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Press Fire To Begin
by Bryan Roppolo

Our colors are black and orange this month, so that can only mean it's the Halloween issue of RTM! Luckily we have some good treats in store for you this month, including two really in-depth articles. The first is part 7 of Fanboyism and the 16-bit Console Wars. John really went out of his way this month and wrote up a 15-page Word document examining the Neo Geo. I think I know more about the Neo Geo now than ever before. Also, we have Brian Blake back with CoCoLicious!, where he takes a really deep look into two CoCo Donkey Kong's (anyone going as Donkey Kong this Halloween?!?).

If anyone has any retrogaming Halloween pictures (past or present), send them my way at bryan@retrogamingtimes.com as I would love to post some in next Month's issue so we can all see what fellow retrogamers do come Halloween time. Until then, keep the pumkin's lit and the creaky doors creaking!

Halloween with the Genesis
by Brian Blake

Happy Halloween, Retrogaming Times readers!! Being was done with the CoColicious article really early this month, I thought I'd try to sneak in a properly themed Sega article. Now, I've never really been one to scare easily. In fact, none of the movies in the horror genre have ever really scared me. The Friday the 13th and Halloween series were unbelievable. I thought the Nightmare on Elm Street series was hilarious. Phantasm was spooky, until, I started analyzing the physics involved in making little, evil chrome balls fly thru the air to run a drill bit into people's skulls. The closest I've ever come to being scared was while watching the movie version of Salem's Lot, and that was mainly due to someone knocking real hard on the front door at the right time - and yes, he was a human being, not a vampire. Though they are seldom scary, I do like a good haunted house, corn maze or trail.

So, you might imagine the difficulty I'm having in trying to come up with an appropriate themed article idea for the Sega Genesis. About the best I can do is discussing a few of the games that might be appropriate for the Halloween season. These are in no particular order.

Game One: Splatter House 2 & 3

The Splatter House series is a no-brainer for a Halloween season game. You play as Rick, wearing an ancient hockey-looking mask possessed with supernatural powers; your goal is to try and save your wife Jennifer's life. Below are screenshots of the game play for Splatter House 2 (left) and Splatter House 3 (right). My personal opinion puts Splatter House 3's graphics, sounds and game play being much better than 2. Others might disagree, but, it's my article and my opinion.

Game Two: Zombie's Ate My Neighbors

What's there to say about this game? For starters, it' extremely campy and fun. There's no way I'd ever classify Zombies Ate My Neighbors as scary. However, it's certainly fun to play and is really great for some mindless shoot'em up action, 1990's 16-bit style. The graphics are crisp and clean; the music and sound effects are cool and the game is just fun to play. And did I mention it was campy fun?

Again, this game is not scary by any means, but, with zombies galore, and enough camp to fit into a 1950's B class horror flick, it certainly is fitting for the Halloween season.

Game Three: Gouls 'n Ghosts

Ghouls 'n Ghosts is a classic hack 'n slash for the Genesis. The graphics are classic 16-bit fare; the level one boss is outrageous; the sound effects are pretty cool and so is the music. Game play is standard hack 'n slash fare with a jump and an attack button. The difficulty isn't too bad and it is a fun game to play.

Game Four: Ghostbusters

What can I say about the cinematic classic that is Ghostbusters that hasn't already been said? The movie was a phenomenal success. The video game, not so much.The scariest part of this game is the fact they made it. The game play is horrible, the graphics are cartoony and the sound effects are weak. The controls are awkward, at best; it's just not a fun game to play. You might have guessed by now I never did find this game entertaining in any way. The best version of Ghostbusters was for the Wii, but, that doesn't qualify as a retro game, now does it...

Game Five: Castlevania: Bloodlines

Castlevania is pretty much legendary - meaning it's been around forever and is one of the better known platform games on any system. If you're reading Retrogaming Times, then I probably just wasted a few seconds typing this since you undoubtedly already know this. The graphics in Bloodlines are very fluid and smooth; the control is excellent and the sounds are very fitting for the game. It's a good entry in the Castlevania lineup.

Game Six: Mary Shelly's Frankenstein

Ok - honestly, I didn't see the movie, nor did I play this game due to the reviews it received on EGM back in the day. After having played it for a few minutes, I can say my opinion is that this game sucks. Moving on...

Game Seven:The Immortal

Admittedly, I didn't get the feel for this game. The graphics are pretty cool, and, splitting the skulls of the goblins is an awesome feeling. This type of adventure game isn't my style of gaming, but, it sure seems cool for Halloween.

Game Eight:Flashback

Flashback may not be a scary Halloween type game, but, it keeps the suspense up. The graphics are phenomenal, and the roto-scoped animation is smooth and fluid. And if being dropped in a jungle with your memory wiped clean doesn't sound Halloween enough, you aren't human.

Game Over

Well, there are more games that could qualify for a Halloween edition highlight. Frankly, I don't have the time nor access to all of my Sega stuff, so I had to rely on Fusion 3.64 and some ROM images. There are other games like the Mutant League sports games that could fit in here; Night Trap or Corpse Killer ,or any other Sega CD FMV game for that matter, could qualify just because they exist. Brahm Stoker's Dracula fits in the same plane as Mary Shelley's Frankenstein - bad movies and bad video games. Really, I haven't found much that could be considered scary from the 16-bit era.

Now, my daughter, my girlfriend's son and their friends, with the different varieties of the Slenderman and Jeff the Killer meme's being turned into games; and Left for Dead, Resident Evil and other zombie apocalypse type games - maybe they'll be writing these articles in 10 or 15 years and have better material to work with.

Guess I'll just have to stick with the haunted houses...

Fanboyism, And The 16-Bit Console Wars
Part 7: Neo Geo AES

Over the course of this series, we've been discussing the 16-bit console war, looking at fanboyism, what it is, what it isn't, and where it goes wrong, but rather than spending most of our time dealing with a direct attack on fanboyism, instead, most of our time has gone into the facts on the actual console hardware, their software libraries, and all the implications therein (a passive attack on fanboyism in the form of here's how to do it without being a fanboy). Well, first, we compared the SNES and Genesis, directly, since this is where most of the controversy is. This was broken up into separate articles for graphics, sound, overall hardware, and software. Then last month we brought the TG16 into the mix, and basically looked at in light of the dynamic set up in SNES vs. Genesis. You'll have to check those out to see what we found, and what it does to the prevailing presuppositions about the three systems. You can see those articles here: Part 1: The "Preamble Ramble", Part 2: SNES vs. Genesis: Graphics, Part 3: SNES vs. Genesis: Sound, Part 4: SNES vs. Genesis: Hardware, Performance, and Design, Part 5: SNES vs. Genesis: Software, and Part 6: Turbografx16. Now, we're gonna turn our attention to the shining light at the tip of the 16-bit hill, you know, that one...beyond the barbed wire tipped, electrified price fence - The Neo Geo Advanced Entertainment System (AES).

As this series has gone along, I've come up with little catch phrases to summarize the various aspects of the systems. In terms of graphics, I have called the SNES "The Dazzler", the Genesis "The Fast and the Furious", and the TG16 "Rainbow Brite." In terms of sound, I have called the SNES "The Jack of All Trades", the Genesis "The Kraftwerk Concert at the Arcade", and the TG16 "Buzz Lightyear." In terms of overall hardware design and performance, I called the SNES "The Gentleman", the Genesis "The Snarly Beast", and the TG16 "The Little Engine that Could". And lastly, in terms of software, I called the SNES "The Telescope.",

the Genesis "The Microscope", and the TG16 "Lost at Sea." The names I will be assigning to these categories for the Neo Geo AES will be: Graphics - "King of the Arcade", Sound - "Everything to Everyone", Overall Hardware - "The Ultimate Warrior", and Software - "Art of Fighters and Shooters". So with that, let's dive in!

Graphics: "King of the Arcade"

The title "King of the Arcade" is a bit of a double entendre. Neo Geo is clearly King of the 16-bit consoles in the graphics department. And also, the Neo Geo was, to the best of my knowledge, the first system to offer a truly arcade-perfect experience in the home. As far as I understand it, the difference between, say, Samurai Spirits on the AES (home console) and the MVS (arcade cabinet) is that where the one says "Press Start", the other says "Insert Coin." That's it! I am not aware of any other difference between the AES and the MVS versions. The graphics should be identical, the sound should be identical, the game play, mechanics, and tempo should all be the same. The difficulty spread should be the same. I suppose the menu may be configured differently, and probably accessed differently, but you get my point. What you got in the arcade is what you got in the home...assuming you could afford it. SNES, Genesis, and even the TG16 with Arcade CD-Rom2 had not the hardware muscle to flawlessly recreate the Arcade ports, and thus, their versions were always scaled down. Oh, they were quite reasonable ports most times (especially the PCE ACDR2 ports), but they still were not arcade perfect. AES ports were...PERFECT! It wouldn't be until the Sega Dreamcast almost 10 years later that you would finally have a mainstream system (or any system) that was capable of matching (or in some cases, exceeding) the graphics capabilities of its Arcade parallels. Of course, even with the Dreamcast, you still had load time, which you would not have had in the Arcade, and you did not have with the AES. So, even to this day, AES stands alone as the perfect reflection of the Arcade, and vastly more capable than the others in the 16-bit realm. And this is why I chose to dub the AES the "King of the Arcade."

The system specs in general are pretty incredible. AES can display a simultaneous 4096 colors out of a total palette of 65,536, which the astute will notice is exactly double the total color library of the SNES (and 128 times the total color libraries of the Genesis and TG16 each). 4096, I'm guessing is the inflated number a la the 256, 64, and 512 spec figures on the SNES, Genesis, and TG16 respectively, which counts each palette as 16 colors, though only one palette is actually producing a background color. The real simultaneous maximum then, assuming 15 colors per palette, plus an extra color for the background layer, I'd suspect would be 3841 then, but even still, 3841 simultaneous is still 8 times as many simultaneous colors as what TG16 can push, and even more striking, 16 times what SNES can do, and a whopping 64 times what the Genesis can put out. So, very, very impressive! The AES can also push an incredible number of sprites at once, 380 (96 per scan line), vs. an "on paper only" 128 at once on SNES, an actual 80 at once on Genesis, and an actual 64 at once on TG16 (SNES due to restrictions in sprites per scan line, and maximum number of simultaneous sprite sizes, etc, would actually only be able to produce something less than 80 in real life, and probably much closer to 64, maybe only 64 exactly.).

Spinmaster

Also, not only is the sprite count figures far ahead of the other on the AES, the spread of available sprite sizes is also dramatically more broad and liberating than the sprite size spread of the other systems. AES sprites can be as small as 1x2 pixels, all the way up to 16x512 pixels (the 16x512 are not usable for character sprites, as we'll discuss later.). SNES sprite sizes range from 8x8 pixels to 64x64 pixels, Genesis sprites can be anywhere from 8x8 to 32x64, and TG16 sprites can be anything from 16x16 to 32x64. However, SNES has a perplexing limitation that none of the other systems have, and that's a maximum number of unique sprites sizes on screen at once, and it's a very strict restriction: SNES can only have two, count them, TWO unique sprites sizes on display at once, where Genesis, TG16, and AES can have any combination of sprite sizes they want, given that that they're all sprite sizes that the system actually supports, and that they don't exceed the maximum number of sprites (or maximum sprites per scan line) in the process.

Now, keep in mind that character sprites are not made up of a single sprite, but of multiple sprites (think of a character made of Lego blocks), which is why you are not limited to just two different sizes of objects on screen on the SNES at once....just the building blocks used to make those objects. So, this limitation is a nuisance, rather than a crisis, but nevertheless, due to these odd limitations in the SNES hardware, the Genesis is the undisputed king of the sprites outside of the Neo Geo. It's debatable whether TG16 or SNES are better at sprites since SNES has a broader range of sprite sizes including the very valuable 8x8 (not having 8x8 is a significant restriction for TG16), but TG16 is much less restricted with what sizes it can put up at once. I don't intend to settle that dispute, partly because it's not precisely on topic, but mostly because I'm not 100% sure myself. I've not seen the strikingly large character sprites on SNES that I've seen on TG16, but the nominal sprites do seem to be better on SNES than TG16...so who knows?

