SUPER NES WORKS

VOL. I

1991

A comprehensive retrospective look back at every game published for the Super Nintendo Entertainment System in the U.S. from Aug. to Dec. 1991

Based on the YouTube video series **Super NES Works** (formerly Mode Seven)

Text, layout, and images by Jeremy Parish

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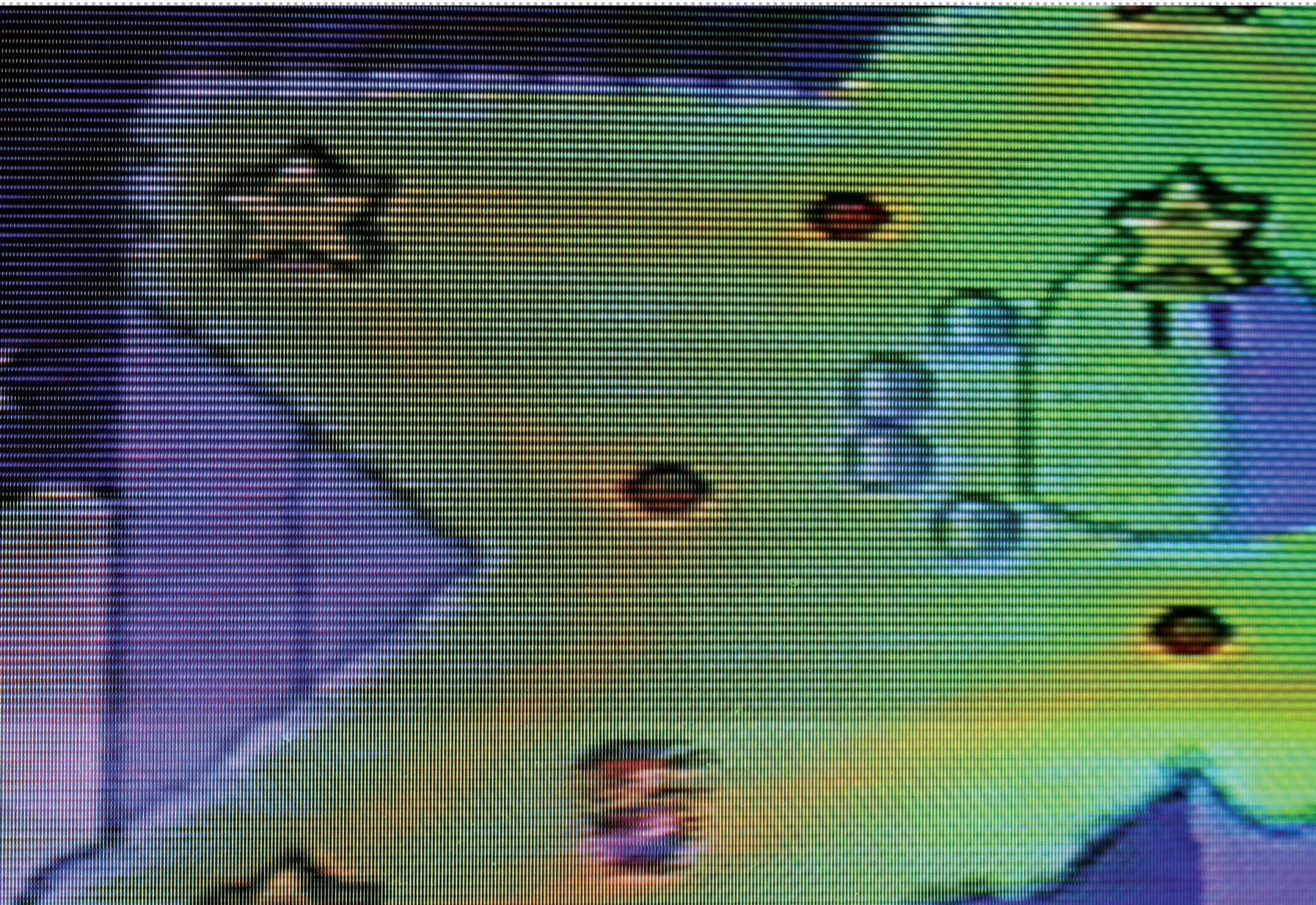

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SUPER NES

PLAYING WITH SUPER POWER

The idea of console generations and cyclical upgrades was not a given back then, in the beginning. We take these things for granted now, but as the cocaine comedown of the 1980s gave way to the optimism of the ’90s, no one had any reason to think of video game consoles as disposable, or of technological obsolescence as a given.

