Arthur's journey will most assuredly not be an easy one.

The primary reason for the toughness of the game, according to Fujiwara in a 2003 interview with Japanese gaming magazine Continue, was down to heavy location testing that he kept an extensive eye on. If he noticed that players were breezing through certain parts of levels, he felt compelled to take the whole game back to development so he could make that part harder. If players figured out tricks to get through the game, he would nullify or remove them – in his words, he did this until it became too expensive to keep burning and erasing the EPROM, saying that he could have made the game even tougher if it wasn't for that. As a result, many players shared the experience that Fujiwara's interviewer had – a cruel game where every part has something that can kill you in the blink of an eye, first reducing Arthur to his underpants, and then turning him into a skeleton.

And despite this, players most certainly kept coming back, training themselves to finally overcome Astaroth and give the story a "happy end", as it says in the credits. Ghosts 'n Goblins shows that even a high level of difficulty in a comparatively lengthy game such as this one is still welcomed when it's paired with ultra-tight technical qualities and even a somewhat cruel sense of humour – for example, perhaps the game's most feared enemy, the Red Arremer, is actually named and designed after Toshio Arima, a Capcom employee. Ever since the release of this title in 1985, Ghosts 'n Goblins has remained a beloved game and franchise, particularly for expert players – the latest title in the series, 2021's Ghosts 'n Goblins: Resurrection, is as brutal as ever. But as this series has always proved, there's plenty of people out there who consider themselves up to the almighty challenge – or at least, that's what they think.









Game Title: **Buggy Boy**
AKA: Speed Buggy (NA)
Genre: **Racing**
Release date: **July 21st, 1985**
Published by: **Tatsumi Electronics/ Taito/Data East**
Developed by: **Tatsumi Electronics**

"The track's littered with obstacles and jumps - this was one of the first racing games that allowed you to get air, while time gates are also important and usually guarded by barriers"

Released as Speed Buggy in North America, Buggy Boy was one of the first serious attempts at off-road racing in the arcade – and one of the best. From big jumps to riding on two wheels and with a load of flags to collect on each of the five courses, it was certainly a jam-packed game, and it could be found in a rather spectacular cabinet. With the appetite for racing games being so healthy in the mid '80s, it's no surprise that Buggy Boy placed in 1986's top five highest-grossing machines for both Japan and the States.

The Cabinet

Buggy Boy's board uses two 5 MHz Intel 8086s as well as a Zilog Z80 – largely the same configuration that was used in Tatsumi's earlier racing title, 1983's TX-1. There are several different cabinets for this game – the original Japanese Buggy Boy comes with three monitors and appears to be available both as an upright cabinet or in a snazzy cockpit variant. A smaller option was available to arcade operators in the shape of Buggy Boy Junior, which came in either upright or cockpit designs and reduced the number of screens to one. Data East's North American-only release, Speed Buggy, is mainly based around the Junior version – Speed Buggy was upright only, and there was never a triple-screen version under that name.

The Arcade Game

Tatsumi Electronics aren't exactly the best known of arcade developers – after all, their name only appears on a handful of '80s and '90s games. Some might assume they didn't last long as a result, but they've actually been going since 1970 – a lot of their arcade business was outside of traditional video games, including the print sticker and prize game machines they still make today. But when they did make video games, they went the whole hog with them – Tatsumi's titles were high-end products, and Buggy Boy is one of their most famous. In some territories, its excellent reputation stems from 8-bit micro ports that seriously punched above their weight, but the original arcade is a tremendous affair that represents the oft-overlooked dune buggy class of racing.

Some may have first come across Tatsumi in 1983 when they made TX-1 – another triple-monitor arcade racing game, styled after Formula 1. This game was published by Namco in Japan, who licensed it to Atari internationally – as such, it's seen as being quite close to the Pole Position series. Some call it a "successor", although with the original Pole Position still being the biggest arcade in town, it might be more appropriate to call TX-1 a "deluxe" version of sorts – a different game with similar gameplay, and outrageously smooth graphics for the period. Buggy Boy is a continuation of the formula (further honed in TX-1 V8, a 1984 sequel that never left Japan), but this time with buggy racing and published internationally by Taito – oddly appropriate seeing as they'd end up creating triple-screen titles like The Ninja Warriors and Darius a couple of years later.

After you choose one of five tracks, you get a colourful game that's actually not all about driving fast – the aim of Buggy Boy is to score points by picking up flags and going through gates. You score the most if you pick up flags in the order they're shown on the top right – doing this produces a jackpot jingle and makes every pickup worth more points, although the racing line for this can be quite risky. The track's littered with obstacles and jumps – this was one of the first racing games that allowed you to get air, while time gates are also important and usually guarded by barriers. The game is impressive indeed – jumping is certainly new, but you also have the ability to ride on angled surfaces similar to that of a NASCAR oval, another great effect that wasn't seen before this title. Funnily enough, these graphical touches are probably more impressive than the three displays, which ends up feeling gimmicky – most of the action in Buggy Boy takes place in the centre screen, and the nature of the monitor set-up means that moving from one screen to another can result in the view being restricted on an actual cabinet.

Tatsumi would retire the triple-screen setup following Buggy Boy, but still went on to make some other technically impressive games, including helicopter shooter Apache 3 and Mad Max-esque road fighter Cycle Warriors. Buggy Boy is perhaps known better by many as a computer game – there were exceptional ports of the arcade to the likes of the Atari ST, Amiga, C64 and Spectrum, a credit to the ingenuity and talent of the programmers responsible for these home versions. The original arcade is still very much worth a go, however – it's obviously proficient technically, but also takes a refreshingly different approach to racing.









Game Title: **Indiana Jones and the Temple of Doom**
Genre: **Action**
Release date: **August 1985**
Published by: **Atari Games**
Developed by: **Atari Games**

"It seemed obvious to make a game based around [the mine cart] scene, and the initial idea was actually to make a LaserDisc game"

Arcade-goers finally got a chance to play as the world's most famous archaeology professor in this 1985 title from Atari, featuring several faithful recreations of scenes from the 1984 movie it's inspired by. Atari championed the diverse nature of this title, hyping up the inclusion of Indy's voice and authentic music from the film. While not as successful as Atari's earlier games based on Star Wars, it still managed to do solid numbers – although in another world, the game could have been an entirely different animal.

The Cabinet

Temple of Doom uses Atari's System 1 architecture, the third game to use this hardware following Marble Madness and Peter Pack Rat, and the first one to use digitised speech. There are a couple of variations for the upright cabinet – one comes with generic Atari branding on the side art, while the other features a full-size image of Mola Ram towering over Indy as he aims his whip at a Thuggee cult member.

The Arcade Game

Before 1985, Indiana Jones had only made a couple of video game appearances: an Atari 2600 game based on Raiders of the Lost Ark, and the entirely original Indiana Jones and the Lost Kingdom on Commodore 64. However, unofficially he'd appeared in many more – so many titles, from Spelunker and Pitfall! to Montezuma's Revenge and Miner 2049er, had tipped a Fedora to George Lucas's creation, and a proper arcade outing for Indy was more than overdue. Finally, in 1985, Atari would deliver a game that promised to make you feel like the explorer, whips and all – and while it perhaps wasn't as ambitious a game as director Peter Lipson originally envisioned, it was still a popular title.

Work on the game started while the film was still in the early stages of production, but the action centrepiece of Temple of Doom was already set in stone – a big chase involving minecarts. It seemed obvious to make a game based around this scene, and the initial idea was actually to make a LaserDisc game, coming hot on the heels of Dragon's Lair and Atari's own Firefox. When talking to Mike Bevan for Retro Gamer in 2013, Lipson remembered being enthusiastic about the idea, but reality soon set in – when they figured out just how much footage would need to be shot for such a game, they realised that the budget for the project would be far north of $100 million. This was obviously a non-starter, so the decision was made to make a more traditional arcade game using the System I hardware (a similar fate befell Atari's arcade release based on Road Runner, which was also set to be a LaserDisc game at one point).

The game features three levels based on scenes from the movie. In the first, you run through the caverns, saving children that the Thuggee cult have kidnapped by whipping their cages, while also whipping everything else in sight – not only do you stun the cult members with a quick crack, but hitting near enough everything you see can result in a bonus, whether it's piles of bones or gas canisters. The second stage is the minecart ride where you evade the cult and make your way through many a treacherous junction, and with a cry of "I'm not leaving without those stones!" you enter the third stage in Mola Ram's lair, where you navigate a bridge and pick up a Sankara Stone. This cycle repeats four times with varying difficulty, and the end of the fourth loop finally sees you take on Mola Ram himself, hopefully sending him into the lava. It's all quite simple, but additions like having a recreation of John Williams' original movie score certainly helps the game out a lot.

Indiana Jones and the Temple of Doom may have some features that haven't aged well – the digitised speech certainly isn't the clearest ever, but it's still nice to have Harrison Ford's voice in the game. The game does have a lot of cute little extras to find with bonuses hidden all over the place, and there's even a nice touch of having to take out a couple of enemies on the difficulty select screen to be able to start at a higher skill level. Other unique elements included allowing the player to start with more lives if they inserted more coins – something that would obviously keep a player at a machine for longer, but made up for that with the higher price for starting with seven lives as opposed to three. While adventure games would become a more natural home for Indy in later years, this is still a very appealing arcade game, one for when you just want to whip enemies' arses as opposed to solving puzzles and making wisecracks.









Game Title: **Space Harrier**
Genre: **Rail shooter**
Release date: **October 2nd, 1985**
Published by: **Sega**
Developed by: **Sega**

"Yu Suzuki believed in the project so much that he offered up his entire year's salary as compensation if the game failed - and eventually, his instincts were proved right"

Sega's new line of Super Scaler arcades continued with Space Harrier, a rail shooter that welcomed you into the Fantasy Zone with dragons, giant moai heads and thousands of bullets that look oddly like American footballs. The game had a hugely popular debut at 1985's Amusement Machine Show in Japan, and quickly topped the charts for cockpit-style cabinets on its release, remaining a popular arcade attraction around the world for several years afterwards.

The Cabinet

The Space Harrier PCB is mostly identical to that of Super Hang-On with both using a dual-M68000 setup, although Harrier's board features improved copy protection. However, the moving cabinet is based on different hardware – whereas Hang-On had you sitting atop of a bike on a spring that you leaned on for movement, Space Harrier's cabinet rolls with the movement of the flight stick and returns back to the centre whenever idle. This new hydraulic set-up also allows the cabinet to tilt forward and backwards as opposed to simply moving left and right, enhancing the feeling of body motion. There is also a smaller sit-down cabinet for the game, as well as a traditional upright version.

The Arcade Game

Despite the success of Hang-On, bosses at Sega were initially worried when Yu Suzuki proposed that the next Super Scaler game should be a rail shooter – Sega's previous attempts at the genre had mixed results, ranging from moderate hits like Buck Rogers: Planet of Zoom to unlucky commercial failure SubRoc-3D. They were even more concerned about the cabinet – a big electromechanical step up from the spring-based Hang-On with the production costs to match. But Suzuki believed in the project so much that he offered up his entire year's salary as compensation if the game failed – and eventually, his instincts were proved right. Years later, Space Harrier is still regarded as one of Sega's most memorable titles, and it helped the Scaler machine craze grow even further.

Although the game is regarded as one of Suzuki's definitive works, the initial idea for the game wasn't his – it started with a 100-plus page design document written by a designer named Ida, for a game simply called "Harrier". This design was military-themed – you'd control a fighter jet and hit targets on land and in the air. The document was impressive, but the Scaler technology wasn't yet able to do the design justice – a true recreation of a fighter jet would have required significantly more animation and rotation than memory would allow. Conversely, Space Harrier's human protagonist doesn't actually have a lot of animation at all; and so, Suzuki widely revised the original design document. According to an interview for the 2018 book 30 Years of Space Harrier, Suzuki paid tribute to the original designer despite the changes – the game's giant moai head enemy was named "IDA'' after him (apparently he had a very large head), and the word "Harrier" was retained in the game's eventual title.

With the fighter jet becoming human, Suzuki and his team – consisting of programmer Satoshi "Bin" Mifune and composer Hiroshi "Hiro" Kawaguchi – set about creating a vivid fantasy world, one that would use plenty more of the 32,000 colours the Scaler board was capable of pushing out than Hang-On did. Suzuki's inspirations lay in prehistoric animals and fantasy art, particularly the progressive rock album covers of Roger Dean, while Mifune contributed more robotic designs. Some references were more direct – Uriah, the fluffy white dragon you control in the bonus stage, is a homage to the similar-looking Falkor from the 1984 movie The NeverEnding Story. Hiro's music was designed to be hopeful and energetic, something that he likened in a 1986 interview to a "ray of sunlight that pierced the shroud of gloom on a dark winter day", and like Hang-On, it takes the form of a pop song as opposed to a more traditional chiptune.

All of this services the most spectacular rail shooter arcades had seen at the time. Space Harrier never loses speed despite the variety and number of sprites it's spewing out; almost every sound effect is memorable; and the graphics were so good that according to Ken Horowitz's book The Sega Arcade Revolution, people who saw it at its 1985 trade show premiere initially thought they were looking at a LaserDisc game.

Space Harrier still feels like an arcade that stops people in their tracks, particularly in its most famous hydraulic cab form – and yet, this rail shooter is more than just a technologically impressive attraction. It's a game that's resonated over the years, one that inspired people to take up making games for a living – perhaps most famously Hideki Kamiya of Devil May Cry and PlatinumGames fame, who included his own tribute to the title in 2009's Bayonetta. Perhaps the best way to sum up the game is that it's one of the most optimistic of all classic arcades – no matter what, Space Harrier is something that brings people a feeling of joy.









Game Title: **Gauntlet**
Genre: **Dungeon crawler**
Release date: **October 15th, 1985**
Published by: **Atari Games/Namco**
Developed by: **Atari Games**

"Gauntlet was an important title for Atari Games - it was multiplayer action of a like that arcade-goers hadn't seen before"

One of the most important multiplayer arcade games ever released, Gauntlet was a big hit for the relatively new brand of Atari Games – the new name for what had previously been the arcade division of Atari, now under the purview of Warner and Namco. Gauntlet was the second-highest-grossing arcade game of 1986 in the United States, and the fourth-highest in Japan – a big success in the East for a North American game.

The Cabinet

The Atari Gauntlet board is an off-shoot of the Atari System 1 – a huge single board that often requires maintenance simply due to the number of components it contains. Seeing as the game has a maximum of four players, the cabinet itself is also very large – each player has their own colour-coded controls, the monitor is angled further back than normal so that everyone can see, and there are four individual coin slots, meaning that you pick a character by putting your money in that character's slot. There is also a two-player Gauntlet cabinet that doesn't have entirely separate slots for each character.

The Arcade Game

Ed Logg was one of Atari's mainstays – he'd been with the company since 1978 and played a large part in some of their greatest successes, particularly 1979's Asteroids and 1981's Centipede. His reputation was such that fellow employees at Atari nicknamed him 'The Golden Boy', and in 1985 he'd prove that again with another huge arcade smash. Gauntlet was an important title for Atari Games – it was multiplayer action of a like that arcade-goers hadn't seen before, and was proof that despite all the tribulations that the Atari name had gone through since the 1983 North American video game crash, it was business as usual for an arcade division that was still in the very top echelons of the industry.

The inspiration behind Gauntlet primarily came from Ed Logg's son – for a long time he'd wanted his father to make a game based on Dungeons & Dragons, but Logg had struggled with implementing D&D into an arcade game. Until, that is, a co-worker brought an Atari 8-bit game called Dandy into the office. Dandy was a one-to four-player dungeon crawler, a game where you hunted for the exit while shooting groups of monsters that vary in strength, using bombs and keys on your way, picking up food and treasure. It's a lot like what Gauntlet would become, and Ed Logg hasn't denied the inspiration – he's often gone into detail about how direct an influence Dandy was on his game. For Dandy's creator, John Palevich, it was almost too much of an influence, and he threatened a lawsuit – however the matter was settled through Palevich receiving a Gauntlet arcade of his own, and the release of a Dandy clone called Dark Chambers for Atari consoles and computers in 1988 that Palevich was fully credited for.

Gauntlet consists of up to four players, each of whom pick their character – you can choose the Warrior, Valkyrie, Wizard or Elf (named Thor, Thyra, Questor and Merlin respectively), each of whom have their own strengths and weaknesses. Thor packs tremendous physical power, Merlin can wield magic and Questor has the most speed – leaving Thyra as the balanced option. While this wasn't the first four-player arcade game, it was the first where players could join in at any time – this approach improved the game's efficiency as a coin-muncher, coercing groups to make their way through the game's endless dungeons just as quickly as a single player could. To quote Ed Logg in a 2012 Game Informer interview, Gauntlet could make a dollar in the same time that a regular game could make a quarter. The presentation helped too – particularly the voices of the dungeon master and famous quotes such as "Remember, don't shoot food!" and "Let's see you get out of here!" almost mocking your progress. It certainly feels like a great arcade take on D&D – indeed, it was named "Dungeons" for most of its development until it became clear that D&D publisher TSR wouldn't sign off on such a name.

Gauntlet was a big deal even during the game's location testing – it had to be pulled from one location because too many rival companies were coming to take notes on the cabinet. When released, it would be a triumph for Atari – it earned them, and plenty of arcade operators, a great deal of money. Indeed, the only thing that stopped it making even more money, according to Logg, was the sheer size of the cabinet – it was too big for street locations, being limited to arcades only. A 1986 sequel further cemented Gauntlet's place as the arcade's premier labyrinth, a game that never truly ended – but that didn't stop people putting coin after coin into the machines so that they could dive deeper into the sprawl of monsters and find the ultimate treasure. It must finish somewhere, mustn't it?









Game Title: **Green Beret**
AKA: Rush'n Attack (NA)
Genre: **Run 'n' Gun**
Release date: **September 4th, 1985**
Published by: **Konami**
Developed by: **Konami**

"There are hundreds of militants there who want to stop you, and you've only got a combat knife to hand"

Green Beret was a game that took the usual run 'n' gun template and injected it with a heavy dose of Red Scare, using a Soviet military setting inspired by popular '80s action movies. The attempt to ride the coattails of films such as Rambo: First Blood Part II certainly worked, particularly in North America where the Cold War theme was ramped up even further – the game was renamed Rush'n Attack in the territory (because it sounds like "Russian Attack") and it proved to be quite popular.

The Cabinet

Green Beret is a standard upright cabinet that uses a board especially made for the game – the Konami Green Beret, which would also be used for the arcade hit Jail Break. The American Rush'n Attack features quite large artwork – fire is the main theme, with flames licking the bezel, marquee and the side art, while your American supersoldier is right there in the middle of it, looking down the sights of his bazooka. The NES version of the game was also featured on Nintendo's PlayChoice-10 arcade hardware.

The Arcade Game

In the middle of the 1980s, popular movies based in and around the Cold War started to change – more serious affairs like 1983's WarGames gave way to flicks where men like Chuck Norris and Sylvester Stallone acted as one-man manifestations of American freedom, going deep into the jungle, killing enemies by the score, and rescuing prisoners of war in the likes of Missing in Action and Rambo: First Blood Part II. A lot could be said about this being Hollywood's way of reframing conflicts like Vietnam so that the States could claim a sort of retrospective victory, but Konami simply saw the popularity of these movies and thought it would be a good idea to make some games inspired by them – and that's how we end up with the classic Green Beret from 1985.

The game casts you as either one or a pair of unnamed elite members of the US Special Forces (the later Famicom port christened them "Steve" and "Ben"), tasked with rescuing POWs from a remote Soviet military camp somewhere in Siberia. There are hundreds of militants there who want to stop you, and you've only got a Bowie combat knife to hand. No matter though, as you're powered by American freedom, and the average Soviet soldier will fall with a well-placed knife to the belly. And so, you stab your way through various types of militants. Most will simply rush you while others have machine guns and rocket launchers, some perform fancy flying kicks, and others will handily drop a limited-use weapon for you – a bazooka of your own perhaps, or a flamethrower. You'll also encounter a boss at the end of each of the four stages, whether it be a pack of German Shepherds, a truck of bad guys, or even three combat gyroplanes. And if you think it's impossible to take down an airborne vehicle armed with nothing but a knife? Well, clearly you haven't been watching enough action movies.

There's no doubt that Konami wanted this game to make you feel like a James Braddock or John Rambo – even in the original Green Beret version of the game, the Soviet setting is rather unambiguous. But Konami decided to go a step further in the States, giving the game the rather punny title of Rush'n Attack and adding a lot of Soviet stars to the background graphics, usually found on the front of shipping containers where less-distinct red blocks used to be in the original version. The name change seems like a cheap ploy, but it presumably worked as the popularity of Rush'n Attack led Konami to do similar things to a couple of other titles. The North American release of Jackal became Top Gunner in 1986, and 1987's Combat School became Boot Camp.

Regardless of any attempts that the game made to ride the wave of '80s action films, Green Beret would become a popular and lasting title thanks to its quality, and it's one that received several acclaimed home ports (particularly its NES and ZX Spectrum versions, although the less said about the Commodore 16 version the better). It also spawned both direct sequels (1989's Missing In Action) and later revivals such as Rush'n Attack: Ex-Patriot from 2011, a download-only title for PSN and Xbox Live Arcade. When looking back on the game in 1989, ACE remembered it as a monster hit and one of the first arcade shoot 'em ups out there to really go heavy on a military theme, something that would be seen in plenty more games to come. Whether armed with a regular knife or a big old gun, after Green Beret the supersoldiers were most definitely here to stay.









1986



Game Title: **Arkanoid**
Genre: **Block breaker**
Release date: **April 26th, 1986**
Published by: **Taito/Romstar**
Developed by: **Taito**

"As simple as [Arkanoid] appears, the development was tough - the pair had all of a month to actually make the game before it was due to start location testing"

Arkanoid didn't just resurrect the block breaker genre – it ended up becoming the name most synonymous with it, replacing the age-old Atari classic Breakout. Alongside a series of games that still continues today as well as many clones made by everyone from industry veterans to coding newcomers, the original 1986 Arkanoid was Japan's most successful cocktail cabinet in 1987, and the highest-selling conversion kit in the United States the same year.

The Cabinet

Arkanoid's PCB isn't exactly cutting-edge for 1986, although you probably wouldn't expect it to be – it's a straightforward Z80-based affair, only capable of showing 16 colours. The cabinet art is equally simple – there's not a whole lot beyond the marquee, and the control consists of one button and a rotary dial. Still, the simplicity of the game, from the low-budget board to the ease of conversion, was one of the things that made it so appealing for operators. If co-designer Hiroshi Tsujino had his way, it could have been even simpler – he initially wanted the blocks to be just one colour, but it was mandated by Taito's sales team that they should have multiple colours.

The Arcade Game

In the late 1970s, block breaker games were all the rage thanks to Atari's Breakout from 1976 – that title sold over 10,000 cabinets, spawned a successful sequel in 1978's Super Breakout, and a whole legion of clones followed it during the early part of the golden age. Still, by the start of 1986 the genre was unfashionable, and seen as old hat – arcades had gotten a lot more complex since the days of Breakout, after all. However, a group of sales executives at Taito disagreed – they thought that with a little bit of revising and expanding, the block breaker could be brought back to life. And when Arkanoid came out in April 1986, they would be proven thoroughly right – this game may not have been the most bedazzling of machines, but it was an immediate success, filling the arcades with an immediately familiar ping-pong sound of balls going up and down a well.

Arkanoid, as a title, came together very quickly – the execs who believed in the block breaker's resurrection ran a company-wide competition to solicit ideas for a new game in the genre which was jointly won by childhood friends Akira Fujita and Hiroshi Tsujino, both of whom were working in Taito's Yokohama Research Institute. The pair were ordered to take the best from both of their ideas and combine them, with the result being a take on Breakout that included many different well designs, a range of power-ups, enemies, a final boss, and an aesthetic that was heavily based on the 1982 film Tron – Tsujino watched quite a lot of sci-fi movies for reference purposes. As simple as the game appears, the development was tough – the pair had all of a month to actually make Arkanoid before it was due to start location testing.

You take the role of a spaceship-cum-paddle named Vaus, defending the titular Arkanoid spaceship from a mysterious entity named DOH. The core of the gameplay is just as it was in Breakout – the ball bounces around, and you must clear the well of bricks without losing said ball. However, the addition of power-ups quickly changes things, adding a great deal of risk and reward – items like multi-balls, extensions and the powerful laser can really help out, but players have to quickly decide whether it's worth grabbing them if they're not in the same area as the ball itself, which must always be returned or a life is lost.

The different layouts also present various challenges – unbreakable gold blocks mean that some levels require precision as opposed to simply bashing your ball against a wall until there's nothing left, and enemies can always run interference, coming down from the top and diverting balls in ways you can do little about. Really though, it's the subtle factors that make Arkanoid: the ever-increasing speed of the ball as it bounces acts as something of a time limit, encouraging players to be efficient lest the ball gets so fast as to make progress impossible without slowing it down; and the effective presentation. There might not be a lot of music in Arkanoid, but the "kinkon-kankon" chime of the ball as it bounces, as described by Tsujino, is one of the most memorable 1980s arcade sounds of them all.

As the arcades matured, there was possibly a chance that earlier genres could have ended up being completely left behind – whether it was the block breaker, or even the very concept of a single-screen game. The success of Arkanoid showed that this didn't need to be the case – a game's sheer quality would be enough to get something over the line without the need for expensive technical fireworks. Arkanoid has been responsible for many clones over the years, being something that a novice coder can work on as a way of understanding how to create a video game – but commercially it showed that the idea of a simpler arcade game was still very much alive and well.









Game Title: **Ikari Warriors**
AKA: Ikari (Fury) (JP)
Genre: **Run 'n' Gun**
Release date: **February 19th, 1986**
Published by: **SNK/Tradewest**
Developed by: **SNK**

"Ikari is quite graphic – much less cartoony than Commando, bullets have impact and both yourself and enemies crumple hard before flashing blood red"

One of the toughest and most violent cabs of its day, Ikari Warriors was another leap forward for the run 'n' gun genre, razing a lot of similar games that had come out in the wake of Capcom's Commando to the ground. A shot in the arm for SNK that broke the company worldwide, it was the second most successful arcade of the year in Japan, amongst the US's top five in 1986 and 1987, and similarly popular in the United Kingdom.

The Cabinet

Ikari Warriors uses a pretty standard dual-Z80 PCB and the cabinet features scenes of jungle warfare with significant echoes of Rambo, but the standout part of the game is how it controls. Ikari deploys an eight-way rotary joystick that you can move normally, but also twist to aim your fire – allowing you to move in one direction while firing in another. This is a smoother version of the controls found in Taito's 1982 game Front Line, and emulating them proved to be challenging for every Ikari home port.

The Arcade Game

Around the summer of 1985, just as Capcom released the highly influential Commando, Osaka-based arcade company SNK were in a tight spot – they'd not had a hit game in a couple of years and were starting to flirt with bankruptcy. However, an almost devil-may-care desire to potentially go out swinging with a big, action-packed shooter led to Ikari Warriors, a game so popular and influential that it brought the company right back to relevancy and profit, with many arcade-goers bashing their heads against what felt like millions of enemy soldiers, tanks and fortifications out to reduce your hero to a bloody pulp.

Designed by Koji Obada, the inspiration for Ikari came from three places – the first being Taito's seminal 1982 title Front Line. Capcom's Commando had simplified Front Line's rotary controls somewhat, but Obada chose to retain them for his games – starting first with a 1985 title called T.A.N.K. (known as TNK III in the States), a popular World War II-based shooter that marked the start of the turn in SNK's fortunes, and the debut of a hero named Captain Ralf Jones. The third and most obvious influence is Rambo – with the jungle setting and red bandanas, Ikari Warriors is everything but an official Rambo game. According to a 2001 Koji Obada interview for CONTINUE magazine, SNK tried to obtain the rights for a game based on Rambo: First Blood Part II but couldn't quite get them, so the name "Ikari Warriors" was chosen in reference to the film's Japanese title, "Rambo: Ikari no Dasshutsu", or Rambo: The Furious Escape. Amusingly, SNK founder Eikichi Kawasaki was friends with Rambo star Sylvester Stallone and might have secured the rights late in the day, but by that time the title was set in stone – however, Stallone himself enjoyed the game and had his own Ikari Warriors cabinet.