But our point here isn't to remind everyone that the Genesis is significantly, but INCREMENTALLY better than the SNES and TG16 at sprites, but rather, to show how the AES is EXPOENTIALLY better than even the Genesis, its closest sprites rival. Plus, the AES has total freedom to zoom its sprites in and out on the fly as they choose. The Genesis doesn't really have anything in answer to that, and whichever of the mode x effects (not mode 7) that SNES has which can zoom -AN- object, a la the foot soldiers being thrown off-screen in TMNT: Turtles in Time is a very pale attempt by comparison (but at least is some sort of answer.) I would've thought the TG16 could not do anything like this but in Altered Beast, Gaum Hermer, the main bad guy does smoothly transition from normal size to giant size right before your eyes. However, I don't believe this is a sprite zooming thing, but rather a changing of sprite sizes on the fly. In any case, in terms, of quality of experience, it's the closest thing I've seen to AES, while the SNES mode x zoom in/out is the closest thing I've seen to AES in terms of flexibility. I've never seen anything like AES sprite zoom on Genesis.

Now, if the SNES's CPU is very easy to bog down with much fewer sprites in play, and even the TG16 and the mighty Genesis CPUs are not immune to down-boggery themselves, what kinda power plant would the great AES require to be able to push all those sprites without getting wobbly at the knees? Well, would you believe me if I told you it was simply nothing more than an up-clocked version of the same CPU that's in the Genesis? It's true! The Neo Geo runs on a 12MHz Motorola 68000 as it's primary CPU. The Genesis is also a 68000, but one that only runs at 7.67MHz. The 68000 is a weird animal in that it is capable of some

32-bit internal operations, but is limited to 16-bit external bus (so, it's often called a 16-bit/32-bit hybrid, but in effect is only a 16-bit processor). They also both use an 8-bit Zilog Z80 CPU as a co-processor and as the sound controller (AES at 4MHz, and Genesis at 3.58). I'll unpack this more in the "Overall Hardware Design and Performance" section, but it's not much of a stretch to say that the Neo Geo is nothing but a super duper tricked out Sega Genesis. Or if that's too much of a generalization for you, then at least it's true that at its most basic, it's architecture is the basically the same as the Genesis.

The Last Blade

One thing about the way Neo Geo produces graphics that sets it apart from the others is how it creates backgrounds. The SNES, Genesis, and TG16 (as well as the NES and SMS in the 8-bit consoles) produce backgrounds via "tile maps". Basically, they just do their thing in front of Bitmaps. But the AES backgrounds are not tile mapped. Instead, the backgrounds are made up completely of sprites ranging in size from 16x16 square shaped sprites to the16x512 vertical strip shaped sprites we had alluded to earlier. This gives the system a whole lot more flexibility with its backgrounds, but also increases the sprite load on the CPU (which I've still never noticed it slowing down), as well as reduces the available sprites for characters and objects considerably, though the system had such an abundance of simultaneous sprites at its disposal, that it could afford to allocate a ton for backgrounds, and still have a ton left for characters. Put another way, if you put 3/4 of the system sprite load towards backgrounds, your remaining 1/4 for characters would still be more than the total sprite capabilities of the Sega Genesis, and I'm guessing that it was closer to half the total sprite load that actually went to backgrounds, not 3/4. But even if it was 3/4, that'd also include foreground objects, leaving 1/4 just for characters, whereas Genesis' sprites would be split between characters and foreground objects. In any case, you get the picture, even with so many sprites going to backgrounds; the remaining sprites are still more than enough to far outclass its nearest rival.

Now, I've painted a picture which portrays the Neo Geo as far and away more graphically capable than the other three, and I think that's right. For the first time, I'm making an OBJECTIVE claim to superiority, and I think a case to the contrary would be VERY difficult to maintain. However, it should be noted that even the king is not without spot and blemish on his royal regalia. Let's spend a minute discussing the very few and very small ways the Neo Geo is actually outperformed by its lesser rivals:

We had talked in the TG16 article about the difference between THEORETICAL, NOMINAL, and REALIZED specs. Theoretical is what the system spec sheets said the system was capable of, whether you ever saw that in an actual game, or not. Realized is what you actually saw "in the wild", and Nominal is "what level the system characteristically performed at". Theoretical is all abstract and essentially worthless. Whether Realized or Nominal is the most important is debatable, and depends primarily on a) how big of a difference there was between them, and even more so b) how often you saw the realized vs. the nominal. If one or both of those is "a lot" then realized may be the more important figure. But otherwise, nominal would be the more important. In general, I feel the nominal is the most important because the realized is more fringe, and where there is a difference, there's more of a difference between the system's nominal figures than their realized figures. So, all that said, let's use that setup to look at the resolution situation with these four consoles (interlaced resolutions will be indicated with the conventional "i" after the horizontal resolution#. All the rest are progressive scan resolutions.):

THEORETICAL resolutions:

We have a two-way tie for first with the SNES and TG16 at 512x448i. And we have a two-way tie for third with the Genesis and AES at 320x224.

REALIZED resolutions:

TG16 comes in first with 336x224. We have a two-way tie for second place with the Genesis and Neo Geo coming in at 320x224, and the SNES lags behind the pack with 256x224 (note, the higher res on the SNES I believe did show up in a small number of menu screens in later games, but as far as I know, it was never used in actual game play.) Actually, in the two player split screen in Sonic 2, the Genesis was actually running in 320x448i, but that was a one off, where the TG16 ran at 336x224 several times. I'd still leave the rankings the way I have them

NOMINAL resolutions:

Genesis rules the day with 320x224. Neo Geo comes in second with 304x224 (since most of its games only actually used the middle 304 pixels), and the SNES and TG16 tie for last with 256x224.

Metal Slug X

Therefore, in the resolution wars, the AES comes in behind the Genesis in the nominal, and the TG16 in the realized. If we assume that nominal is the most important figure, then that would mean the AES would come in second overall behind its lesser architecture-mate. But even if TG16 comes in 3rd overall, it's still worth noting that you'll never find higher res in the 16-bit world than when you stumble upon a quasi-rare upper res TG16 game. SNES comes in dead last...except for on paper.

However, despite the SNES coming in last on resolution, it is the one that gets the most blows in on King Neo. Genesis comes in at the bottom in this dynamic with only one slap against it - better resolution. It is equal to or lesser than the AES in ever other way (and lesser in more ways than equal) TG16 gets two pot shots with higher realized resolution, and with best in class RGB-to-Composite conversion. The SNES has slightly better RGB-to-Composite conversion than the AES (though they're -VERY-comparable - nearly identical.) SNES has mode 7, where AES has nothing of the sort. SNES can actually produce polygons without any additional chips - though additional chips, like the SuperFX chip were required to prop up the huffy, puffy 65c816 SNES CPU if you were gonna have a game that was based on polys, like Star Fox or Vortex.

It is interesting, though, that SuperFX was not adding graphical capabilities that the SNES GPU otherwise didn't have, but instead, was adding sufficient heft to the CPU to do that which the GPU could do natively. I don't know if that makes any difference on a practical level, but it's still interesting to see how wrong we can be in our perceptions of causality, and I guess for me, it's mildly paradigmatic (can there be such a thing as "mildly paradigmatic?") I could swear that I've seen some basic polygonal action on the other 16-bit systems as well, but in the case of the Genesis and AES, those games may have been making use of supplemental chips, and in the case of the TG16, mayhap I'm just trippin'. As far as I understand it, the SNES is the only one that can produce polys natively in GPU hardware. Also, the SNES is the only system in 16-bit land that can handle genuine transparencies - something not even every 32-bit system could do, and something the AES decidedly could not do. When it tries, you get the same grainy rainbowing that you do on the Genesis.

So, while the AES steamrolls all, the SNES still manages to get in more arm pinches before getting smushed than the other two. But again, I just wanted to highlight that while the AES is indeed the overall superior objectively, it is still not the superior in every conceivable way. Each system has at least one small corner where it beats all (which, again, is what makes this all so fascinating!)

So anyway, to wrap up Neo Geo graphics - we're left with a system that in every way matches the graphical panache and punch of it's arcade parallels, and in just about every way bests the other 16-bit home consoles. Then again, let's keep in mind that the design philosophy was different. Neo Geo was meant to be the ultimate super system - 16-bit TRULY DONE, without compromise, or corner cutting, and boy was it ever! But all this power came at a price that was a deal breaker to just about everybody, and so before we get carried away with adulation for this uber-console, let's not forget to keep sales figures in mind when comparing it to the budget conscious "16-bit AFFORDABLY- DONE systems that were far more prolific than the mighty AES, and actually performed admirably against it even in terms of hardware, all things considered.

AES is my favorite console for graphics both objectively and subjectively. But my subjective like for all three of the others (Genesis in the lead) is much closer to it than their respective spec sheets are to it...if that makes any sense. And since it's so far ahead of the others, it makes it almost boring to compare against them. With the other three, the contest is much more fun because the intricacies are so much more complex and nuanced, with advantages and disadvantages scattered all over the place. In the end, the Neo Geo almost "betters" itself out of the contest, just like the guy who is bowling 268 is kind of ignored by the rest of the party who are all bowling low 100s or high double digits and are genuinely competing with each other for "gutter supremacy"....the 268 bowler, and the Neo Geo...sorta find themselves playing alone in a crowd.

Sound - "Everything to Everyone"

The Neo Geo AES is every bit as much a super machine in the sound department as it is in the graphics department. Keeping up the refrain of basic architectural parity between the AES and the Genesis, the Neo Geo is based on a Yamaha OPN series FM sound chip, namely, the YM2610. However, the ways the YM2610 and the Genesis' YM2612 are the same is smaller than the ways they are different. How they are the same is that they both contain dedicated FM synth channels, of the Yamaha OPN line.

TIME OUT! What are OPN chips? They are limited to sine waves for their operators. The OPL chips, for instance, are not limited to standard sine, but can manipulate the sine wave to create non-standard waveforms. Also, unlike the OPN, which are uniform in what waveform they can use, there is some variance among OPL chips. For instance, OPL3 (Used in things like the Soundblaster-16 PC sound cards) can make use of 8-different waveforms, though all but two of them are either standard sine, or non-standard "mutants" of sine (the other two are a standard square wave, and a semi-standard ramp-wave, which is just an inverted saw tooth wave), while the OPLL (aka the YM2413 in the Japanese Mastersystem) could only use four, and they were all either standard sine, or mutant sine variants.

So anyway, both YM2610 and YM2612 are restricted to sine operators, and I also believe the algorithm parameters, and envelope parameters, etc are similar or identical (and I know for a fact that both the 2610 and 2612 FM channels are each four operator, so each channel can either do 1 four-op FM voice, one or two 2 op FM voices, and anywhere from one to four plain sine waves,) so the FM side of the Neo Geo is going to sound virtually identical to the Sega Genesis.

FM side? What on earth's that supposed to mean? Well, there's so much more to the 2610 than just its four FM channels (Genesis has six). The 2610 also has 7 dedicated ADPCM sampler channels (think SNES, which has 8), six of which (ADPCM-A) are fixed to 18.5kHz samples, compressed to 4-bit PCM, then decompressed to 12-bit for playback, while one channel (ADPCM-B) actually can produce samples anywhere from as low as 1.8kHz to as high as 55.5kHz, compressed to 4-bit, and decompressed to 16-bit. Samples for either A or B can range from 256b to 1Mb.