As of 1991, the only console maker to have attempted to sell iterative consoles to the American public was Atari. Their efforts proved disastrous at best. The Atari 5200 had been positioned tentatively as both successor and companion to the aging 2600, but it flopped. Poorly designed controllers; lack of compatibility with the 2600 library; the fact that the console was effectively a less-useful version of the company’s personal computer line; the implosion of the U.S. home gaming market: These factors conspired to doom the 5200. The launch of the 2600’s proper successor, the 7800, ended up being pushed back from its intended 1984 debut until after Nintendo’s more advanced (and more heavily marketed) NES had landed on American shores, relegating an excellent system that could have normalized the concept of a console upgrade cycle to a footnote.

It’s not that the idea of technological advancement in video games was somehow unthinkable in the ’80s; on the contrary, the practice had been fairly well established. Mattel had sold the Intellivision on its superiority to the 2600. Furthermore, both computers and arcade cabinets evolved through a constant string of advances. However, computers and coin-ops represented a different slice of the gaming market than consoles. The ballooning cost of increasingly sophisticated arcade cabinets was largely transparent to U.S. arcade-goers, who had paid 25 cents for the pleasure of three lives in *Pac-Man* in 1980 and would continue to pay 25 cents for up to three rounds of combat in *Street Fighter II* in 1991. Unless a game offered some sort of novelty—like *Galaxy Force II*’s gyroscopic cabinet, *Dragon’s Lair*’s theatrical-quality laser-disc animation, or

スーパーファミリコンピューター・Super Family Computer
Developer: Nintendo
Manufacturer: Nintendo
Release: Nov. 1990 [JP] Aug. 1991 [U.S.] April 1992 [EU]
SNES-001

The Super NES introduced the Multi-AV port that would come standard on Nintendo consoles for 20 years, only being phased out with the arrival of the HDMI-capable Wii U. The Multi-AV port could support a variety of output types including composite video, S-video, and eventually component video. Many models of Super NES even supported RGB video, though Nintendo only released its official RGB video cable in Japan.

whatever *Holosseum* was—the cost remained the same to end users regardless of how much arcade operators had to invest into the hardware. The real consumers of arcade cabinets were the amusement vendors who had to make the inflating economics of the format work, somehow.

At the other extreme, computers cost quite a lot, and more advanced models arrived on the scene on a yearly basis for purchase by end-users. But for the most part, computers offered a certain continuity for their owners. These were devices that simply served as hosts for their true platform, the operating system; buying the latest member of a computer line's "family" meant a great deal of the software that had worked on the older model could usually be coaxed to run on the new model, too.

So while the concept of console and computer generations certainly existed when Nintendo embarked upon its follow-up to the NES at the tail end of the '80s, there was no reason to think consumers would accept it for their home video game systems. Nintendo had no guarantee that NES owners would take the leap to the system's sequel, even if that new platform offered an obvious improvement over the 8-bit system's capabilities.

Nintendo had already tested the waters for consoles as replaceable commodities to a certain degree by the time the NES's successor rolled around. In Japan, the NES's equivalent—the Famicom—had already been somewhat replaced by the Famicom Disk System way back in 1986. But maybe that shouldn't count. The Disk System added to the capabilities of the Famicom by attaching to the console rather than replacing it outright. Indeed, the stock Famicom console easily outlasted the Disk System. Microchip memory expansion tech developed to a point where cartridges could offer far more memory than diskettes and contain superior supplemental features unique to solid-state media; those add-ons allowed the base Famicom console to pull ahead of its purported successor a mere two years after the Disk System's launch.

Only Sega had broken the seal on console upgrades—and even then, their console evolution had been a series of tiny baby steps. The SG-1000 begat the Master System, which essentially used the same innards as the SG-1000 but juiced up its graphics chip. And in 1988, the Mega Drive—which became the Genesis when it shipped in America a year later—arrived, but it too incorporated the previous hardware's innards to help power it. Even the Game Gear handheld would amount to a beefed-up, portable Master System. As a result, Sega consoles had maintained a line of backward compatibility unique in the industry. The Master System could play SG-1000 games through its Card port, and the Genesis could be made to run Master System software with the help of an inexpensive passthrough adapter. Sega's iterative design helped soften the blow of paying to upgrade hardware—well, that and the fact that few in America or Japan had even bought Master Systems, meaning the Genesis felt less like a successor and more like an attempt to start afresh.

Nintendo, however, found itself in a very different position from Sega. Where the Master System had only found any real traction in Europe and Brazil, the NES and Famicom had dominated America and Japan, shipping more than 50 million units worldwide by the end of its run to become the best-selling game system the world had seen to that point. With that many Nintendo 8-bit consoles in the wild, hundreds of millions of cartridges had entered homes through a constant infusion of allowances, birthday presents, holiday gifts, and summer jobs. The NES had become, in effect, an investment—and the arrival of a new and entirely different Nintendo system threatened to render 50 million households' investment moot.