The very start of the game is iconic, if only because players have likely seen it loop over and over – an Allied plane has crashed behind enemy lines, and Ralf Jones and Clark Still (rechristened Paul and Vince in the US release) must fight their way through to the village of Ikari. The gameplay is much tougher than the likes of Commando and even Front Line – you get a gun and grenades but you only have limited ammo for both of them, so you can't even be reckless with your primary shot. There's always a ton of enemies, and they'll constantly try to pin you down with fire – but you must keep moving forward, otherwise the enemy will call in missiles to blow up your position. Our heroes do have one great equaliser – enemy tanks that they can commandeer, able to fire off shells and run over grunts, but even a tank doesn't make them invincible as if it blows up, they'll die with it. Ikari Warriors is fairly graphic for its time – with bullets that have impact and both yourself and enemies crumpling hard before flashing blood red, it's far less cartoony than Commando. For Obada, this detail in the slaughter was important – he wanted Ikari to have a visceral nature, and the dramatic deaths add to that almost as much as the game's level of difficulty.

After Ikari's tour of duty in arcades around the world, SNK capitalised on its popularity with two direct sequels, Victory Road and Ikari III: The Rescue, and also a quasi-spin-off called Guevara, a title that put you in the boots of the legendary revolutionary (known as Guerrilla War internationally). Ralf Jones and Clark Still would later become a part of The King of Fighters, SNK's long-running fighting series, competing as "Team Ikari" – a tribute they deserve, seeing as Ikari Warriors managed to not just save the company as a whole, but helped them become a major force in the arcade business.









Game Title: **Rampage**
Genre: **Action**
Release date: **July 3rd, 1986**
Published by: **Bally Midway**
Developed by: **Bally Midway**

"The overriding principle for Colin and Nauman was that there was no "wrong" way to play the game"

Rampage reversed the conventional roles of the arcade game, giving you cities to destroy rather than save and essentially letting you do what you want – and this approach proved to be hugely attractive. The game was one of Bally Midway's last successful games before being bought out by Williams in 1988, and it was one of their biggest – executives at the company such as Maurice Ferchen and Bob Lundquist said in interviews that it was one of the fastest earners in Bally's history.

The Cabinet

Rampage is classed as an MCR III "monoboard" game – a condensed version of the company's hardware that they started using in 1984 (earlier games by Bally often came in a multi-board "sandwich" format). The large upright cabinet surrounds the monitor with illustrations of wrecked buildings, while the sides are dedicated to the company's branding. The standout feature, of course, is that there's space for three players to crowd around the machine, pick their monster, and get smashing.

The Arcade Game

The large majority of arcade games usually cast the player as a hero. It's you against an evil army or organisation, trying to save something or other – a girl, a city, a planet – it's kind of a common theme. Sometimes, however, it's good to be bad – sod the hero's journey, let's break stuff instead! That was the theme behind the creation of Rampage. Designers Brian Colin and Jeff Nauman, a duo who didn't even really consider themselves gamers, did away with typical arcade conventions and made a title that allowed you to let off some steam, turning cities across the United States into twisted piles of wreckage. They were convinced it was going to be a hit, and they would be proved absolutely right.

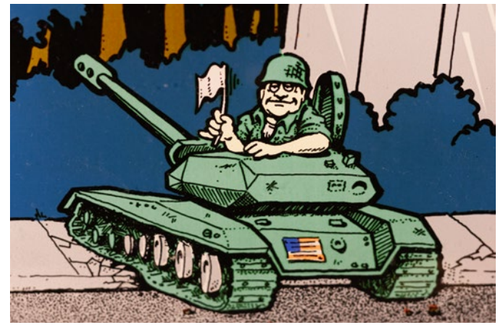
A 2018 Chicago Tribune article about Rampage starts off by calling it "a game about nothing" – and that's a pretty accurate description. You play as either George, Lizzie or Ralph – ordinary people who have turned into monsters and are now destroying everything in sight. You climb buildings, punching them apart every step of the way, eat poor souls shouting for help, and deal with the military who are out to stop you with their inconvenient tanks, choppers and missiles. You can take a lot of damage, but in all likelihood the army will probably drain your health after a few minutes – at which point our monster doesn't die, but instead shrinks back into human form, embarrassingly shuffling off while covering their unmentionables. The overriding principle for Colin and Nauman was that there was no "wrong" way to play the game – you are not frogmarched in any direction, and no higher meaning can be gleaned from the destruction you leave behind. There are 768 days' worth of level-looping action in Rampage, but few people ever got that far.

There are certain ways to achieve a higher score – monsters can grab civilians specific to them and hold them for bonus points (the King Kong stand-in George can grab a woman in a red dress, for example), but such conventions aren't really the point. Instead, Rampage offered various ways for players to make fun – playing ping-pong with a train was a common laugh, and if our monsters get tired of punching buildings? Well, they can always punch each other – indeed, another monster could even finish by eating their fallen comrade once they'd changed back to human form. It's all nice and casual, not even really designed to hold people's attention for more than a few minutes – a simple theme that Colin and Nauman continued with later arcade creations like Arch Rivals and Pigskin 621 A.D., their somewhat twisted takes on basketball and American football respectively.

It did take a bit of time for management at Bally to see the duo's vision, which frustrated Colin as he was so sure it would be a hit. In the end, he went to the very top and spoke with Maurice Ferchen, the company's new president, who loved the idea – ensuring that the game would get made. Going back through the game's history with Nick Thorpe in Retro Gamer, he recalled that one testing location actually asked for the cabinet to be removed because everyone was crowding around it, and he was quite happy to be proved right. In many ways, the game's a proto-sandbox – a little bit of Rampage can be found in all sorts of titles, from Grand Theft Auto to Minecraft, where there isn't all that much of an aim and just screwing around is a big part of the appeal.









Game Title: **Out Run**
Genre: **Driving**
Release date: **September 4th, 1986**
Published by: **Sega**
Developed by: **Sega AM2**

"[Yu Suzuki] did initially want to set the game in the United States, but realised that if he followed the setting of something like Cannonball Run closely, the scenery might well become samey"

Sega's game of driving (and not racing) still stands as one of the best examples of the "Super Scaler" line of games that Yu Suzuki had started with 1985's Hang-On, and it was certainly one of the most lucrative examples. Out Run was the highest-earning arcade across the entire world in 1987, topping the charts in Japan, North America and Europe, and it would be Sega's top-earning cabinet of the entire decade, with sales that had earned Sega over $100 million (over $263 million in today's money) by the end of 1987.

The Cabinet

The Sega Out Run board is an upgrade of the first Super Scaler PCB, the Sega Hang-On, with the main difference being that the dual M68000s powering video are pushed up to 12.5 MHz, and the hardware is capable of drawing two road layers at the same time – a necessity for the game's multiple paths. There were four separate cabinets released for the game – upright and cabaret versions were available along with a large cockpit cabinet that puts you right into the driver's seat, and finally a deluxe cabinet that takes the form of a single-seater car. Both of these cockpit versions use hydraulics to tilt and roll the player, and the upright still gives you an impression of body movement through the wheel's force feedback.

The Arcade Game

Since 1985 and the success of Hang-On, Yu Suzuki and his team at Sega AM2 had continued to hone the new Super Scaler hardware with the likes of Space Harrier and Enduro Racer, both of which were hits in their own right. However, Out Run would be a level beyond these titles – the game that would achieve Yu Suzuki's goal of taking Sega to the top of the arcade driving podium. Rather than encouraging players to overtake rivals and claim pole positions, Suzuki envisioned a title where you just drove (at high speeds, naturally) in a luxury sports car and took in the scenery with your girl at your side – and in doing so he created one of the decade's most definitive arcade images, not to mention one of its most successful games.

The inspiration for Out Run did still come from a race – speaking to Jonti Davies for Retro Gamer in 2008, Suzuki recalls his love for The Cannonball Run, the 1981 comedy where a rag-tag bunch of drivers race across the States. The point-to-point nature of the film's titular race was an inspiration for him to make a game where you choose your own path to the goal, rather than being limited to one single course. He did initially want to set the game in the United States, but realised that if he followed the setting of something like The Cannonball Run closely, the scenery might well become samey. So he switched his focus to Europe, taking in the sights around places like Monaco, Switzerland and Italy, filming everything along the way and finding the inspiration for what he wanted to include in the game (the States would eventually feature in the game's sequel, 1989's Turbo OutRun).

A European-themed game naturally pairs well with a European sports car, and Yu Suzuki didn't want anything other than a Ferrari – indeed, he first wanted the player to be able to choose from a wide range of different Prancing Horses, before eventually plumping for an open-top red Ferrari Testarossa as the vehicle of choice (again, a later sequel – 2003's OutRun 2 – would allow players to choose from several Ferraris). It also had to feel right – Out Run's Ferrari naturally moves quickly, but it's designed to almost drift around bends, controlling in a way that's a bit more accessible than something like the ultra-twitchy Pole Position. And then there was the music – you choose from three songs at the start of your journey, all of which feel like a perfect accompaniment for driving. This music, composed by Hiroshi "Hiro" Kawaguchi, represents the honing of a concept that started with Hang-On of making game tunes that were quite lengthy and had a more traditional pop/rock song structure – Out Run was Suzuki and Hiro's fourth project together, and the game's radio-ready tunes represent one of the composer's greatest achievements.

Even after finishing the project, Yu Suzuki still felt like there were a lot more legs in it – ideas that he hadn't been able to include that would eventually feature in later sequels. But for many arcade goers, Out Run rides close to perfection – that rare game where every component seems to be working in total synergy with each other to create an experience that overtakes the imagination. Out Run makes driving around at upwards of 180 MPH almost feel like a relaxing experience, and that's certainly not an experience you'll get in real life without at least getting a few penalty points.









Game Title: **Rolling Thunder**
Genre: **Run 'n' Gun**
Release date: **November 9th, 1986**
Published by: **Namco/Atari Games**
Developed by: **Namco**

"The evidence certainly points to Rolling Thunder being something of a forefather to a style of play that's seen a lot today"

A slower-paced game than a lot of its more frantic contemporaries, Rolling Thunder was a strong hit worldwide, ranked by the AMOA as one of 1987's top-four highest-grossing games. A game that's often thought of as an unofficial James Bond title but also takes a lot of influence from Japanese manga including Cobra and Golgo 13, the original arcade is sadly uncredited – although it's known that long-time Namco in-house composer Junko Ozawa worked on the music.

The Cabinet

Rolling Thunder uses the Namco System 86 arcade board – a dual-6809-powered PCB that was also deployed on games such as Sky Kid Deluxe and Hopping Mappy. A traditional upright game, it's not necessarily packed full of artwork, but the marquee and side art both capture the 1960s spy movie theme that the game's going for, with the side art in particular being a direct reference to the classic "gun barrel" James Bond introduction.

The Arcade Game

A lot of games over the years have tried to put you into the shoes of an elite secret agent tasked with taking down a sinister terrorist organisation – possibly a British one who has a habit of repeating his surname. While there are many official James Bond games out there and some of them, like the N64's GoldenEye 007, have their own important place in video game history, a lot of unofficial adaptations of MI6's finest have also made their mark – and in the arcades, it's hard to look past Namco's Rolling Thunder from 1986. A strong title that would leave an impression on arcades for several years to come, it was also a different take on the run 'n' gun genre that forced players to be a bit more careful.

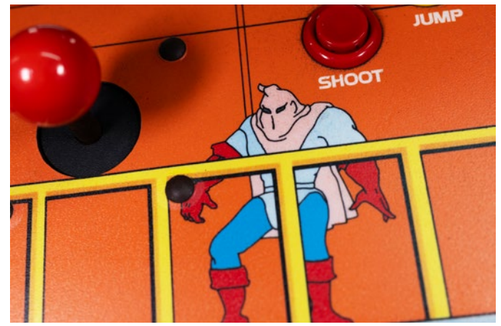
The quite traditional plot is set in the 1960s, and it puts you in the shoes of "Albatross" – an agent working for the World Crime Police Organisation, tasked with saving your colleague Leila Blitz from an organisation named Geldra, operating somewhere in New York City. You'll have to shoot your way through a whole legion of enemies to do so – the regular goons are known as "Maskers" and they come in a whole variety of colours, but you'll also take down evil panthers, mutated bats and lava men on your way through the base. The game consists of five stages and between-level cutscenes showing Leila in peril, but much like Capcom's Ghosts 'n Goblins you'll have to play through the areas twice (taking the form of two "stories") before you reach the church-like inner sanctum of Geldra's leader, Maboo, and take him down once and for all. Helpfully the game allows you to begin at any one of the five areas in the first story.

Rolling Thunder differs a great deal from quicker run 'n' gunners such as Commando simply by being a lot slower – the game has more accurately being described as a "walk and shoot" title where a fair bit of cover is provided from enemy bullets, whether it's the doors that you can go into (where you also find extra bullets and a machine gun power-up), or conveniently placed sacks and tyres. You'll need these too as there's a lot of enemies, and Albatross's life bar is somewhat illusory – a simple punch from an enemy will knock it down by half, while a bullet or grenade will kill you outright. This slower play is quite inspired by Taito's classic Elevator Action from 1983 – another more considered game that worked by allowing you to use the different levels to avoid enemy bullets.

While Rolling Thunder largely moves horizontally as opposed to vertically, it retains that multi-level play, often allowing Albatross a higher and lower level to jump to and find his best path through, something that would also feature in Sega's 1987 title Shinobi.

With play that still holds up nicely and an art style that definitely sticks out, ranging from the appropriately '60s-esque use of many vivid colours to Albatross's rather long legs, Rolling Thunder's always been a game that Namco has celebrated – and for good reason. The title's impact does go beyond contemporaries like Shinobi – when writing about the game for Den of Geek, Ryan Lambie described it as "the precursor to the modern cover shooter", citing the influence it had on Namco's later Time Crisis, a rail shooter that was centred around cover mechanics. The evidence certainly points to Rolling Thunder being something of a forefather to a style of play that's seen a lot today and that's more complex than simply walking forward and blasting, and having a legacy that goes far beyond the 1980s.









Game Title: **720°**
Genre: **Sports/Skateboarding**
Release date: **December 1986**
Published by: **Atari Games**
Developed by: **Atari Games**

"[The making of 720°] started with the filming of a halfpipe contest in Tahoe, and evolved to Atari building a ramp in their Sunnyvale, CA warehouse"

More than just being the first skateboarding game, 720° set a template for games in the new subgenre by fully embracing the sport, rather than trying to shoehorn skateboarding into a more established genre. The result was a groundbreaking success – not just a title that was popular with arcade-goers, but one that was embraced by the skating subculture, earning a big seal of approval from popular publications like Thrasher Magazine.

The Cabinet

720° uses the Atari System 2 PCB that was first introduced in 1985's Paperboy – a powerful board that's notable for its 512 x 384 display, a significantly higher resolution than most arcades were capable of at the time. The game's cabinet is a thing of beauty – large and with a 25" monitor, the most notable feature is the big faux ghetto blaster on top, housing a tape by the cool-sounding yet totally fictional band Face Plant. The game uses a rotary dial with a joystick attachment for control, something that makes the quick spins required to perform the various tricks a bit easier than they would be with a regular joystick.

The Arcade Game

Skateboarding, as a culture, had its various ups and downs by the mid-80s – it was partly a scene that was going mainstream with people such as Tony Hawk and Steve Caballero taking it up as a profession, and yet there was also an underground that pushed skating towards the streets, abandoning the disused pools and DIY ramps that skaters often called home to ride in and around regular people, grinding rails and performing tricks off of anything in sight. It was certainly a tough job to attempt to represent the whole of skating with one game, but Atari managed it with 720° – a game that brought the two codes of vert and street together, was as authentic as it could possibly be, and finally gave extreme sports some long-awaited representation in video game form.

The initial idea for 720°, naturally, came from a skater – in a March 1987 interview with Thrasher Magazine, Atari technician Rob Rowe recalls that when he first brought up the idea in the summer of 1985, people initially had a good laugh about it. However, it quickly gained traction – soon enough a team was on the project, headed up by the duo of John Salwitz and Steve Ralston, the duo who had previously hit arcade gold with 1985's Paperboy. Eighteen months of design, coding and research followed, starting with the filming of a halfpipe contest in Tahoe, and evolving to Atari building a ramp in their Sunnyvale, CA warehouse. It was here where plenty of top skaters came to have their moves observed and recorded – Steve Caballero, Andy Berenson and Doug Smith are just a handful of names who graced Atari's ramp, and their efforts would contribute to the game's many tricks and animations.

The resulting game is largely based in an open world setting – you ride around Skate City with 100 dollars to your name and a ticket for one of the four events. You've got a choice between Ramp, Downhill, Slalom and Jump, and your goal is to get gold in all four of them while upgrading your gear and earning enough points for more tickets. There are plenty of hazards around this hub, but they represent opportunities – getting air over water or plants is a good way of earning extra points, as is jumping and spinning wherever you go. The game has one simple rule: skate or die! The hub world has a strict timer, and when it runs out a flock of killer bees starts chasing you until you enter another competition, your game ending if they catch you. The game's full of cool touches – some of your fellow skaters wear skeleton costumes, there's an appropriately punky soundtrack (also released on record), popular names like the Sessions clothing range make an appearance, and the initials of the production team are often found throughout the hub in graffiti form.

Some of the old blurbs for 720° are a little bit cringey – you'll certainly find plenty of uses of words like "rad", "bodacious" and "totally studly, duderino" dotted throughout reviews for the game (okay, possibly not the last one). However, the game itself is hugely faithful to the skating culture, and very important when it comes to the rise in extreme sports in games. It was immediately influential upon gaming, with EA's computer title Skate or Die! following in 1987, and provided a foundation for later games like the Tony Hawk series. A lesser title could have tried to half-arse those half-pipes and be a bit more traditionally game-y, but 720° earned its reputation and subsequent legacy through both being very authentic and very, very good.









Game Title: **Xybots**
Genre: **Third-person shooter**
Release date: **December 1987**
Published by: **Atari Games**
Developed by: **Atari Games**

"Some of the things that make Xybots different are perhaps amongst the reasons why it didn't catch on"

A game that takes the corridor-based maze action of games like Gauntlet and gives it a pseudo-3D spin, there wasn't an awful lot like Xybots around at the time – and this perhaps contributed to the game not being a particularly huge success in the arcade. Still, Ed Logg's title has retained diehard fans over the years, and has often been seen in Atari's retrospective collections.

The Cabinet

Xybots has its own unique Motorola 68000-based board, but despite the game's perspective there's no specific hardware dedicated to 3D processing, or bitmapping, or anything that could potentially make the game smoother – Atari had yet to develop any arcade-specific hardware for that purpose, and making a game like Xybots despite this limitation was part of the challenge for its team. The game's cabinet has a unique futuristic look, almost like a computer terminal from a '70s sci-fi movie – particularly the octagonal casing for the game's monitor, and the capital I-shaped front housing the control panel and coin/service doors. The game also has a joystick that you move normally but also twist left and right for 90-degree turns.

The Arcade Game

Ed Logg had given arcade players many great experiences over the years, from blowing space rocks apart to massacring insects, but he's arguably mostly associated with maze games. Back in 1981 he created a dynamic twist on Pac-Man called Maze Invaders that was well made but didn't pass location testing, before striking gold with Gauntlet in 1985. With Xybots, Logg would take the maze into three dimensions – of a sort – in a sci-fi-themed game where two hard-as-nails heroes named Rock Hardy and Ace Gunn take on a group of robots hell bent on destroying mankind. It's certainly a different sort of arcade, and not necessarily a successful one – but it's as strong a title as any of Logg's other maze classics.

In Richard Rouse III's 2005 book Game Design: Theory and Practice, Logg states that Xybots came about from a conundrum set by engineer Doug Snyder – to take the 1981 PC classic Castle Wolfenstein and make a 3D arcade based around those mechanics, but without any specialised hardware. Logg believed it could be done with 8x8 pixel stamps emulating 3D rotation, limiting the rotation to 90 degrees at a time to make the game itself simpler. Initially the game was called Catacombs and would have featured the characters from Gauntlet, making it a third game in that series – but Atari's marketing decided that they wanted something different. Logg then settled on a sci-fi aesthetic, with robots that were inspired by Owen Rubin and Mark Cerny's 1983 vector game Major Havoc – however, in interviews for the Ted Dabney Experience Podcast in 2021 and other outlets, he expressed regret that he wasn't able to pursue his original vision.

Xybots does share a lot of similarities with Gauntlet – you make your way down into each level, fighting robots of various classes that take more hits to kill if they're stronger. Your energy gradually ticks down, acting as a timer, but energy pods replenish your health and keys can open doors to warps, taking you down a few levels and giving you a bonus. The 3D environment does allow for some new features – the game indicates when you're in danger of being shot from a robot that's out of view, and it also offers the odd bit of cover such as barrels that players can duck behind in the midst of a frantic shoot-out. Much like Gauntlet, it's a game that shines in co-op – two players can cover each other and explore different areas, particularly in the larger mazes, and there's plenty of opportunities for upgrading at terminals between each level. Even if Xybots doesn't have the sheer number of monsters you might find in a game like Gauntlet, there's enough danger lurking around that every new area and every corner needs to be approached with trepidation, and it encourages you to always be moving. The brash nature of your heroes, blowing the smoke from their zappers when all the bots have been destroyed, helps a fair bit too.

Some of the things that make Xybots different are perhaps amongst the reasons why it didn't catch on. Logg believed that the control scheme confused players, and the third-person view meant that a lot of the screen's real estate was taken up by a necessary map and HUD, only leaving a quarter of the display for the action. However, the game does feel ahead of its time whilst still being a fine arcade experience – one that keeps you putting coins in just to see how far down you can go, and to see how many times you need to beat the Master Xybot before he stops saying that he'll be back.








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1987



Game Title: **Contra**
AKA: Gryzor (EU)
Genre: **Run 'n' gun**
Release date: **February 20th, 1987**
Published by: **Konami**
Developed by: **Konami**

"There are very few moments in Contra where you're not being shot at from all angles"

Although probably more known for its NES version these days, the original Contra was a critically acclaimed chart-topper in all territories, and was cited by the Amusement & Music Operators Association (AMOA) as one of the top four highest-grossing arcades of 1987 in the United States. The game was also a hit in Europe, where it was renamed Gryzor in order to avoid any association to the ongoing Iran-Contra scandal in the United States. The game's futuristic and fictional setting of the Galuga archipelago was also significantly played up more in Europe than the States, and home ports completely relocated the game's action to the (then) present-day Amazon jungle.

The Cabinet

The Contra board includes a pair of dual M6809 microprocessors handling video and sound, but it also features Konami's custom 007121 video chip – similar PCBs were used in games such as Combat School and Haunted Castle, an arcade entry in the Castlevania series. Perhaps the most unique feature of the cabinet is that it features pictures of actors portraying Bill and Lance on the marquee and bezel – this is in sharp contrast to the illustrations that ports and later games in the series would use. The original arcade uses a portrait screen in order to accommodate both the horizontal and vertical scrolling stages, as well as the pseudo-3D stages.

The Arcade Game

Another game from Konami that rides the '80s action wave, Contra proudly follows the line of Western-friendly gung-ho titles that the company started with 1985's Green Beret (also known as Rush'n Attack). You play as two hard-as-nails, cigar-chomping action heroes named Bill and Lance, and thousands of enemy soldiers must be butchered with your rifles. While Contra certainly has more of a science fiction bent than the likes of Combat School and another Konami shooter, Jackal, particularly with the reveal of the enemy Red Falcon Organization being controlled by an alien at the end, there are enough allusions to contemporary events simply in the title alone for the anti-communism metaphor to be played up – at least in the United States.

Contra, in many ways, feels like another step forward for the run 'n' gun genre, one that's informed by several games that came before – including Konami's own titles such as Green Beret, as well as the likes of Ghosts 'n Goblins and Rolling Thunder that were a bit slower in terms of gameplay. In contrast, Contra is much faster and has more in common with top-down games like Commando and Ikari Warriors that, generally, featured a lot more action and dodging of bullets – there are very few moments in Contra where you're not being shot at from all angles. Having a second player definitely helps to redress the balance, and most versions of the game allow for simultaneous two-player action (for unknown reasons, this feature was taken out of the Gryzor European release, which can only be played by two players alternately).

Another thing that helps the balance is the magnificent set of weapons at Bill and Lance's disposal, all of which are pretty easily found. While the spray gun is usually thought of as the best choice, there are also powerful laser guns, rapid fire upgrades and plenty more out there to play with. This amount of firepower allows you to always move forward – which, similarly to games like Commando, is the main appeal of Contra as the action simply doesn't stop. It also incorporates pseudo-3D "base" stages where you fire into the screen, pushing your way through each enemy installation and then fighting a core at the end, that hadn't really been seen in this sort of game before.

Coming with a seriously high level of challenge and no Konami code to be found anywhere (indeed, the original arcade release automatically ends if you game over in the final level), Contra was a game that would keep players coming back for a good while. And when the hotly-anticipated NES port came out in early 1988, its appeal only grew further – to the point where the series gradually transitioned to being a console-only affair. And yet, the arcade was where it all started, and it remains one of gaming's best sprints – as Clare Edgeley says in her original look at the game for CVG magazine, it doesn't give you a breather and it's one hell of a tiring game to play. For a game like Contra, which was trying to take arcade action to a whole new level, that sort of sentiment confirms that the mission was accomplished.









Game Title: **RoadBlasters**
Genre: **Vehicular combat**
Release date: **March 5th, 1987**
Published by: **Atari Games**
Developed by: **Atari Games**

"The design document was quite simple - programmer Mark Pierce recalled that it basically consisted of "drive real fast and shoot" and little else"

A game that plays somewhat like a third-person Spy Hunter, RoadBlasters puts you behind the wheel of a lovely looking sports car, with little else except a goal to reach and a gun so that you can blast everything else on the road. The game was a hit for Atari – it was marketed as a cheaper (and more violent) alternative to Sega's Out Run, and arcade operators responded pretty well to that.

The Cabinet

RoadBlasters is the last Atari game to use their System 1 hardware – the game does represent the limitations of the board (no sprite scaling, entirely flat surfaces), but also shows the team's creative solutions and workarounds for such problems. The upright cabinet is a rather standard Atari-branded affair, although there is also a deluxe cockpit cab that's got the same red colour as your vehicle and some appropriately futuristic decals – both versions use a pedal and the (by now very familiar) Star Wars yoke as their controls. The game also came with a competition – those who completed all 50 rallies (the last one cannot be continued) would get a big bonus and a secret code for a t-shirt, and this contest was another big selling point for operators.

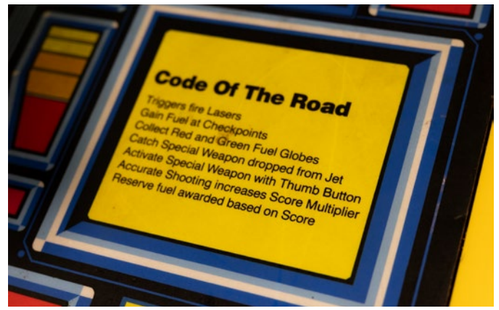
The Arcade Game

We've yet to reach a present where sports have become so boring that there's a need to add a serious risk of death to them with guns, mines and what have you, but RoadBlasters offers another vision of what such a dystopia might look like – a murder-filled rally where enthusiastic competitors shoot their competitors while avoiding being gunned down by turrets, or colliding with other cars. While this game doesn't involve drifting around hairpins in a Subaru Impreza, it is a successful and important game in the car combat subgenre, almost feeling like Out Run's sadistic kid brother.

The initial idea for RoadBlasters came from Lyle Rains, who wrote up a design document for a game titled "Future Vette". Silly name aside, the document was quite simple – programmer Mark Pierce recalled in a Retro Gamer interview with Craig Grannell that it basically consisted of "drive real fast and shoot", and little else. The team stayed true to that ethos through the game's production, which was mainly about dealing with the challenges of the System 1. They knew that the game couldn't match the likes of Out Run technically, so a lot of creative steps had to be taken in order to essentially fake the scaling of sprites, as there's no way the hardware could have done it for real. The dystopian future-sports setting does help somewhat – the environment's not much more detailed than the earlier likes of Pole Position, but it does give the game a bit of a Mad Max-esque feel.