That's a huge spread! By comparison, all eight SNES ADPCM channels were the same (and actually look better on paper than the Neo Geo's ADPCM-A channels!) They used flexible sample rate, and could be as high as 32kHz. Plus, they compress to 4-bit PCM, and then decompress to 16-bit PCM for playback. Just looking at that, you'd think the SNES would sound better than the AES.
But once again, the fork-tongued SNES spec sheet that only tells half the story (and not the important half) strikes again! The important piece of information that's missing here is that all the SNES sounds had to fit into 64kb of memory, that's sound effects, all musical instruments...everything. Figuring that samples were compressed at a ratio of about 3.5:1, that means before compression, you had about 224kb to work with, but again, that's not per voice, that's for -EVERYTHING-. Figure half of that goes to sound effects, and half to music, and you're left with approximately 112kb for music. Further divide that by however many channels you're using of 8 available (let's say 5-8 channels, so 22.5kb per voice on the high side, and 14kb on the low side, and that's if you're maxing out the sample size per channel, which almost never happened. I'm told that most individual SNES samples are in the 5kb-10kb range. Also, while the SNES sampler channels can support 32kHz sampling, due to size limitations, it was more common to see things more in the 8-10kHz range, with the high extreme closer to 22kHz than 32. In short, since SNES interacts with it's RAM in a load-fill sorta way, then it is limited by how much RAM the system has.

The AES, on the other hand, only has 2kb of audio memory vs. 64kb, and yet, it can support individual samples ranging from a teeny 256b to a titanic 1MB (and all points in-between in 256b intervals). The way this works is an interesting compromise between SNES (Read from RAM) and TG16 (Read from ROM). With TG16, the system makes no distinction whatsoever between RAM and ROM (except, of course, RAM can be written to, and ROM can't). So united are they in terms of system interaction that write-ability becomes the ONLY meaningful difference. On the other extreme, the SNES can only read from RAM, and must load ROM to RAM before it can use it. The lack of "streaming" does reduce CPU load, but it also locks you hard and fast into system RAM limits (hence, why all sounds must fit into 64k of space.) This is why TG16 can have full soundtracks on just 20bytes of Audio RAM per channel (bytes, not kilobytes), because it can read straight from ROM. And it is for similar reasons why you only need 2kb of Audio RAM on AES.

While the AES isn't quite as crass as TG16, which doesn't distinguish RAM from ROM at all, neither is it bound to read everything from RAM like the SNES. The way it works is you load the audio data into the audio Memory (basically just a skeleton, just the instructions for what you want the ROM and the YM2610 to do, and then ROM feeds straight into the YM2610 from there. This is why you can have 1MB samples on only 2kb RAM.

In addition to the 4 FM channels, and 6+1 PCM channels, the Neo Geo, just like the Genesis, has four channels for PSG, but it's not the same PSG chip (and in the AES, it's integrated into the 2610, where it's a separate discreet chip on the Sega). The PSG chip on the Genesis is the Texas Instruments SN76489, the same chip that was in the Mastersystem, Colecovision, Texas Instruments TI99/4a computer, and in a modified-for-stereo version in the Game Gear. The PSG in the AES is the General Instruments AY-3-8910 SSG (SSG is the brand-specific term, PSG is the generic term...they're both PSG. I believe the brand-specific acronym for the SN is DCSG, or something like that, though you almost never see that acronym used). The AY-3-8910 was used in the Intellivision, the MSX/MSX2, the Amstrad CPC, and most of the pre-FM PSG based arcade games (though SN76489 was occasionally used, as were yet other chips, such as Atari 5200's "POKEY".) The SN76489 and AY-3-8910 are very similar chips, but they're still different enough for endless debates to have sprung up over which one was better. At their most basic they're both 3 plain square waves channels, and a basic white noise channel, but in their more advanced, more niche applications, they're quite a bit different

I wont really get into all the ways they're different except to say that the AY can pitch deeper, and can also use many/most/all of its high end functions without sacrificing an extra channel to do it (SN has to use both square 3 and the noise channel to use its advanced functions), but the SN is a tad crisper, cleaner, and more dazzling, plus while I have only ever heard one instance of AY detuning, I've never heard a single occurrence of detuning in the SN. It seems from what I've read that the court of popular opinion at least slightly favors the AY...and I think that on a subjective preference level, so do I - AS A STANDALONE CHIP! As a supplement to an FM system and/or a Sampler system, though, you don't really need the deeper bass, and more tonal flexibility without sacrificing channels as much. Instead, you benefit more from clean, crisp, clear, dazzling tones (which the SN provides), and you can afford to lose an extra PSG channel to get the signature odd tones of the SN's more advanced functions. So AS A SUPPLEMENT, I actually prefer the SN. A very small win for the Genesis (especially considering the AES makes VERY little use of its PSG for music anyway)...but a win nevertheless. A great example of a Neo Geo track that does make good use of PSG, look at Stage 1 from Viewpoint - "Not there at all", the first non-percussive sounds you hear are the PSG, and as you will notice, they are a fairly constant presence in the rest of the track, but pleasantly so.

Now, I had almost dubbed the Neo Geo sound system "The SNES/Genesis Duet" since it combines FM/PSG with ADPCM sampling. And if the programmers had retained and employed for the later games the sound design philosophy they had implemented in the earlier games, that is in fact what I would've called it since the early games really did sound like an SNES and Genesis working in tandem, certain voices being handled by the FM/PSG channels (Genesis), certain voices being handled by the ADPCM channels (SNES), many of which even using sample sizes not too far removed from what SNES was using.

The best example that I can think of of the SNES/Genesis duet effect in action would be the entire Magician Lord soundtrack, but particularly Stage 3 - Highway Leading to a Foreign Space (catchy title, huh?). Stage 3 theme starts with a good easy percussion, a driving bass, a choir effect (which sounds like a choir backwards, actually), and another ambient "sizzly waw" instrument. The percussion and the choir is ADPCM (SNES), and the Bass and the other voice are FM. At the bridge, you have additional FM voices performing a regular staccato cadence, then at the chorus, there's a PCM sampled guitar, an almost pearloid FM voice, followed by PCM brass, a PCM airy synth and an FM brite organ. Except for the drums, which do sound better than what I'd expect on the SNES, the other PCM voices sound like they could feasibly be heard on there, and all the FM voices sound virtually identical (or even absolutely identical) to what you could hear on Genesis. Even slightly later games, like Last Resort, though they use bigger PCM samples still retain something of this SNES/Genesis duet effect. Consider Stage 4 - The Melting Point, you have FM bass again, right before the chorus, you have this dirty, very low end voice that plays a few ominous notes which is also FM, in the bridge, you have a PCM/FM double melody, and in the verse, you even have a PCM/FM call-and-respond. In the chorus, you have a nice, PCM layered melody. The Viewpoint track I had mentioned earlier with the PSG is also a great SNES/Genesis Duet track, with the afore mentioned PSG (Genesis), very strong PCM drums (SNES), and a lot of interweaving FM and PCM voices throughout the melody and harmony layers (I think FM actually slightly dominates this one).

Well, as time marched on, and CD-Rom became more and more the norm, the AES programmers began to rely less and less on FM, and began to use ever more and bigger PCM samples to keep their games sound competitive with that of the Sega CD, and the Playstation, etc. As they began to fight up market like that, the SNES/Genesis duet effect was increasingly lost. In short, the Neo Geo, in going after the CD-Rom crowd tried to be everything to everyone, and hence, why I called it what I did. You can argue whether the later games going more for CD-Rom caliber sounds was a good thing, a bad thing, both, or neither. To me, it was a bad thing because as it began to sound like CD, it lost its niche of identity, rather than in the beginning where absolute magic happened.

Of course, "Everything to Everyone" isn't quite right either, as while the AES has a PSG, and FM, and ADPCM, what does it NOT have that has been discussed at length in this series? That's right! There's no wavetable synthesis hardware in the Neo Geo. In other words, if the AES is a SNES/Genesis duet, it is NOT an SNES/Genesis/TG16 trio, and that's a bummer, really, as I think adding the WSG would only make the sound system even richer, fuller, and more multi-faceted. Nevertheless, with 7 PCM channels, and the ability to sample anything, including WSG, this limitation is mitigated to a significant degree.

Consider the Team Select theme from Super Sidekicks, bass and harmony are FM, percussion and melody are PCM, but the PCM melody is a sample of what? Wavetable synthesis as best as my ears can discern. So though a false impression, it gives a convincing impression of in fact being a SNES/Genesis/TG16 trio. SNES could and often did sample WSG as well, but with the lower quality samples, the effect wasn't quite as powerful. Still, having no WSG hardware to speak of and not frequently PCM sampling WSG, perhaps it would be better to call the AES "Almost everything to everyone", especially considering it's bid to parallel CD-Rom music only gets it about 90% of the way there...more like N64 territory (hence why the Neo Geo CD version of so many AES games have redone soundtracks).

Nevertheless, it is undeniably a super-system in the sound department just as it is in the graphics department, and best-of-both-worlds-only-even-better mega machine! Objectively, I'm willing to stick out my neck to say this is actually the objectively superior sound platform. In terms of subjective preference, when it does the PCM/FM mix right, nothing beats it, but that's rare enough, and many of the PCM samples are still cheesy that overall, I think I'm still sticking with Sega. Actually, I'll put it this way, I think I simply "enjoy" the Genesis more...but I am definitely far more "excited" by the AES. However, just like the TG16, I have only explored a fraction of AES's total sound library, which means I have...pleasantly... a lot to learn yet. We'll see how I feel on the other side of that journey (I'm finding myself liking TG16 more and more all the time, and I suspect that will probably happen with AES too.)

Overall Hardware - "The Ultimate Warrior"

You know, talk about the CPU and over all hardware came up so much in the graphics and sound sections that I don't know that I have left myself a ton to say here. The AES at first glance is very much like a Genesis in terms of architecture with the same 16-bit Motorola 68000 main CPU/8-bit Zilog Z80 co-processor/sound manager as the Genesis (except 12MHz/4Mhz instead of 7.67MHz/3.58MHz respectively.) Its sound system is based around a Yamaha OPN sound chip just as the Genesis is (though YM2610 - aka OPNB instead of YM2612 - aka OPN2). Yet, its architecture is also reminiscent of Turbografx16 in the very small memory banks, and the way it reads/streams data from ROM. The Genesis is more like the SNES in this regard. It's got, along with the Genesis, the most solid CPU/co-proc setup of the four. It's got, along with the TG16, the fastest way to access data of the four. It has the fastest CPU of the four, has far more sprites and far more colors than any of the others, essentially contains two of the three others' sound system all under one hood, and could handle cartridges EXPONENTIALLY the size of the others' media (we're talking hundreds of Megabits (I think there actually were a game or two that made it to the 1Gigabit mark) vs. what, 8-40Mbits). No, it didn't have the nominal resolution of the Genesis, or the realized resolution of the TG16. No, it didn't have the

RGB-to-Composite of the TG16 (or even the SNES, though they were basically neck and neck), nor did it have the transparencies, mode x suite of effects, or polygon capabilities of the SNES, but it is equal or better in every other imaginable way, and overall was a far, far superior piece of hardware to the rest - as good, or even better than some of the 32-bit systems at 2D (just not able to do 3D).

Everything about this system just screams heft, power, and excess. The console is cartoonishly big, almost as big as the Atari 5200; the standard controllers are the size and general shape of the NES Advantage, with an arcade-sized joystick, and the game cartridges...ha! Taller, thicker, and almost as wide as a VHS cassette...with TWO connector cards protruding from its underside (within the cartridge housing) instead of the standard one card that you see on, well, everything else. The boxes the games are housed in are thicker, wider, and almost as tall as Disney movie cassette boxes. Everything about this system is huge! The graphics on the screen are likewise huge, the sound out the speakers...huge! Of course, the price is also huge - for the system, but especially for the games! When it was still being sold, and games were still being made, the system was like $600. But what's even more jaw dropping is the price the games were fetching. It was not unheard of to have games selling for $200 -apiece!- Nowadays, in collector's land, the price for the system on e-bay is still about the same. The price for the carts...sometimes they're still about the same too. A cheapie by Neo Geo standards is like $70 or so. More than you'd spend on the latest PS3/360 blockbuster! You'll spend less on a Japanese system than an American one, same with the games. Then again, region-lock is in the system, not the game. A Japanese game popped into an American system will play the American version. An American game popped into a Japanese system will play the Japanese version, and so on and so forth. Some games let you toggle in the menu screen (such as Samurai Spirits 2 - aka Samurai Showdown 2), while others that were "Japan Only" will play in Japanese no matter which system you pop it in. The good news is that your average game isn't going to contain enough dialog that you'll be unable to play it if you have a Japanese system, but if you, like me, have the misfortune of having a Japanese system, and then something like Samurai Spirits RPG (on the Neo Geo CD)...that disc is going to be pretty worthless to you.