Bad enough Nintendo had just shipped the Game Boy, which required its own software! Now the company would be offering a third system, one

designed to supplant the console everyone already owned and had bought tons of games for.

And yet, Nintendo couldn't *not* upgrade the NES. Sega's Genesis, which was essentially a stripped-down rendition of the company's powerful arcade machines, absolutely eclipsed the NES's capabilities, hosting shooters and sports games on par with a coin-op cabinet. Meanwhile, over in Japan, computer giant NEC had released its own console, the PC-Engine. While less powerful than Genesis, the PC-Engine had a memory-boosting CD-ROM expansion lurking in the wings that promised to bring LaserDisc-style experiences home. And so Nintendo gave in to the inevitable and created its own answer to the Genesis and PC-Engine: The Super NES, also known as Super Famicom in Japan.

A Family Affair

Interestingly, the Super NES could potentially have maintained a spirit of continuity with its predecessor through backward compatibility. The console's internals were designed by Masayuki Uemura, the former Sharp engineer who had designed the NES and Famicom. Uemura decided to power the console with a Ricoh 5A22 processor, a 16-bit chip drawn from the MOS 6502 family—the same family that gave us the NES's 2A03 chip. In theory, it wouldn't have been difficult to include some sort of NES compatibility mode in the hardware.

Indeed, there were rumors before launch that the console would include an NES cartridge slot, or that an add-on in the style of the Power Base Converter for Genesis would ship to enable standard NES carts to run on Super NES. More recently, historian Frank Cifaldi has dug up photos of a paired Famicom/Super Famicom redesign that would allow the two individual consoles to connect and tap into a single video output. Ultimately, though, Nintendo decided to make a clean break.

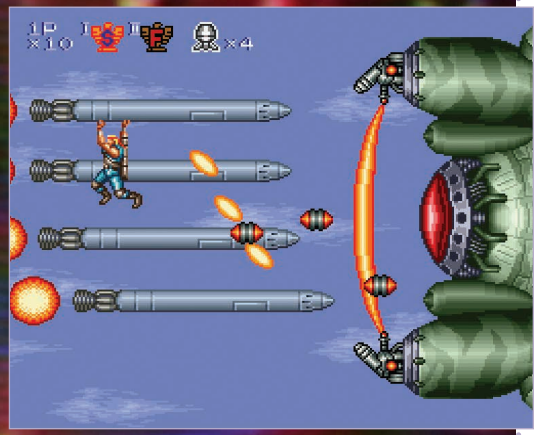
Like the NES, the underside of the Super NES hid a data port that would have connected to a never-released expansion peripheral (in this case, an ill-fated CD-ROM). It did see one very esoteric use case, however: The Life Fitness exercise bike.

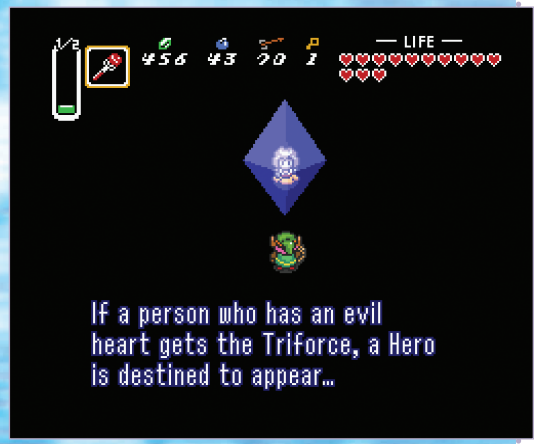
The Super NES was not a literal "super" NES—it was an all-new console, requiring all-new software.

This was a bold decision for Nintendo, and it didn't sit well with many parents, who resented the idea that all the money they had sunk into NES games for their kids (or themselves) was suddenly lost to obsolescence. But that wasn't exactly the message Nintendo presented; the Super NES launched in 1991, but the company continued to support the NES with new software releases through 1994, and with phone and repair support for another decade beyond that. Nintendo would publish some fine games on NES and Famicom even after the Super NES had arrived, most notably the spectacular *Kirby's Adventure*. As such, the company presented a straightforward proposition to fans: Players interested in living at the bleeding edge should hunt for a Super NES, but hey, you could always hand your old NES down to your little brother or sister—or keep playing yourself.