RoadBlasters is quite straightforward – you simply have to get from point A to point B. There are some subtle intricacies that you don't usually find in a game like this, however. For once, you're not encouraged to just hammer the shoot button – the game rewards you for accuracy, increasing your multiplier whenever you successfully kill another car, so it pays to actually aim your shots for a change. A plane will often fly by mid-stage with a handy power-up (similar to the trucks in Spy Hunter), and there are also little blobs of fuel dotted around – picking these up is often necessary, as you usually don't have enough juice to reach a stage's finish line without them. Even if most of the other cars on the road don't shoot back, RoadBlasters can still be quite treacherous – you blow up automatically if you so much as scrape another vehicle, there are purple cars that can't be destroyed, as well as puddles, mines, gun turrets and all sorts of other challenges to contend with. The driving itself can also be tough to grasp – programmer Bonnie Smithson's engine for the road and driving is very much based on the classic Pole Position, and the steering in RoadBlasters is similarly skittish.

The game, in the end, is a great example of a cheap thrill – and there's nothing at all wrong with that. Operators loved it because it gave players another blast of speedy driving action at a bargain cost relative to Sega's popular Super Scaler titles, and the possibility of winning a t-shirt was the sort of thing that would keep players pumping the coins in, looking for another crack at that final level. It's also one of the first games to give car combat a proper third-person perspective, something that would eventually lead to the likes of Carmageddon and Twisted Metal – so it's fair to say that the game's got a part to play in gaming history, even if you probably shouldn't recreate it in real life.









Game Title: **Double Dragon**
Genre: **Beat 'em up**
Release date: **April 22nd, 1987**
Published by: **Taito**
Developed by: **Technōs Japan**

"Over 80% of all U.S. arcade operators purchased at least one Double Dragon machine"

Another huge leap forward for its genre, Double Dragon would set a trend in the arcades for the rest of the 1980s, helping beat 'em ups become incredibly popular amongst coin-op releases, if not the standout style of the period. The game was a massive hit in all territories, but especially in the States where it was the highest grossing arcade game in 1988 and 1989, and a copyright filing by Taito in 1989 revealed that over 80% of all U.S. arcade operators had purchased at least one Double Dragon machine.

The Cabinet

Double Dragon's arcade cabinet is a relatively straightforward one – the side art is dedicated entirely to Taito's branding, our two heroes appear on either side of the game's title on the marquee, and the bezel is largely devoted to a twin set of snake-like dragons that surround the screen. As the game features quite a lot of moves, it's no surprise that the instructions at the bottom of the bezel are detailed, featuring descriptions of how to perform attacks like the "Head Butt" and "Elbow Punch".

The Arcade Game

It's not too often that an arcade game could be considered autobiographical, but when Yoshihisa Kishimoto created Nekketsu Kōha Kunio-kun for Technōs Japan and Taito in 1986, the story of a high schooler duking it out with rival gangs and protecting his weaker friends, it was greatly based on his own youth experience as a street tough. Those hot-blooded years helped him create the biggest leap forward for the beat 'em up since Irem's Kung-Fu Master of 1984. Kunio-kun was a huge success in Japan and made waves in the West too, where it was adapted with several changes and localised as Renegade. The success of Kunio-kun directly led Kishimoto to his next game, 1987's Double Dragon, where he would take things even further and create a true arcade Goliath.

For the bosses at Taito, the equation was simple: Kishimoto should create a direct sequel to the original Kunio-kun, only the game should be a one- or two-player title as that would naturally generate more money. Kishimoto certainly wanted to go further with Kunio-kun as a series – and would later on, for home consoles – but the large amount of localisation changes needed for the original to be released in the West ultimately meant that Taito's request was for something with greater international appeal. And thus, the saga of Double Dragon was born – a post-apocalyptic Mad Max-style setting, twin-brother heroes named Billy and Jimmy Lee (nicknamed "Hammer" and "Spike" in the West), and a girlfriend named Marian who gets captured by Willy and his Black Warrior gang.

In all other areas, Double Dragon follows on from what Kishimoto created previously – whereas stages in Renegade feel more like self-contained arenas, the five levels of Double Dragon go from left to right and follow on naturally from each other, with the between-stage cutscenes essentially presenting them as one continuous level. Our two fighters have a lot of techniques at their disposal, way more than a simple punch and kick – they can do elbows, grabs, and headbutts; pick up and throw weapons; and perform a special back kick. The enemies themselves are also wide ranged – from speedy thugs who can cartwheel and avoid your attacks, to the almighty Abobo who's double the size of anyone else and capable of throwing you all over the shop.

While Taito certainly anticipated a hit with Double Dragon, the huge success of the game was perhaps a surprise to even them – it would become absolutely ubiquitous in arcades around the world over the next couple of years, and many more games would follow in its wake, with seemingly every major arcade developer racing to get their own line of beat 'em ups out there in response. While this original is not wholly perfect – the elbow smash is highly overpowered and the game does suffer from a lot of slowdown – it unquestionably captured a mood, helped by a strong narrative, the addition of multiplayer, Kazunaka Yamane's pounding soundtrack accompanying the crunching of bones, and so much more besides. When asked in 2013 if people would still be playing Double Dragon in 100 years, Kishimoto responded that he didn't know – but he did think that the beat 'em up is a timeless sort of game. And he deserves more credit for the genre's evergreen status than possibly anybody else.









Game Title: **R-Type**
Genre: **Shoot 'em up**
Release date: **May 15th, 1987**
Published by: **Irem/Nintendo**
Developed by: **Irem**

"R-Type was created by a small crew of dedicated shoot 'em up fans, and the last thing they wanted was to make a Gradius clone"

The seminal shoot 'em up that invited you to "blast off and strike at the evil Bydo empire!", R-Type was one of Irem's most successful titles and their biggest hit since Kung-Fu Master in 1984. The game was phenomenally successful worldwide, but particularly in Japan where it was the top-grossing arcade game of 1987, and still a huge earner in 1988.

The Cabinet

R-Type was originally built to show off the M72 – Irem's new 16-bit PCB that was based around an NEC V70 chip, and the same hardware would also power games like Dragon Breed, Hammerin' Harry and Image Fight. The cabinet itself is a fairly straightforward affair, with no bezel and side art depicting the R-9 (later updated to R-9A) Arrowhead taking on Dobkeratops, the game's first boss. The North American version also features Nintendo's branding – this was the first dedicated arcade that the big N had distributed since Punch-Out!! three years earlier, and it would be their last dedicated machine – Nintendo stopped manufacturing coin-ops entirely in 1992.

The Arcade Game

The historical status of shoot 'em ups as a challenging genre is something that perhaps occurred naturally – it just appears as though people gravitated towards the hardest games on the floor, whether it was Defender in 1981 or Gradius in 1985. In 1987, Irem would carry on the tradition with a shmup that heralded the dawning of the 16-bit generation, and was tougher than anything else out there – R-Type was a beast of an arcade that attracted all of the genre's aficionados, and plenty more people besides.

The origins of the game were quite simple – Irem had developed new 16-bit arcade hardware and wanted a game to show it off, one where you could see how many sprites that the PCB could effortlessly handle without slowing or flickering. The team behind the game didn't just want to create something shiny yet derivative, mind you – R-Type was created by a small crew of dedicated shoot 'em up fans with no interest in producing a Gradius clone. When explaining the process of making the game in a 1987 interview with Gamest magazine, the R-Type team said that they thought at every stage about just what they could do differently from Konami's game. As is often the case with Japanese titles of the age, these programmers were identified by nicknames as opposed to real names – the project's leader was dubbed "KINTE", graphics were handled by "AKIO", and the lead designer was known as "ABIKO", with the actual identities of these people yet to be determined.

Difficulty aside, the R-9 (the "R" stands for "Ray" due to the abundance of energy-based weapons) has several important features that distinguish it from any old Vic Viper and help it across the game's seven challenging stages. The standout mechanic is the "Force", an add-on that you obtain after the first power-up. Inspired by dung beetles, the Force is actually what gets powered up with the various creative weapons you pick up, such as reflecting lasers or flames that hug the floor and ceiling. It also protects the ship from shots either from the front or back depending on where you position it (the team also wanted the Force to be attached to the ship's sides, but this proved too difficult to code). So, considering the number of enemies and shots coming your way and the total fragility of your ship, the Force is somewhat essential. Sadly, one death will wipe out all your power-ups, and a naked R-9 is essentially a lumbering hunk of space junk in waiting that's going to be blown up over and over again. It is possible to recover such a dire situation in the early stages with some careful piloting, but there's certain parts where a death is virtually impossible to salvage. Make no mistake – this is a fearsome game that gives the player no quarter.

No shoot 'em up before R-Type felt quite as epic as this game did, with every stage providing its own memorable challenge – whether that's the screen-filling bosses, careful manoeuvring through tunnels of waste and organs, or a whole stage that sees you gradually dismantle a gigantic battleship. As hard as it may have been, R-Type caught fire from the moment it hit arcades in Japan, becoming the biggest hit of 1987 and one of the biggest of 1988, enough even for Nintendo to agree to publish the title in North America despite having largely left dedicated coin-ops behind. It was the game that everyone wanted to see ported to consoles and computers (the Master System, Spectrum and Amiga versions particularly being of note), and a few more generations would be blessed with great games that came out under the R-Type name. A seminal effort, and a title that would be on the first ballot of any shoot 'em up-based hall of fame.









Game Title: **1943: The Battle of Midway**
Genre: **Shoot 'em up**
Release date: **June 1987**
Published by: **Capcom**
Developed by: **Capcom**

"You engage the Japanese air force in dogfights before taking aim at either a fleet of battleships or a formation of bombers"

Yoshiki Okamoto's sequel to one of Capcom's first worldwide arcade hits came three years after the original, and continued 1942's success – it was Japan's second-highest-grossing table arcade of 1987, only beaten by Irem's R-Type. While superficially similar to 1942 – Okamoto's first game for Capcom – a lot of changes were made to the mechanics that make 1943: The Battle of Midway the more appealing experience today.

The Cabinet

Although the PCB was a couple of years old by this point, 1943 used Capcom's Commando board that had originally entered service in 1985, a relatively simple board primarily consisting of two Z80 processors handling video and sound respectively. The game was available in both an upright and a cocktail cabinet form, and the upright is certainly the more attractive one in terms of art – the World War II aesthetic is present throughout the title and side artwork, and the bezel makes its best efforts to make you feel like you're at the controls of a P-38 Lightning.

The Arcade Game

When Capcom originally released 1942 in 1984, it was the product of a relatively fledgling Japanese company's purposeful efforts to look to the West for success – to create a shoot 'em up with a more recognisable surrounding and theme than the space-based shooters that were popular at the time, such as Namco's Xevious of 1982 and Capcom's own Vulgus from earlier in 1984. Their instincts would be proved right with 1942 becoming a tremendously popular game that served as many players' introduction to Capcom; and eventually the company sought to revisit this breakthrough success, assigning the game's creator Okamoto to create a sequel in 1987 that would ultimately be released as 1943: The Battle of Midway.

Much like the first game, 1943 puts you in the seat of a Lockheed P-38 Lightning, and pits you against the Imperial Japanese Army and Navy in the Pacific theatre of World War II – and yes, this was the case in both the original Japanese release and Western release of the title. Also much like the first game, the stages themselves are relatively small – you engage the Japanese air force in dogfights before taking aim at either a fleet of battleships or a formation of bombers, and you have to destroy a certain percentage of these larger boss enemies for the mission to be considered complete. The enemy battleships are all named after real-life carriers and ships that took part in the war, with the final battle taking place against the Japanese Navy's flagship, the Yamato.

While all of these things are similar to the original, Okamoto went to great lengths to change the mechanics for 1943, making it a much more complex shooter. Rather than using lives, the P-38 has a single fuel bar that slowly depletes on its own, but depletes faster when you're struck by enemy fire – and because you no longer have to restart at a checkpoint after every single hit, this makes the game a lot quicker. A great deal more weapons are available to the pilot, ranging from three-way splitters to shotguns and even to more fanciful shells and lasers – but these special weapons come with limited ammo, meaning you might not want to use them willy-nilly.

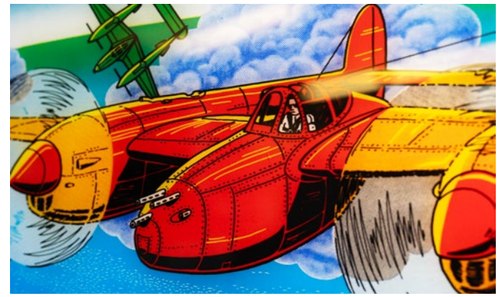
The roll feature from the original is still present for when you're in trouble, and it's also accompanied by a special attack that takes a more natural form – a cyclone perhaps, or a lightning bolt. This attack isn't necessarily a full-on screen clearer, but it works in a pinch and is always available – so long as you have enough fuel to deploy it. A similar mechanic would also appear in Okamoto's later beat 'em up, 1989's Final Fight.

Just like the original, 1943 would prove to be a great success, and it helped establish a series that would span several gaming generations. Its popularity also resulted in very popular ports, with 1988's NES/Famicom version arriving complete with additional gameplay features. In Japan, this home port would be supported by a special alternate version of the game in arcades, 1943 Kai: Midway Kaisen, featuring newer graphics and a different soundtrack. While this version was not officially released outside of Japan, it was often made available unofficially under the title of 1943: The Battle of Midway Mark II.

When Capcom made 1942, they were still trying to find their feet as a developer – but three years later, when this sequel came out, they were right up there at the forefront of the arcades, and the quality of 1943 speaks to the stellar reputation that they'd obtained.









Game Title: **APB – All Points Bulletin**
Genre: **Vehicular combat**
Release date: **July 1987**
Published by: **Atari Games**
Developed by: **Atari Games**

"It took two and a half years for Dave Theurer to program the world-building tool required to make APB, and artist Alan Murphy spent the same amount of time creating assets for it"

APB puts you in the shoes of Officer Bob, a fresh-faced road cop who's got to meet a daily arrest quota, chase after high-profile suspects, make them talk and try not to earn too many demerits while also finding time for gas and donuts. The officer's busy day makes for one of Atari's more complex and challenging arcade games, and while around 2,000 APB cabinets were initially made, it didn't have too long of a lifespan on the floor.

The Cabinet

APB is another medium-resolution game, and the variety of graphics on display surely make it the best-looking game out of the set of System 2-based titles – the result of around two and a half years of making a level-editing tool and creating material for it. APB has another well-made cabinet – you've got the grinning visage of Officer Bob on each side, a gallery of mugshots on the bezel, a gas pedal and steering wheel for controls and the most famous feature, the marquee with flashing lights resembling a police siren. Rather than make a cockpit version of the game, Atari also included a detachable seat that operators could use in order to turn the game into a sit-down cab (of sorts) if they wanted to, but this cheaper alternative didn't really catch on.

The Arcade Game

If a list was to be made of the greatest programmers and designers who worked for Atari, Dave Theurer would surely be close to the top. He made Missile Command and Tempest, innovated in games such as I, Robot (the first commercial arcade game to have 3D polygon graphics), and APB is the final game that he made for the company. Considering that Theurer's earlier titles have themes centred around a nightmarish abyss, Big Brother and Armageddon, APB is quite the change of pace – a light-hearted and cartoonish game that hits on just about every cop show cliché, while also being rather tricky as the player has a lot more tasks to attend to here compared to what most arcade games demanded of the user. However, behind all the humour lies a project that was actually pretty epic in its scope.

The creation of APB took a little over three years. Theurer wanted to create a top-down driving game, but one more complex than the likes of 1983's Spy Hunter. His ambition was for a title that felt like it took place in a busy world, rather than along a road filled with nothing but enemies. It took two and a half years for Theurer to program the world-building tool required to make the game, and artist Alan Murphy spent the same amount of time creating assets for it before Mike Hally joined the team as designer when this process was finished. Once Hally had access to this playground, the game came together in several months through many nightly coding sessions alongside Theurer – not just refining the game's mechanics, but creating a city that players could explore.

The main task that Officer Bob has to do in APB's world is bust a bunch of mostly petty criminals in cars, pulling them over with his siren and ticketing them – the likes of litterbugs, horn-honkers and hitchhikers are easy enough to catch, and you can also help stranded motorists. On some days, there'll be a more serious criminal at large who'll need to be found and rammed or shot off the road, then throttled back at the station in order to make them confess – this is the titular All Points Bulletin, and a successful run will result in cuffing a rather diverse gallery of felons.

There's a strict time limit to do all of this, which can be increased by eating donuts or filling up on gas – and the best thing about doing this is being able to spend more time in APB's world, which is filled with personality and various virtual neighbourhoods such as Drinking Town and the highly volatile Ticket Town. Throughout play, Bob needs to avoid acquiring Demerits – you get these for colliding with other cars or blowing up your vehicle, and too many will result in an unceremonious firing. Plenty more funny animations detail this process, such as a stereotypically stupid chief shouting at you, and the sight of Bob being cuffed and chucked into a bin.

APB initially did well on the arcade floor, but interest in it dropped off quite quickly – a shame, especially because it doesn't seem as though Theurer's amazing world-building tools were used anywhere else except on this game. Some have wondered if APB was perhaps a bit too complex for an arcade release, if it gave the player too much to do and was ultimately looked over as a result. But it's really a title that was ahead of its time, a proto-sandbox experience that landed in the wrong place on gaming history's timeline but still has an awful lot of charm about it.









Game Title: **After Burner**
Genre: **Rail shooter**
Release date: **13th July, 1987**
Published by: **Sega**
Developed by: **Sega AM2**

"When you played the game in the actual cabinet, you'd also know when the enemies were locked onto you through flashing lights at the top of the monitor"

One of the most lavish and expensive arcade games that Sega had produced to date, After Burner was envisioned by Yu Suzuki and his team as being the company's first "true blockbuster" arcade game, complete with a deluxe hydraulic "taikan" cabinet to match the flying action. The cabinet ran at a cost of $12,000 for arcade operators (over $30,000 in today's money), but that didn't stop the game being a hit – it was 1988's highest-earning game in Japan, and similarly successful in North America and Europe.

The Cabinet

After Burner uses the Sega X Board, an upgraded version of the original dual-M68000 Super Scaler hardware that could now handle smooth sprite rotation – something that the game's happy to show off whenever you perform a barrel roll. While a simpler upright version of the cabinet is available that still features a big flight stick and excellent side art, the deluxe motion cab is one of Sega's most famous creations – it houses you in a cockpit that moves in all cardinal directions with the movement of the stick. The movement could have been even more aggressive if it weren't for safety concerns, and Yu Suzuki also had the idea of making a gyroscopic cabinet that would spin players around – something that would later be the basis for the Sega R360.

The Arcade Game

Each successive Sega Super Scaler game appeared to up the ante further, to the point where by the Summer of 1987 even the likes of Hang-On and Space Harrier had started to look like humble beginnings. With After Burner, Yu Suzuki and his team went up to another level – with inspiration naturally coming from the hugely popular 1986 film Top Gun, they worked on the game in a secretive office named "Studio 128", located away from Sega's main offices and barely known about inside the company (this was the predecessor of the more famous AM2 division). The final product would be an extravagant and bombastic affair – a game that threw players about in all directions, and something that would be the first cabinet in many people's dream arcade.

Yu Suzuki had wanted to create a game starring a fighter jet as early as 1985 – that was the basis for what would become Space Harrier, with hardware limitations pushing him towards a fantasy setting. For After Burner, the inverse would occur – in a 1988 interview, Suzuki mentions that he wanted to create a game based in sci-fi and anime, inspired by Laputa: Castle in the Sky. However, the consideration of selling the game worldwide led him to go back to the fighter jet theme and put players in the seat of an F-14 Tomcat. Top Gun provided a lot of inspiration for the game's presentation, but the game could have had more of a Cold War theme at one point – Suzuki wanted players to start in the Mediterranean and end up flying over Moscow, but the progression didn't work out due to difficulties in implementing landmarks like the Kremlin.

Once you take off from the SEGA Enterprise aircraft carrier, you'll find yourself ducking and diving many missiles from the enemy's planes – you do have a machine gun to shoot them down, as well as a limited supply of missiles that should be triggered whenever you hear the shout of "FIRE!", which is a lot. When you played the game in the actual cabinet, you'd also know when the enemies were locked onto you through flashing lights at the top of the monitor, meaning that evasive manoeuvres had to be taken quickly. The game moves so fast that being blown up is almost inevitable, but the experience is strong enough for players to come back again and again – the audio and visuals are still impressive to this day. Speaking of audio, Hiroshi "Hiro" Kawaguchi once again provided the soundtrack for a Yu Suzuki game, after previously collaborating on the likes of Out Run and Space Harrier, and had Kenny Loggins firmly on his mind – this was the first Hiro soundtrack to feature a proper sample of a real guitar, something that adds a real edge to classics like "Final Take Off" and the title theme.

As with all of his Scaler titles, Yu Suzuki felt that more could have been added to this title. After Burner II, an arcade update released just three months later, made some important additions – there's a throttle to control the Tomcat's speed, essential for dealing with bogeys on your tail, and you now land on the ground to get your ammo restocked instead of doing it in the air. This second form of the game is largely the one most people are familiar with, and it would also enjoy a famous film cameo, appearing in 1991's Terminator 2: Judgement Day. Even if the big moving cabinet for this title isn't always readily available nowadays, After Burner still provides a major headrush for all players, and it remains one of the most memorable rail shooters in gaming history.









Game Title: **Operation Wolf**
Genre: **Lightgun shooter**
Release date: **July 16th, 1987**
Published by: **Taito**
Developed by: **Taito**

"That big metal Uzi 9mm wasn't the first gun to be stuck onto a cab, but it's certainly the most iconic"

The game that added a full-blown dose of '80s action movies to the shooting galleries that had previously occupied the arcades, Operation Wolf was one of the most successful games of the latter part of the decade. In the United Kingdom, it was the highest-grossing arcade game of 1988 – and in Japan, it was second only to After Burner. With all of this success, it's something of a shame that the original arcade has no developer credits at all.

The Cabinet

There are no prizes for guessing what stands out about Operation Wolf's cabinet – that big metal Uzi 9mm wasn't the first gun to be stuck onto a cab, but it's certainly the most iconic. Unlike later games in the series, Operation Wolf is a lightgun game – the Uzi contains an optic sensor, and the screen flashes white whenever you fire. It also contains a motor to simulate recoil, which adds a lot to the experience. As amazing as the gun was, it was also very high maintenance – either the springs holding up the gun would break, the recoil motor would burn out, or the sensor would fail. When Taito decided to double the players for their 1988 sequel Operation Thunderbolt, they didn't want to double the failure rate as well – the Uzis on that cabinet were simply fancy looking traditional joysticks.

The Arcade Game

For a long time, and perhaps for understandable reasons, shooting gallery games in the arcade would usually be pretty light affairs. Games such as Atari's Triple Hunt, Exidy's Crossbow and Nintendo's Duck Hunt (a hit in arcades thanks to the VS. System) had more in common with the sort of things that you'd see at a carnival than anything you might see on a film screen – simply a game where you had to hit basic targets, provide cover for adventurers, or try not to fruitlessly shoot at a dog who laughs at your failure. Operation Wolf provides a lot of these same elements (minus the dog) but it does so with an entirely different and more realistic package that, more than anything that had come out previously, made the shooting gallery a seriously hot commodity in the arcades.

As there's no credits for the original Operation Wolf, no-one is sure of who actually made the game at Taito – but its roots can be traced back to an earlier Taito lightgun game from 1985, N.Y. Captor, coded by Ichiro Fujisue and Taisuke Kono. Much like the games previously mentioned, this is a very cartoony title filled with comedy spies and bonus balloons and so forth – but it does have quite a high degree of action, something that Operation Wolf would ratchet up considerably. And for this game, Taito wanted something contemporary – they wanted you to feel like Rambo, breaking into an enemy base, rescuing hostages and Swiss-cheesing every soldier in your path in a hail of bullets. Operation Wolf would be much more serious and intense, with realistic graphics – unlike other galleries, you're unmistakably shooting humans. Finally, the arcade denizens would get to play what they'd already enjoyed watching on the big screen.

After Special Forces Operative Roy Adams gets tooled up in an intro that could come straight out of Commando, he embarks on a journey that'll take him through jungles, communications towers, a camp where he rescues and protects the hostages, and a daring escape. You have an Uzi and rockets at your disposal, but they're not unlimited – you have to pick up extra magazines along the way, which naturally you do by shooting at them. Enemies will hurl everything at you, sirens will wail when your health bar's nearly empty, and civilians naturally have to be protected. It's a simple game really, much like any other gallery – but this had a whole new sheen to it that felt sleek, and very modern.

Although some people did raise questions about the game's level of violence and sheer body count (the game was even banned in West Germany), nothing could stop Operation Wolf from being a huge hit – it took the people's appetite for the films of Schwarzenegger and Stallone, and rode that wave to the arcades. Some arcade operators would fill up whole walls with the cabinet simply because there was so much demand for it, and naturally a great deal of imitators such as SNK's Mechanized Attack and Sega's Line of Fire would follow in its wake. Those games certainly scratch a similar itch to the original Wolf and they may even take the action a little bit further, but nothing could come close to topping this game's popularity.









Game Title: **Pac-Mania**
Genre: **Maze**
Release date: **September 11th, 1987**
Published by: **Namco/Atari Games**
Developed by: **Namco**

"While the original didn't have a short average play time, Pac-Mania is a longer game that doesn't necessarily want to kick players off as soon as they've put a coin"

The arcade's most famous character returns for a game that brings him back to his roots – he's in a maze and he's got an awful lot of dots to eat. However, Pac-Mania presents the munching action in a whole new perspective, and he's got a brand-new ability. Arcade-goers and magazines warmly welcomed the return of the Pac – he once again provided an alternative for people who weren't interested in games where faces got punched, and earned roughly $2.8 million in sales.

The Cabinet

Pac-Mania uses the Namco System 1 board – a triple-M6809 PCB that can be found in plenty of other games, including Galaga '88 and Splatterhouse. An intriguing quirk of this board is the inclusion of a connector called "3D GRASS DRIVER" – rather than being for an arcade lawnmower simulator, it's speculated that this was supposed to power a set of 3D Glasses, but it was never used. Considering Pac-Mania's perspective, one wonders if it could have been included with this game in mind? The cabinet is simple and old-school, with a triumphant Pac-Man and some ghosts all over it – the control panel does not have the original's cross-gate joystick restrictions, and the biggest difference is obviously the red button marked "jump".

The Arcade Game

The mid- to late-'80s would see Namco go on a little bit of a nostalgia kick, bringing two of their biggest franchises back to the arcades for a modernised revival. But while Galaga '88 got a nice reception, a new Pac-Man game was clearly a bigger deal, particularly with creator Toru Iwatani taking the helm. Contemporary positive reviews such as the one by Nick Kelly in ACE thought that the game would "surely be massive with wrinklies who thrilled to the original", but Pac-Mania's re-styling of an experience that was already old-school in 1987 got a great reception with arcade-goers of all ages.

The core of Pac-Mania remains the same as the original title, of course – you're eating dots. Or are you? In 2010, Toru Iwatani had a discussion with Shinya Arino (famously the host/"kachō" of Japanese TV show Game Center CX) about the nature of Pac-Man on Namco's official site, saying that he ate the cookies that the ghosts had neatly placed around their area. Arino posited that this made Pac-Man a bad person, but Iwatani stressed that he did not consider the implications of what he was eating – he just ate regardless. Navel-gazing aside, the big change in Pac-Man is the perspective – a form of isometric graphics known as "cavalier", because it was often used to draw military fortifications. Used as a way of modernising the game, the perspective allows for larger, multi-tiered areas without the problem of obscuring any part of the playfield – as a result, Pac-Mania features four zones, all of which are considerably bigger than the original maze.

The new game also sees Pac-Man being able to jump, an ability that he first received in Pac-Land – however, this is the first time it's happened in the maze. Jumping is certainly useful – it can be used to jump over ghosts in a pinch, although the height of Pac-Man's jump does slightly decrease every time you do it, so you don't want to do it willy-nilly. There are more ghosts this time, too – as many as 11 in a stage. These include the original four, Sue from Ms. Pac-Man who is constantly at full aggro, and Funky and Spunky who can also jump – indeed, Spunky will always jump with Pac-Man and cannot be dodged in this manner. The behaviour of the ghosts has also changed – it's similar but much more unpredictable, and they will get more aggressive as the number of dots dwindle. There are now red and green power pills, with the red giving you double points and the green providing a speed boost. The big mazes can occasionally make searching for the last dots a lengthy challenge, but this perhaps reflects a difference between eras of the arcade – while the original didn't have a short average play time, Pac-Mania is a longer game that doesn't necessarily want to kick players off as soon as they've put a coin in so that the next in line can step forward.