But anyway, as I was saying, everything on the Neo Geo is huge, with one exception...

Software: "Art of Fighters and Shooters"

...the genre spread in software! Not that the software library wasn't huge as well in terms of number of titles released, but the Super Nintendo or Sega Genesis with their robust, well orbed genre spread it is not! Oh, not that there weren't several games that were something other than fighters or shooters (either SHMUPS or Run and Guns), but those two genres clearly dominated. Like TG16, I'm no expert on the AES software library, and don't want to pretend to be, but it's almost a meme how lopsided the AES library was. Bottom line is the AES was the arcade in your home, and there are genres that are big in the home that don't really work in the arcade...you didn't see those on the MVS, and therefore, you aren't going to see them on the AES. Now, if you were a diehard fan of One on One SFII style fighters, or SHMUPS, or Run and Guns...then the AES is THE place to be, a gamer oasis of the highest order. But otherwise, at least the scraps off the table are still fine dining...just not a whole lot of it.

TG-16 (Cedar Rapids)

I was gonna try to find a way to explain the AES software library using the mountains and swamp analogy that came up in part 5 and part 6, but I'm not quite sure how I would. Instead, I think the skyline analogy that came up off-hand in part 5 works so much better. So, I will compare the software library of SNES, Genesis, TG16, and AES using the analogy of four US mid-size metro skylines (all remarkable for their size class). For clarification, the definition of midsize metro I'm using is this: Big cities are 2mil metro population and larger, Small Cities are 100k metro pop and smaller. Midsize is 100k - 2mil. So places like Indianapolis would bring up the large extreme of mid-size, and places Iowa City would bring up the small extreme. I further subdivide "midsize" into "upper middle" (1mil-2mil), "lower mid" (100k-500k), and "true middle" (500k-1mil) Going with that definition, for our skyline example, we're using two lower mid-size skylines (Cedar Rapids, Iowa at about 260k, and Mobile, Alabama at somewhere in the middle 400s), and two true-middle-sized skylines (Omaha, Nebraska at just under 900k, and where I live, Des Moines, Iowa - at just under 600k). I'm a huge fan of downtowns and skylines. It doesn't matter if I'm heading to a huge city, a small nowhere town, or a small or medium metro area, wherever I'm going, scoping out the downtown is a must. Also, even though I've been there a million times, I still love spending time in d-town 515, and I have yet to tire of looking at our skyline, so yes, this is all very self-gratifying...but it also just works soooo well as an analogy anyway that I think I can justify putting you guys through a little "town talk."

Cedar Rapids has a fair number of buildings, none of them are exceedingly tall, (Alliant Tower is only 285ft tall, with Cedar River Tower coming in behind it at 237 ft.) nor are any of them exceedingly fancy, but their combined presence does create a tight skyline that rises above the land around them, and gives the impression of a metro much larger than 260k. (I've always said the Cedar Rapids Skyline belongs on a city the size of Des Moines, and the Des Moines skyline belongs on a city much larger.) Also, there is something wonderfully quirky in Downtown Cedar Rapids - May's Island. It is a small Island that sits in the middle of the Cedar River, just south of the downtown core that has two municipal buildings on it (one of the only cities in the world to have this), one tallish and multi-tiered on the wider west end of the island, and another shorter one on the narrower east end, the east end ending in a point. Taken as a whole, the Island looks almost exactly like the namesake piece from the board game "Battleship" - a very odd, quirky, but neat little piece of downtown Cedar Rapids.

Super Nintendo (Omaha)

Omaha vs. Des Moines: The two tallest buildings in Omaha are taller than the two tallest buildings in Des Moines, but the next 8 tallest buildings in Des Moines are taller than the next 8 tallest buildings in Omaha (and are more dynamically styled). As a result, the Des Moines skyline is denser, tighter, and overall more vertical. There are a few views of Downtown Omaha that just look great (like looking at it with Central Park towers 1 and 2 in the foreground, or from the lookout hill in Omaha suburb Council Bluffs), but most of them look bland in comparison, while nearly every angle of Downtown Des Moines looks good (particularly from the East, South, and especially Southeast). It's debatable whether 801 Grand (the tallest building in DM) is more or less aesthetically pleasing than One First National Center, Omaha's tallest (I personally favor the pointy, mathy, 801, to the planar FNC, even though it does look nice all lit up on top at night). The two are only 4 feet apart in height. Mounting a statue of Emanuel Lewis on top of 801 would make it taller than FNC. That kind of height difference is not going to be noticeable on 630ft tall buildings, so for all accounts and purposes, they are the same. Woodmen tower, the second tallest building in Omaha is a white rectangle that says "Woodmen" in huge letters on all four sides at the top, while One Ruan Center, the second tallest building in Des Moines is a black rectangle that is actually turning a rust color and has no major features on it, like the Woodmen building. At

night, Woodman is very well lit, which is neat, while Ruan is not, and almost disappears into the sky except for all the lit up windows, which is also neat. Sometimes they light strings of light bulbs along all the outer edges, creating an outline of the building in which resides nothing visible except the windows, which is neat too (this usually happens around Christmas time) It's debatable which of the two look better (I'm almost inclined to favor Woodmen, though I do appreciate how reminiscent Ruan is to "The Monolith" from 2001: A Space Odyssey.) Woodmen edges out Ruan height-wise, with a mere 18ft of skywardness (which I don't think would be that noticeable either on buildings nearly 500ft tall).

Genesis (Des Moines)

But, even if we were to give the top two to Omaha, between the Octagonal, silver-plated Hub Tower, the old gothic spire on top of the Equitable Building, the curved blue roof of the Plaza, the cool starkness of The Financial Center, and Bank of America buildings, the cylindrical top of Davis Brown Tower, and above all, the epic old-world grandeur of the Iowa State Capitol, and the gorgeous EMC Tower (even if the middle part of the back does look like a bottle of Absolut Vodka at night - I used to call it "The Absolut Building" before I knew its real name) the Des Moines skyline is more attractive and stunning over all, giving the appearance of being a slightly bigger city than Omaha (when in reality, it's only 2/3rds its size). The old-fashioned "Travelers" light up sign at night, visible from the east/northeast, and the arch bridge don't hurt the DM Skyline either. Bottom line is the highest heights of the two are in Omaha by a very narrow margin, while the average, nominal playing field, as well as the number of significantly meaningful structures are greater in Des Moines. Des Moines also has fewer junk buildings, though it has just enough to keep the downtown area from looking too sterile.

Downtown Mobile is a case of a simply remarkable building or two in a sea of not much else. The RSA Battle House Tower is the tallest building in any of these downtowns by over 100 feet (745ft, because of the tower on top. Without the tower, it'd be comparable to 801 and FNC, but that's beside the point.) It is the tallest building outside of Houston on the Gulf Coast, and only 16 states feature buildings that are taller (21 and 22 states for Neb and Iowa respectively). The second tallest building in Mobile, the RSA Bank Tower is 40ft shorter than One Ruan Center and 68 ft shorter than Woodmen. All three of these 2nd place buildings are boxy slabs (though RSA at least wins cool points for having the opaque off-center stripe running down its face with a small roof structure right above it), while the tallest ones are all elegantly and uniquely styled. But beyond the first, second, and third tallest buildings in Mobile (which looks like a miniature of the Battle House Tower, even though it predates it by a couple decades), there really isn't much else there. Of course, considering that Mobile is less than half the size of Omaha, has a taller building, and has a skyline that makes perfect sense being compared against it, that's a huge credit to Mobile. While Des Moines is my favorite skyline of the four over all (with Omaha coming in second), I think in terms of "bang for buck" Mobile wins hands down. Cedar Rapids is my least favorite of the four by a significant margin, yet for a metro of less than 300k, it's phenomenal. I challenge you to find one in that size class that beats it. Roanoke VA, at just over 300k is probably the only one I've seen that comes close...but it doesn't have anything quirky cool, like May's Island.

All right, so, now that I've gabbed about these skylines, let's actually apply the analogy:

Neo Geo (Mobile)

With it's comparatively small, humble, but respectable library, without many striking features, but with some undeniable quirky cool-factor, TG16 in this analogy is Cedar Rapids. SNES and Genesis are Omaha and Des Moines respectively (see FAT16BCW part 5 for a greater exposition on this), and Neo Geo AES with its two or three ultra-represented genres in a sea of not much else is so very Mobile! However, just as RSA Battle House Tower is magnificent, so are the fighting and shooting games on the Neo Geo. If that's your bag, then there really is no better place on earth - PERIOD! - Subjectively, I'm not sure if I'd put it just above, or just below the TG16, but I would put it below both SNES and Genesis.

So, as we conclude our look at the Neo Geo, a lot of people thought it was a market failure because it captured so little of it. But I don't think it was a failure at all. I think it was a smash hit....in it's little niche. In it's corner of the world. The thing was never really intended for mainstream dominance, like the other three were. It was intended for the ultra-hardcore gamer and/or the ultra-rich kid...nothing more. And in those arenas it did well. And moreover, even though very few of us ever got to play an AES during the day, most of us played the MVS (the arcade equivalent), and even those who didn't were well aware of the Neo Geo for all the mystique and hype surrounding it made it a thing of legend....a super system. It made it into all our bloodstreams, and as such, the thing was a stellar success! I would recommend you have an SNES, Genesis, and TG16 before you invest in an AES, but if you can find one that you can afford, GO FOR IT! If you're gonna look for one now, go for Japanese version of hardware and software, as you will save a ton of money, and 99% of the games will be perfectly playable to non-Japanese speaking players like me....and probably, like most of you...unless, you know, I'm big in Tokyo, or something! Objectively, as hardware, it is clearly the best of the bunch. It was also the best of the bunch as software in a few narrow categories, but was outdone in the grand scheme by the robust, holistic, diverse libraries of the SNES and Genesis. Overall, I'd say it's still a thing of legend, a marvel...awesome...even though I've had mine now for almost 10 years. Just as I never tire of staring at Downtown Des Moines, neither do I tire of staring at the Neo Geo....wait, I thought Neo Geo was Mobile, AL? You get my point!

Alright! So, that's Neo Geo! What's next? Frankly, I don't know. I've reached out to Kamahl about specs for the Amiga, which he's provided, but I'll need to ask a lot of clarifying questions from him before I would be able to write anything. If I can get that done soon enough, we'll have an Amiga article before we go to wrap up. Otherwise, next issue will be our last in this series, just tying up loose ends, and all that. I also do need to give a shout out to Kamahl for this installment. While he was not nearly as involved as last time (and has not read this, like he read the last one before it went to print), he was still of help to me in understanding how you could get 1MB samples through 2KB RAM. I mean, I suspected, but he confirmed, and clarified. So thanks!

In either case, thanks for reading, and we'll see you next month!

The New NFL Season

With the giants of the gridiron doing battle once more, it's time to look back at some classic C64 simulations of the sport of American Football. There are still fans over here in Europe, with the International Series games and live games available on TV. So strap on your pads!