It helped salve the wound to realize the Super NES was, indeed, a cutting-edge console. At the same time, it wasn't *so* dramatically superior to Sega's Genesis that making a choice between the two was obvious. Each console had its own comparative strengths and weaknesses in terms of both its hardware and its software. The Genesis' arcade legacy meant it excelled at fast-paced titles with an emphasis on speed, and its audio and visual design reinforced this idea. Genesis had a relatively limited color palette, which made for bold, crisp visuals, and its sound chip made use of Yamaha's FM synthesis tech to create a cold, mechanical sound that perfectly lent itself to driving beats and synthesized electric guitars. Genesis owners enjoyed the best shooters, the best sports games, and many of the best pure character action games to choose from. The console was particularly well-suited to the tastes of Americans and Europeans, who gravitated toward speedy gameplay and vibrant color palettes.

The American Super NES and Japanese Super Famicom side by side.





Super NES, on the other hand, focused on different factors altogether. Uemura selected a surprisingly pokey 16-bit chip for the console; at 3.58 MHz, it was clocked at half the speed of the Genesis' chip. This would help feed the popular notion that Super NES couldn't handle fast action, a concept reinforced to a certain degree by early third-party releases that, according to some sources, were programmed in high-level languages that didn't play well with Super NES's architecture.

The Super NES's chip was slower than Genesis', it's true, but clock cycles are hardly the only measure of a console's power. What Super NES lacked in raw CPU speed it made up for in its unusual extra features. The system's audio chip, for example, lacked the ability to generate the digital tones heard in previous consoles. Instead, the Sony-designed chip processed and played libraries of sampled sounds. While similar technology had previously appeared in high-end computers like the Commodore Amiga and Sharp's X68000, it was unusual for a system to use that tech exclusively... and to sell for $200 rather than $2,000.

Super NES audio lacked the sharp punch and rasp of the Genesis's sound. It possessed a warmer, softer quality, thanks in part to the low sample rate of its audio library. But Sony's SPC700 audio chip granted composers remarkable versatility. While they could rely on the default sound library with its cheesy guitars and late '80s slap-bass effects, they could also craft their own samples. *ActRaiser* composer Yuzo Koshiro crafted that game's John Williams-esque score by bringing his own sound sources to the mix, and other composers soon followed suit. What the Super NES's sonics lacked in urgency and intensity, they made up for with richness—and the Nintendo library would be far poorer without sonic moments like *Final Fantasy III*'s opera and *Super Metroid*'s eerie environmental effects.

On the visual front, the console represents a similar design philosophy. Very few games on Super NES felt as panicked and intense as *Thunder Force IV* or *Gunstar Heroes* on Genesis, but Uemura's engineering team compensated for meager MHz horsepower by powering up the system in other respects. For starters, the Super NES could call up and display a far larger color palette than the Genesis or TurboGrafx-16. Where Sega's stock console could display 61 colors simultaneously from a palette of 512, the Super NES could display 256 on-screen from a total palette of 32,000.

As a result, the system's graphics tended to run warmer and softer, much like its audio; game artists often employed more pastels and integrated more complex shading into sprites and backgrounds. The Super NES could also create more convincingly gloomy graphics by putting the full range of dark shades into action, too, as seen in games like *Super Metroid*, *Super Castlevania IV*, and *Alien*^{3}. In theory, the Super NES could also move more (and larger) sprites around the screen than the competition—though again, early third-party titles tended to suffer from severe slowdown that undermined Nintendo's claims of power. *Gradius III*, for example, wheezed to a halt whenever enemy projectiles appeared on screen... a shortcoming remedied nearly 30 years later by hacker VitorVilela7 with a ROM patch that ported the game to the advanced SA-1 mapper.

Speaking of the SA-1, mapper chips would prove to be a crucial tool in programmers' arsenal for pushing the console beyond its basic limits, just as on NES and Famicom. Unlike on NES, mappers were available for Super NES developers almost from day one: *Pilotwings*, which shipped in Japan exactly one month after the Super Famicom's launch, included a digital signal processor chip called the DSP-1 to help with the fast math calculations required for the scaling and rotational effects that powered its simulation of flight.

The most famous of the console's add-ons, of course, were the Super FX family of chips

containing advanced co-processors to make possible rudimentary 3D polygonal graphics... or, in the case of *Yoshi's Island*, to help power zippy 2D effects. The Super FX chip made possible the likes of *Star Fox*, *DOOM*, and *Dirt Trax FX*—primitive by modern standards, but reasonably competitive with more expensive contemporary systems like the 3DO. According to the chip's designer, Dylan Cuthbert, the Super FX nearly shipped as integral technology inside the console. Nintendo and Cuthbert's team at Argonaut locked down the chip's design early on and considered including it as part of the hardware spec. Unfortunately, the console was so far along in its production cycle that such a massive change would have held up production and delayed the system's launch. The Super FX instead became an add-on cart option reserved for developers willing to sell their games for a premium above the already steep cost of Super NES carts.