This attempt at modernising Pac-Man does, in many ways, go down as one of the first arcade remakes – it marks the beginnings of a trend for the older names in the industry bringing successful titles and classic concepts back. Blasteroids by Atari would follow a few months later, and the next couple of years would see the likes of Super Space Invaders '91 bringing back Taito's iconic aliens, and Williams returning to the Robotron formula in spectacular style for Smash T.V. – and as it turned out, these old-school-flavoured experiences could happily sit alongside even the most modern of arcades, making a visit more varied than ever before.









Game Title: **Shinobi**
Genre: **Platformer/Hack 'n' Slash**
Release date: **November 16th, 1987**
Published by: **Sega**
Developed by: **Sega AM1**

"(Yutaka) Sugano and his team took the ninja into a direction that hadn't really been explored before"

Shinobi was one of Sega's most successful arcade games – it was 1988's highest grossing conversion kit according to the AMOA, was highly praised by arcade journalists such as Commodore User's Nick Kelly for its mixture of shoot 'em up and beat 'em up action, and it was crowned one of the best martial arts arcade games of the decade in 2003 by combat sports magazine Black Belt.

The Cabinet

The System 16 board meant that the game was capable of being installed in almost any regulation upright cabinet, although a harness adapter was needed to connect the board to a JAMMA cab. With the game being such a successful conversion kit, you were likely to find the game just about anywhere – both in dedicated arcade and street locations, where it could easily be slotted into a generic cabinet. No matter where the cab was, protagonist Joe Musashi's eyes on the screen would be an attraction all of their own – something that would entice players to part with their coins, while the high-intensity gameplay would keep them coming back for more.

The Arcade Game

Joe Musashi's quest to topple Zeed and rescue the children of his ninja clan would prove to be one of 1988's biggest titles, giving Sega a global smash while also being successful in their home country of Japan. But while ninjas were quite a common feature in games before Shinobi, this arcade would handle things a little differently to the norm. With five missions taking you everywhere from city streets to ancient temples, a memorable bonus stage where you have to stop ninjas from jumping directly into your face, and the piercing eyes of Joe Musashi staring directly into your soul on the game's title screen, Shinobi was one of Sega's biggest '80s cabinets – one of the top games from their oft-used System 16 board, and the beginning of a new franchise for the company that would exist mostly in the home, with games such as 1989's The Revenge of Shinobi winning plenty more fans on the Mega Drive.

According to the game's producer, Yutaka Sugano, in a 2017 interview for Brazilian games site Bit Memoria, the inspiration behind Shinobi laid largely in Western movies that placed the traditional Japanese mercenary in nontraditional settings such as the United States, where they'd be fighting gangsters as opposed to rival clans. In particular, movies starring the martial artist Sho Kosugi such as 1983's Revenge of the Ninja were cited as a large inspiration on the direction of Shinobi, and other Hollywood influences can be found in the pictures of Marilyn Monroe and Spider-Man-esque enemies that pepper some of the stages. In doing this, Sugano and his team took the ninja into a direction that hadn't really been explored before – titles such as Taito's The Legend of Kage and Sega's own Ninja Princess had stuck to a more traditional feudal Japan setting, but Shinobi would follow in Kosugi's footsteps by taking the action to the city.

As far as the gameplay goes, Shinobi is a side-scrolling hack 'n' slasher where our hero has no mask, but does have an infinite supply of shurikens as well as a sword for more intimate confrontations, and one screen-clearing Ninjutsu technique per stage that can take the form of tornadoes, thunderstorms, or doppelgangers. A great deal of the stages take place on two levels in a style similar to Namco's Rolling Thunder of 1986, meaning Joe can jump from the lower to the upper level automatically – both levels will be filled with bad guys, and the children from his clan that he'll have to rescue, usually guarded by Mongolian swordsmen who throw boomerang-esque blades. As is often the case in arcade games of this ilk, Joe dies with one hit – however, if he simply bumps into an enemy and not their weapon, that won't kill him. Each of the game's five missions consists of three or four stages, and Zeed's bosses include a Shredder-like fireball-spewer, a sleek attack helicopter, and statues that would dearly love to fry our hero on an electric wall. The final mission of the game doesn't allow you to continue, meaning that a player can't just throw coins down the slot until they win – they have to actually learn the game and become a master ninja if they wish to take down Zeed for good.

Shinobi may not have necessarily been as pioneering a title as Rolling Thunder, its main inspiration – but its arrival would signal a coming wave of other ninja-inspired games, several of which would also herald the beginning of long-lasting franchises such as Taito's Ninja Warriors and Tecmo's Ninja Gaiden, while modern indie titles like 2020's Shadow Gangs pay a more direct homage to Sega's walk and shoot game. For as long as Shinobi has been around, it has unquestionably remained a relevant touchstone in the world of action gaming.









Game Title: **Xenophobe**
Genre: **Shoot 'em up**
Release date: **December 1987**
Published by: **Bally Midway**
Developed by: **Bally Midway**

"Xenophobe is largely a game where the aliens are more of an excuse for three players to mess about and cause trouble"

Brian Colin's first game after Rampage allowed you to screw around and smash up buildings was another light-hearted affair – Xenophobe, a corridor shoot 'em up designed for three players that's almost like a parody of the movie Aliens where you can play as some rather strange characters and generally muck about on a ship that's about to go boom. Initial testing and profits for the game were excellent, although the arcade release didn't quite have Rampage's staying power on the floor.

The Cabinet

Xenophobe uses a pretty standard M68000-based game, and it would largely share this board with later Brian Colin-helmed games Pigskin 621 A.D. and Arch Rivals. Following Rampage, Colin pretty much had full control over his game's cabinet art, which he contributed himself – there's appropriately cartoonish drawings on the marquee and panel, while the bezel marks out where the red, yellow and blue players need to be looking. The cabinet features a monitor on a pedestal and looks like a sci-fi computer terminal – slightly similar to Atari's Xybots from the same year – but the funniest touch is the two thumb buttons on each player's stick that act as the character's hands, positioned so that they look like a pair of eyes staring back at you.

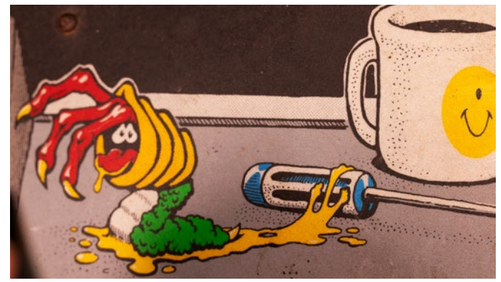
The Arcade Game

Rampage, along with being a load of mindless fun, was a game that set out Brian Colin's design ethos – there wasn't a "wrong" way to play his titles. It's as if the words "game over'' were dirty – whether you played Rampage with reckless abandon or you actually tried to follow the rules, it didn't matter as long as you enjoyed yourself, and the only limit was the number of coins you'd inserted. Xenophobe takes this formula and places it into a more traditional genre – a corridor shooter where you have aliens coming after you, and where there is a certain goal to clear a base entirely of monsters before it self-destructs. However, Xenophobe disrupts things by still largely being a game where the aliens are more of an excuse for three players to mess about and cause trouble.

With Xenophobe, Colin wanted to go back to gameplay themes that he'd explored in his 1984 arcade game Zwackery – something based more around picking up items that had various levels of usefulness. This would be the core of the title, which was initially based around spoofing Indiana Jones-esque tomb adventures – however, watching Aliens convinced the team to spoof that instead. Colin has often said in interviews that the humour and unconventional parts of his games were often the result of the limitations of Bally Midway's hardware, which was far weaker than that of other companies. Most of their classic games didn't feature any kind of actual horizontal scrolling, for example – even later titles such as Arch Rivals used a "fake" form of scrolling, and the same is true of Xenophobe.

The screwing around in Xenophobe is best enjoyed with three players, just like Rampage. Each player has their own colour-coded third of the screen, and there are nine diverse characters to choose from depending on what colour you pick – you could be a macho hero, a swarthy space pirate, a doctor who's also an alien duck, and various other creations. Each level gives you a couple of minutes to rush through a base and shoot as many "Xenos" as possible – these aliens evolve, starting as eggs and eventually mutating to bigger threats like rolling enemies, or warriors that leap at you and knock your phaser away. You can pick up better weapons as you go, along with more conventional items like keys, but there are also items that are effectively useless, perhaps there for other players to screw around with if they'd rather just get in the way of their compatriots. Again, there's no wrong way to play this – as in Rampage, you simply have an energy bar that ticks down and needs refilling with credits for as long as you want to play, and it's not even game over if you don't kill all the aliens before the base blows, because you just get teleported to the next level seconds before the big kaboom. As with a lot of Colin's games, there's no real ending – the levels are finite, although the last couple are virtually impossible to beat and there isn't so much as a "congratulations!" if you do.

The entire purpose of the game, in the end, is to have a bit of a casual laugh. Sometimes Xenophobe can be misunderstood, usually by someone who's just played it solo – it's not bad this way, but it's an incomplete experience if you don't have other people blasting away, chucking items around, or getting lost and looking for their cone-headed pal with the Geordi La Forge glasses. A profoundly and proudly stupid arcade that shouldn't be taken all that seriously.








1988
TAITO CORPORATION
MADE IN THE UK BY ELECTROCOIN



Game Title: **Blasteroids**
Genre: **Shoot 'em up**
Release date: **February 1988**
Published by: **Atari Games**
Developed by: **Atari Games**

"Digitised sprites would become all the rage not long after Blasteroids, although nowadays these visuals are perhaps the thing that dates the game the most"

Blasteroids sees Atari revive one of their most famous titles, Asteroids, and recast it as a sort of space opera where players battle across galaxies, rid the sectors of space rocks, and have a final showdown with the many-tentacled Mukor, ruler of the aliens. This third Asteroids sequel, arriving after 1981's Asteroids Deluxe and 1982's Space Duel, was warmly received; and while designer Ed Rotberg later described the game's performance as "so-so", it does appear to have been quite successful in the European market, particularly the United Kingdom.

The Cabinet

Blasteroids' PCB is 68000-based, and fairly similar to that used by the likes of Klax and Rampart. The main difference between this and earlier games in the Asteroids series is that it's no longer a vector-based game – Blasteroids is a raster game, using sprites that were digitised from ship models made by Bill George of Industrial Light and Magic. The controls are also different – whereas the original Asteroids and Space Duel used buttons to rotate the ship, Blasteroids employs a much faster rotary knob. The game only came out as an upright cabinet, designed for two players – a red and green one – and with similarly space-evoking illustrations to the original 1979 game.

The Arcade Game

For all their ups and downs, Atari were one of the most storied arcade companies around by the late '80s, and it perhaps makes sense that of all the big studios they'd be one of the first to start revisiting and updating their old classics. After all, when you've got a monolith like the original Asteroids in your vault – a game that sold over 100,000 units in its heyday – it makes commercial sense to try to recapture that sort of magic. Asteroids came out in a completely different time for arcades, and Blasteroids was never likely to do those sorts of numbers, but it was still a worthwhile update on a legend that holds up well, even if some of the new game's elements have actually dated a lot more than the 1979 original.

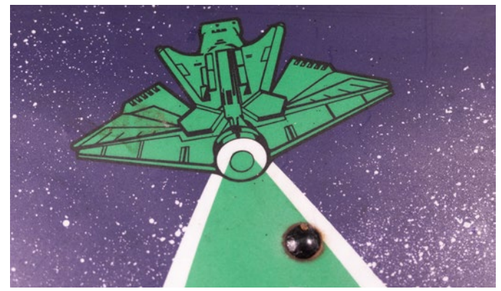
Atari veteran Ed Rotberg approached the design of Blasteroids as a huge fan of the original – according to an interview for James Hague's Halcyon Days book in 1997, he was one of many workers at Atari who Asteroids developer Ed Logg had to constantly shoo away from his lab, and who'd sneak in to play the game whenever Logg was out of office. Dan Van Elderen, Atari's senior vice president of engineering, wished to revisit the original game, and Rotberg jumped at the chance – having spent so much time playing Asteroids over the years, he had plenty of ideas about how the game could be twisted and modernised. From inception to release, the project took Rotberg and his team approximately 11 months.

The core gameplay of Blasteroids' hasn't changed at all from its late-1970s inspiration – you thrust your way around the screen and blow rocks into smaller pieces, something that's as engaging and precarious as ever. A key difference is that rather than lives, you instead have an energy bar that slowly runs out and has to be refilled by blowing up red asteroids and taking the stores of energy they leave behind – colliding with a rock or being hit by a UFO's bullet will drain that bar a lot quicker. Another change is that the main spaceship can actually transform at will between three different types: the Speeder, the Fighter, and the Warrior. These all have their own advantages and disadvantages, and upgrades such as shields, twin blasters and ripstars are also available from taking down enemies and defeating the Mukor – a boss who only appears after every sector in a galaxy has been cleared.

There are also other elements that have been retained from the less-famous vector games in the series. Like Space Duel, two players can take on Blasteroids simultaneously, and the new game also retains Space Duel's option to combine ships together, in which a Speeder docks with a Warrior and acts as an independent turret.

The biggest upgrade, subject to personal taste though they are, is in the graphics – Blasteroids uses digitised sprites, a concept that was still relatively new despite first appearing in 1983 as a part of Journey, Bally Midway's game of the band that featured the real faces of Steve Perry and company. Digitised sprites would become all the rage not long after Blasteroids, reaching an apex with 1992's Mortal Kombat, although nowadays these visuals are perhaps the thing that dates the game the most. Regardless of that, Blasteroids is still a very worthy update to one of the arcade's most distinguished titles that, while adding plenty of extras, doesn't fiddle with the mechanics that made the original Asteroids great.









Game Title: **Hot Rod**
Genre: **Racing**
Release date: **March 1988**
Published by: **Sega**
Developed by: **Sega**

"The upright is a hefty three-player machine, but the deluxe table cabinet is the one that's meant to be an arcade centrepiece"

Put your foot down in this speedy top-down racer that's primarily designed for a quartet of players to crowd around an especially impressive table cabinet and see who can twist and turn their way around the multi-stage courses the fastest. Hot Rod wasn't a major seller, only once placing on a monthly list of successful cockpit cabs in Japan, but the graphics and style of the game give it a charm that's perhaps better appreciated nowadays.

The Cabinet

Hot Rod marks the debut of a new Sega arcade board – the System 24. This M68000-based hardware was a modification of the System 16 with a couple of major differences, particularly the medium resolution 496x384 graphics – these games can't just be shoved into a more standard cabinet as they won't display – and the use of floppy disks, meaning that operators could switch out games simply by replacing the floppy and the security chip. There are two variations of the cabinet, both of which are impressive – the upright is a hefty three-player machine, but the deluxe table cabinet is the one that's meant to be an arcade centrepiece. This cab handles four players, each with their own wheel and pedal, and comes with a huge lit-up marquee that almost makes it as tall as the upright – even by Sega's standards, it's an exceptional machine.

The Arcade Game

A lot of 1980s racing games are a measure of the technical standard of arcades at the time, whether it's the pioneering likes of Pole Position or Super Scalers like Out Run. However, 1986 would see Atari release Super Sprint – a single-screen game with small cars viewed from above that was a successor to a series of mid- to late-'70s titles. The game did have sharp medium-resolution graphics, but it was certainly simpler than something like Out Run. And yet, it caught fire – Super Sprint was an arcade hit worldwide, particularly in Japan where it was one of the top cabinets in both '86 and '87. Suddenly, everyone else wanted to make a top-down racing game, and it's in this context where a game like Sega's Hot Rod is best appreciated.

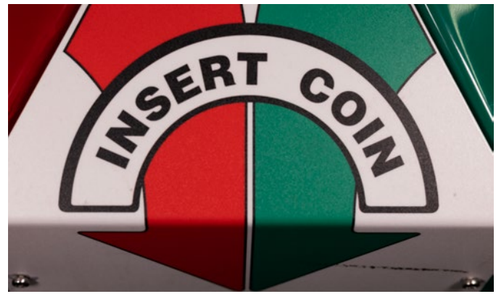
Hot Rod features three or four cars (depending on the cabinet), and isn't a single-screen game with lap-based tracks – instead, you race in stages from point A to point B. The scrolling isn't super-smooth, although that's part of the mechanics – you have a timer in the shape of a gas tank, and you can either get bonuses if you race well and send the other cars off the screen, or be penalised if you fall behind and go off the screen yourself, in a mechanic that's similar to the head-to-head mode in the later Micro Machines series. You earn cash through your performance and by picking up coins on the track, and in between each stage you get a chance to upgrade – you can get extra speed from boosting your engine, although tyres are perhaps the most important pick seeing as they'll grip better or worse depending on the surface you're racing on (the start of the next track is just visible from the garage, and shows you what to pick). In a slight referential touch, the music in this garage interlude is the same as the shop music from Fantasy Zone, Sega's popular cutesy take on the Defender formula.

All of these touches do differ from Super Sprint slightly, although perhaps not enough for it to get out of the slipstream of Atari's game. Sega can offer something else, mind – whereas Super Sprint only ever had a maximum of three players (one car would have to be CPU-controlled), Hot Rod has one more player-controlled spot on the grid in its most famous table version. It's another high-quality cabinet from Sega, although sadly not one that's as well-known as, say, After Burner's cockpit. Looking at retro arcades of today such as the UK's Arcade Club that have the four-player Hot Rod on their floor, it tends to get a lot of attention both due to the impressive style of the cabinet, and perhaps also because despite that, the game's quite obscure – even those who are pretty experienced with Sega's arcade oeuvre might not be too familiar with Hot Rod.

At the time, Hot Rod wasn't appreciably different enough from Super Sprint to be a success – contemporary reviews such as that from German magazine PowerPlay focused on its derivative nature, and when it got a few computer ports from Activision in 1990, magazines like The Games Machine wondered why they'd bothered to convert it. Nowadays however, this forgotten title does have a bit of a cachet as a great party game in places where it can be found – so if you've never heard of it before and you come across it with a group, it's absolutely worth a try. It certainly gets a warmer reception now than it ever did in 1988.









Game Title: **Silkworm**
Genre: **Shoot 'em up**
Release date: **March 1988**
Published by: **Tecmo**
Developed by: **Tecmo**

"A single-player session of Silkworm almost feels incomplete seeing as both the helicopter and jeep are capable of performing tasks that the other simply cannot do"

A side-scrolling shoot 'em up that stressed the importance of playing with others by giving a duo two entirely different vehicles to control, Tecmo's Silkworm put a different spin on traditional shooter gameplay. The arcade release was an average performer, but the game found a lot of success (as well as a sequel of sorts) thanks to excellent home computer and console ports.

The Cabinet

Silkworm is a Z80-based arcade game – there's two of the processors handling video and sound respectively. The game isn't necessarily designed to fit into a specific cabinet; it adheres to the JAMMA standard that was slowly becoming universal, and was often sold as a conversion kit. The components and design of this kit have a lot in common with another 1988 Tecmo arcade game, Ninja Gaiden – they share the same oversized bezel, a control panel emblazoned with several Tecmo logos, and thin joysticks that have a button on the top of them. In Silkworm, this joystick button is used either for the chopper to focus their main fire on the ground, or for the jeep to fire backwards.

The Arcade Game

In a lot of shoot 'em ups, a second player doesn't usually add much more to the game than doubling the firepower – both players pilot the same type of craft, with the same features. Even in games where you can choose from a range of ships, they're not that different from each other – usually varying slightly in speed or strength, or in what weapon they specialise in. Tecmo's Silkworm, however, is a different kettle of fish – a single-player session of the game almost feels incomplete seeing as both the helicopter and jeep are capable of performing tasks that the other simply cannot do. It perhaps should have been more successful in the arcade than it was, although that wasn't the end of the game's story.

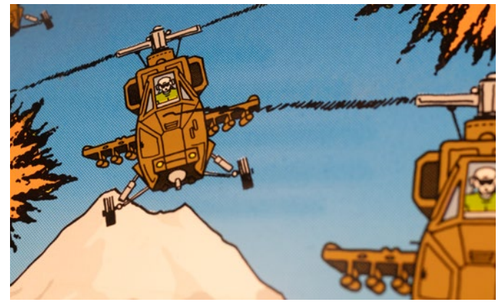
Silkworm appears to be a combination of various popular side-scrolling shooters – the huge success of Konami's Gradius in 1985 is a factor seeing as many other horizontal titles followed in its wake, although this game's setting is entirely different. The use of a helicopter possibly comes from Sega's 1985 arcade version of Choplifter – a popular game in Japan and one where a helicopter behaves more like the real thing, able to angle its fire down towards ground fortifications. The jeep is like a souped-up version of the buggy in Moon Patrol – also capable of jumping, and of firing diagonally and horizontally at the same time. As for the game's name, it likely references the Chinese-made "Silkworm" missile, which gained notoriety during the Iran-Iraq War as both sides were using them against each other.

The game features a pretty typical plot and setting – it's another day, another supercomputer has gone mad and decided to destroy humanity, and only a helicopter and jeep (piloted by Stacey and Robert respectively) can stop it. They take on the computer's forces through 12 waves of action – there's a wide variety of enemies, some of which are best killed by one of the vehicles. For example, a missile launcher on the bottom left can't even be touched by the Heli, while a Jeep can easily take it out by firing backwards – ideally while the chopper provides covering fire. Survival requires working together – there's a lot of enemies to deal with from the off, and blowing them up is important seeing as the famous "goose" chopper, which leaves important twin-shot and rapid-fire power-ups when killed, doesn't appear until you've destroyed a set number of enemies. (And the last thing you want is to deal with that goose as well as the wave's end boss – usually a giant chopper or tank – so make sure you destroy it swiftly.) If you can stay alive, you can earn stripes and even keep your power-ups when you die, although this is easier said than done. And if you reach the end of the twelfth wave and destroy the computer's brain? In very old-school fashion, you'll be embarking on another loop and doing it all over again without so much as an ending.

Although the arcade's sales performance was pretty average, Silkworm became a big hit in British homes due to microcomputer versions developed by The Sales Curve and released by Virgin Mastertronic. Somehow the game seemed to fit better within the confines of the Amiga or even the ZX Spectrum, and its popularity resulted in a home-only successor, SWIV, a game that took the helicopter/jeep tag team and placed them in a vertical shoot 'em up that had multiple sequels of its own. The game stands as a fine example of the interesting life that '80s arcades could have away from the floor, as well as a shoot 'em up that tries to do something new with a very common formula.









Game Title: **Bad Dudes Vs. DragonNinja**
AKA: DragonNinja (JP/EU)
Genre: **Platformer/Beat 'em up**
Release date: **March 2nd, 1988**
Published by: **Data East**
Developed by: **Data East**

"enemies are willing to set themselves on fire and run at you in order to stop you achieving your goal"

Makoto Kikuchi's beat 'em up, filled with contemporary 1980s references, was a highly successful game in all territories – becoming one of the five highest grossing arcades of 1988 in the US, alongside the likes of Operation Wolf and Double Dragon.

The Cabinet

Bad Dudes comes in a generic upright cabinet, but the scenes of street violence on the top marquee, replete with knives, claws, and nunchucks, certainly do a good job of showing what the game entails. The art surrounding the monitor features our heroes fighting enemies on ladders, which is unfortunately not something you can do in the game – Blade and Striker cannot climb ladders, nor do any ladders exist in this world. Like a lot of Data East arcade games around this time, such as RoboCop and Sly Spy, Bad Dudes doesn't have any side art – instead, the side of the cabinet is proudly emblazoned with Data East's logo.

The Arcade Game

Bad Dudes was largely conceived as Data East's answer to the runaway success of Taito's Double Dragon – a one- or two-player beat 'em up where you'd give villains various bunches of fives and end up rescuing somebody at the end, although the game opts for a single-plane, dual-level setup similar to the likes of Rolling Thunder and Shinobi. As the introduction says, the White House is no exception to the spate of ninja-related crimes happening nowadays, and President Ronnie has been kidnapped by ninjas. Are Blade and Striker, our two tough hombre heroes, bad enough dudes to rescue Ronnie? Ronnie is, of course, Ronald Reagan, who was still U.S. President at the time of the game's release. Later home versions removed him, replacing him with the far more generic "The President".

Blade and Striker have quite a lot of moves at their disposal, something that perhaps came from Double Dragon – you've obviously got a punch and kick, but you can also use a back kick, a spin kick, and a power punch that's accessible by holding down the button. There's also a couple of weapons – knives and nunchuks can certainly get you out of tight spots. In any case, most of the Dragon Ninja Clan's goons die in one hit, but the game compensates for that by throwing a lot of them at you – it's very easy to get crowded and pounded, making the game quite a tricky one that craves your coins, much like a lot of other Data East games such as RoboCop and Karnov. Speaking of Karnov, the fire breathing Russian protagonist of that title makes an appearance as the first level's boss, and the atomic-powered robot Chelnov, from the Data East game Atomic Runner Chelnov, is seen being transported in a train in a later stage. It was quite common for Data East's titles to feature references to their other works, and Bad Dudes is one of the more famous examples.

That's hardly the end of the references though – Bad Dudes is chock-full of contemporary Americana. You heal yourselves with cans of what's blatantly Coca-Cola; the heroes shout "I'M BAD!" at the end of each stage in a clear nod to Michael Jackson's "Bad", which was big at the time; and other bosses reference Wolverine and the Human Torch (a play by Kikuchi to make arcade games related to X-Men and the Fantastic Four, which never came to pass). And then the end scene sees you and Ronnie go for a burger while "Hail to the Chief" plays. All of these references seemed to pay off, as the game itself has been referenced many times – a corrupt cop gets thrown into a Bad Dudes cab in RoboCop 2 (where the arcade itself is exclusively stocked with Data East games), while Gil Buckman's encouragement doesn't stop his son Kevin losing at the game in Parenthood.

Bad Dudes doesn't have too much depth to its gameplay, but it more than gets by thanks to its sheer ridiculousness. It's also a great example of the quirkiness that Data East often brought to the arcade – they make very American games, but with a Japanese slant that gives a lot of the references they throw into their titles an Uncanny Valley feel that's certainly amusing, and always stands out. It's likely only in a Data East game where you'd find enemies that are willing to set themselves on fire and run at you in order to stop you achieving your goal, and that general level of ludicrousness continues to make Bad Dudes a memorable part of the '80s arcade experience.









Game Title: **Vindicators**
Genre: **Run 'n' gun**
Release date: **April 1988**
Published by: **Atari Games**
Developed by: **Atari Games**

"Vindicators fits into a cooperative maze line of games that started with Gauntlet and continued with Xybots - the game definitely shines brightest with two players at the helms"

On the surface, Vindicators looks like another fairly typical top-down run 'n' gun style game – but the space station corridors and robotic sentries serve a slower-paced title with tank controls straight out of the 1980 classic Battlezone. The game's concept is very interesting and Atari pushed it considerably, although the intimidating controls led to a mediocre performance on the arcade floor, with Atari manufacturing approximately 1,600 (very good looking and heavy) Vindicators cabinets.

The Cabinet

Vindicators and its sequel Part II use Atari's Motorola 68010-based hardware, and are most similar in configuration to Gauntlet and Gauntlet II. The game's cabinet is exceptional – it's a little similar to the cab that Atari made for Xybots, but styled more like a futuristic tank, particularly with the mock treads on the side. The control panel is a heftier evolution of Battlezone's tank-style controller – each player gets two metal levers that you push and pull forwards and backwards in unison to move, push one and pull the other to turn, and there's buttons on each of them to twist the turret clockwise and counter-clockwise. These self-centering sticks were prone to breaking, requiring the replacement of the compression springs, but they add to a heavy-duty machine that's succinctly described in the game's entry on the Arcade Museum as "looking like a tank (and weighing like one)".

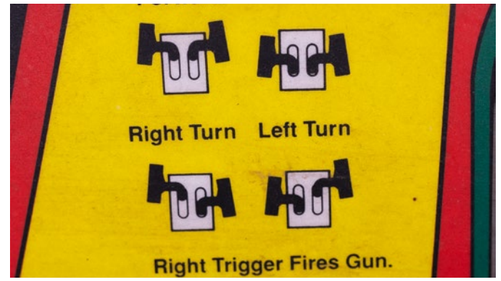
The Arcade Game

Vindicators is an interesting way of revisiting a classic game – something that takes the formula from the 1980 first-person vector arcade Battlezone, but places it into a modern top-down title. The result is one of Atari's most intriguing games from their late-'80s period – certainly not one of their most successful ones, but this mish-mash of run 'n' gun gameplay and complex controls that would put even the likes of Ikari Warriors to shame isn't something that players would usually find on the floor circa 1988. Even if those controls can be tough to get to grips with and the "kill the evil robots" setting is so generic as to be interchangeable with Xybots, the game's still interesting enough to warrant attention.