Onside Kick

Many early attempts took a side-on view of the action, scrolling the pitch as play progressed. AMERICAN FOOTBALL by Argus Press was a decent effort, hampered by a lack of plays. TOUCHDOWN FOOTBALL from Electronic Arts was terrible, with badly animated players. But after the success of Hardball, Accolade released the brilliant 4TH & INCHES using a similar menu system. Two teams face off in a single match, with TV style replays and a clever zoom effect. The construction kit & season editor were sold separately, allowing the creation of more teams. For a different take, Epyx produced STREET SPORTS FOOTBALL – part of a range that tried to reflect how kids play the game in the streets and parks. Teams are chosen from a group of characters and then it is three on three.
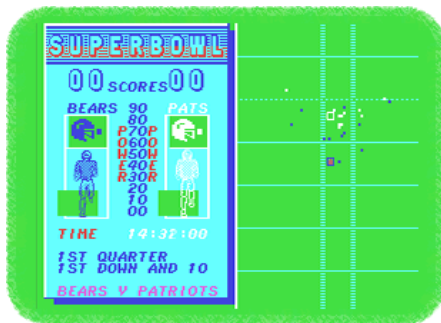

4th and Inches

Statistically Speaking

There is a brilliant card-based game called Statis Pro Football, updated each year with new player cards reflecting the stats of real players. And the creators Avalon Hill transferred the gameplay to the C64 as SUPER BOWL SUNDAY (or SUPER SUNDAY when released by Nexus Software in Europe). This showed play highlights in a horizontal view and allowed players to pit classic teams (such as the 1973 Dolphins or the 1982 Redskins) against each other.

The follow-up called SUPER SUNDAY - OFFICE OF THE GENERAL MANAGER saw the player working from a nice office screen, drafting and trading players. But in general the games from a coach's point of view on the C64 are poor. GRID IRON and GRID IRON II have a terrible "highlights" section with tiny players moving around. HEADCOACH from Addictive is basically a soccer management game with more players.

Superbowl XX

Hail Mary

The vertically scrolling view of the pitch was more popular, started by Atari's coin-op and perfected by 10 Yard Fight. There were plans to convert this to the C64 but it was never finished. Activision's ON FIELD FOOTBALL reduced teams to six players a side, which was confusing for newcomers. The officially licensed SUPERBOWL XX from Ocean was based on the classic battle between the New England Patriots and the Chicago Bears. That was the Superbowl that included the larger than life William "The Refrigerator" Perry. The in-game display resembled a tactical diagram with dots for players, but it was enhanced by the giant "scoreboard" - animated players passed, ran and kicked.

JOHN ELWAY'S QUARTERBACK first appeared in arcades before making the jump to home machines. The C64 conversion is pretty good, but was overshadowed by two bigger names. ABC MONDAY NIGHT FOOTBALL had large players and digitised speech, plus a clever system of choosing plays - a row of helmets at the bottom of the screen showed which player was to be receiver or rusher. And JOHN MADDEN FOOTBALL first appeared on home computers including the C64 before becoming an annual console hit. Real playbooks gave it an authentic edge.

But for the classiest presentation, Cinemaware unleashed an amazing C64 interpretation of TV SPORTS FOOTBALL. From the animated TV presenter to the 3D kicking section, this looked superb and played a good game. The ability to play through a whole season or play-offs was worth the asking price for this disk-only game.

Super Sunday Office

Fantasy Football

Board game BLOOD BOWL introduced the idea of fantasy creatures battling on the gridiron, and British company Tynesoft were planning a conversion. However the company folded before it was published and all that can be found is PLAZMA BALL, which replaces monsters with robots. Robots also featured in CYBERBALL, another game originating in the arcades. For collectors it is worth noting that the cartridge version (designed for the C64GS console but able to run on the standard machine) includes a much larger playbook compared to the tape & disk releases. Activision was also inspired to create a fantasy version, known as GRAVE YARDAGE and featuring a pitch littered with mines to slow down a player... These were the ancestors of the popular MUTANT LEAGUE FOOTBALL on Genesis/Megadrive, based on the Madden engine – and now hoping to undergo a revival with a Kickstarter campaign.

Virtual Memories
by Donald Lee

High Scores Arcade

I'm not a big fan of Twitter but I do use it to read interesting news and articles. A few months ago, I saw a recommended tweet by email or on my Twitter homepage that caught my attention. Someone had tweeted that they were opening some video game arcade or museum and that people needed to check it out. There was a link to a website so I clicked on it to get more information.

"This new video game attraction was called "High Scores Arcade" and located in the SF Bay Area (Alameda, CA). I thought it was interesting as Alameda, CA is also home to the Pacific Pinball Museum which I took a look at a few years ago. The two museums are about 2 miles apart from each other.

This caught my interest immediately. Unfortunately, I did not have a chance to visit until recently. While I am familiar with Alameda, CA (friend lives there and I go to the city semi-frequently), it's an estimated drive of about 20 miles across the Bay Bridge for me.

The arcade is located in a business district and there is no parking lot. You'll have to find street parking. However, this isn't a big deal as the arcade is open until late on most evenings. So if you come later, there will be plenty of street parking to choose from.

Like the Pacific Pinball Museum, the arcade charges an "admission" fee and then you get to play any or all of the games to your heart's content. While the Pacific Pinball Museum charged one fee for unlimited play, the arcade had two choices: $5 for one hour of free play and $10 for a "Day Pass". There is an interesting story on why the arcade and pinball museum charge in this manner. Apparently, the city of Alameda had some ordinance that prevents businesses from letting people pay to play games (or something like that). I wonder if it dates back to the days of people playing some "electronic gambling games". In any case, the fee structure is very fair as you can play games to your heart's content.

On this day, as I was with someone, I paid $5 to give the arcade a spin for an hour. Upon arriving, the only thing I knew about the arcade was what I read from their website and Facebook page. I was a little surprised to see that the arcade itself is a little small. It seemed big from viewing the pictures, but in reality, the space is a little tight.

However, while the space isn't huge there are a good selection of games. Many of the games are standalone. But there are a few cabinets with multiple games. There were a couple of sit-down driving games plus some fighting games at the back of the arcade.

On this day, I managed to play: Qix, Donkey Kong, Ms. Pac Man, Pac Man, Galaga, Mappy, One Driving Game (Out Run I think), and Star Wars (may have missed a game or two).

Overall, I liked visiting the museum and I expect to be back a few times a years. I've written about the lack of arcades in today's world. I think arcades are a good social center for people and gives them a place to go. I will admit that visiting a retro arcade museum wasn't super exciting as the Pacific Pinball Museum. Most of the games are the arcade can be played via emulator so it isn't like I haven't played some of these games in years.

However, the arcade is located in a fairly low key business district. It's great for bringing a friend or two to hang out and enjoy some 80's arcade games. If anyone reading or writing RTM is from the Bay Area, High Scores Arcade is definitely worth a look.

For more information visit their website:

http://www.highscoresarcade.com

Is Soft Modding Killing Traditional Retro Gaming?

I can still remember it as clearly as when I first heard about it in my youth, the ability to add a mod chip to your console in order to play retro games. It seemed like such an amazing, illegal, and dangerous thing to do for someone my age, and while I wasn't a child, I wouldn't consider myself a true adult at the time either. I remember hearing it was expensive, that you had to send your console away and there were no guarantees it would work and furthermore, no guarantee your console would work after this "surgery" being done on it. I also fondly recall during this period of time, and later during the era of emulators, thinking that the Nintendo or Sega Police would break down the door of my room, handcuff me, and drag me off because I was an illegal gamer. Funny, I know, but I am often burdened with an over the top imagination. Still, as time went on and I got older I wanted to, no I needed to know if there was any way I could enjoy retro games on a modern system. I had used emulators and while I did like them, nothing could truly replace for me holding an actual cartridge in my hands, and that would never change..right?

About a year ago I found out about a project where a few folks got together and started taking physical cartridges for systems like the Atari 2600, NES, and SNES and were making slots in them for SD cards that you could fill up with roms. This would allow you to put whatever games you'd like on the SD card, thus eliminating a lot of storage space and the need to seek out games, while still enjoying the fun of playing a game on a television and not a computer screen, and still maintaining the use of a cartridge. I actually know people who have sold off their entire collection and gone this route just to make things easier on them. The cost for this venture? On average between $150-$200. This route wouldn't be the answer for me, as I continued to struggle with my love of having an actual physical cartridge versus storage space and spending on these games.

Enter the Wii, a console that, truth be told, I had very little interest in. I didn't like the idea of motion sensory technology and I never bought one during its heyday. As the WiiU came into the picture, and I began picking up Wii games for a special needs children's picnic, I realized I would obviously need to test these games. My fiancée found a Wii with two Mario games for $75 and we were good to go. That's when all these rumors started, and then became realized as truths, by my cousin Chris, classic gamer and IT guru. He sent me instructions on soft modding the Wii, which at first looked horribly confusing. I was so concerned about breaking the Wii, and yet the idea that I could have practically any game I wanted enticed me.

So what is soft modding? Obviously, it is the notion of modding your Wii to play games as one would on an emulator without having to use any tools on your Wii. There is, of course, the risk of bricking or essentially frying the Wii beyond repair, but with the right backup tools and set of instructions it is nearly impossible to mess it up. I went right to work securing SNES titles, but things got confusing when I tried adding other consoles, until I finally cracked the code pouring in titles for NES, Genesis, Sega Master System, N64, and Colecovision, just to name a few. So with technology working on my side and a huge library of games at my disposal that I can play using a Wii Classic Controller, I should be thrilled, right? Sadly this is not to be.

The reason for this is because deep down in my heart of hearts I know this will definitely affect retro gaming sales in the future. It will certainly have an impact on those people who just love collecting this stuff. I really sat down and wrote out a few key reasons why I feel soft modding will change the way retro gaming evolves from this point on, and there were 3 of them that came to mind right away.

Soft Modding Makes Straight Collecting Less Cost Effective

Now look, I'm just as nostalgic as the next guy, and the idea of physically holding a cartridge in your hand, digging through totes in flea markets and yard sales, that thrill of the chase if you will, it's a beautiful thing. But as I wrote months ago, retro gaming sales are definitely being affected by people who have limited knowledge of the products, and with that comes an inflation on prices, which is further compounded by the amount of copies of a game that are readily available to buyers. I own over 300 video games, most of which are in cartridge form, and they are proudly busting at the seams in a large media shelf. I do feel proud knowing I have such a nice collection, and it really has been a blast finding all these games, both online and locally, but I would be lying to you, dear reader, if I didn't say it was also a pain in the butt at times, and obviously, a pain to my wallet. I highly doubt I will ever own every game I've ever wanted in true physical form in my lifetime, and to be honest, as each day passes, I'm becoming less and less driven to continue looking. The idea that, free of charge, I can have several systems planted onto one console, along with whatever games I want, including games that in physical form are either priced high or near impossible to find, is a very intriguing and a hard to deflect argument. A prime example of this would be my love of Earthbound. I had plans to some day purchase a WiiU just so I could download it from the Virtual Console. Once this idea of soft modding came into my life, I thought "Why bother?" and immediately downloaded the game to my Wii via my SNES emulator. Yes, I would love to have the actual physical cartridge, but the idea of paying in the hundreds for one game, or for a new console so I can then spend more money to buy a card allowing me the funds to buy the game just doesn't seem like a financially sound venture. Having the original system and the original game seems more like an act of pride, but why be proud when you can be smart instead?

Then There's The Part About Space

If you, by some chance, own a large home, mansion, palatial estate, feel free to bypass this section, but chances are, most of us are living in apartments or homes that just don't allow us the space we'd love to have for a game room of our own. Chances are you share your home with other people who aren't quite as enthusiastic about this whole retro gaming thing as you are, and you make the most of the space you have. However, if you're me, with 16 systems and over 300 games the idea that virtually everything you own can be placed on an SD card or USB stick and placed onto the Wii definitely makes you and whoever you are living with feel a lot better than tangled up cords, dusty consoles, and space that can be better utilized for other things, like, oh I don't know, your fiancées yarn stash, in my case. My apartment is starting to look more and more like a flea market threw up in it, and maybe you're fine living that way, but I'm beginning to have my doubts. Still, could I really just go out and sell all of this stuff I worked so hard at collecting?