Or, perhaps not unfortunately. The Super NES may not have had much going on 3D-wise in its innards, but the system gave us arguably the lushest and most beautiful 2D graphics of the generation, topped only by Sega's Saturn a few years later. The system-level graphical features Nintendo built into the Super NES hardware went a long way to make these stunning visuals possible. Super NES didn't simply offer devs an impressive color palette and powerful optional on-cart upgrades; it also gave artists and programmers a huge array of graphical options with which to present their games, all defined at the system level.

The Super NES output its visuals in one of eight "modes," numbered 0 through 7. Of course, Mode 7 is the best-known of these—in fact, I originally called *Super NES Works* "Mode 7," because it's such an iconic element of the console's legacy. Graphical Mode 7 allowed developers to take a large bitmap graphic and manipulate it along multiple axes. They could stretch, spin, skew, and scale it, crudely simulating 3D visuals. It's this

scaling effect that powered a fair few of the system's behind-the-vehicle racers and shooters, such as *F-Zero*, *HyperZone*, and *Top Gear*. RPG designers were fond of using it for their overworld maps, as seen in the *Final Fantasy* games and *Terranigma*. Mode 7 was also responsible for all the gimmickry in Stage 4 of *Super Castlevania IV*. The spinning room, the scaling boss, and the rotating spike trap were all showcases of what Mode 7 could do.

While less famous, the console's other modes actually did more to define the real look of the system, since they were the workaday tech that powered games outside of those flashy Mode 7 moments. In simple terms, each mode defined the colors and background elements that could be displayed at any given time. The Super NES had limited processing and memory resources, and the graphical modes divided those up: A game could display tons of colors or multiple layers of background elements, but never both at once. By setting the graphical mode, developers customized how they wanted to allocate the system's limited resources. Mode 0, for example, could render an impressive four background layers at once, making possible all kinds of impressive parallax effects to simulate depth and distance. However, the tiles of those four background layers were limited to a mere four colors apiece—and if you wanted to be able to see through a layer to one "beneath" it, "transparency" counted as one of those colors. At the other extreme, Modes 3 and 4 only allowed two background layers... but the tiles in one of those layers could contain up to 256 colors. In short, designing Super NES graphics involved a tradeoff: Color depth versus visual depth.

The system offered more advanced options, too. Developers could make use of alpha blending, creating the impression of translucent graphics for effects like fog or ghosts; on Genesis, this feature had to be faked with checkerboard dithering until late in the console's life. You also had highly


Nintendo
SUPER NINTENDO
ENTERTAINMENT SYSTEM
ON
OFF
POWER
RESET
POWER SWITCH MUST BE OFF BEFORE
LOADING OR REMOVING A GAME PAK
EJECT


USE CASSETTE WITH SUPER FAMICOM MARK ONLY
ON
OFF
POWER
EJECT
RESET
Nintendo
SUPER FAMICOM
POWER

specialized graphical Modes 5 and 6, which allowed developers to sacrifice color in order to output double-resolution graphics. This was mostly used for menu screens and other scenes in which dense text was required—a godsend for Japanese RPGs containing complex kanji text—but it did show up in other contexts, as in the entirety of *R.P.M. Racing*. Ironically, the game that ended up being Super NES's most essential graphical showcase, *Donkey Kong Country*, did little to push the console's hardware. Instead, it amounted to a masterwork of fakery on the production side: Rare Ltd. simply paired the console's standard 2D platformer tech with sprites, backgrounds, and color palettes that had been carefully crafted on high-end computer workstations to create the impression that the Super NES was cranking out advanced 3D graphics on par with PlayStation.

In other words, all the tech in the world means bupkis if you don't have talent behind the games. And that, the Super NES had in spades. Developers quickly cottoned to the fact that the Super NES lent itself to slower, more elaborate game concepts than the quick-hit arcade thrills of Genesis and TurboGrafx-16. Arcade experiences didn't vanish entirely from Super NES, especially once brawler mania took hold, but the console is best remembered for its more methodical titles.

Role-playing games achieved a golden age on Super NES. Simulations and titles that took advantage of the Super NES mouse, like non-gaming creative app *Mario Paint*, were essential. Even action games tended to become more exploratory on Super NES. Consider the *Mario* games, which slowed their pace and focused on discovery and uncovering secrets. This was abetted by the console's controller, which greatly upped the complexity of D-pad style interfaces from the existing standard without making the mistake of going down the Intellivision/Jaguar "controller plus digital phone keypad" route. Nintendo added two extra face buttons and a pair of shoulder triggers to

the basic NES controller layout, upping the number of buttons from four to eight. While it took both players and developers a while to adjust to these new options, the standard laid down by the Super NES continues to serve as the baseline for console controllers: Sony's Dual Sense adds an extra set of triggers and two analog sticks to the Super NES design, but it keeps the general diamond-shaped button layout and trigger design... as do Xbox Series X's pad and Switch's Pro controller.