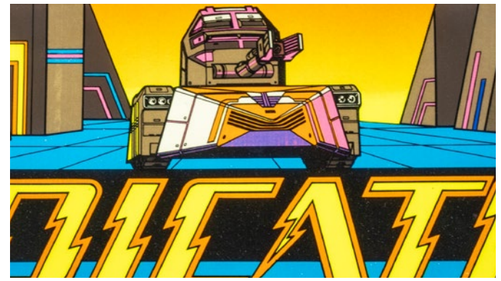
Information on the making of Vindicators is difficult to come across. The game was mainly designed by Kelly Turner, who was an active part of the burgeoning American scene around retro gaming in the early 2000s, but he tragically passed away in 2005 after a short illness aged just 43. There are a couple of Atari games clearly in its DNA – Battlezone is there thanks to the controls, and also because revisiting and reimagining Atari classics was something the company had started doing the previous year with Blasteroids. Vindicators also fits into a cooperative maze line of games that started with Gauntlet and continued with Xybots – the game definitely shines brightest with two players at the helms of its red and blue tanks. There was also a clear trend at Atari for upgrading your player – options to beef up your tank can be found between stages, similar to Blasteroids and Xybots. Atari employed a novel way of promoting the game – it includes a "contest" stage that you have to complete in under 30 seconds, at which point the arcade gives you a code that you'd send off to the company in exchange for a Vindicators t-shirt.

The first few times a player tries Vindicators will probably be spent struggling to learn the controls and dying very quickly, which may have been one of the reasons the game didn't do too well – but once they're in a player's head, the precision of those controls can be appreciated. This certainly isn't Ikari Warriors – it's a slower game with fewer enemies, but a lot more of them are your equal, taking several shots and wrecking your fuel bar fast if you aren't careful. This is where a second player most certainly helps, although Vindicators is more competitive than the likes of Xybots – every level has two keys and two exit doors, and the first tank to exit gets a bonus. It's also interesting that the full range of controls aren't unlocked from the beginning – you need to use stars to buy the ability to rotate your gun with the thumb buttons after the first station's completed.

Contemporary reviews for Vindicators were lukewarm, making the connection between Vindicators and Battlezone but criticising the controls for being so hard to get to grips with. Atari did release an enhanced version later in 1988 called Vindicators Part II, primarily as a conversion kit for Gauntlet cabs, although only a few hundred of these kits were ever made and it didn't change the game's fortunes. Even if the game's not as well remembered as some of the other titles from Atari's mid- to late-'80s renaissance, it rightly has a small group of ardent and dedicated fans.









Game Title: **Altered Beast**
AKA: Juuouki (Chronicle of the Beast King) (JP)
Genre: **Platformer/Beat 'em up**
Release date: **June 1988**
Published by: **Sega**
Developed by: **Sega R&D 1**

"It was, perhaps, primarily meant to look nice rather than have any in-depth play mechanics"

The first game developed by Makoto Uchida (later of Golden Axe fame), Altered Beast was a moderate success in Sega's home country of Japan, but much more successful overseas. The game also served the purpose of being a new and impressive arcade release that Sega could quickly port to their new Mega Drive home console – Altered Beast was the system's launch title, coming out just five months after the game's debut in arcades.

The Cabinet

Coming on a Sega System 16 board that could easily be used in most generic cabinets, Altered Beast was usually sold in kit form, allowing arcade owners to convert a less-successful cab into something new and ideally profitable. The exquisite side art tells you most of what you need to know about the game, showing off the various beasts that our centurion hero can transform into, but the real eye-catcher is... well, the eyes. The eyes on the top marquee are meant to stand out, particularly as they're backlit – while a lot of marquees use backlights to shine attractively in those darkened halls, the eyes of Altered Beast certainly make this game a memorable example.

The Arcade Game

"Wise from your gwave" – the words that greet you at the beginning of every game of Altered Beast are amongst the most iconic of '80s arcades, even if they're not necessarily the most clearly spoken ones. You play as a deceased centurion, fallen in battle yet chosen by Zeus to rescue his daughter, Athena, from the clutches of the evil Neff who, judging by the vignettes between levels, wishes to turn her into a bird and trap her in a cage. However, you can undergo some transformations of your own. Picking up the orbs left behind by defeated white Orthrii (double-headed dog-like creatures) firstly gifts you muscles that'd put Arnold Schwarzenegger to shame, and then they'll turn you – with a great roar – into a mythical beast that lays enemies to waste with special attacks and is capable of taking on the level's boss. Depending on the level, you transform into either a wolf, a dragon, a bear, a tiger, or a golden wolf in the final stage.

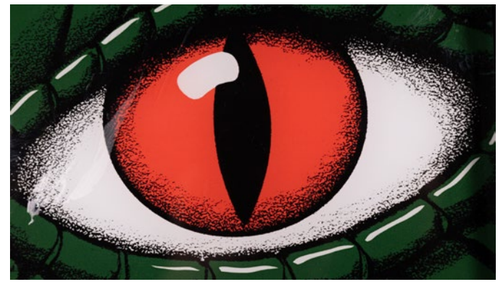
As with a lot of Sega's arcade games from around this time, a little bit of modern influence went into Altered Beast. While Greek mythology is the obvious basis for a whole thing, designer Makoto Uchida and his team also took inspiration from horror movies, particularly The Howling series, and he wanted the shuffling of the game's generic zombies to be similar to that found in Michael Jackson's video for "Thriller". Altered Beast was also the first Sega game to crib a sound entirely from the movies – that first howl that accompanies your transformation into the wolf is taken straight from the classic '80s horror flick An American Werewolf in London. With all this inspiration, it's perhaps appropriate enough that the game's ending reveals the whole thing as having taken place on a film set.

Altered Beast, on the whole, is a pretty straightforward game – a simple side-scroller based around punching and kicking, not much more complicated than the likes of Kung-Fu Master. It was, perhaps, primarily meant to look nice rather than have any in-depth play mechanics – the varied monsters all have a distinctive look about them, thanks to the work of artist Masaki Segawa (who would later go on to work in manga), and there's a subtle use of scaling when, after repeatedly hitting them, these enemies theatrically splatter into pieces, and the end-of-level guardians are appropriately large. The game also has enough silly quirks and memorable moments to keep it amusing: the cry of "Never give up!" when you use a continue; the fact that it always appears as though you're kicking these abominations in the balls; and, of course, the big metamorphosis itself in each level, which is always quite satisfying.

Is Altered Beast a good game? At the time, reviews were largely quite mixed, with Your Sinclair even commenting that the game was "not recommended to those that are still living". Still, it's undeniably a game that has stuck around in people's memories all these years later. Of course, a lot of that does have to do with the Mega Drive – this was the console's pack-in title before Sonic the Hedgehog, bringing the game to a much wider audience, and the Beast undoubtedly had a far greater purpose as proof of Sega's promise to "bring the arcade experience home" on their new 16-bit system. It might not be the greatest game to ever grace the arcade, but something about a raw punch and kick fest where you pound demons into dust for a few minutes does still have a bit of simple appeal.









Game Title: **Chase H.Q.**
Genre: **Vehicular Combat/Racing**
Release date: **June 20th, 1988**
Published by: **Taito**
Developed by: **Taito**

"[Chase H.Q.] is designed to be as close to Miami Vice as you can get without Taito stumping up for an official licence"

"Let's go, Mr. Driver!" Taito's loving tribute to Miami Vice, Chase H.Q. was Taito's most successful racing game to date, coming hot on the heels of other hits such as Full Throttle and Continental Circus. This was Japan's top "dedicated video" (a category specifically for environmental machines) arcade game of 1989, with another Taito game, Operation Thunderbolt, taking second place. Both of these games were created by designer Hiroyuki Sako, making for quite a high-profile year.

The Cabinet

Chase H.Q. uses the Taito Z System, a dual Motorola MC68000 board designed specifically for scaler arcades that Taito had debuted with the previous year's Continental Circus. The board would also power the likes of Night Striker and Space Gun. There are two separate sit-down/cockpit versions of the game – a large cabinet that emulates the driver's seat (similar to Pole Position), and a smaller "open-top" variation that uses hydraulics. Upright versions of the game are much more common, complete with illustrations of the perpetrators on the side and patrol lights on the marquee that flash when you make contact with the criminals.

The Arcade Game

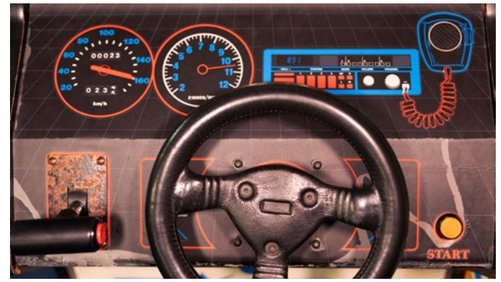
The phenomenal success of Sega's Out Run in 1986 made sure that a lot of other arcade developers didn't just try and get their own brand of "super scaler" arcade games out onto the floor, but it cemented the racing genre as the best way of showing off such hardware – nothing does so good a job at showing the speed of the scalers like jumping into a car and peeling off on a journey through checkpoints. And Taito was no exception: Full Throttle, released in 1987, was quite derivative of Out Run with a similar-looking sports car that you took on a comparable drive through American cities and countryside. The game featured one notable addition though, in the form of nitro boosts that you could use for a quick speed burst in every stage. The game was a mild success, but designer Hiroyuki Sako would take his work and iterate on it yet further, with the result being 1988's tremendously successful Chase H.Q.

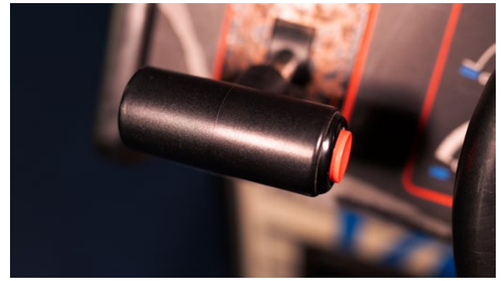
There's no prizes for guessing Sako's inspiration – our heroes, Tony Gibson and Raymond Broady, drive a Porsche 928 and are very much styled after James Crockett and Ricardo Tubbs, so it's designed to be as close to Miami Vice as you can get without Taito stumping up for an official licence. As a matter of fact, the legendary '80s cop show had already made a cameo in Full Throttle, where an image of Crockett and Tubbs appears on one of the game's billboards, so it's fair to say that Sako was a fan, and possibly already had this game in mind while creating the previous title. Chase H.Q. wouldn't just have the cops chasing the perps and nothing else – it's presented in buddy cop style, with Ray having plenty of speech commenting on your driving with phrases such as "Bear down!" and "More, push it more!" being common (as well as "What are you doing?" whenever you make a mistake).

After receiving details about your suspect from Nancy over at Chase Headquarters, you play out a stage in two parts – you have 60 seconds to reach the target vehicle, and once you do you get another 60 seconds to take them out, which you achieve by repeatedly bashing their rear-end. As in Full Throttle, you have three turbo boosts at your disposal which you can either use to get to your target faster, or get some quicker hits in when you make contact with them. If you damage the suspect's car enough, you pull them over, read them their rights, and move onto the next stage. There are five chases in all, pitting you against the likes of "Ralph the Idaho Slasher" and "Carlos the New York Armed Robber", all of whom also happen to be driving in state-of-the-art 1980s sports cars. Bashing a vehicle until it's on the verge of blowing up is certainly satisfying, although you have to be careful not to collide with the many civilian cars that annoyingly are also on the road, getting in your way.

The game's quintessentially '80s presentation certainly helped it become popular, but Chase H.Q.'s driving action felt like an evolution from Out Run and other titles – this is where Taito showed that they weren't just hanging on the coattails of Sega's popular scaler arcades, but that they were neck-and-neck with them. Chase H.Q.'s speed and fluidity signalled to other companies that they were going to have to raise their game, and its 1989 sequel Special Criminal Investigation would further cement the place that this series had in the arcade. The original is still an impressive and heart-pounding title, however, and really it can best be summed up with what Broady says when you hit that nitro button... Yaaooowww!









Game Title: **Power Drift**
Genre: **Kart racing**
Release date: **July 5th, 1988**
Published by: **Sega**
Developed by: **Sega**

"If you perform well through a five-race series, you can enter a special race where you'll control the bike from Hang-On or the F-14 Tomcat from After Burner"

Officially recognised as the first kart racing game, Power Drift is an absolutely wild arcade with tracks that go up and down like a rollercoaster and many competitors in your way, trying to stop you hitting that magical "third or better" mark. Another title from the mind of Yu Suzuki, it's not quite as well known as the likes of Out Run and After Burner, but was still a tidy performer in Europe and Japan, where it was 1989's fourth most-successful arcade according to Gamest magazine.

The Cabinet

The Sega Y Board is the last one that the company made specifically for Super Scaler games and had been introduced earlier in the year with Galaxy Force. It's quite the beast – three MC68000 CPUs allowed the game to work with the X, Y and Z axis and simulate full 3D while still taking place in a 2D environment. As is normal, there's an upright version of the game and a deluxe motion cabinet, pulling off the usual "taikan" body movement and featuring a force feedback wheel – it's not the best remembered Sega cab, but it still guarantees a wild ride. There's also a rare version of the game in which up to eight cabs can be linked together as a lag-free multiplayer network – this was done to compete with the rise of twin racing cabinets like Namco's Final Lap of 1987, although Power Drift had to undergo a few changes to be suitable for multiplayer action.

The Arcade Game

Yu Suzuki's done bikes, he's done cars, and now he's onto karts. Once again inspired by his own petrolhead inclinations and experience of doing hill climbing events, Power Drift has little in common with the average dilapidated holiday park go karting circuit, being a fantastical race where courses go up so high that they seem to scrape the sky. It's the sort of racing game where vehicles pinball around in a highly disorganised madness while trying not to fall off, and it marks the origins of a subgenre of racer involving karts that would become especially popular in the hands of Nintendo.

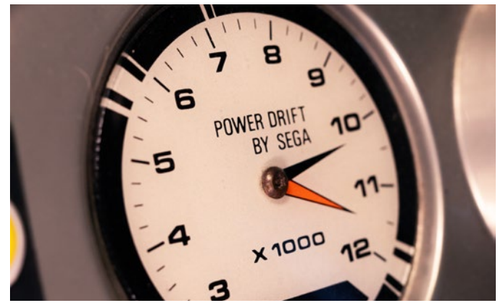
Power Drift didn't start as a kart racing game – according to a 2022 interview with 4Gamer, Suzuki wanted to make an off-road rally title based on the famous Paris-Dakar race, but later rejected the idea for commercial reasons (the idea would eventually come to life in 3D with 1994's Sega Rally Championship). The game itself would push even the powerful Y Board to its very limits – the bitmap-built courses rise and fall at speed, and the tracks rotate with the movement of the player, requiring far more mathematical brawn than Galaxy Force. One of the game's party pieces is the fly-by that occurs before the start of each race, showing off the technology. This was inspired by Super Game Z (later known as Sega Super Circuit), a huge attraction available at several Sega World locations where players controlled RC cars using modified Out Run cabs.

Power Drift is quite the chaotic experience – the game moves so quickly that there's scarcely time for getting on a racing line, and it's very easy to crash into rival karts that are coming from both the front and back (a rear-view camera is available with the START button if you need to see what's on your tail). Some of the karts are easier to handle, with the red one being the simplest option due to its large tyres – but even then, players are probably going to find themselves spinning around or falling off sooner rather than later. Still, the tracks – of which there are 25 in the game – are short enough for the game to never be a bore; it's a lot of fun even if there perhaps isn't a lot of skill involved; and winning races does come with a cool reward. If you perform well through a five-race series, you can enter a special race where you'll control the bike from Hang-On or the F-14 Tomcat from After Burner – a nice little touch, and an early example of Sega looking back on their arcade history.

The sheer power of this title is perhaps best exemplified by the struggles that port-masters M2 thought that they were going to have when creating an updated version for the Nintendo 3DS in 2016 – Power Drift got so much out of its arcade hardware that M2 initially wondered if a successful port was even possible. On the whole, the game didn't appear in the home as much as a lot of other Scaler titles, like Out Run and Space Harrier, which is possibly one of the reasons why it's not as well known. But while it's perhaps better at giving players a headrush than it is at providing a deep racing simulation, Power Drift is certainly not an experience to be passed up.









Game Title: **Toobin'**
Genre: **Sports/Tubing**
Release date: **September 1988**
Published by: **Atari Games**
Developed by: **Atari Games/ Midway Games**

"Toobin' is possibly what Paperboy would have looked like had Dave Ralston stuck to his more surreal initial vision"

Most likely the only game based on inner tubing, Toobin' sees two extremely cool dudes named Bif and Jet race each other down a big river filled with settings and obstacles that get progressively stranger, on their way to a big beach party at the end. Reviews for the game were excellent, with Robin Hogg of The Games Machine saying that it was close to being Atari's best ever coin-op. In the end it was a decent hit, with Atari making around 1,500 Toobin' cabs for the United States market alone.

The Cabinet

Toobin' is Atari's final "medium resolution" game, although the hardware is different to what could be found in the likes of Paperboy and 720°, using a Motorola 68000 as its main CPU. At first glance, the Toobin' cabinet might appear more standard than a lot of Atari's other machines, but it features a cool effect – rotating drums that light up behind the square marquee and give the impression that the waterfall is actually flowing, an effect inspired by the classic 1960s waterfall motion bar sign for Coors beer. The controls for the game are also non-standard – it entirely uses buttons to move the tube as opposed to a joystick, similar to Konami's Track & Field. As was often the case with Atari games from this time, there's a competition – if you complete the game while picking up all the letters that spell out the word "TOOBIN", you can get a code and send it off for a t-shirt! Or at least, you could if the competition hadn't finished 35 years ago.

The Arcade Game

Atari's flirtation with extreme sports started with Paperboy's assault course and reached an apex with 720°, both of which were by Dave Ralston and John Salwitz. However, Dennis Harper's Toobin' has a case for being the third game in what could be considered an unofficial trilogy as it has many things in common with the previous two releases, from the much sharper than normal graphics to the chucking of items that stun a variety of weird enemies. The highly competitive nature of this race down the rapids helped the game become something of a success, although it's certainly one of those Atari games that's best experienced in an arcade as opposed to any of its significantly lesser home ports.

Toobin' originally started out life as a game based on kayaking, even featuring a yoke that would presumably have been pushed and pulled alternately or in unison in order to simulate rowing – however, people just weren't having fun in this form, and so Harper changed it to be based entirely around buttons. Harper had an unlikely partner in the shape of Milt Loper – generally Loper was responsible for a lot of Atari's excellent arcade cabinets (including Toobin'), but he was far more involved in the creation of this game than usual, eventually being credited as designer. Toobin' was a project that Harper and his team passionately believed in, and Harper has cited it as his personal favourite game that he worked on.

While a lot of Atari's other multiplayer games tend to be based around co-operation, Toobin' is somewhat different – Bif and Jet are racing each other to the finish line and they can certainly get in each other's way, or even throw cans at their opponent, taking off a tube patch (these act as lives). Still, there's plenty of dangers for both of them to avoid – everything from fishermen, thugs and desperados on the riverbank, and even the likes of Martians and dinosaurs closer to the finish. In many ways, Toobin' is possibly what Paperboy would have looked like had Dave Ralston stuck to his more surreal initial vision. There are plenty of bonuses to pick up along the way, including bonus gates that stuck around from the initial kayaking idea, but the main joy of Toobin' lies in the buttons – using them for a well-timed bump, hammering them to get out of the path of an incoming pool of sludge or alligator, or carefully making your way through ever-narrowing paths. Most home ports of Toobin' opted to use a joystick, and as a result they could never get the feel of the game right – this is really meant to be a test of precise and occasionally frantic button-mashing.

So many attempts at creating a game based on an extreme sport, or something that's considered "cool" at the time, can fall flat, or end up feeling somewhat condescending as they clearly aren't genuine. But Toobin' stands out because it was clearly made with love and is blissfully free of any pandering. Perhaps it was something in the air around Sunnyvale that allowed Atari to get this sort of game right more than most, but Toobin' still stands up as a totally tubular coin-op.









Game Title: **RoboCop**
Genre: **Run 'n' Gun**
Release date: **November 1st, 1988**
Published by: **Data East**
Developed by: **Data East**

"The idea of playing as Detroit's finest cop in a video game was a pretty natural one, and few companies fit the task better than Data East"

Part man, part machine, and all game, the success of RoboCop as an arcade was perhaps less surprising than the initial movie becoming a sleeper hit in 1987, with the game quickly becoming a high earner in all territories. It was particularly huge in the Hong Kong market – in a May 1989 report from ACE Magazine about Flashback in Kowloon, then believed to be the world's biggest all-video game arcade, journalist David Snook said that it was Hong Kong's top-earning game of 1988.

The Cabinet

With the game being quite similar to the company's earlier 1988 hit Bad Dudes Vs. DragonNinja, it's no surprise that RoboCop uses the exact same PCB as that game – the Data East MEC-M1, meaning that it was very easy to convert the board from one game to the other. They also share the same upright cabinet, with the notable feature being a convex marquee that sticks out somewhat compared to the usual flat marquees on most regular uprights. The side art features the film poster image of RoboCop getting out of his car, while the bezel is filled with stills from the movie (nothing too violent, mind -- you won't find Murphy getting his arm blown off here).

The Arcade Game

RoboCop, as a hit movie, was in a rather unusual position – it was a violent R-rated film in the cinemas, but the character himself was very merchandise-friendly, with the result being a whole line of Robo-related media from comic books and cap guns to action figures and an animated series. The idea of playing as Detroit's finest cop in a video game was a pretty natural one, and few companies fit the task better than Data East – a Japanese studio with one of the strongest presences in the West, offices in San Jose, and freedom-packed games like Bad Dudes Vs. DragonNinja. With all that said however, the road to making this game a reality wasn't necessarily a straight one.

To be able to make the game, Data East had to make a sub-licensing deal with UK-based software house Ocean, who were known for releasing a large amount of movie tie-ins and had picked up a licence for RoboCop when the film was at a script stage. Fortunately this wasn't too problematic – the companies already had a working relationship due to Data East distributing some of Ocean's computer games in America, and they soon figured out a process that would benefit both parties where Data East would make the arcade game first, and Ocean would be able to get a port out to computers such as the ZX Spectrum and Commodore 64 only a month after the arcade's debut. This speedy turnaround resulted in a huge hit for Ocean, with the home version of RoboCop selling over a million copies across all formats.

Data East's original arcade is a straightforward side-scroller, but it does a great job of capturing the movie's action, with an attract mode and intro that summarises the plot of RoboCop very well, and music that subtly riffs on Basil Poledouris's bombastic OST. Robo initially punches enemies in the beginning, only pulling out his Auto 9 pistol when the thugs start shooting – and that gun can also be upgraded with limited yet powerful three-way and piercing shots. The game is quite frontloaded, with a battle against the ED-209 occurring right at the end of the first stage, on the streets of old Detroit. Although this isn't faithful to the movie, things were presumably done this way to give most players who were only going to use a single credit a satisfying experience where they quickly get to fight against Murphy's bigger yet clumsier rival.

A game that stars one of the most iconic characters of the late '80s has a good chance of being a hit regardless of its quality, but Data East's effort resulted in an entertaining if difficult side-scroller that still had legs beyond Robo's initial popularity. The importance of these games to RoboCop's success as a franchise was also reflected in the film sequel, RoboCop 2, when Robo fights bad guys in an arcade filled with nothing but Data East titles and slams a corrupt cop's face directly into a Sly Spy cabinet (Data East would also handle the arcade game based on RoboCop 2). The game remains one of the most successful attempts at bringing big-screen action to the arcade, and it probably wouldn't have been quite the same if a studio other than Data East had handled it.









1989



Game Title: **Golden Axe**
Genre: **Beat 'em up/Hack 'n Slash**
Release date: **January 27th, 1989**
Published by: **Sega**
Developed by: **Sega**

"You cut your way through many of the boss's henchmen, a lot of whom theatrically die with screams ripped from various '80s movies"

A game that takes the arcade sensibilities of Double Dragon and adds a Conan-esque fantasy theme filled with magic spells and legendary weapons, Golden Axe is considered to be part of a holy trinity of games that went on to define beat 'em ups in the early 1990's, alongside Capcom's Final Fight and Konami's Teenage Mutant Ninja Turtles. However, Golden Axe was the first of the three to be released, beating the others by a good few months. The game was tremendously successful and influential in all territories, inspiring many other developers to pick up their own swords and make similar slashers, such as Irem's Blade Master and Taito's Warrior Blade: Rastan Saga III, both from 1991.

The Cabinet

Golden Axe uses Sega's System 16B board, a combination of the Motorola 68000 and Zilog Z80 chips that would provide the foundation for many other games, including Altered Beast, Alien Syndrome and Cyber Police ESWAT. The original upright cabinet is a boxy affair that's fairly spartan in terms of art, with some character illustrations on the marquee and depictions of the game's weapons on the side art. Most of the bezel is dedicated to instructions on how to play the game and details of the combos needed for all the moves – it makes for a good comparison point to show just how much more complex arcade games had become by the end of the 1980s.

The Arcade Game

Just before they completed Altered Beast in 1988, designer Makoto Uchida and his team quickly found themselves pushed towards their next project by Sega management – the bosses wanted another action game that ran on the System 16B hardware, but one that had similar appeal and play to Double Dragon, Technōs's arcade juggernaut. Uchida decided that it made no sense to try and match Technōs with a game set on the streets, and so he looked to a whole mythical world for inspiration. Thanks to his instincts, Golden Axe was a triumphant effort that helped broaden the scope of the beat 'em up genre.

The things that influence Golden Axe are fairly similar to those that helped give birth to Altered Beast – mythology and fantasy, particularly of a Western variety. While Uchida certainly gives plenty of credit to Western films such as Conan the Barbarian and Jason and the Argonauts (the latter referenced through the juddering movement of the game's skeletons), his main inspiration was The Lord of the Rings – he immersed himself in Middle-earth during the game's development, becoming a lover of J.R.R. Tolkien in the process. He was not alone in this approach – with Western-inspired JRPGs becoming such a big deal in the second half of the decade, figures like Tolkien were becoming much more inspirational in Japan. To paraphrase his words in a 2014 Retro Gamer retrospective, Golden Axe was less Double Dragon, and more Dragon Quest.

The game sees you pick from three wonderfully named heroes – Ax Battler, Tyris Flare and Gilius Thunderhead – who have all been wronged by Death Adder, the evil ruler of Yuria who has captured the king and the titular axe, Yuria's powerful emblem. You cut your way through many of the boss's henchmen, a lot of whom theatrically die with screams ripped from various '80s movies (including Conan), and stay on the screen once killed as opposed to disappearing. Magic will also help you – you pick up pots by kicking thieves who occasionally dart across the screen, and these can be used for a screen-clearing elemental attack. There are "Bizarrian" creatures that both heroes and enemies can ride, essentially acting as the game's limited weapons; and much like Double Dragon, our heroes have extensive and occasionally complex movesets.

Of course, this game features nothing but weapons – however, Uchida kept Golden Axe balanced by keeping people's proportions largely human, and adjusting a weapon's range accordingly. A sword may not have as long a reach here as a baseball bat does in Double Dragon, but it still satisfies, and it certainly makes for an intimidating encounter when a larger enemy, such as the hammer-wielding Bad Brother, enters the fray.

Golden Axe, while a huge arcade hit, was similar to Altered Beast in that it played an important role in helping to establish the Mega Drive as a successful console, with the excellent port coming out around Christmas of 1989. The series itself would be given console duty for the next couple of years with home-only sequels and spinoffs before Uchida himself returned the series to the arcade with 1992's almighty The Revenge of Death Adder. This period established Golden Axe as an important franchise for Sega in all areas, particularly in the pre-Sonic days. The original certainly stands out amongst the rest of Sega's late '80s output, and it's still a joy to find a machine in an arcade, ready for players to commit themselves to an epic battle.