Imports and Hacks Don't Seem So Far Away

For me personally, what really has been a treat using this modified Wii has been the availability of imported games and hacks that might strike my fancy. I mean, if you really stop to think about it, you are saving yourself so much time and money from trying to hunt down an actual physical copy of these ultra rare games, and yes, while you can always play these on an emulator for your computer, the one thing that rings true in using a modded Wii is that you are still playing a game on your television, and the

games are a lot easier to find on a rom site than surfing the web in order to find an actual physical copy. These are games you may have never got to play in your lifetime while hearing great things about them from other friends. I will use my love of Earthbound as an example here again. A few years back, a group of folks got together and translated the Mother 3 Gameboy Advance rom, and while it was nice to play this title, translated, on my laptop, there's something extra special about playing it on my actual television set. I have a laundry list more of examples of this, but the point I am trying to make here is the use of a modded Wii opens up so many more doors for gamers to experience games they wouldn't normally in a setting that is the most familiar.

So Is This Really Killing Retro Gaming?

No, perhaps not, perhaps I am being a bit too rash here, but it is certainly changing the landscape for sure. Yes, there will always be the need to have the actual physical copy of a game, but I also think this avenue is becoming more likable to those folks who simply don't have the time or resources to track down each and every game they would want in their collection. I also feel this is a great resource for trying out games before you hop online and purchase the actual copy for yourself. I think, in the end, there is still great risk (you could make your Wii completely useless) but also great reward with only a small margin for error. Soft modding is not killing retro gaming, but perhaps merely giving people another alternative.

Thanks for joining me on this edition of Jaded Gamer. Look for more in the coming months!

King vs. Kong: A Tale of Two Donkeys

Greetings Retrogaming Times readers!! Welcome to another fun-filled CoCoLicious article!! After previous few months' hiatus from doing CoCo articles, last month I did a comparo between the Sega Genesis and the 32x versions of Sega's revolutionary arcade racing game, Virtua Racing. This month I wanted to look back at the TRS-80/Tandy Color Computer again. In the early 80's, arcade games were all the rage, and having the best home port version often, and very sadly, lead to the belief that the system the 'best' version of a game was on was indeed, the best system. I distinctly remember arguing with classmates who felt the Apple II was far superior to the CoCo due to its version of Pacman (Sadly a good CoCo version of Pacman had yet to materialize - more on that to come).

In July of 1981, Nintendo released a video game many consider to be a quintessential classic video game - Donkey Kong. The goal of Donkey Kong is to help Mario (this was his first video game appearance - ever) navigate four levels of a building under construction to rescue Pauline from Donkey Kong.
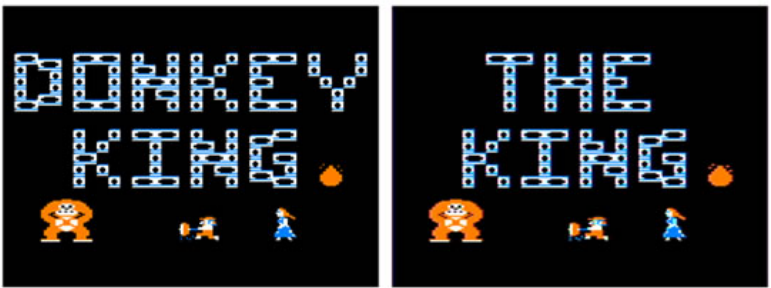
Donkey Kong, to a much lesser extent than Pacman, took the arcades by storm. Virtually all computers and consoles, from the venerable Atari 2600 and Colecovision to the C64 and Atari 8-bitters and everything in between, had an officially licensed version waiting to be plucked off the shelf and played. Except, of course, the CoCo line. You see, Tandy in their infinite wisdom seldom got licensed versions of games. I can think of only a few: Zaxxon, Rampage, Frogger and Pitfall II are a few examples. No, instead we got game titles like Space Race (Omega Race), Monkey Kong and Dunkey Munkey (Donkey Kong), Lunar Rover Patrol (Moon Patrol) and Offender (Defender).

Not that I'm complaining, mind you, since I was very glad to even have some games to play. However, most of the CoCo games came via unlicensed, third party ports, which leads me back to Donkey Kong. As mentioned above, Dunkey Munkey and Monkey Kong were two ports made for the CoCo - but they weren't very accurate to the arcade game - which was common for the CoCo back then. That changed in late 1982 when Tom Mix Software released a game called Donkey King - authored by Chris Latham (who was also responsible for several other arcade quality ports I'll review in the future), for the 32k CoCo, on either cassette tape or floppy disk. The ad for it first appeared on page 40 of the December 1982 Rainbow Magazine:
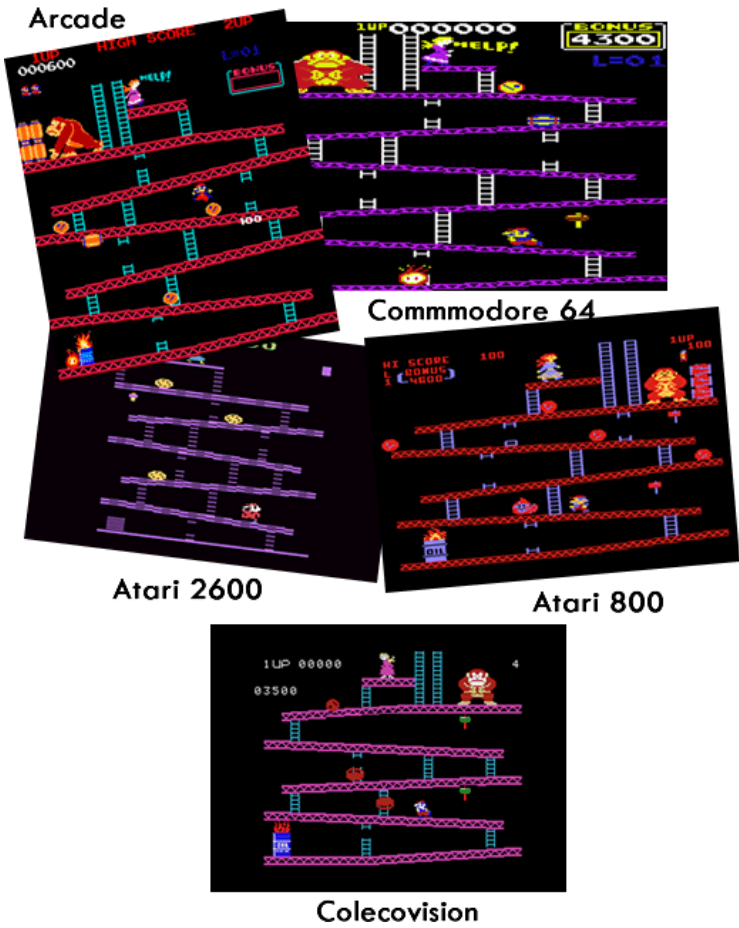

Donkey King Ad

Obviously a clone of Nintendo's Donkey Kong , it was very true and accurate to the arcade with the exception of colors and some sound effects. In hi-res screens, the CoCo relied on artifact colors to try to add some color depth to the screen, since its color palette was very limited (see my CoCo1 article here or here for specs). Further, with no dedicated sound hardware included in the design, getting sound effects and music to play during a game relied on clever programming tricks by software authors who really understood the CoCo's architecture.

Donkey King was so close to the arcade version of the game, rumor has it that Tom Mix Software was threatened with a lawsuit over the game title and was force to change it from 'Donkey King' to 'The King' - hence there being two different title screens for the same game. Which one you got just depends on when the game was purchased. Obviously, since it was an unlicensed version, certain changes had to be made.
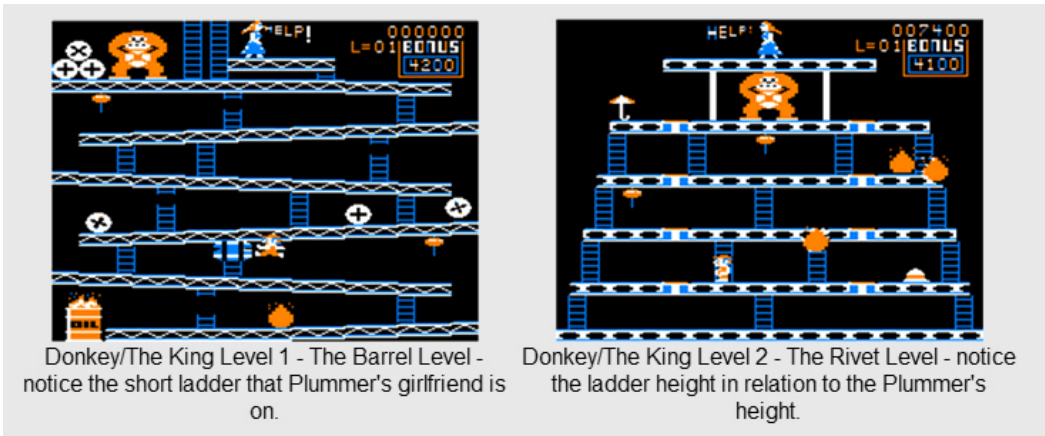
Now, most home versions of Donkey Kong differed from the arcade version in several ways. Usually, the home versions lacked a level and or intermissions and some music and sound effects. The most common difference, however, was the screen layout of one or more levels - for example the Colecovision version, considered by many to be the best home version regardless of the missing level, even had the sides of the screen reversed on Level 1. The VIC-20 and C64 versions had all of the levels and correct orientation; however, they too had height differences on the screen when compared to the arcade version.

Below are screenshots of the arcade and various home versions of Donkey Kong:
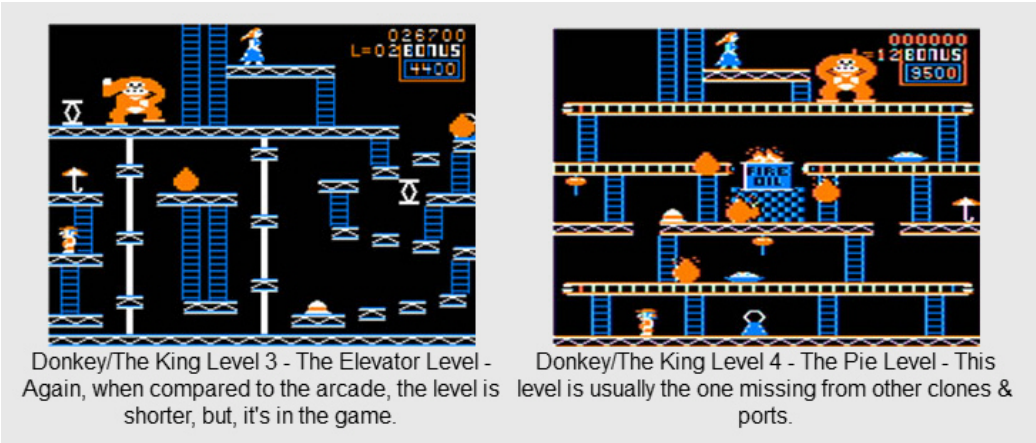

From the screenshots shown above, you can see some common differences between the arcade version and the console versions. I suspect this had to do with the vertical resolution of the home console versus the arcade machine. Whether that's an acceptable reason or not, I'll leave that to the individual retro fans to decide for themselves since it's beyond the scope of this article.

Personally, I prefer the approach taken by Chris Latham, which appears to be one of shortening ladders here and there to achieve the most arcade like translation available for Donkey Kong or a clone at the time. If that was indeed his goal, in my opinion he succeeded.

Donkey/The King Level 1 - The Barrel Level - notice the short ladder that Plummer's girlfriend is on.