Over in Japan, the Super Famicom also continued Nintendo's experiments in breaking from standard retail distribution. The Nintendo Power distribution service allowed players to download games to special flash carts, many of which were unique to the service, including puzzler *Sutte Hakkun* and *Chrono Trigger* sequel *Radical Dreamers*. Meanwhile, the BS-X Satellaview took the cable distribution concept of SegaNet a step further than. Not only could players download unique games and add-ons (like Mario-themed *Excitebike* remixes) to their consoles, they could also enjoy unique real-time game experiences such as a *Zelda* quest series featuring guidance and clues from live operators.

Super NES dominated the Japanese market to nearly the same degree that the Famicom had. In the U.S. and Europe, however, it struggled to keep pace with Sega's Genesis, which beat it to market by two years and offered a vast library of energetic action and sports games. Ultimately, Sega undermined its own console with a series of questionable choices borne of infighting between its Japanese and U.S. executives, and the Super NES eventually outsold it. But the race between the two platforms was heated for years, and each console offered clear-cut advantages, disadvantages, and distinctions whose value boiled down to individual tastes; the competition between the two made the industry stronger.

Nintendo and Sega's 8-bit systems sold about 74 million units combined, but their 16-bit consoles

hit 84 million units in a shorter period of time. The industry grew during the 16-bit era, fueled by great games on great consoles... and of course by players with an appetite for the growing diversity of content available on Super NES and Genesis. Also notable is the fact that the Super NES existed in tandem with the Game Boy, and the Super Game Boy peripheral offered a premium experience for many later portable games with enhanced colors and special borders.

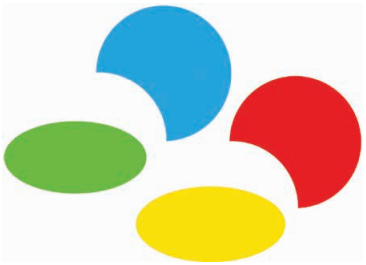
All that said, the Super NES also saw Nintendo make some critical tactical blunders. The Sony partnership that resulted in the system's remarkable sound chip also led to a power play that shattered the relationship between the two giants to this day. This rift inspire Sony to develop and launch the PlayStation platform and its successors, which alternate between eating Nintendo's lunch and being eclipsed by Nintendo's latest console offering, depending on the generation.

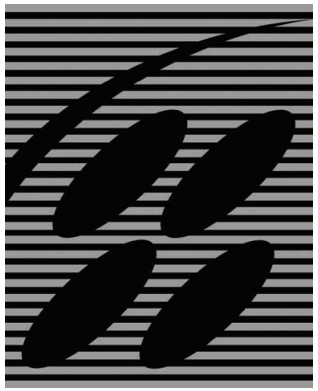
Nintendo protectionist licensing policies also alienated many publishers, who bore the burden of production costs and frequently lost money putting games on Super NES. Thanks to the high cost of ROM cartridges and the changing tastes of gamers, most of Nintendo's long-time partners were all too happy to jump ship to PlayStation when Sony offered them more generous contract terms, along with far more generous storage space courtesy of the CD-ROM format.

The Super NES was eventually replaced by the Nintendo 64 in 1996, which proved to be a dicier venture than the 16-bit generation had been. Even so, Nintendo phased out the Super NES in the U.S. within two years, due to the success of the N64 in that region. In Japan, however, the N64 was slower to catch on, and the Super Famicom trucked along until Nov. 2000 and its final release, *Metal Slader Glory*—there was a 10-month gap between the active Japanese life of the Super Famicom and the debut of the GameCube. It's almost as though the N64 was a lost generation in Japan.

But you can't say the same for Super NES. The system was a definite hit in Japan and the U.S. alike, and it even caused some European gamers to finally come around to this whole Nintendo thing they had more or less rejected out of hand in the 8-bit era. The Super NES's legacy lives on both in the collector's market and in the mainstream thanks to reissues like the Super NES Classic Edition, which shipped in 2017 and included the first official "new" Super NES release in two decades: The completed-but-canceled *Star Fox 2*.