Game Title: **Tetris**
Genre: **Puzzle**
Release date: **February 1989**
Published by: **Atari Games**
Developed by: **Atari Games**

"The changes that Atari made to Tetris were not destructive, but they proved to be influential - it laid the groundwork for Tetris as a competitive puzzle game"

Tetris began its arcade life in 1989 after slowly becoming a juggernaut on computers over the previous few years – initially gaining traction in Moscow, being ported to various Soviet computers, and then surfacing on Western micros and PCs from 1987 onwards. The game was a worldwide phenomenon by the time of its arcade release – Sega's version was Japan's highest-grossing cabinet in 1989, and Atari's was set for a lucrative NES port until a famous battle erupted over the rights to the game.

The Cabinet

Tetris uses a single M6502 CPU and POKEY sound chip – it had been years since Atari had released such a low-powered arcade game, but then this game doesn't exactly require dual M68000s or anything like that. The Tetris cabinet is also not complex – two joysticks and two buttons, with art that goes heavy on the faux Cyrillic "backwards R" theme for the game's title. The simplicity meant that it was easy enough for operators to convert a standard upright to Tetris, and it wasn't going to need much in the way of extras to sell anyway. There is also a cocktail version of Tetris, and a bartop model was also planned but never released – a prototype of it does exist.

The Arcade Game

The story of Tetris is the stuff of video game legend – a Soviet terminal operator named Alexey Pajitnov tries to recreate puzzles from his childhood, and in doing so he comes up with the concept for Tetris. In 1985 he creates the initial game on an Elektronika 60, it gets converted to more platforms, rises up from Moscow's computer banks and eventually spreads all over the world. Legal battles and famous wranglings are fought over the many rights to the game while Pajitnov initially sees no royalties due to being a government employee. Many documentaries and even a well-received 2023 film have been made about the battle for Tetris and its various cast of characters, from Nintendo and Henk Rogers to the Maxwell business empire and Robert Stein – but in the midst of all of this, an arcade version of Tetris appeared in early 1989. It was hardly the most striking game on the floor, but as it was already one of the world's best-known games by this point it hardly had trouble attracting custom.

While Atari's battle with Nintendo is one of the more famous parts of the Tetris story, that has more to do with the NES version of the game rather than the arcade – comparatively, obtaining the arcade rights to the game was relatively benign. Atari licensed them from Mirrorsoft in May 1988, who in turn had acquired them from Robert Stein of Andromeda Software – the man who made an agreement with the Soviet government department ELORG. The arcade version was largely worked on by programmers Norm Avellar and Kelly Turner, who had the coin-op passed on to them by Ed Logg while he set to work on the ill-fated NES conversion of the arcade. It's worth noting also that Atari sublicensed the Japanese arcade rights to Sega, who would set about making their own completely different take on the game.

Atari's arcade take on Tetris doesn't change too much about the gameplay's foundations – you are still, in the end, placing tetrominoes in a well and trying to make as many lines as possible. However, the game does play around with the formula in other ways, offering players a set of different challenges – you have a set of levels here in the arcade, and a quota of lines to meet. While the first few levels are simple, you'll soon have to navigate trickier wells that are already occupied by uneven sets of blocks, all while the various shapes from the I to the L and Z come down faster. This is also the first version to introduce simultaneous two-player Tetris, with both players aiming to beat levels as efficiently and with as high a score as possible – combining efficiency and a relatively empty well with the creation of doubles, triples and the four-line Tetris itself. Atari's playing around with the formula differed greatly from Sega's arcade interpretation – they opted simply to reproduce the classic "Marathon" format that was found in the original version, where you simply have to survive in the well for as long as possible without hitting the top.

The changes that Atari made to Tetris were not destructive, but they proved to be influential – it laid the groundwork for Tetris as a competitive puzzle game, a form in which the game is still highly popular thanks to modern versions like Tetris 99 and the Grand Master series. The legal battle between Atari (in the shape of home subsidiary Tengen) and Nintendo over the NES version of the game perhaps obscures this arcade somewhat, but it is quietly one of the very best early takes on one of the most famous titles of them all.









Game Title: **Hard Drivin'**
Genre: **Racing**
Release date: **February 12th, 1989**
Published by: **Atari Games**
Developed by: **Atari Games**

"The initial aim of the project wasn't even to create a game - Moncrief's original idea was to create a training simulator that could be sold to driving schools"

A realistic driving game that was four years in the making, Hard Drivin' was one of the very first fully 3D racers to hit the arcades. The game's cockpit view and stunt-packed track provided a feast for the eyes that the floor hadn't seen before, and even if the game was pretty expensive for operators (running at $7,995 for the environmental version), Atari still managed to ship a total of 3,318 environmental and standard cabinets for the game.

The Cabinet

The first iteration of Atari's 3D hardware, used in this game, was known as the "Driver" board – a monster consisting of a primary MC68010 CPU and three TMS chips that handled the polygons and many calculations. The hardware is similar to Namco's System 21 "Polygonizer" 3D board – indeed, both companies worked on the 3D hardware together until they split in 1987 (Namco's first game on this hardware, Winning Run, beat Hard Drivin' to the floor by a couple of months). The two main cabinet variants of the game are a large, boxy upright complete with seat, and a large environmental cab that gives the impression of a Ferrari – this deluxe cabinet also features a higher-resolution monitor than the standard version. Both cabinets also feature a hefty wheel that provides arm-shaking force feedback to budding motorists.

The Arcade Game

For years, arcade-goers had enjoyed putting the pedal to the metal – racing games, it seemed, had always been amongst the most popular of arcade titles. Not only that, these games often represented the cutting edge of the arcade, being the most technically advanced titles around – whether it was Namco's speedy Pole Position, or Sega's various Super Scaler games like Hang-On and Out Run. The end of the decade, however, would see Atari set the bar even higher – Hard Drivin' was the first fully 3D racing game to hit the West. For some, the game's polygons may have aged worse than the likes of the Super Scaler titles – but in 1989, Hard Drivin' felt like the arrival of the future.

Development on a 3D driving simulator at Atari started all the way back in the spring of 1985, although some of the game's building blocks, including a force feedback wheel, go back even earlier to 1982. The project leader was Rick Moncrief, who handled a team at Atari called "Applied Research", and they spent nearly three years simply developing the hardware and software. Accuracy was always the focus, largely because the initial aim of the project wasn't even to create a game – Moncrief's original idea was to create a training simulator that could be sold to driving schools, although this changed after market research showed that schools weren't wholly receptive to the idea. With that, development on Hard Drivin' proper started in 1988 – while the concept naturally became more gamified, a focus on realism would remain. A large part of this was down to the work of Doug Milliken, an expert on car modelling who assisted on making the handling of the car as realistic as possible (the game credits him as the "test driver").

The game gives you a minute and a half to ride around on the Hard Drivin' course, which consists of a Speed and Stunt track. As with any racer checkpoints will extend your time, but some parts of the track are certainly unique – a loop-the-loop, banking turns, dips, jumps and a great deal of traffic coming both ways are amongst the game's many standout touches. It's not always about raw speed – players may want to set a good time and challenge the Phantom Photon in the championship, but too much speed may result in flying way too far off a jump, or going over the aforementioned bank. Still, one of the most entertaining parts of the game is the spectacular crash – failure results in an instant replay, and it can be amusing to launch yourself into the sky off a loop, crashing down with a loud boom. For 1989, the simulation of driving itself is spot-on – while there may have been many more accurate sims released since this game's heyday, this was a new experience in 1989, one that earned effusive praise from contemporary reviewers like Commodore User's Nick Kelly, who said that the game "really does put you in the driving seat" and that it represented "a major first". As the game's title screen said, "you can't get closer to the thrill of real racing without a fireproof suit".

The lengthy time and expense involved in creating Hard Drivin' was worth it – not only was the game a success, but it provided the building blocks for other successful Atari 3D releases, such as S.T.U.N. Runner from just a few months later, and the likes of Steel Talons and sequel Race Drivin' in the early 1990s. It's also another important landmark for the genre – the arrival of Hard Drivin' on the track pointed to the genre getting more in-depth and serious about recreating the adrenaline rush of race day.









Game Title: **Ivan "Ironman" Stewart's Super Off Road**
Genre: **Racing**
Release date: **April 1989**
Published by: **Tradewest**
Developed by: **Leland Corporation**

"Super Off Road is quite the special entry into an old genre - a game where big trucks get thrown about like pinballs and yet never blow up"

Some might have thought that single-screen top-down racers would have been obsolete by 1989, but Super Off Road didn't just prove that they weren't – it showed they were in rude health, with the most chaotic and entertaining entry in the genre to date. This was Tradewest and Leland's most successful arcade by several laps – RePlay Magazine ranked it one of North America's most successful dedicated cabinets of 1989.

The Cabinet

For 1989, the hardware that's running Super Off Road is rather quaint – the game runs on a pair of Zilog Z80s and an Intel 80186, a somewhat underpowered configuration for the end of the decade, but that scarcely matters when the game's in action. The upright cabinet is somewhat plain with decals of the Ironman himself giving you a thumbs up on the side, but it's sturdy and built to last – each player has a big gas pedal they can put the hammer down on, and there's no locking mechanism on the steering wheel, meaning you can spin it as much as you want. For operators who wanted to shake the game up a bit, Leland started offering "Super Off Road: The Track-Pak" in 1990 as a conversion kit.

The Arcade Game

It's not exactly necessary for arcade games to have a whole bunch of depth, and sometimes it's not even important for them to be at the bleeding edge of innovation. The enduring popularity of the single-screen racing game is evidence of that – Atari's Super Sprint wasn't exactly technically amazing in 1986, but it became a massive hit with many players simply due to the sheer fun there was in speeding around circuits and bumping each other out of the way. Three years later, Leland's Super Off Road – complete with an endorsement from endurance racing king Ivan "Ironman" Stewart – would repeat the trick with an even more chaotic and entertaining title that gave more powerful games a severely bloody nose.

The origins of the game go back to late 1986, when designer John Morgan created "Redline Racer" for the ailing Cinematronics. This top-down racer was a fairly crude take on the Super Sprint formula, simply trying to get into the bigger game's slipstream – but it set the groundwork for Morgan to build on later, after Tradewest bought Cinematronics and rebranded it Leland Corporation. Morgan and his team already wanted to take the top-down concept off-road using dune buggies when a chance meeting with Ivan Stewart in a restaurant led to a deal for his endorsement and technical advice, and the dune buggies being switched out for trucks. According to a 2013 interview with Popular Mechanics, Stewart also ended up receiving seven Super Off Road coin-ops as part of his contract, which he largely gave to family and friends.

The game's eight tracks pit four racers against each other – the red, yellow and blue cars can be player controlled, but the grey one will always be Ivan Stewart's. If the others aren't manned by players, they're raced by "Jammin'" John Morgan, "Hurricane" Earl Stratton and "Madman" Sam Powell – named after the game's two main programmers and lead musician. The pull of the game is that it doesn't take any half measures when it comes to off-road racing – tracks undulate wildly, there's big jumps over water, and the trucks are bashing into each other all the way around four action-packed laps. It's the sort of game where a clean run through the hills and pits of a straight could take you from last to first, perhaps helped by a boost of nitro – and you'll need that to get ahead of Stewart in particular. Ivan Stewart's skill level is dynamic – he gets better or worse depending on your performance, meaning that if you dominate one track, you better believe he'll be right on your tail in the next one. Another interesting mechanic comes in the garage – you can upgrade acceleration, tyres and so on whilst buying up nitro, but if you want to get a head start on the competition you can pop another coin in and convert that credit to in-game cash.

Super Off Road is quite the special entry into an old genre – a game where big trucks get thrown about like pinballs and yet never blow up, it's got the same sort of appeal as the very best casual and kart racers. With the Sprint series finally starting to flag, it quickly took first place amongst the top-down field, and wasn't too far off from being 1989's most successful game – not bad at all for such a technically humble title, although that also translated into several relatively accurate home ports. Of all the top-down racers there've been in the arcade, there's a solid argument that this is the one that's endured the most over the years – and that's pretty appropriate for the Ironman.







Game Title: **S.T.U.N. Runner**
Genre: **Racing/Combat**
Release date: **September 4th, 1989**
Published by: **Atari Games/Namco/ Jaleco/Sega**
Developed by: **Atari Games**

"There's still a touch of old-school sensibility about S.T.U.N. Runner - even the best drivers won't make it to the end of the network, as the last track is endless"

Atari's second major full-3D title of 1989, S.T.U.N. Runner is a more futuristic counterpart to the racing simulation stylings of Hard Drivin'. Here, you blasted through highways and tunnels at speeds of up to 900 mph, being sure to shoot some enemies, avoid unkillable ones, and hit as many stars and boosts as you can. Technologically brilliant and with a very memorable cabinet, the hefty price of the arcade (running at around $10,000) didn't stop it from being a hit that was quite influential on the car combat genre.

The Cabinet

The S.T.U.N. Runner board, slightly upgraded from Hard Drivin', is a serious affair – the main CPU is a Motorola 68010, but the multi-layer board is full of chips that specifically handle polygons, mathematics and so on. The deluxe cabinet for the game is justifiably famous, and stands out from the more common cockpit-like cabs – it's fully open and very much built in the style of the racer you're controlling. You get a big bench to sit on, and a suitably large yoke for the game's controls. Seeing as S.T.U.N. Runner doesn't have acceleration controls, the bench is surprisingly flexible – it wasn't uncommon for smaller children to stand on it so that they could get a better angle on the screen.

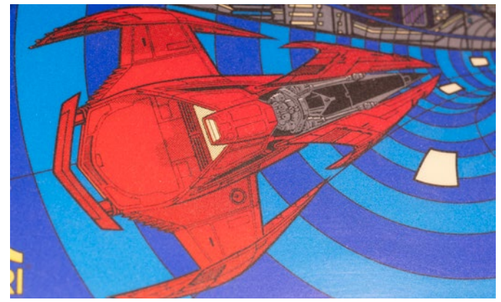
The Arcade Game

Going back to the golden age, 3D had always been a part of Atari's arcade line-up – there were big vector hits ranging from Battlezone to Star Wars, but even back then they had set their eyes on making a full-3D game with real-time polygons. To that end, the Dave Theurer-designed arcade first I, Robot was released in 1984 – but while it was a solid game, the technology wasn't reliable enough and the title flopped. It took another five years for the coin-op division to create a successful full-3D experience, and the one-two punch of Hard Drivin' and S.T.U.N. Runner in 1989 put Atari right back at the bleeding edge of arcade innovation.

The initial idea for S.T.U.N. Runner was submitted by designer Carole Cameron in a brainstorming session, but it wasn't Atari's first stab at tube-based combat. A decade earlier, programmer Owen Rubin completed a first-person tunnel shooter called Tube Chase that tested well but was rejected by Atari on the grounds of the cabinet being too expensive – eventually it was released by Centuri in 1982 as Tunnel Hunt, by which point it was a bit outdated. Now, Ed Rotberg – designer of 1980's Battlezone – was heading up S.T.U.N. Runner; when interviewed in 2021 for the Ted Dabney Experience, Rotberg recalled Rubin playfully reminding him that this was Rubin's ideal vision for Tube Chase in 1979. The creation of S.T.U.N. Runner was pretty straightforward – the team were, after all, working off of the foundations that had largely been built by Hard Drivin', and a great deal of Atari staff worked on both games. Parts of it were created at Atari's Sunnyvale mothership, while other bits were made across the pond at their Ireland plant in Tipperary.

The game features 23 tracks that comprise the "Space Travel Underground Network", consisting of tunnels, flat areas, and even parts that are still under construction. You drive as fast as possible through these courses, using blasters to take out anything in your way, and going even quicker with the help of boosts that you ride over. Stars give you bonus points, and there are also armoured drones that you can't just blow up with a shot – however, you do have a limited supply of quite spectacular shockwaves that'll take these down. The speed truly is something else – despite being over 30 years old, the game still moves at lightning pace; and yet there's almost a feeling of zen about it. In 2009, Craig Grannell of Retro Gamer proposed that S.T.U.N. Runner almost feels like a futuristic Out Run, and the comparison is quite apt – Rotberg was primarily interested in a game that felt good rather than creating something more realistic, a point where this game and Hard Drivin' differ wildly.

There's still a touch of old-school sensibility about S.T.U.N. Runner – even the best drivers won't make it to the end of the network, as the last track is endless yet filled with bonuses so you can get one final boost to your high score. At the same time, it's a technological wonder that was still, many years later, hard for consoles to handle – later emulations of the game on sixth-generation consoles (PlayStation 2, GameCube and Xbox) were criticised for not achieving the original's speed. Many hybrids of racing and combat, particularly the highly successful Wipeout series, have S.T.U.N. Runner in their DNA – and even now, it's got enough pace and feel to hang with even the sleekest of modern titles.









Game Title: **Teenage Mutant Ninja Turtles**
AKA: Teenage Mutant Hero Turtles (EU), TMNT: Super Kame Ninja (Super Turtle Ninja) (JP)
Genre: **Beat 'em up**
Release date: **October 11th, 1989**
Published by: **Konami**
Developed by: **Konami**

"Konami actually picked up TMNT in 1987 just before the quartet really caught fire, but Turtlemania was in full swing by the time the first game arrived on the NES in May 1989"

Arriving right at the very peak of Turtlemania, TMNT featured the four turtles on a typical quest to rescue April O'Neil and get the best of the evil Shredder, and it allowed a quartet of players to take their position around the arcade and become the heroes in a half-shell. The arcade game followed on from an already successful NES title, and would become one of Konami's biggest ever arcades – it shipped over 25,000 cabinets, and was the Western market's most successful machine since 1987's Double Dragon.

The Cabinet

A 68000-based arcade game, TMNT wasn't Konami's first four-player beat 'em up – that was Crime Fighters from earlier in 1989, and the controls and cabinet for TMNT are quite similar to that game with a joystick and two buttons for attack and jump. Konami's marketing for the game is intriguing – it was common for them to use real-life models posing as characters, so we have an unknown person portraying April O'Neil and appearing on the arcade's side art. A common issue with the cabinet was that the controls for the more popular characters would wear out simply due to heavy use – in this instance, Leonardo and Michelangelo were probably going to be much less responsive than Donatello and Raphael on a well-used machine (see also: Homer and Bart vs. Marge and Lisa on the 1991 Simpsons arcade).

The Arcade Game

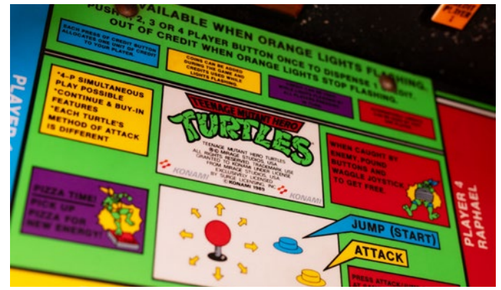
Originally starting life as a more adult-themed parody of popular comics before crashing into the mainstream with an animated series, movies and over a billion dollars' worth of merchandise, it's hard to overemphasise how big Teenage Mutant Ninja Turtles (or "Hero" Turtles, if you're British) was at the end of the 1980s – Playmates' products alone were, at the time, the third-biggest toy line ever behind only G.I. Joe and Star Wars. So many people made a lot of hay during Turtlemania, but few benefited quite as much as Konami, who picked up the licence at an early stage and rode it all the way into the stratosphere, resulting in several of the company's biggest ever titles.

According to a March 2023 interview with Jack Yarwood for Time Extension, producer Masahiro Inoue was the man responsible for Konami acquiring Turtles – he spent a couple of years in America heading up an R&D department, and was convinced on his return that tie-in games were the way to go. Konami actually picked up Turtles in 1987 just before the animated series aired and the quartet really caught fire, but Turtlemania was in full swing by the time their first TMNT-related game arrived on the NES in May 1989, becoming one of the console's biggest sellers. Five months later, the arcade game was released – the brand was at such a fever pitch that almost anything with the Turtles name would have sold, but Konami hit on a four-player beat 'em up that shared a lot of elements with Crime Fighters, a rather Americana-tinged brawler that the company worked on at roughly the same time.

TMNT is quite different, as a beat 'em up, to the likes of Golden Axe or Double Dragon – it's a lot simpler seeing as you only have a main attack, jump attack, and a special that's more like a strong attack rather than the list of commands you had in something like Technōs's game. The addition of more players perhaps necessitated stripping down the moveset so things didn't get too messy, allowing the game to concentrate on throwing lots of Foot Clan soldiers at you as well as environmental traps – although seeing as the Turtles already have their weapons, they can also use bits of environment against the enemy, launching parking meters and fire hydrants that replace the more traditional lead pipes and baseball bats. It also helps with the presentation, which really nails the cartoon – based off the first series of the animated series, it features most of the original rogues' gallery, from Bebop and Rocksteady to the Rat King and Krang, as well as a lot of voice samples and appropriately cheesy quotes. A lot of the voices don't come from the cartoon, although Shredder's "Tonight I dine on turtle soup!" is provided by the show's actor and the Fresh Prince of Bel-Air's Uncle Phil himself, the late James Avery.

The huge success of TMNT led Konami to acquire many more licences over the next couple of years – the likes of The Simpsons, Bucky O'Hare, Asterix and X-Men would follow directly in the Turtles' footsteps with similarly excellent and popular beat 'em ups, usually with fairly simple play and a focus on being faithful to the show and allowing lots of people to play (as many as six at once in the case of X-Men). Konami were, for a time, the very best at making a great game out of an existing IP, and the acquisition of the Turtles was one of the most important moves in the company's history.









HIDDEN TREASURES

Armor Attack

Genre: **Shoot 'em up**
Release date: **July 1980**
Published by: **Cinematronics**
Developed by: **Cinematronics**

Nowadays, the world of vector games is often reduced to the exploits of Atari and games such as Battlezone, Asteroids and Tempest. But they certainly weren't the only ones scoring in the world of XY – Cinematronics had some big vector hits in the early 1980's, and a lot of that was down to the work of one Tim Skelly, a fiercely independent designer who produced some great vector titles over the course of a couple of years. Armor Attack is a notable, if simple example – it's a tank-based shooter where you take out enemy vehicles on land and in the air, but the nooks and crannies in the stage and the look of the destroyed city combined with those bright lines do give the game a certain special feeling, even if this look was accomplished through a monitor bezel/overlay, as was the case with a lot of arcade titles in the late 70's and early 80's. Skelly's games would have a different, almost darker feel to the sort that Atari made, and he would score some more hits with the likes of Rip Off, Warrior and Star Castle, as well as attempting to make a very ambitious vector title based on War of the Worlds. Armor Attack also includes a strange easter egg – a morse code message in the intro that spells out 'don't register', inspired by his disgust over the U.S. Army's reinstated drafting policy that required all men over the age of 18 to register.

Demon's World

Genre: **Run n' Gun/Platformer**
Release date: **July 1989**
Published by: **Taito**
Developed by: **Toaplan**

Toaplan are mostly known for their classic top-down and horizontal shoot 'em ups – games such as Tiger Heli, Truxton and Zero Wing. 1989's Demon's World is something a little bit different from them, a side-scrolling platformer with a more cartoony horror theme; you play as an unnamed ghost hunter who certainly looks quite cool with his blonde hair and Ray-Ban's on, and you make your way through ten stages filled with the usual assortment of spectres and otherworldly beings you'd expect to find in such a game, whether they're fire-spewing bats or enemies based on Jason and Frankenstein's monster. The game does feel a little like an unofficial Ghostbusters title, or at least something that's heavily inspired by it – happily it's a more engaging game than the official Real Ghostbusters game that Data East produced for the arcades, and it does feature a healthy amount of different weapons such as lasers, 3-way shots and the like, as well as a double jump feature for navigating some of the trickier platforming sections. There are also two versions of this title; the Western release tends to stick to more conventional settings such as modern towns, while the Japanese version features enemies and surroundings that are much more based in the country's mythology and filled up with yōkai for you to zap. Either way, this isn't Toaplan's most successful game by any stretch, but it certainly takes them out of their comfort zone.

Don Doko Don

Genre: **Platformer**
Release date: **July 1989**
Published by: **Taito**
Developed by: **Taito**

If you asked arcade fans to name a single-screen game by Taito, they'd likely go straight to 1986's almighty Bubble Bobble – but that's far from their only worthwhile contribution, with 1989's Don Doko Don also standing out as a very capable game. You play as an old dwarf armed to the teeth with a mallet, and you need to hammer each enemy in the stage to stun them – you can then pick them up and ideally chuck them at other enemies, picking up the fruit that they leave behind. Power-ups can also help you out, potentially giving you the ability to kill enemies instantly or throw hammers in their direction. The similarities to Bubble Bobble are pretty clear and while Don Doko Don isn't quite as in-depth as Bub and Bob's adventure, it does run on the much more powerful F2 System hardware, allowing the game to present some pretty nice settings for the carnage, as well as appropriately imposing boss fights every 10 levels or so. The title's a romp, and it fits right in with other cutesy games that Taito produced, whether it's Bubble Bobble, The NewZealand Story or Liquid Kids – with this in mind, it's surprising that the original arcade release of the game never left Japan, and one wonders if the game was seen as a bit too derivative. It may not be the most original game ever made, but it's certainly worth seeking out, and it has come out in the West several times as part of arcade compilations such as Taito Legends 2.

Exterminator

Genre: **Shoot 'em up**
Release date: **February 1989**
Published by: **Premier Technology/Gottlieb**
Developed by: **Premier Technology/Gottlieb**

Following his time at Gottlieb, Warren Davis spent most of the 80's working at companies like Williams and Midway, where he'd become a central figure in the development of digitised graphics for games, helping to create the Z Unit, Y Unit and T Unit systems that powered the likes of 1988's NARC, as well as later 90's megahits like Mortal Kombat and NBA Jam. Exterminator, a 1989 title released by Premier Technology under the Gottlieb name, is hardly the most famous example of Davis's digitised exploits, but it may be the strangest – it's a game where you move from room to room and use a flying disembodied hand to administer some serious pest control by grabbing insects out of the sky, pounding them with your fist, even firing bug spray and lasers through your finger. Exterminator was very likely the first arcade game to be composed entirely of digitised graphics, and unfortunately it wasn't a success – an unreliable house-shaped dedicated cabinet and the general weirdness of the whole thing tended to put operators and players alike off, and it was also a bit more expensive than most other games released at the time due to it being a dedicated cab and not a conversion kit – as a result, only 250 Exterminator cabinets were ever produced. The game does have something of a cult following however, and it's unquestionably a very different beast to the more conventional arcade games that dominated 1989.

Flicky

Genre: **Platformer**
Release date: **May 1984**
Published by: **Sega**
Developed by: **Sega R&D 1**

Can you, Flicky, save the little baby Pio-Pio's from the evil Nyan-Nyan? That may sound like a strange sentence but in a nutshell, that's the plot of this exceptional side-scroller from Sega – you control a blue bird that may well look familiar, and you have to grab the little chirps and bring them back home, avoiding cats that want you for their supper. Also known as Busty and Flipp over the course of its development, Flicky is a fast-paced game, one that greatly rewards grabbing as many baby birds as possible and bringing them all home at once, and there's a lot of jumping going on – it's tricky, but very satisfying to jump over a cat while you've got a line of chirps in tow, and you can also stun the felines temporarily by throwing items like cups or hammers at them. Flicky was a hit back in the day even if the game itself isn't hugely remembered now, but the main bird himself would make cameos in a lot of other titles – he most famously appears in the Sonic the Hedgehog series where he often bursts out of a destroyed badnik, and the Mega Drive game Sonic 3D Blast is something of a spiritual successor to Flicky when it comes to the mechanics of rescuing birds and bringing them to safety.

Heavy Metal

Genre: **Shoot 'em up**
Release date: **March 1985**
Published by: **Sega**
Developed by: **Sega R&D 1**

Sega had previous when it came to armoured vehicle shooters – 1981's Borderline, a rather mazey top-down jeep game, was an early hit for them, as was 1983's Regulus; a game that took the Xevious formula as inspiration, only using a tank rather than a fighter jet. 1985's Heavy Metal is another tank shooter, and not as famous as these other titles – this System 2-based game only ever came out in Japan and was never ported to a home system, but it's something of a hidden gem. The unique mechanic in this title is that while you've got your regular shots for dealing with enemies at close range, you've also got a big cannon that can fire shells right up to the other end of the level – a radar helps you track the enemies and fortifications, and you can take a pot-shot at those pips whenever you like; it's very satisfying indeed to take something out in this manner with a suitably satisfying explosion, although you have to watch out for enemy vehicles that can do the exact same thing to you. Heavy Metal was the debut game for Hiroshi Aso, who'd go on to have a distinguished career at Sega, working on titles such as Space Harrier, Thunder Blade, Ristar and House of the Dead, but this early title is still one of his best.