Donkey/The King Level 2 - The Rivet Level - notice the ladder height in relation to the Plummer's height.
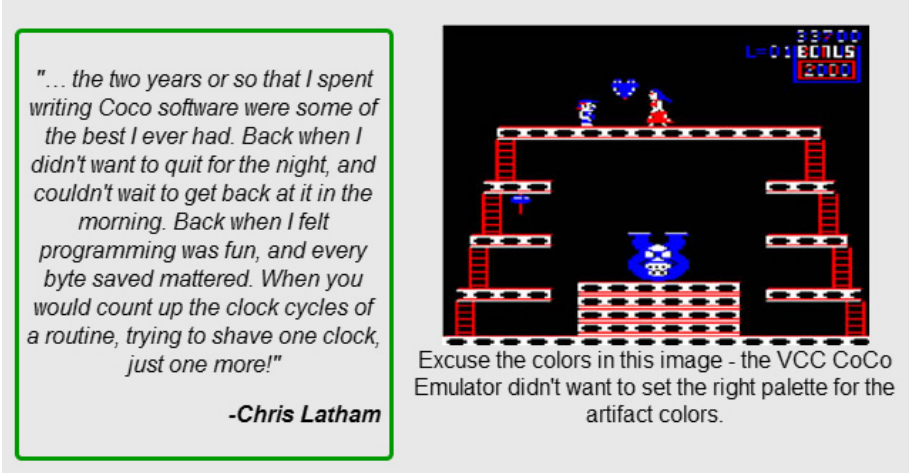
In Level 1 and Level 2 of Donkey/The King you can see where Chris shortened the height of the ladders, and thus the height of the play field in general. Again, personal opinion here, but, I prefer this ideology to changing the layout and orientation of the game's levels.

Donkey/The King Level 3 - The Elevator Level - Again, when compared to the arcade, the level is shorter, but, it's in the game.

Donkey/The King Level 4 - The Pie Level - This level is usually the one missing from other clones & ports.

Chris did a great job ensuring all of the elements that made the arcade version a hit were present in Donkey/The King. All four levels - Barrels, Rivet, Elevator and Pie/Conveyor are present in the game. The other CoCo versions had varied levels of the game, but, Donkey/The King was the only one to have all four levels, arcade like sound effects and the intermissions from the arcade. And as I said earlier there were a number of officially licensed versions that didn't have all four levels either.

Looking at how close Chris's game is to the arcade, one wonders why Tom Mix never pursued an official license. There was a name change from Donkey King to The King, which gives credence to the rumor that Nintendo did, in fact, take notice of the game. No, the colors were not arcade accurate, but, neither were the colors for the C64 and Colecovision either - two versions that are often considered the best Donkey Kong ports.

As for the graphics, I'd have to say Donkey/The King was just as good as the other home ports as well. Also, the fact the game has the Rivet Level intermission (below), and all four levels gives the CoCo game a sense of completeness other home ports lacked.

"… the two years or so that I spent writing Coco software were some of the best I ever had. Back when I didn't want to quit for the night, and couldn't wait to get back at it in the morning. Back when I felt programming was fun, and every byte saved mattered. When you would count up the clock cycles of a routine, trying to shave one clock, just one more!"

-Chris Latham

Excuse the colors in this image - the VCC CoCo Emulator didn't want to set the right palette for the artifact colors.

"The CoCo's strong point was it's CPU, of course, but also the fact that many abilities were software generated rather than limited to a specific set of hardware (a particular sound chip, sprite limitation, etc...) It meant more work and was highly dependent on the skill of the programmer, but it meant it was always possible to make something different or better." - John 'Sock Master' Kowalski
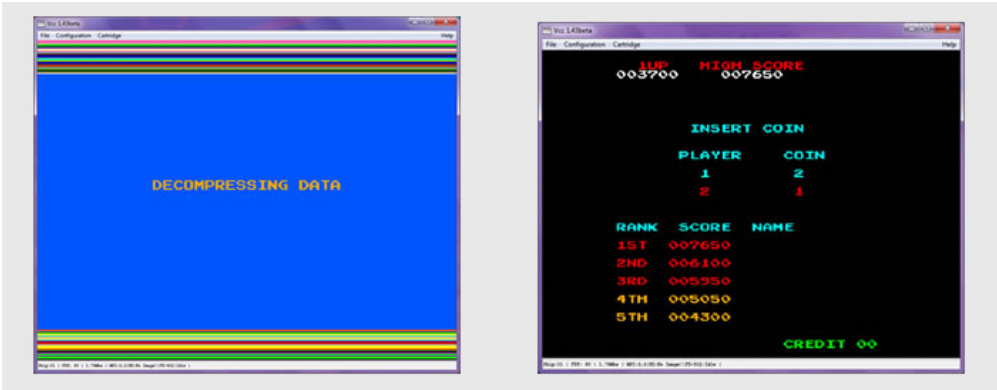
Donkey/The King was a very good representation of Donkey Kong for the CoCo. The game was the rare exception when an unlicensed CoCo port was as good as or better than many of the other 8-bit home ports available at the time. Really, though, the story doesn't end there. As you might have noticed, the article was titled 'A Tale of Two Donkeys' and there's a reason for that. At the Chicago CoCoFest in 2007, a programming legend in the CoCo family made an earth-shattering statement with the release of his latest project. John 'Sock Master' Kowalski is well known for his ability to make the CoCo do things it theoretically it shouldn't be able to. His demos are legendary and his Gloom FPS demo was the basic engine behind Nick Marentas' awesome 'Gate Crasher' game (to be reviewed later).

"What did 'Sock Master' have up his sleeve for this CoCoFest?" That was the question being asked by many during the last month before the 'Fest - and I was one of them asking. In short - Donkey Kong. Literally - it was Donkey Kong. John converted the Z-80 source code to 6809 assembly language. The areas that couldn't be converted, he emulated on the CoCo. Now, the game will not run on a regular CoCo1 or CoCo2. In fact, it will not run on a stock CoCo3, either. In order to play Donkey Kong on a CoCo3, it must have at least 512k of RAM."

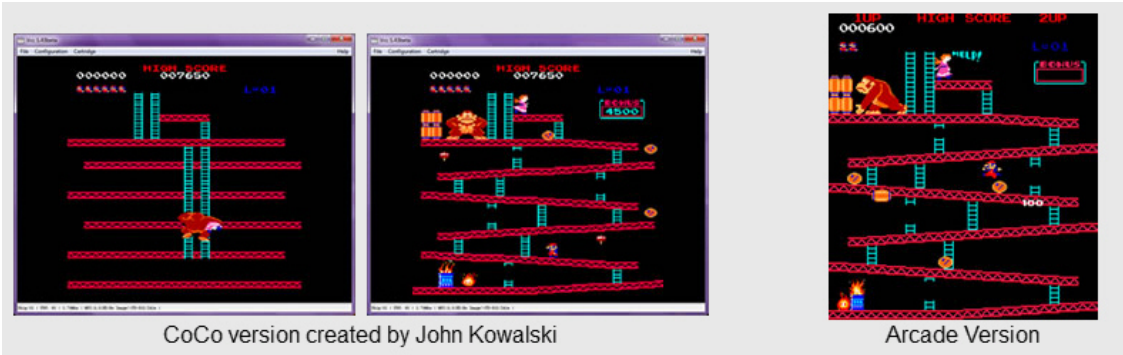As for the results of John's hard work? Nothing short of spectacular.

The load screen and game configuration screen are shown above. The configuration screen is self explanatory - you really can change all of those settings to tailor the game your skill level and CoCo3 configuration. An interesting fact about the game: while not coded to specifically take advantage of it, if the game detects a 6309 CPU in the CoCo3, it would kick the CPU in to native mode. This would give the game a bit of a performance boost over a stock 6809, but, it was coded to run fine on a CoCo3 with a 6809 - which it does quite well. In fact, I've noticed no difference in actual game play at all in my testing and playing over the years on 6309 & 6809 powered CoCo3's.
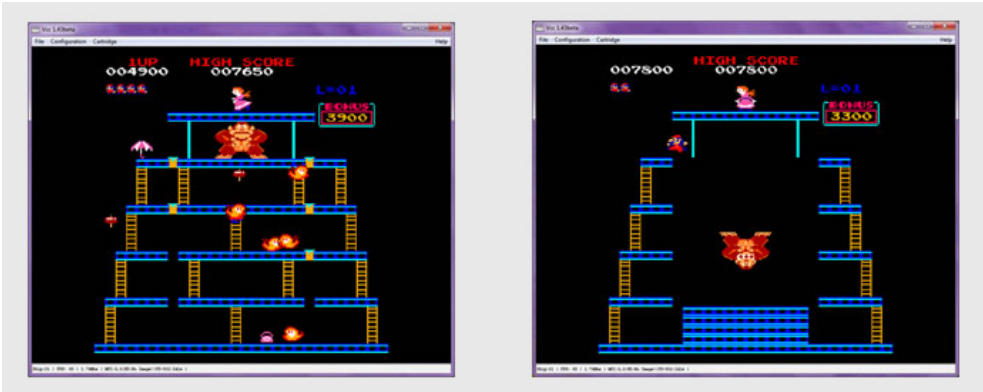
Data Decompression screen and high score screen: John's CoCo3 version of Donkey Kong is highly compressed, therefore it does take some time to decompress - about 30 seconds I'd guess, though I have never actually timed it.

Once the game data is decompressed, the player is greeted to the Donkey Kong 'High Score' screen. In order to play the game, the player pushes the joystick button once to add a credit, then again to begin the game.

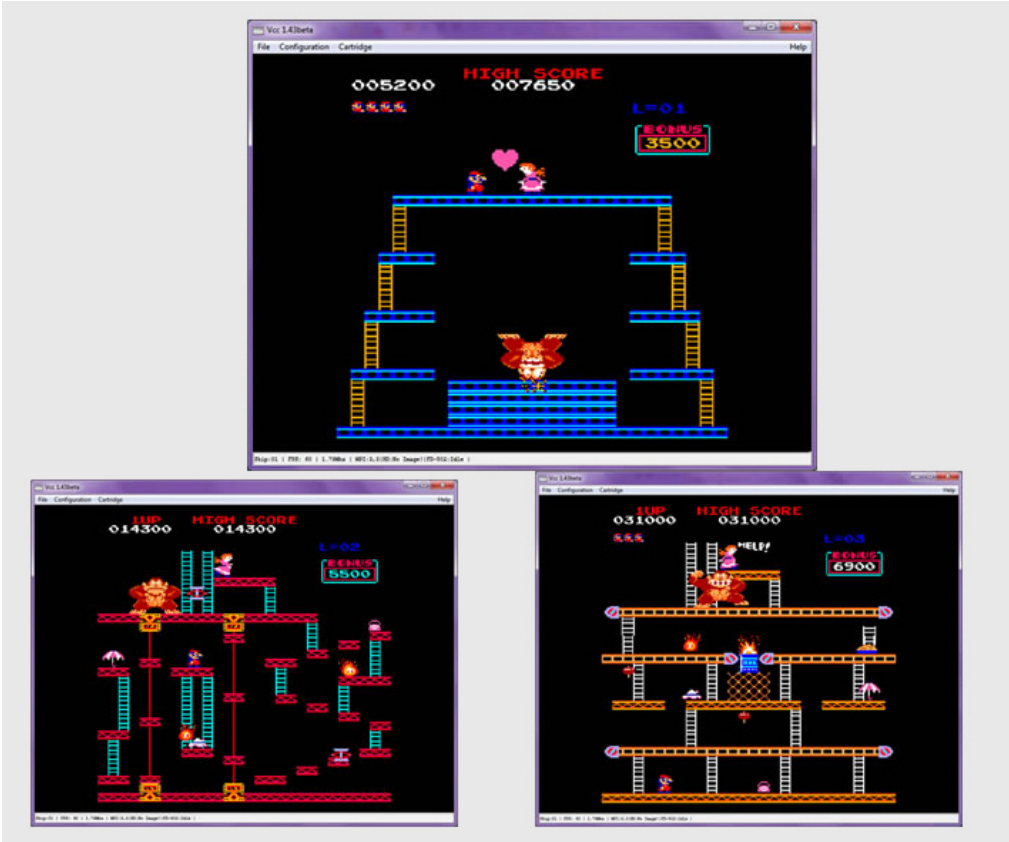
CoCo version created by John Kowalski

Arcade Version

The Game Intro screen was maintained (naturally since it is the original code) with Donkey Kong carrying Pauline up the girders to start the Barrel Level. Since the game literally IS Donkey Kong, it's nearly arcade perfect. Since the arcade has a taller vertical screen height (right image), John had to shorten the screens just a bit to compensate. (Which also appears to be the same idea Chris Latham had for Donkey/The King)

Other than differences in vertical height, this is nearly an arcade perfect translation - graphics, sounds and all.