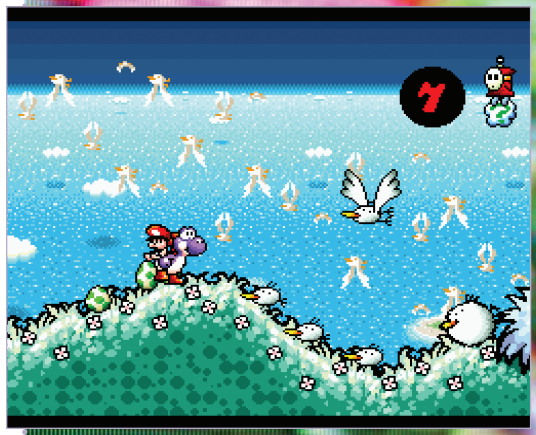
The Super NES contains multitudes, both successes and blunders. But looking back, it's easiest to remember the good things... though of course *Super NES Works* is ultimately about both the good and the bad.





Far left: The Japanese Super Famicom logo, which plays off the soon-to-be-iconic controller face button color arrangement.

Left: The American Super NES equivalent, which appeared less frequently than its Japanese counterpart—the busy reverse-space line art may have been stylish, but it doesn't read as cleanly at all sizes as the simple colored circles.



The Japanese Super Famicom (left) and American Super NES (right) controllers. The four-color diamond pattern of the Super Famicom buttons has become an iconic symbol of gaming in Japan, and references to it continue to appear in games by both Nintendo and other studios.


SUPER NINTENDO
ENTERTAINMENT SYSTEM
SELECT
START
X
A
Y
B

THE SUPER NES TIMELINE

1987 SEPT.

Sept. 1987:
NCL President Hiroshi Yamauchi confirms a next-generation successor to the Family Computer is in early development, as reported by the *Kyoto Shimbun* newspaper.

1988 AUG.

Aug. 1988:
The first concrete details of the "Super Family Computer" appear in print by way of *TOUCH* magazine, along with a decidedly off-the-mark artist's rendition of what the eventual console might look like.

OCT.

Oct. 1988:
Super Mario Bros. 3 ships for the original Famicom in Japan, marking the end of work by Nintendo EAD (and producer Shigeru Miyamoto) on the 8-bit console, clearing the way for their intensive dev cycle for Super Famicom launch software.

NOV.

Nov. 1988:
Nintendo demonstrates the Super Famicom hardware and a handful of tech demos to the press.

DEC.

Dec. 1988:
Weekly Famitsu magazine publishes the first comprehensive report on the Super Famicom, including details on a never-released expansion module that would have enabled a clumsy backward compatibility feature for Famicom cartridges.

1989 JAN.

Jan. 1989:
Nintendo confirms the tech specs of the console, including its processor. Details on the *Dragonfly* demo (later to be reworked into *Pilotwings*) are published in the Japanese media.

JULY

July 1989:
Nintendo demonstrates Super Famicom to the public at their own Shoshinkai event (aka Space World). Included is an early build of *Super Mario World*, which seemingly took place entirely on a single island shaped like a mushroom.

Japanese media images and information courtesy of Chris M. Covell

SEPT. 1987 THROUGH DECEMBER 1991

1990 NOV.

Nov. 1990:
Nintendo launches the Super Famicom console in Japan in advance of the holiday season. Arriving three years after Hudson's PC Engine and two years after Sega's Mega Drive, it is the most powerful home console on the market, though its relatively late arrival allowed the competition time to become entrenched, meaning Super Famicom would never achieve the same share of the domestic market that Famicom managed. Launch titles consist entirely of *Super Mario World* and *F-Zero*, though several additional big-name releases would follow by year's end [see page 252].

1991 MAY

May 1991:
Nintendo Power magazine reveals the first official image of Lance Barr's redesign of the American Super Famicom—or rather, Super Nintendo Entertainment System—hardware.

JUNE

June 1991:
Nintendo rolls out its full pre-launch promotional efforts for Super NES via *Nintendo Power* magazine.

AUG.

Aug. 1991:
The Super NES launches in the U.S. with a nationwide rollout. Four games are available on day one, with Konami's *Gradius III* following a few days later. As with the Japanese market, Super NES offers more advanced performance than competing consoles—but Sega's two-year headstart for their 16-bit console has far greater impact in the U.S., and the two consoles largely compete neck-and-neck for the next four years.


SUPER NINTENDO
SELECT
START
X
A
Y
B


F-ZERO
Nintendo
The Race
of the
26th Century!
-111-
Official
Nintendo
Seal of Quality

F-ZERO

THE SEVENTH MODE

The 5A22 CPU that powered the Super NES was a capable workhorse, but its clock speed came in at at about half the speed of the chips that powered competing systems like TurboGrafx-16 and Sega's Genesis. This would prove to be a significant bottleneck for programmers in the console's early days, and it's widely regarded as the reason behind the system's relative lack of high-speed action games.