I, Robot

Genre: **Shoot 'em up/platformer**
Release date: **June 1984**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

A combination of two unfinished 3D games called Ice World and Heart of Ice, I, Robot was the first video game made entirely out of rasterized polygons, a great leap over earlier titles such as Cube Quest that combined polygons with LaserDisc footage. Dave Theurer's game was far ahead of its time – you move the robot around the stages, filling in the platforms and making sure not to be airborne whenever Big Brother's eye opens. Once you've filled the stage, you can poke him right in that evil eye before flying off to the next level, making sure to shoot down as many tetras as possible, with a battle against the disembodied head of Big Brother happening every few stages – there's a lot going on, and there's even an option to enter Doodle City and simply screw around with shapes for three minutes if you don't feel like playing anything. I, Robot still plays well four decades later, and the aesthetics have held up better than many later 3D titles – but it wasn't successful at the time, only getting mixed reviews from magazines such as Play Meter. The cabinet, lifted wholesale from the earlier Firefox, had a lot of issues such as failing chips and a hall-effect joystick that often broke down, and the poor state of the arcades in North America didn't exactly help, but if I, Robot came out a few years later than it actually did, it may well have been as successful as it was revolutionary.

I'm Sorry

Genre: **Action**
Release date: **April 1985**
Published by: **Sega**
Developed by: **Coreland**

If you think that the arcade floor isn't an ideal venue for political satire, then think again. Sega's I'm Sorry is certainly a strange beast – you play as Kakuei Tanaka, former Prime Minister of Japan, and this game is based around his history of corruption; you have to collect gold bars and take them to the bank in each stage, landing a big punch on anyone who might get in your way. Enemies in the game include the likes of the legendary pro wrestler Giant Baba, a comedian named Tamori, Madonna, Carl Lewis, and Michael Jackson – just the sort of group you'd expect to be formed in order to stop this PM's scandalous behaviour. Even the indestructible barrel is apparently a commentary on the real-life PM's practice of rewarding barrels filled with pork to those he wished to curry favour with, and let's not even get into the rather kinky things that happen whenever Tanaka gets caught by one of the outraged celebs. And yet, as out there as the game is, I'm Sorry is actually a pretty good game in the Pac-Man vein – the quality of the gameplay makes it easy to stick with this title, just to see how weird it can get. The weirdest thing of all may be that despite having a plot that would be completely incomprehensible to those not familiar with Japanese political scandals, I'm Sorry did get a Western release later in 1985; shockingly, it wasn't very successful in the United States.

Journey

Genre: **Action**
Release date: **March 1983**
Published by: **Bally Midway**
Developed by: **Bally Midway/ Marvin Glass & Associates**

It may seem like an odd idea to make a game based off of the rock band Journey, but Bally Midway, riding high after the success of Tron, were keen to do it, as were the band. The aesthetic of the game is based on the artwork for their 1983 album Frontiers, and much like Tron, Journey features a selection of mini-games where you have to guide members of the band through single-screen stages to retrieve their equipment; for example, Steve Perry makes his way through a set of gates in order to get his microphone, which he can then use to destroy the gates on his way back to the band's Scarab vehicle. The game features digitised faces of the band, something that looks crude nowadays but was innovative then – they were shot on a camera designed by Ralph Baer that was initially going to feature in a game called Clone where the player would take pictures of themselves, but this got canned after the designers realised that people were far too eager to use the technology to photograph their genitalia. Completing all the mini games rewards you with a bonus level where you stop the band's screaming fans from invading the stage while a tape loop of the song Separate Ways plays out, and even if the premise of the title is somewhat cringey, the game itself is actually fun – the minigames are very engaging, and in the end it's simply an enjoyable and curious artefact from the golden age.

Jungler

Genre: **Maze**
Release date: **December 1981**
Published by: **Konami**
Developed by: **Konami**

In a year where Konami released the likes of Frogger, Scramble, Amidar and Super Cobra, Jungler was a game that unfortunately got lost in the shuffle. This single-screen title puts you in control of a segmented snake, on a quest to gobble up other snakes. To do so, you have to become bigger than them – this is achieved by shooting bullets at their head, knocking one segment off with each shot and taking them for your snake, although naturally they can do the exact same thing to you. The enemy snakes are helpfully colour-coded – if they're red they're bigger than you, if they're yellow they're the same size, and the green ones are smaller and can be eaten. The appeal of Jungler is quite similar to that of Joust, in that it's a very fair game – both you and the enemy snakes have the exact same abilities so it's a pretty even playing field, and even if you get knocked all the way down to a single segment, it's still very much possible to work your way back, using the faster speed of the smaller snake to outmanoeuvre enemies and win back the segments you lost. It's a shame that precious little is known about Jungler's development, but while the game was largely ignored in 1981, it's often praised by those who discover it – something made easier nowadays by its recent inclusion in Hamster's Arcade Archives collection for the Switch & PS4.

Maze Invaders

Genre: **Action**
Release date: **1981 (unreleased)**
Published by: **Atari, Inc.**
Developed by: **Atari, Inc.**

There are a lot of games that Atari worked on that ended up falling through the cracks and never getting released, and some of them are pretty good indeed – good enough that you wonder why they didn't get a shot on the arcade floor, although the answer is usually because the game didn't test well when it was put out on location, something that many Atari arcade games essentially lived and died by; if a title didn't perform well, it would either be brought back for changes or simply scrapped altogether. Ed Logg's Maze Invaders from 1981 is one such title, a game that's something like a cross between Pac-Man and Berzerk; you make your way through mazes that change every time you play, picking up gems that'll open up the doors to another room and making sure you don't get zapped by the enemies. It's a very engaging title, but when interviewed for Richard Rouse III's Game Design: Theory and Practice, Logg felt that there was too much waiting around in the game, and that was the reason why it eventually failed in location testing. Despite this, interest in the game has steadily increased over the years as people learned more about it and were eventually able to unofficially play it, and the game was finally made officially available in 2022, when it was included in Atari's 50th Anniversary Collection alongside several other unreleased prototypes, including the equally notorious arcade game Akka Arrh from 1982.

Mikie

Genre: **Action**
Release date: **October 1984**
Published by: **Konami**
Developed by: **Konami**

Mikie is not the most famous of Konami arcade games, but it's certainly one of the funniest – you play as a high school student who causes unrest in the quest for hearts, bumping fellow students off their chairs, chucking basketballs around in a laundry room, destroying roasts in the kitchen and all the while avoiding the exasperated teachers that are forever chasing him around. These teachers can also be thwarted in quite violent fashion by headbutting them in the face, which will momentarily stun them – in Japan the game was actually changed completely because of this as Konami didn't want to be seen promoting violence in schools, so the Japanese version is set in an office and you play as a salaryman who shouts at his foes as opposed to butting them, a change that actually makes the game a lot harder due to the shout's greatly decreased range. The music is also interesting, featuring versions of the Beatles songs A Hard Day's Night and Twist and Shout; while people often assume this music was ripped off without permission, both songs were actually licensed for use in the game. Mikie's concept is hilarious whether you're headbutting or shouting at the staff, and it's married up with an engaging gameplay loop – the result is a game that's highly underrated, although it's possibly best known in the UK due to the fantastic ZX Spectrum conversion made by Jonathan "Joffa" Smith.

Ordyne

Genre: **Shoot 'em up**
Release date: **September 1988**
Published by: **Namco**
Developed by: **Namco**

Ordyne is an earlier entry into a special sub-genre of shoot 'em up known as the "cute 'em up", where the surroundings and enemies tend to be much more colourful and cheerful than the more regular space armada and world war settings you'll find in the majority of shooters. While the likes of Fantasy Zone and TwinBee were amongst the first games of this type, Ordyne may be one of the best, with little to fault about its classic shoot 'em up mechanics and range of power-ups, one of which does include a cheeky cameo for Pac-Man, in which he functions as a smart bomb. This particular mission to rescue a fiance goes through seven action-packed rounds, and it's actually pulling off some pretty impressive technical stuff – the game uses Namco's System 2 board and there's a lot of impressive scaling and rotation effects going on that weren't usually found in games like this, something that Namco would also deploy in other System 2 games like 1989's Phelios and 1990's Marvel Land. Disappointingly, the original arcade version of Ordyne did not get a release outside of Japan despite being successful here – however, the PC Engine port of the game was released on the North American TurboGrafx-16, and from there the game has developed something of a cult following. The original arcade did eventually get a Western release in 2022 through Hamster's Arcade Archives.

Psycho-Nics Oscar

Genre: **Run'n Gun**
Release date: **August 1987**
Published by: **Data East**
Developed by: **Data East**

A powerful slice of mechanized action that's likely far more influential than you think, 1987's Psycho-Nics Oscar sees Data East take their usual brand of hi-octane side-scrolling to a setting that's something of a cross between sci-fi and fantasy, a mysterious place called Ordio City that's full of both towers and thickets. The eponymous mech that you control has, as is often the case, a lot of weapons and abilities – but interestingly, this game uses a Gradius-style system to dish out the power-ups, allowing you to stock up on capsules and activate them as they're needed. These capsules also make a lot of difference beyond simply providing different and more powerful weapons and sub-weapons – they'll majorly improve Oscar's speed and jumping abilities, and the game is similar to Gradius in that a completely unpowered Oscar is just about useless at points, especially in the later stages, so it's very important to keep him alive. This is a tremendous game, one that deserves to be known just as well as Data East classics like Bad Dudes and RoboCop, but sadly it isn't – possibly because it never received any ports outside of the arcade. However, it did inspire something major; the coder Manfred Trenz played this machine an awful lot, and in 1990 he would use it as the main inspiration for the classic and highly influential computer game Turrican.

Quantum

Genre: **Action**
Release date: **November 1982**
Published by: **Atari, Inc.**
Developed by: **GCC**

General Computer Corporation's (GCC) Quantum from 1982 has the special distinction of being the first arcade game to use a 16-bit Motorola 68000 processor in its hardware, the chip that would go on to power the majority of arcade titles in the latter half of the decade. The game itself is a strange colour vector title from Betty Ryan (née Tylko) where you control a probe with a trackball and use it to make circles around atomic particles, while avoiding others that'll destroy you if you touch them – it's in the same family of games like Qix in that there's something of a risk-reward element where encircling a large number of particles earns you a lot of points but can be fraught with danger; Namco's Libble Rabble from 1983, also a 68000-based game, uses similar mechanics but with twin sticks as opposed to a trackball. The cabinet could be slightly temperamental, especially when it was initially shown – on his website, Atari programmer Jed Margolin recalls being in charge of Quantum at an Amusement & Music Operators Association (AMOA) show and surreptitiously resetting the game on and off every 10 minutes to ensure that it was consistently playable. Only about 500 Quantum cabs were produced, but there aren't a lot of other golden age arcade games like it, it doesn't take long for it to become very frantic and engrossing, and it does hold an important place in arcade history as the game where a very important chip made its debut.

Saint Dragon

Genre: **Shoot 'em up**
Release date: **March 1989**
Published by: **Jaleco**
Developed by: **NMK**

Saint Dragon, also known as Tensei Ryuu in its native Japan, is quite possibly the greatest entry in a rather small niche of horizontal shoot 'em ups where you play as a dragon, with the likes of Irem's Dragon Breed – also from 1989 – running it pretty close. The unique mechanic in such games is that as a dragon, you have a segmented body and tail that's immune to most shots, and can therefore be used as a makeshift shield – only the dragon's head is vulnerable. When you play this game, you're quickly going to have to learn how to use that body correctly, as this is a tough shooter that's more than ready to fire projectiles at you from all directions, and while the dragon has several different ways to power up and fire multiple weapons back, having your head sticking out will often result in a quick death – only mastery of the dragon's movement will see you make your way through five levels against this particular army of cyborg nasties, and there's plenty of invulnerable obstacles to make your way through, a la R-Type. While Jaleco and NMK's game was never the most famous of shoot 'em ups, Saint Dragon was popular enough to receive several conversions to systems like the PC Engine, as well as microcomputers like the Amiga and even the ZX Spectrum, and it's been available through Hamster's Arcade Archives series since 2020.

Snacks'n Jaxson

Genre: **Action**
Release date: **December 1984**
Published by: **Bally Sente**
Developed by: **Bally Sente**

Arcade games, particularly from the 80's, aren't necessarily known for plots and concepts that are grounded in reality, but something like Sente's Snacks'n Jaxson from 1984 really stretches credulity to a breaking point – it's even stretchier than this guy's elastic neck. This title, one of the weirdest arcade games of them all, has you play as a clown named Jaxson de Box who so happens to be very hungry; he takes his day's meals by using his incredibly long and flexible neck to chomp up the food that's flying around all over the place, although there are certain items such as soap bars that he has to avoid. Also, he has to juggle his red nose as it goes into the screen and then comes back – we wouldn't want that to smash the window behind him, would we? The game was made by a man named Dave Ross who worked on several other games for Sente, and sadly little is known about the inspiration for this title – but the game itself is quite entertaining and definitely one of Sente's better arcade efforts, even if it is also one of the strangest games of the whole decade. Snacks'n Jaxson was not a success in the slightest, although Jaxson de Box did have a couple of brief cameos in 2012's Wreck-It Ralph. As the unused text from the game's attract mode says, Jaxson will stick his neck out for you if you stick in a coin for him.

SonSon

Genre: **Platformer**
Release date: **July 1984**
Published by: **Capcom**
Developed by: **Capcom**

SonSon was Capcom's 2nd ever arcade game, the first game that Yoshiki Okamoto created for the company, and it is unfortunately one of the least remembered of Capcom's early games when compared to the likes of 1942 and Ghosts'n Goblins. The game itself is an auto-scrolling platformer where our monkey boy hero can jump up and down between levels, shooting energy bolts from a stave and dodging enemies. The game is similar to the likes of Moon Patrol and Scramble in that it feels like one continuous level, only split into 20 segments with the occasional pause for a fight with guards, and this is quite appropriate considering what this game is based on. SonSon is arguably the first of many games that take inspiration from the Chinese novel Journey to the West – the main character is based on Sun Wukong and the 2nd player, TonTon, is based on Zhu Bajie, a humanoid pig. When you complete all 20 segments, you finally come across a statue of Buddha, just as in the novel, before the game loops. SonSon did get a release outside of Japan, presumably trying to capitalise on earlier popular adaptations of the story in the West such as Monkey from the late 1970's, but it didn't perform quite as well as it did in Japan. A 1989 Japanese-only PC Engine sequel, SonSon II, is also something of a hidden treasure – a console sequel that takes a lot of inspiration from the 1987 hit Black Tiger.

Us vs. Them

Genre: **Shoot 'em up**
Release date: **June 1984**
Published by: **Mylstar Electronics**
Developed by: **Mylstar Electronics**

Mylstar (formerly Gottlieb) scored a hit during the LaserDisc boom in 1983 with the rock-solid M.A.C.H. 3, a flight combat game that saw you whizzing over terrain, taking part in dog fights or bombing enemy locations. Their second LaserDisc game, Warren Davis and Dennis Nordman's Us vs. Them, would be even more ambitious – you're defending yourself against alien invasion in this shoot 'em up that takes place from several different angles, whether it's a ¾ view, directly behind the ship, or from the side. There's Return of the Jedi-esque parts where you're dodging trees in a forest, others where you're flying through a city, it all leads up to big battles in the alien base itself and the action is peppered with intermissions featuring suitably B-movie-esque cutscenes and acting. While the plot is fun, the gameplay's really strong here – Us vs. Them has a lot more depth than the likes of Dragon's Lair, taking on multiple shoot 'em up forms and pulling them off very well, and the result is one of the best LaserDisc games of the era. However, by the time it came out as a conversion kit for M.A.C.H. 3 machines, the bubble had burst – a great deal of distributors refused to pay for their orders of M.A.C.H. 3 cabs resulting in the start of costly legal proceedings, and the failure of Us vs. Them was one of the final nails in the coffin for Mylstar, who were shuttered by parent company Coca-Cola in September of 1984.

Valkyrie no Densetsu

Genre: **Action-adventure**
Release date: **March 1989**
Published by: **Namco**
Developed by: **Namco**

Valkyrie no Densetsu, also known as The Legend of Valkyrie, is another game that unfortunately didn't make it outside of Japan, and it's a real crying shame in this case. This title is more in-depth than what you'd usually find in a 1980's arcade game, a top-down game with some serious RPG elements and a story involving the kingdom of Xandra Land and a search for the golden seed. Namco had previous in this department, particularly with 1984's genre-defining Tower of Druaga, although Valkyrie here is thankfully much less unforgiving – it's a much prettier adventure with a much more relaxed difficulty curve as opposed to Druaga's brick wall of pain, and it comes with a beautiful, symphonic-style score, something that really makes the game feel like it belongs somewhere in the mid 90's, as opposed to 1989. Oddly, this title took an opposite path from the one that most games take, in that Valkyrie's original adventure actually happened on the Famicom in 1986, in the game Valkyrie no Bōken – this arcade sequel retains similar gameplay to the home original, but it certainly makes major leaps in every other department, as well as giving a 2nd player the chance to join in and play as the lizardman Kurino Xandra. While the game never left Japan, the Valkyrie character has made several cameos in other Namco games ranging from a hidden boss fight in Tales of Eternia, to an extra costume for Cassandra in Soulcalibur II.

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HIGH SCORE
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INSERT COIN
BERTHILDAS CASTLE
LEVEL 1
HIGH SCORE
20000
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3260 HI 20000 2P
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STAGE 2
TIME
SPEED
POINT I
TIME 076
CARS PASSED
TIME: 04

WHO'S WHO

Bill Adams

Bill Adams was a contractor at Honeywell when he received a cold call at his desk, asking him if he was interested in making games. It sounds a bit like a scam, but the call came from Bally Midway, and Adams was interested – so he met them, and was hired as a senior programmer, working first on 1981's Kick-Man and Satan's Hollow. In 1982, he and George Gomez were chosen to take the lead on a licensed game for the film Tron, and the end result was spectacular – a collection of mini-games inside one of the 80's most iconic arcade cabinets that proved very popular with folks who wanted to feel like they were in Flynn's Arcade. While sequel-cum-spinoff Discs of Tron wasn't as successful, Adams and Gomez would score another major hit with Spy Hunter in 1983, another one of the golden age's most memorable and successful titles. Adams was briefly at Mylstar before that company closed, and his final arcade game was 1989's Triple Play for Williams – as of 2016 he was a self-employed contractor and programmer of gambling games for casinos.

Dona Bailey

Previously an assembly programmer for General Motors, Dona Bailey became curious about games thanks to the song Space Invader by The Pretenders, getting hooked after playing the game said song was inspired by. She was hired by Atari in 1980, becoming the only woman working in their coin-op department (In a 2015 interview with VICE, Bailey believed she was one of only a handful of women in the USA with assembly programming experience at the time) and finding the idea that spawned Centipede from the division's brainstorming netbook – she then worked on the game itself alongside Ed Logg. While Centipede was Bailey's only released game from Atari, she did work on an unreleased title called Weather War (also known as Cloud 9) before leaving in 1982 to join Videa, a company formed of ex-Atari people such as Ed Rotberg and Roger Hector. Bailey left the industry in 1984, later becoming a professor at the University of Arkansas.

Mark Cerny

Raised in San Francisco, Mark Cerny dropped out of Berkeley in 1982 to join Atari at the age of 18, initially working on games such as Millipede and Major Havoc and then scoring a hit of his own with Marble Madness. Cerny left Atari not long after this to work with Sega in Japan where he designed the 3-D glasses for the Sega Master System, and later set up Sega of America's STI, or Sega Technical Institute, taking a role as producer on Sonic the Hedgehog 2. His next job at Crystal Dynamics resulted in establishing contacts with Sony, and on joining them in 1998, initially working on the graphics engine for the PlayStation 2, working with companies he had close connections with such as Naughty Dog and Insomniac and helping to bring them under Sony's wing, and later becoming the lead designer for the PS4, PS5 and PS Vita. Now aged 60, Cerny is still with Sony, and was inducted into the Academy of Interactive Arts & Sciences (AIAS) Hall of Fame in 2010.

Brian Colin

Brian Colin's first video game credit was as a character animator for Bally Midway's Discs of Tron in 1982, and since then he's worked on over 90 games. 1984's Zwackery was the first game for which Colin took a credit as a designer, but his most famous work came when he partnered up with Jeff Nauman – their first title together was 1985's Sarge, and they followed that up with the 1986 smash hit Rampage, a game where many players happily took out their frustrations or just screwed around as they tore their way through the state of Illinois. Colin's style of games, more based on having fun rather than trying to reach an end or achieve a high score, was further cemented with games such as 1987's Xenophobe, as well as other projects that he worked on with Nauman including Blasted, Arch Rivals, and Pigskin 621 A.D. Colin and Nauman left Midway to form the independent company Game Refuge in 1992, creators of games such as General Chaos and Rampage: World Tour, and the company still exists today. He did film a cameo for the 2018 film based on Rampage, although his scene ended up on the cutting room floor.

Warren Davis

Warren Davis found his way into games around Christmas of 1981 when he joined pinball company Gottlieb's nascent video games division, where he'd soon stumble upon a pattern of hexagons that artist Jeff Lee had created for another programmer named Kan Yabumoto – this pattern would evolve into a pyramid, and that pyramid would be the basis for Q*bert. While Davis's sequel to the game, Faster, Harder, More Challenging Q*bert, would go unreleased, he also worked on Us vs. Them, a forgotten laserdisc gem that mixed shoot 'em up action with a suitably corny B-movie storyline. Following the collapse of Gottlieb/Mylstar in 1984, Davis joined Williams and would become crucial in the development of digitised graphics for video games, developing early systems for video digitization that he would also have a hand in improving over the years. Later, at Midway, Davis would be part of the teams for games such as Mortal Kombat, Terminator 2: Judgment Day, NBA Jam and Revolution X, while also briefly joining former Gottlieb associates at Premier Technology to create 1989's Exterminator, the first arcade game that consisted entirely of digitised graphics.

Rick Dyer

It took a couple of years for people to see Rick Dyer's vision for interactive cartoons, as an initial static image-based concept titled Secrets of the Lost Woods failed to grasp people's imagination. However, he was able to realise it after getting in touch with Don Bluth – the resultant arcade game, 1983's Dragon's Lair, would be one of the biggest hits of the golden age. Dyer was at the helm of his own company, RDI Video Systems, and explored the interactive concept further with his next title, 1984's Thayer's Quest – this game wasn't a success thanks to the quick end of the LaserDisc boom, although it does have a cult following and was later remade for the 3DO as Kingdom: The Far Reaches. Other Rick Dyer projects include the Halcyon; a LaserDisc-based console that was never fully released, as well as the PC game Kingdom II: Shadoan. After 20 years in the games industry, Rick Dyer eventually became a real estate agent in California.

Masanobu Endō

While a lot of Masanobu Endō's most famous titles aren't very well known in the West, they were pretty big deals in Japan, and he is undoubtedly one of Namco's most important arcade game designers. 1982's Xevious was essentially a one-man show where Endo designed the game, programmed it and drew the graphics, and it would become one of the most successful and influential shoot 'em ups of the entire decade – he also made a spin-off of the original game in 1984 called Grobda, a tank-based arena shooter. Despite the success of Xevious, Endo's magnum opus is undoubtedly the Babylonian Castle Saga, beginning with 1984's The Tower of Druaga, a highly important game that combined arcade action with role-playing elements that would inspire many other action RPG's, including Ys and The Legend of Zelda, Shigeru Miyamoto being full of praise for Endo's work in a 1986 conversation for Japanese magazine Famimaga. Endo went independent following Druaga, forming the Game Studio Corporation, but would still regularly work with Namco on other Babylonian Castle games such as The Return of Ishtar and the Famicom-only Quest of Ki. Nowadays, Endo is the President of the Japan Digital Game Association, and a Professor at Tokyo Polytechnic University.

Noah Falstein

Fascinated with games from a very early age, Noah Falstein's career started in 1980 at Milton Bradley, before taking a job at Williams. Along with making contributions to Joust and Mystic Marathon, Falstein would take the lead on Sinistar – but although his time at Williams was relatively short, Falstein would make his biggest impact on games at LucasFilm Games (later LucasArts) – he was one of the company's first employees and would spend 10 years there, co-designing and project leading on games such as Koronis Rift, Battlehawks 1942, Strike Fleet and, most famously, Indiana Jones and the Fate of Atlantis. Falstein has largely worked at the head of his own consultancy business, The Inspiracy, since 1996, and he was Google's Chief Game Designer from 2013 to 2017. He has also taken playtesting roles on modern LucasArts-style adventure games such as Thimbleweed Park and Return to Monkey Island.

Jamie Fenton

Jamie Fenton was studying and working at the University of Wisconsin when she took a job at Dave Nutting Associates, primarily working on pinball machines (including 1976's Bally Fireball Home Machine) as well as early arcade video games such as 1976's Amazing Maze, and 1977's Checkmate. In 1981, Fenton made GORF – a multi-scene shoot 'em up that would become, by some distance, her most successful title. Fenton's next arcade game, 1981's The Adventures of Robby Roto, wasn't nearly as big a hit, but Fenton would continue on to have a long career in the software industry for various companies, producing MacroMind VideoWorks in 1985 (the precursor to Macromedia Director), working on a children's computer environment called Playground, and also holding positions at companies including TiVo, Amazon, and the Stanford Research Institute (SRI).

Akira Fujita

Akira Fujita hit the ground running at Taito with his first game – he and Hiroshi Tsujino made Arkanoid in 1986, a hit re-imagining and evolution of the classic Breakout formula. Fujita's other arcade games from Taito would largely be similar in terms of playing around and trying to revitalise older styles of game – 1988's Raimais was a dot eater in a similar vein to Pac-Man, and 1990's Cameltry sees the player move a ball around a maze to try and get to the goal, rotating the maze in order to get there as fast as possible. Fujita was also the co-designer for 1987's Darius alongside Junji Yarita, a highly acclaimed and very successful shoot 'em up famous for its three screens and space-cum-aquatic theme.

Tokuro Fujiwara

Tokuro Fujiwara, also known as "Professor F.", was a student at the Osaka Designer's College before joining Konami in 1982, where he made his first arcade games – Roc 'n Rope and Pooyan. However, he would be most famous for his work at Capcom from 1983 onwards – over the next few years he was the planner on games such as Vulgus, Ghosts 'n Goblins, Commando, Tiger Road, Bionic Commando and Ghouls 'n Ghosts, also taking a management role in the development of Strider. After being transferred to Capcom's domestic division later in the 80's, Fujiwara would be the head producer for the Mega Man series from the 2nd entry onwards, designed the cult Famicom RPG Sweet Home, and was also the producer on the first Resident Evil game, using his experience on Sweet Home to help design the title. Outside of Capcom, Fujiwara directed the 2 Tomba! PlayStation games at the head of a new company called Whoopee Camp, designed 2009's MadWorld for PlatinumGames, and recently returned to Capcom to direct 2021's Ghosts 'n Goblins Resurrection.

Steve Golson

Steve Golson was part of a group of MIT dropouts who, having had experience operating an arcade on campus, thought they could make a business out of enhancing arcade games – General Computer Corporation, or GCC, was the result. Their first hack, 1980's Super Missile Attack, was a popular one that made a lot of additions to Missile Command, but Atari weren't best pleased about it; therefore they sued. However, the little company fought back hard and were possibly looking like they were going to win the case until the companies eventually settled, with GCC actually being hired by Atari. It was during this time that a GCC hack for Pac-Man, Crazy Otto, was picked up by Midway in 1981 and turned into Ms. Pac-Man, the most successful arcade game ever made in North America. GCC would also make Jr. Pac-Man for Midway in 1983 alongside two arcade games for Atari – 1982's Quantum, which was the first arcade game to use a 16-bit Motorola 68000 microprocessor, and Food Fight. Golson and GCC also handled a lot of Atari 2600 and Atari 8-bit conversions of arcade games, as well as working on the creation of the Atari 7800. Nowadays, Golson works as a consultant under the name of Trilobyte Systems.

George Gomez

Born in Cuba but raised in the U.S. after his family fled in the early 60's, George Gomez was interested in making things of a more physical nature – he first studied at college to become an architect, but he ended up with a degree in industrial design. He joined Bally Midway in 1978 and became part of the video game division, designing joysticks for several games including GORF, but from there he took a much bigger role in the creation of games, starting with 1982's hugely successful Tron, which he worked on with Bill Adams. Gomez didn't stop there – over the next couple of years he made Satan's Hollow in 1982, Discs of Tron in 1983, and then headed up Spy Hunter in 1983. For these games, Gomez would often have a hand in

designing the cabinets as well, using his design education – the environmental cabinet for Discs of Tron being particularly notable. Gomez left Midway after the North American crash, went on to invent toys for Marvin Glass, and since the 90's he has largely been involved with pinball, initially designing tables for Williams and later Midway before joining Stern Pinball in 2011 – he remains there today as their Executive Vice President and Chief Creative Officer.

Mike Hally

Initially, Mike Hally wanted to join Atari in order to work on pinball tables – however, he would end up becoming a key part of Atari's coin-op division for 25 years. Gravitar was his first game in 1982, and it would be followed up by the incredibly successful Star Wars in 1983 – a vector classic that first met the approval of George Lucas, and then met similar approval from droves of arcade-goers. Hally went straight from Star Wars to working on 1984's troubled Firefox, and he also worked on the unreleased cult classic Akka Arrh with John Salwitz and Dave Ralston. Following the switch to Atari Games, Hally continued to work as a producer and designer in the arcade division, working on games such as Indiana Jones and the Temple of Doom, Road Runner, Blasteroids, and A.P.B., and this work would continue on into the 90's on titles like Skull & Crossbones, Area 51, and Gauntlet Legends. As the Ted Dabney Experience Podcast put it, Hally was one of the last ones left at Atari Games to turn out the lights when Time Warner disbanded them in 2002 – in Hally's words, he was 48 years old then but felt like he'd done 50 years' worth of work.

Steve Hanawa

Steve Hanawa was the producer and designer for several early Sega video arcade games, with 1981's Turbo being his most successful title – it was a tough development that hospitalised him for a month with stress, exhaustion and a collapsed lung, but the result was the most advanced racing game available at the time. Other Hanawa games include Tranquilizer Gun, Monster Bash, Space Trek and Sindbad Mystery, before he moved over to Sega of America, headed up the marketing for the Master System, and also helped bring both Tetris and Columns to Sega, discovering both games for the company. He then worked for companies like ASCII and Capcom before heading up his own company called DiMagic, and since 2012 he has worked as an independent consultant.

Koji Hiroshita

Also known as "K. Hiroshita" or "Maruhi", Koji Hiroshita's first credit for Konami was on 1986's Jackal, and every other game that he worked on would also be under the Konami banner. 1987's Contra is by far the most famous of these titles, a major hit in worldwide arcades that would then become an even bigger game in the home on the NES, but there were plenty of other games that Hiroshita worked on in both production and management roles. Some of the more famous titles credited to him include Super Contra and Ajax, which he produced, as well as Aliens, Final Round and Gang Busters, which he managed. On consoles, he would also head up games such as the Game Boy Color cult classic Survival Kids, and the Japanese-only Sega Saturn port of Suikoden.

Tōru Iwatani

Tokyo-born Tōru Iwatani spent most of his time in class drawing manga characters in his notebooks, and wanted a job at Namco so that he could make pinball machines – only to be told that Namco didn't make any. Still, he was hired as a game designer, and his first trio of games from 1978 to 1979, Gee Bee, Bomb Bee and Cutie Q, would all be majorly inspired by pinball. Pac-Man came the year after in 1980 as an idea that Iwatani had to potentially draw everyone into game centers rather than just young men, and he would succeed – he designed the most successful arcade game ever made, although his salary didn't change because of that. Contrary to urban legends, Iwatani stayed at Namco following Pac-Man, designing games such as Super Pac-Man, Libble Rabble and Pac-Mania, while also producing on Galaga, Pole Position and the later Ridge Racer and Time Crisis. Iwatani's final game for Namco was 2007's Pac-Man Championship Edition, at which point he left the company and became a lecturer at Tokyo Polytechnic University. He would also have a brief cameo in the 2015 film Pixels as a game repair man – the much-derided movie in which a giant Pac-Man and other arcade gaming icons wreaked havoc on many an American city street.

Eugene Jarvis

Initially, Eugene Jarvis wanted to be a biochemist but found that was too complicated for him, so he started learning FORTRAN at Berkeley instead, eventually ending up at Atari's pinball division in the late 1970's. From there he went to Williams just as video-based arcade games were taking off, and the huge success of Jarvis's Defender in 1981 would represent a pretty major change for this historically pinball-centric Chicago company. Jarvis and regular collaborator Larry DeMar would go independent shortly after, forming Vid Kidz, although they still made games for Williams – Defender sequel Stargate in 1981, the hugely acclaimed Robotron: 2084 in 1982, and unheralded 3D rail shooter Blaster in 1983. After Vid Kidz disbanded, DeMar went back to pinball (later programming acclaimed tables like High Speed and The Addams Family) and Jarvis returned to games for Williams, working on NARC, Smash TV and the Cruis'n series of racing titles. Nowadays Jarvis has his own game studio named Raw Thrills, and is the game designer in residence at DePaul University. The Academy of Interactive Arts & Sciences chose Jarvis to receive their Pioneer Award in 2013.

Yoshihisa Kishimoto

Yoshihisa Kishimoto initially worked for Data East on laserdisc titles such as Cobra Command and Road Blaster before jumping over to Technōs Japan with several other ex-Data East employees, where he'd make an arcade game that was inspired by his misspent youth – 1986's Nekketsu Kōha Kunio-kun, a beat 'em up where a hot-blooded student gets into fights with various gangs. The game achieved worldwide success when it was localised for the west as Renegade, and Kishimoto would revolutionise beat 'em ups further with his next title, 1987's Double Dragon. Kishimoto would continue to direct new entries in both the Kunio-kun and Double Dragon series while with Technōs, while also directing other games including WWF Superstars, WWF WrestleFest and The Combatribes. He became independent in the 1990's, founding a company called Plophet in 2010, and in recent years he has acted as a creative consultant on newer entries in his two most famous series, such as River City Ransom: Underground and Double Dragon IV.

Franz Lanzinger

A graduate of the University of Notre Dame, Franz Lanzinger joined Atari's coin-op division as a programmer in 1982 and soon set about working on his most famous game – 1983's Crystal Castles, a trackball maze game with a cute bear as its hero, a beautifully created cabinet, and the cheeky inclusion of Lanzinger's initials, FXL, as the game's high score and corresponding structure on the first level. Crystal Castles was a hit, although it was Lanzinger's only released arcade – he worked on an unreleased game based on the movie Gremlins before leaving in 1984 over a royalty dispute. Lanzinger returned to games and the Atari umbrella in 1989, working for Tengen and converting Toobin' and Ms. Pac-Man to the NES, before forming his own company, Bitmasters, in 1990. He founded another company named Actual Entertainment in 1996, producing a series of puzzle games called Gubble, and nowadays he is an author of several game books, the head of Lanzinger Studio, and also a successful pianist.

Ed Logg

From a childhood spent as a military brat, Ed Logg became one of the most acclaimed designers in the history of the Atari coin-op division – even before the 1980's, he had co-designed one of the most successful arcade games ever in the shape of 1979's Asteroids with Lyle Rains, and he would produce more hits throughout the decade, earning the nickname "The Golden Boy". In the Atari Inc. era, he would design Super Breakout as well as co-designing Centipede with Dona Bailey and Millipede with Mark Cerny, and he also worked on the unreleased Maze Invaders and RoadRunner LaserDisc games. When the Atari Games switch happened, he'd score another massive hit with 1985's Gauntlet, despite marketing people thinking that it was impossible to get four people to gather around one cabinet. Gauntlet II soon followed in 1986, as did Xybots and the Atari arcade version of Tetris, which Logg worked on with Kelly Turner and Norm Avellar. Logg then designed Steel Talons and Space Lords in the early 90's, and after a brief stint at Electronic Arts returned to Atari to work in their home division on games such as Wayne Gretzky's 3D Hockey and the console editions of the San Francisco Rush titles. Ed Logg, along with fellow old-timers such as Mike Hally, turned out the lights at Atari Games when Midway closed the division in 2002, and he created games for CloudTV set-top boxes before entering retirement.

Alan McNeil

Initially, Alan McNeil's interests lay in art – both of the performance kind and the computer-generated kind. While he then went from education to working in a Chicago stock trading firm, he soon found his way to video games, first with Bally Midway where he worked on 1977's Boot Hill and the Bally Professional Astrocade, before signing up with Stern in the late 70's. Much like Eugene Jarvis, the game that McNeil produced would significantly change this pinball company's business – 1980's Berzerk was a huge hit, helped along by its menacing voices and atmosphere, although McNeil constantly butted heads with the management at Stern over the treatment of himself and the employees working under him. He initially left Stern after one dispute but returned soon after to make the 1982 Berzerk sequel Frenzy, before switching over to software at MacroMind, working on VideoWorks II in 1987. Frustrated by the industry (specifically the management), McNeil moved to Montana with his family later in the decade and never looked back, falling in love with the countryside. Sadly, Alan McNeil passed away from a heart attack in 2017 at the age of 66.

Shigeru Miyamoto

Born in Kyoto Prefecture, Shigeru Miyamoto had aspirations to become a manga artist, but Space Invaders would pull him towards video games, and to Nintendo in 1977 as a planning apprentice. He first worked on the graphics of early Nintendo coin-ops such as Sheriff, Space Fever and Radar Scope before striking gold with his first fully designed game – 1981's Donkey Kong. Donkey Kong made Nintendo one of the biggest games companies around on its own, and Miyamoto followed it with games such as Popeye, the original Mario Bros., and Donkey Kong Jr. over the next couple of years. Miyamoto largely concentrated on home games following the release of the Famicom in 1983, and his titles would continue to have massive impact – they include the Super Mario Bros. and Legend of Zelda series, and working on just one of these would be enough to be classed as having a hall of fame career, let alone both. Shigeru Miyamoto is arguably the most famous and celebrated person ever to be classed as a video game designer, and he is still at Nintendo today as a Creative Fellow, having filled just about every prominent role in the company over the course of his time there, including acting President alongside Genyo Takeda in 2015 following the passing of Satoru Iwata.

John Newcomer

John Newcomer, a University of Notre Dame alumni who studied Industrial Design at the same time as his good friend Franz Lanzinger, initially started his career in toys, helping create prototypes for Gordon Barlow Design that were then picked up by other companies. When he moved to Williams in 1981, he had something of a free role as an ideas generator, and this creativity was what led him towards 1982's Joust, working with programmer Bill Pfutzenreuter and artist Jan Hendricks to build a unique and memorable golden age title based around riding flying buzzards and crashing them into opponents. Newcomer stayed under the Williams and Midway umbrella for 18 years, working on arcade games such as Turkey Shoot, Joust 2: Survival of the Fittest, NARC and High Impact Football, before leaving in 1999. Newcomer is still active today as an independent consultant, having also worked for various companies including Cybiko, Reliance Games, and Game Forest.

Takashi Nishiyama

Takashi Nishiyama, also known as "Piston", started his video game career at Irem in 1982, one of three companies where his games would make serious waves. After working first on the Galaxian clone UniWar S in 1980, he designed 1982's Moon Patrol, a game that seriously impressed with its parallax scrolling and platform/shoot 'em up hybrid gameplay. Nishiyama rejiggered the Moon Patrol formula for his next game, Spartan X, replacing bullets with fists and feet, and this

game would be a worldwide success in 1984 under the name of Kung-Fu Master. Headhunted by Capcom in 1985, he then made Trojan – a weapon-based spiritual follow-up to Kung-Fu Master – before taking the boss fights in those games to another level in 1987 with the original Street Fighter. Nishiyama was then headhunted again by SNK, where he'd make his own spiritual sequel to the first Street Fighter game, 1991's Fatal Fury – he would also have a hand in the Art of Fighting, King of Fighters and Metal Slug series of games. As an important part of so many titles over the years, Takashi Nishiyama has had a huge impact on gaming, perhaps more so than people realise; as of today he is at the head of his own game company called Dimps that was formed in 2000 – over 300 people work for Dimps, largely creating games for the Dragon Ball franchise.

Kōji Obata

Kōji Obata's first game for SNK, in 1983, was the cutesy top-down car game Joyful Road, starring a bright red vehicle that grabbed items from the side of the road with his gigantic retractable hands. This debut couldn't be more different from most of the other games that the man known as "Mr. Oba" made for SNK – most of them were full of action, violent for the time, and occasionally quite provocative. 1985's T.A.N.K. got the ball rolling, a big hit that was much needed for the struggling SNK and was their first game to use a rotary joystick, but Obata's next title would be even bigger – 1986's Ikari Warriors, a Rambo tie-in in all but name, and while there were some complaints about the visceral nature of the title, it attracted arcade goers in huge numbers. Next came 1987's Guevara, a title that kept the blood from Ikari and also added a revolutionary theme where you played as Che Guevara himself, going against the armies of the dictator Batista – naturally, all of this was stripped out for the game's Western localisation as Guerrilla War. Despite these successful titles, Obata left SNK at the dawn of the 90's, unimpressed with and feeling restricted by the new Neo Geo hardware.

Yoshiki Okamoto

Yoshiki Okamoto started at Konami at around the same time as Tokuro Fujiwara in 1982, and he also created two successful games for them in the shape of Time Pilot and Gyruss before leaving for Capcom – although for Okamoto it would be a disagreement with management that caused him to depart. Konami's loss was Capcom's gain, as he set to work on directing several well-regarded titles including 1942, 1943: The Battle of Midway, and Gun.Smoke. Okamoto's profile would grow ever stronger as a producer, starting with 1987's Black Tiger, but his biggest hits were both still to come – 1989's Final Fight was a revolution in the beat 'em up genre and one of the most successful games of the early 90's, and he then followed that up with Street Fighter II: The World Warrior in 1991, one of the most influential arcade games ever made and the third most successful coin-op ever behind Pac-Man and Donkey Kong. Okamoto went independent in 1997, forming Flagship but still working for Capcom on games such as the Saturn version of Resident Evil and the original cancelled version of Red Dead Revolver, before leaving Capcom entirely in 2005 and forming Game Republic. In 2013, Okamoto designed the mobile phone game Monster Strike for Mixi, and its phenomenal success in Japan would eventually lead to it becoming one of the most successful mobile apps of all-time, with a total revenue exceeding $10 billion as of 2023.

Ed Rotberg

Ed Rotberg had two stints inside Atari's coin-op division, the first taking place from 1979 to 1981 – he debuted on Atari Baseball, and his second title was revolutionary – the vector 3D tank game Battlezone from 1980 is one of the forefathers of modern first-person shooter titles. However, when the US Army wished to modify Battlezone and make it a trainer for their Bradley Infantry Fighting Vehicles, Rotberg was dead against the idea, arguing with top management figures that working with the military wasn't what he or others at Atari had signed up to do. Rotberg left along with several other figures to form Videa in October of 1981 where they worked on an unreleased game called Gridlee from Gottlieb, and when Nolan Bushnell was able to return to video games after a non-compete clause with Atari expired, he approached Videa and made them part of his Pizza Time Theatre, at which point they became Sente. Rotberg headed up several games for Sente including Hat Trick and Snake Pit, but returned to Atari in 1986, working on titles such as Blasteroids, S.T.U.N. Runner, and Steel Talons with Ed Logg. Rotberg left Atari for the last time in 1991, jumping to Apple after Owen Rubin asked him to interview there, and after taking other positions in companies such as 3DO, THQ and Silicon Entertainment, he retired in 2015.

Owen Rubin

One of several UC Berkeley alumni in this section alongside Mark Cerny and Eugene Jarvis, Owen Rubin was hired by Atari in 1976 and would remain there for eight years. One of his most famous credits is being the guy who made the volcano active in the background of Battlezone, but he worked on several other major titles and important prototypes – complex vector titles such as 1983's shoot-'em-up/platformer hybrid Major Havoc, Asteroids follow-up Space Duel, and the unreleased 1979 game Tube Chase which would, years later, provide the foundations for Ed Rotberg's S.T.U.N. Runner – Rubin and Rotberg were good friends, and Rubin always liked to remind Rotberg that he'd had the idea first. Owen Rubin joined up with Sente in 1984, working on games such as Goalie Ghost, Stompin' and Name That Tune, until he joined Apple in 1988 as a Senior Manager, largely leaving the games industry until 2011 when he, Rotberg, Ed Logg and several other old-timers were signed up by Seamus Blackley to form Innovative Leisure, a mobile and social game focused studio. He has remained in the Apple fold, recently spending 4 years from 2019 to 2023 as a Senior Manager in the Apple Vision group.

John Salwitz

To say "John Salwitz" feels incomplete – it would be more accurate to title this entry "Dave Ralston & John Salwitz", as the pair were largely inseparable when it came to making games for Atari, with Salwitz taking on programming and Ralston heading up art and design. After signing up to Atari in 1981, Ralston & Salwitz's first project, the unreleased cult classic Akka Arrh – which also included Mike Hally – didn't quite make it over the line after being crushed by Robotron: 2084 in location testing, but while Salwitz expected that he'd lose his job over the failure, this didn't happen; after all, there were many projects at Atari that didn't make it to full release. It was in the Atari Games era when Ralston & Salwitz really shone, starting with the classic Paperboy in 1985 – a tremendously engrossing and amusing game that cemented their style and taste for somewhat bizarre settings and ideas for games that made something special out of a mundane task. This continued with their next game, 1986's 720°, and they followed that up with futuristic gridiron game Cyberball, and multiplayer cannon and fort building-fest Rampart. Ralston & Salwitz dipped in and out of Atari in the 90's, also making the cult Mega Drive game The Haunting: Starring Polterguy for Electronic Arts in 1993, and their last game for Atari was 1998's Vapor TRX. Salwitz would go on to spend over 20 combined years at EA in various roles, and is now working as an Engineer and Manager for Meta.

Tim Skelly

Tim Skelly's games career started out at Cinematronics in 1978, and according to the Arcade Blogger, he changed the company from largely a producer of Pong clones to a creator of innovative and successful coin-ops virtually single handedly – his games, particularly Rip Off, Star Castle, and Armor Attack were well praised indeed, with 1980's Rip Off being the first arcade game to feature two-player cooperative play. One of his last projects at Cinematronics was an unreleased 3-D Vector game based on War of the Worlds before he moved to Gottlieb's fledgling coin-op games division, working independently, producing Reactor and insisting on a full credit in the title screen of the game – something that was very rare in those days. While his next Gottlieb projects, Screw Loose and Insector, would also end up unreleased, Skelly continued working on video games into the 1990's, working on the Golden Tee series for Strata and contributing art and design to the American development of Sonic The Hedgehog 2 for Sega before moving to Microsoft and later academia. Sadly, Tim Skelly passed away in 2020 at the age of 69.

Yutaka Sugano

A degree in mining engineering may not seem like an ideal path towards gaming, but Yutaka Sugano found it useful – he compared it to exploring a dungeon, specifically to Pitfall II: The Lost Caverns, the title that pulled Sugano towards joining Sega, who had made an arcade version of the game. Sugano joined Sega in 1985 and first worked on Alex Kidd: The Lost Stars as an assistant, but 1987's Shinobi would be his signature title and biggest hit – a game that took American ninja movies as inspiration for a walk-and-shoot title that had a comparable impact to Namco's earlier Rolling Thunder. While the Shinobi series would move into other people's hands, Sugano continued with Crack Down in the Arcade before becoming a producer at the Sega Technical Institute in America, with credits on Sonic The Hedgehog 2 and Sonic Spinball. Sugano left Sega in 1999 to form Artoon with Naoto Ohshima and Yuji Ishii, and he is now the CEO of Arzest – their most recent games include Balan Wonderworld and Sonic Superstars.

Kazunori Sawano

Before Tōru Iwatani and the rise of Pac-Man, Kazunori Sawano was arguably the premier designer at Namco – he had worked previously on electromechanical arcade games for the company from the mid 70's onwards, but he was then tasked with making 1979's Galaxian, a huge success that broke Namco through into the world of video games. Sawano's achievements certainly didn't stop there – he then spent three years on the creation of Pole Position alongside Shinichiro Okamoto and Sho Osugi, taking all of that time to make the driving feel as accurate as was possible, and to push arcade hardware further than it had ever been taken before – the result in 1982 was the most advanced racing game available, and one of the world's most successful arcade games in both 1983 and 1984. Other Sawano credits span 15 years of Namco history – from 1980's King and Balloon to 1995's Time Crisis, with other arcade games such as Assault and Starblade also produced by him. Little is known about what Sawano worked on after 1995, but he was at one point a Director of Namco.

Yu Suzuki

Possibly the most famous game designer associated with Sega, Yu Suzuki got into programming in college, joining the company in 1983. His first game, Champion Boxing for the SG-1000, impressed enough for it to be converted into an arcade machine, and from there he would be the architect of Sega's groundbreaking Super Scaler titles at the secretive Studio 128, starting with 1985's Hang-On. This would be followed by OutRun, Enduro Racer, After Burner and Power Drift, before Suzuki was assigned to head up the new Sega AM2 arcade division in 1990 – there he would be the producer of 3D games such as Virtua Racing, Virtua Fighter, Daytona USA and Virtua Cop, with plenty other hits besides those. Suzuki made his biggest impact in the home with another influential title, 1999's Shenmue for the Dreamcast, which would have a sequel in 2001, and then a third game that Suzuki kickstarted in 2015 through his own company, Ys Net, eventually releasing Shenmue III in 2019. Suzuki had left Sega in 2008 after 25 years to form this new company, but he remained on amicable terms with his previous employers. He was inducted into the Academy of Interactive Arts and Sciences Hall of Fame in 2003, also receiving a Pioneer Award at the Game Developers Choice Awards in 2011.

Genyo Takeda

Hired by Nintendo in 1972 after studying semiconductors in college, Shigeru Miyamoto considers Takeda to be Nintendo's first game designer – he created Nintendo's first electromechanical arcade game, EVR Race, in 1975, although he also had a hand in the earlier Laser Clay Shooting System. Takeda was the head producer at Nintendo's R&D3 department and often worked with Shigeru Miyamoto as the producer for his titles, including Sheriff and Popeye, but Takeda is probably most famous for being the producer and designer of Punch-Out!! in 1984, a hugely significant boxing title. Takeda would continue to head up this series through Super Punch-Out!!, the spin-off Arm Wrestling, and the highly successful home version of the game, originally released in the West as Mike Tyson's Punch-Out!! In 1987. Takeda was also the main force behind the cult NES action adventure game StarTropics, he was prominent in hardware design including battery back-up memory on cartridges and the Nintendo 64 controller, as well as being one of the lead developers for the Wii. Genyo Takeda retired from Nintendo in 2017, with his final role in the company being as a co-representative director and Technology Fellow.

Dave Theurer

Dave Theurer was another person who had an unconventional path towards video games, initially earning a degree in psychology before working in the programming centre of his alma mater, Wheaton College in Illinois. He took several other programming jobs before being hired by 1977 after a previous colleague had signed up there, and the rest was history. He began by programming 1978's Atari Football and the pinball simulator Solar War, but it was 1980's Missile Command that made him a superstar in the company – the result was one of the greatest and most memorable games of the golden age, a Cold War classic that gave its creator nightmares. Not content with one hit, Theurer followed up this game with Tempest, Atari's first full-colour vector game – another title that had arcade goers dropping an untold amount of quarters into the cash box. While 1984's I, Robot was not a success, it would go down in history as the first fully polygon-based 3D game to hit the arcade, and he would then build an entire world of graphics and situations for 1987's A.P.B. Theurer left Atari in 1991 to work on DeBabelizer, a graphics tool for the Mac, and he retired in 2017 after a long stint as a Software Engineer at LogMeIn, a remote working tools company.

Kelly Turner

Kelly Turner joined the Atari coin-op division in 1984 following the switch to Atari Games, and he would go on to make several successful titles for the company – often in collaboration with fellow programmer Norm Avellar. One of his most successful titles was 1986's Super Sprint, a series of speedy single-screen racers that Turner continued to work on through follow-up Championship Sprint and post-apocalyptic sequel Badlands. Turner and Avellar worked together on the latter title, and they also worked on Vindicators, the arcade version of Tetris, Off The Wall and Batman for Atari over the course of the late 80's and early 90's. Turner would be part of several other video game companies in the 90's including Virgin Interactive and P.F. Magic, as well as the 3DO company where he would be the Executive Producer on a great deal of entries in the Army Men series of games. Kelly Turner was active in the nascent convention scene based around old arcade games in the early 2000's, often giving talks and featuring on panels, but sadly he passed away in 2005 at the far too young age of 43 following a short illness.

Makoto Uchida

Makoto Uchida, also known as "UCH", has been a part of Sega since 1987, making him one of their longest standing employees. He started out at Sega AM1 and his first credit was as a "Test Pilot" for After Burner before heading up "Team Shinobi" – it was here where Uchida would break through with a quick one-two punch, planning 1988's Altered Beast and the 1989 hack 'n' slash classic Golden Axe. He later worked on Wing War, one of Sega's early 3D titles, before moving over to Sega of America where he was the designer and director of Dynamite Deka (also known as Die Hard Arcade) and its sequel, Dynamite Cop. Uchida moved to China in 2002 to take charge of Sega's offices over there (also known as Sega Shanghai), initially supervising the 2005 reboot of Altered Beast, and he has acted as supervisor on many titles since then including Yakuza 0, Fist of the North Star: Lost Paradise, Sonic Frontiers and Like a Dragon: Infinite Wealth.

Robert Weatherby

A music graduate from West Texas State University, Robert Weatherby had virtually no programming experience when he initially joined a games studio called Venture Vision in 1982 – however, according to co-worker Dan Oliver in an interview for Atari Compendium, he picked it up immediately, working on an unreleased Atari 2600 shoot 'em up called Solar Defense, as well as Chuck Norris Superkicks for Xonox. After these two companies folded, Weatherby joined Atari right before the switch over to Atari Games, where he first programmed and designed Super Sprint and Championship Sprint with Kelly Turner, before taking the lead on 1987's RoadBlasters, being credited for "Tactical Command". Weatherby moved to Electronic Arts at the start of the 1990's, working on various basketball titles, but after forming his own company called Mesa Logic in the mid 90's, he would work with Atari again – Mesa Logic were the developers of Area 51, Maximum Force, and Area 51: Site 4.

Shigeru Yokoyama

Shigeru Yokoyama has been at Namco virtually since the beginning of their video game history – his first known job was contributing to the planning for 1979's Cutie Q, meaning he was there even before the company broke through with Galaxian. It was Galaxian's success that gave Yokoyama the opportunity to make the game that he'd be synonymous with – in 1981 he directed its sequel, Galaga, an all-time legendary shoot 'em up that was successful in the arcades far beyond even the Golden Age period. Other 1980's games credited to Yokoyama include New Rally-X, Assault, and the memorable horror-themed action game Splatterhouse, and while the last game that Yokoyama directed was 2010's Pac-Man Party for the Wii, he has taken production and management roles for many other games over the years for Namco and later, Bandai Namco. These titles include Time Crisis, Soulcalibur, the Klonoa series, Tekken 7, and Super Smash Bros. Ultimate in collaboration with Nintendo. Yokoyama's last credit to date was in 2019, for the PC version of the action RPG Code Vein.

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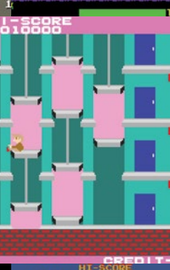


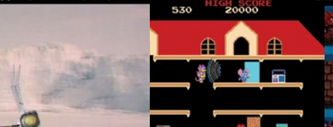
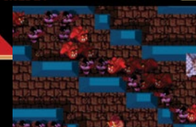


BERTHILDAS CASTLE
LEVEL 1

SUPER BONUS

INSERT COIN

INSERT COIN


INSERT COIN



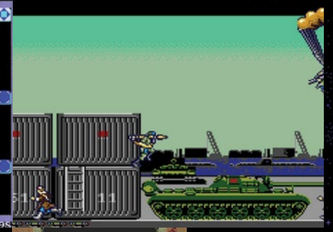






INSERT COIN






INSERT COIN

