Still, even though Nintendo's 16-bit machine ran at half the speed of the other guys, designer Masayuki Uemura didn't send it into a cold and uncaring world with nothing to back it up. Rather than focus on raw speed, the Super NES instead revolved around special features. It could display an impressive number of colors at once, drawn from a palette that eclipsed those of competing consoles. And of course, it had a unique Sony-designed audio chip that centered around digitally sampled sounds rather than generating electronic waves or FM synthesis. Then, serving as a sort of gatekeeper for these features, the console could run in multiple graphical modes—eight in total, numbered from zero to seven.

In simple terms, these modes determined the number of background layers available to programmers and the color depth available to those backgrounds. There are some other factors at work for individual modes, such as Mode 5 and 6's ability to produce double-resolution graphics, as seen in *R.P.M. Racing* [page 162]. By and large, though, the modes simply determine the relative complexity of a game's appearance—developers could choose between detailed visuals, high-resolution visuals, or colorful visuals. The hardware's modes gave game makers the ability to easily select which aspect they preferred to emphasize.

Hardware Mode 7 differed from the others. It gave developers the ability to

F—ZERO
Developer: Nintendo
Publisher: Nintendo
Genre: Racing
Release: Nov. 1990 [JP] Aug. 1991 [U.S.] April 1992 [EU]
SNS-FZ

create a single 256-color background, a far more limited arrangement than other modes... but unlike those other modes, devs could apply interesting effects to that background. Working in Mode 7, developers could rotate, scale, and distort the background. It was, all things considered, a pretty light simulation of abilities that everyone takes for granted in the age of polygons. At the time, however, no other home console offered anything that even began to compare, especially not as a basic hardware feature. Mode 7's bitmap effects were a massive advantage for the Super NES, creating simple and effective illusions of 3D visuals. Not surprisingly, Nintendo built one of the console's launch titles entirely around showcasing this effect. *F-Zero* is one part racing game, one part tech demo, and it's quite good in both respects.

Nintendo published only two games alongside the Super NES when it launched in Japan as the Super Famicom, and *F-Zero* belonged to that illustrious pair. The other member of that duo, *Super Mario World*, was precisely what you'd expect: A 16-bit iteration of the *Super Mario Bros.* series, building on the concepts of *Super Mario Bros. 3*, and presenting all the bells and whistles that entailed.

F-Zero, on the other hand, existed entirely for the sake of showing off the new console's potential, unbounded by familiar franchises or the constraints of a known property. There were no limitations on what *F-Zero* could be, no fan expectations demanding it adhere to certain rules. The closest thing it had to first-party precedent were Nintendo's handful of racing games, including *F-1 Race* for Famicom and Game Boy, and even then the connection was only conceptual. *F-Zero*, of course, is meant to be a play on "Formula One." The F-1 circuit is the pinnacle of that racing format, a prestigious high-stakes competition for drivers who have worked their way up through the ranks from Formula

Top: *F-1 Race* for Game Boy
Middle: *Out Run*
[source credit: *vgmuseum.com*]
Bottom: *F1 Race* for Famicom

Four after graduating through Formula Three and Formula Two. *F-Zero*, or Formula Zero, is the racing challenge of the future: A racing division a step beyond even Formula One.

F-1 Race for Famicom was developed by HAL, though, while Nintendo's R&D1 division developed *F-1 Race* for Game Boy [see *Game Boy Works Vol. II*] internally to accompany the Four-Player Adapter peripheral. *F-Zero*, on the other hand, comes to us courtesy of none other than Shigeru Miyamoto and Nintendo EAD. After putting the wraps on *Super Mario Bros. 3* back in 1988, Miyamoto and his team immediately set to work on creating spectacular launch titles for the company's new console. *F-Zero* was nothing if not a spectacle.

Fundamentally, *F-Zero* boils down to a fairly standard racing game. Players control a vehicle, zip around increasingly complex tracks, and try to edge out other racers in order to take first place. But it was the spectacle that made an impression on players, not the rules. Nothing about *F-Zero* seemed standard in 1990, when the console launched in Japan, and it looked no more mundane by the time of its U.S. debut nine months later. *F-Zero* looked amazing, moved at an insanely fast speed, and incorporated its futuristic setting into both its aesthetics and its mechanics.

Miyamoto was no stranger to racing games, of course. 1985's *Excitebike* [see *NES Works Vol. I*] had served a similar purpose to *F-Zero*, acting as a showcase for the console's unique features. You can even see carryovers from *Excitebike*'s design in *F-Zero*, including the ability to adjust your attitude on a jump to alter the strategic value of hang time, as well as the fact that this isn't really a proper race against a fixed number of opponents but rather involves a motley army of random duplicates whose rankings the game doesn't bother to track with any real rigor. In *Excitebike*'s case, Miyamoto's team had put together a racer that somehow emphasized platforming as much as driving, making the most of the NES's effortless horizontal scrolling capabilities.