The Rivet Level is here - along with the intermission after the level is completed, with the full musical interlude:

The elevator and conveyor/pie levels are here as well. Both are nearly arcade perfect - vertical screen height being the only difference. The job John did on his Donkey Kong conversion is nothing short of spectacular. When John set out to convert

Donkey Kong to the CoCo3, his hope was it would inspire others to do similar conversions with other arcade games. Sadly, this has not happened yet. There were some conversions started, but, to my knowledge none have been completed.

In discussions with other retro computer fans over the years, many have said the CoCo3 version of Donkey Kong should not be considered as an entrant when discussing the best home versions of the game. My personal opinion is, why not? Yes, it came out years after official software stopped being developed for the system. So what? Yes, parts of the game are emulated. Again, so what? I think the more important question is this: could the same result have been achieved on other 8-bit platforms? That's a question I'll leave to retro fans everywhere to debate. I'd like to think the answer would be 'yes' - since I'm sure there was some pretty underutilized talent and hardware capabilities for all platforms of the day.

But when you boil it right down, when looking at the specs of the arcade Donkey Kong machine vs. the CoCo3, the quality of this game is a testament to not only John and his skills, but, also the CoCo3. It's a remarkable computer that never ceases to amaze those of us who spent so much of our youth growing up with the machine.

Wrapping up: That's it for another episode of CoCoLicioius. My next article (not sure yet if it'll be next month or not) will be a review of another CoCo3 game by Nick Marentes. The game is a tribute to a popular yellow character from video gaming history. Till then...

Naughty Boy

I didn't think there was a chance in Hades of finding a decent Halloween-themed MAME game this year, thanks to the zombie apocalypse. Not the zombies themselves, mind you, but the crush of modern-era games that have totally sucked the life out of the undead.

This Halloween I'm in the mood to TP the homes of everyone who has made a corpse of the pleasure I got from masterpieces such as Death Race 2000 and The Evil Dead ("You bastards, why are you torturing me like this? Why?"). But perhaps it's that desire that opened me to the possibilities of the darker side of "trick or treat," resulting in one of my more pleasant obscure video game discoveries of the past year.

Naughty Boy, a 1982 coin-op by Jaleco, is an aptly-titled maze shooter for those hell-bent on raising mischief (try Googling "naughty boy video game" and savor the possibilities). In this relatively wholesome version you're tasked with throwing rocks at deadly monsters and goblins while making a brief journey up a vertically scrolling screen to a series of flags flying atop a fortress wall. Destroying all the flags by hitting them with rocks advances you to the next of four screens, which repeat at a faster pace after you complete them. The manual claims there's 50 levels of difficulty, but making it through the first two rounds is a formidable task.

There's a few other elements and complications, of course, but what got me to give this game more than a passing glance is the mechanism for throwing rocks. They're basically mini-grenades, in that the player controls how far Naughty Boy throws them by holding down the fire button until you want them to strike (they're thrown in the direction he's moving). Furthermore, a well-placed rock between two flags will destroy both of them. It takes a bit to learn the timing, but it's a novel way to dress up a mid-pack shooting game and, like the guided missiles games like Demon Attack, becomes a definite strategic asset once you know what you're doing.

I plunged into Naughty Boy without knowing anything more than what the demo in the attract mode showed, so I made the mistake during my first few games of thinking I needed to kill all of the creatures as I advanced. Don't bother – their movement is rather erratic and stupid, so they're often avoidable, during at least the first couple of screens.

The purplish ghosts, who have mouths that look more like hearts than something that could devour you, are joined primarily in their pursuit by monsters that vaguely resemble yellow penguins. Making occasional appearances are robots that absolutely, positively aren't unauthorized R2-D2 clones with different colors. A different kind of intermittent threat comes from dragons – actually just their long and apparently dismembered necks and heads – that appear suddenly and breath a horizontal wave of fire momentarily. As long as I kept moving mostly forward I didn't find the latter to be too much of a threat, but backtracking suddenly does become an increasingly risky proposition.

You have two big things that provide extra aid. One is a "safety zone" that is essentially a small box with doors on the left and right sides, and a number on the bottom wall. Enter the zone and this number starts to count down (I'm guessing you get about 10 seconds or so in real time). While in there you can throw rocks at enemies with no fear of reprisal, but if time runs out the doors disappear and you're basically a sitting duck.

The other big asset are question marks that pop up occasionally on the screen. If Naughty Boy hits it with a rock he becomes invincible to everything but the dragon for a short time – although it's often enough to destroy most of the flags – plus various objects appear in the same spot that can be hit for bonus points.

After every two screens there's a bonus round where the player flies back and forth across the top of the screen in a hot air balloon, trying rack up points by dropping objects on a monster as it moves to and fro along the bottom. The time of the round is measured by a fuel gauge.

By the way, it's after the first two screens when you'll notice a significant ramp up in the difficulty curve, mostly because most of the third screen takes place in maze-like corridors so you can't avoid enemies like the first two screens. Things open up again on the fourth screen, but by then enemies are fast enough and intelligent enough that mere avoidance doesn't work as a strategy. There will be many, many times, at least for a while, when you curse either the game's rock-throwing system or your own inability to succeed with it.

Given the difficulty I had getting through the first four screens, it might sound strange that one of my main grips with Naughty Boy is there isn't a bigger variety of them. There really aren't any games that directly compare to this one, but I did find myself thinking other "cute shooters" of that era like Mr. Do have many more screens and therefore more incentive to keep playing to master them all.

Sticking with the negatives for a moment longer, there's nothing terribly impressive about the cartoonish graphics or sounds, which seem more suited for arcades in 1980 rather than 1982. Both are little grating during periods when you're invincible (the entire screen changes color, rather than something easier on the eyes like your character or the monsters).

DIP switches cover the essentials, including an easy/hard switch, allowing the player to start with two to five Naughty Boys, and awarding an extra Naughty Boy at between 10,000 and 70,000 points.

If you've read this far, then you deserve to be rewarded with one of the biggest tricks and/or treats in arcade gaming. The Killer List of Video Games notes there is a glitch on the first screen that allows the player to roll over the score possibly more quickly than any other arcade game.

"Naughty Boy can sit between the fence and the escape tunnel on the left hand side and keep shooting monsters up and down forever," the site notes. "The point multiplier keeps going up and up until monsters are worth 100,000 each, getting to the point where ten shots will roll the game's score."

The KLVG classifies the game as "uncommon," and there is indeed scant mention of it at gaming forums and websites. At one forum a collector with the moniker of "Claremont" describes an incredible find last September at a flea market that left him "amazed … and disappointed."

"The game condition is unbelievable," he wrote. "The play meter says 700 plays. Not a scratch or mark on it … This thing is not even dusty. Joystick was tight as could be. The buttons felt super solid. Got it home, plugged it in and it started right up perfectly. Played it for 10 minutes and decided I did not care if I ever played it again."

"Unfortunately, the game is Jaleco Naughty Boy. On of the biggest arcade fails I have ever come across. Oh well, for $100 it was mine, and I will not lose a moment's sleep over modding it!"

Needless to say, I found no conversions – official or unofficial – for home computers and consoles.

This probably sounds like a lukewarm write-up for something I'm giving a thumbs-ups rating to, but Naughty Boy is one of those games where the whole somehow works despite some less-than-great parts. I doubt it'd have been a favorite if I'd encountered in arcades back then since there was far too many classics during what might have been the greatest year or two in video game history, at least for me. But in the overall and rather mind-boggling scope of arcade games released during the 1980s, is possesses enough quality to rise above most of the titles I load into MAME, shrug and send quickly to their grave.
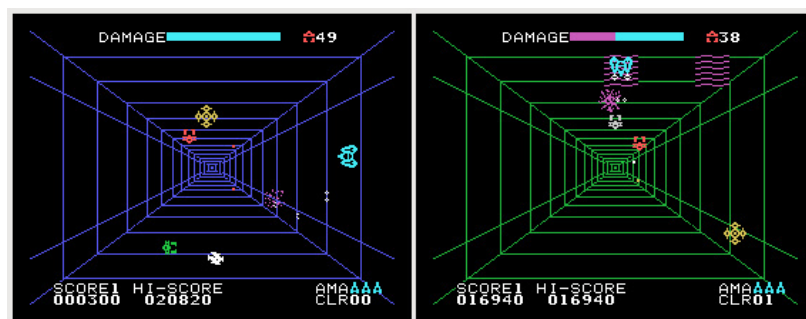

FINAL VERDICT:

SEVERED THUMBS UP

Hyperspace

Cutting right to the chase, of the two games remaining in the Tomy Tutor cartridge catalog, Hyperspace is the more entertaining title. An arcade style shooter with fast action and a frantic challenge, it offers something in a game rarely seen on the Tomy Tutor and that is speed. Hyperspace is what is commonly referred to as a tube shooter, a game that uses the perspective of looking down a tube or tunnel. Enemies are generated at the far end of the tube, which is usually around the center of the screen to simulate perspective distance, and work their way along the edges to the other end of the tube where the player is stationed. The player doesn't move down the tube during normal play and instead revolves around the near end, shooting down into the tube itself. A sub-genre at best, tube shooters are generally represented by two big names in arcade gaming: Atari's Tempest from 1981 and Konami's Gyruss from 1983. However Hyperspace was released right around the same time that Gyruss hit the arcades, offering an experience based around the same technical concept but built within the limitations of the Tomy Tutor hardware.

The "tube" in Hyperspace is more like a rectangle which mirrors the shape of the screen. At the beginning of each stage the tube is drawn from the outside in as a wire frame and then populated with the player's ship on the outermost grid. The control disc on the Joy Controllers, or stick on the Joy Stick, moves the ship around the tube but the control is a little strange. Pressing Left spins the ship around the tube clockwise while pressing Right will go around anticlockwise. This is all well and fine except pressing Down also moves clockwise while Up moves anticlockwise. That means one has to be very careful not to slide into the vertical directions while moving the ship. With the control disc on the Joy Controllers this is rather easy to do since the shape of the input surface lends itself to rolling around in a circular motion. The only reason for this strange control choice I can think of is it allows the Joy Controller to be held sidewise, more like a "modern" control pad, without any difference in input movement. When rotated 90 degrees the controls work the same as when held vertically, Left for clockwise and Right for anticlockwise. If anyone has any other theories as to why the controls are set up this way, I would love to hear them. SL and SR both fire the ship's twin cannons and holding down either button engages an endless stream of rapid fire, a welcome and flat out required design choice.

While blasting away for points is the primary objective of the game, the stage goal is to destroy a set number of enemy ships. The ships themselves are Recognizers from the movie TRON. Incredibly the Japanese version of Hyperspace is on the Tomy Pyuuta is called TRON and was officially licensed by Walt Disney Pictures. Other than the titles and some copyright information, the two games are completely identical. Recognizers in Hyperspace come in three varieties: orange, green, and flashing. Orange Recognizers make up the main attack force and as with every enemy in the game they are generated from the far end of the tube. They move in a generally straight path toward the near end of the tube, occasionally squeezing off a shot that also follows a generally straight path. If an orange Recognizer reaches the near end of the tube it explodes and corrupts part of the grid. A "Damage" bar at the top of the screen details the current state of the grid that the player is currently moving along. Once the damage meter is filled the current grid becomes inaccessible and the player is moved down a row to the next grid. As the player is now further down the tube, there is less time to react to debris and enemies as they come screaming out of the abyss. Full damage on this row will move the player even further down the grid and full damage a third time will destroy the ship, resetting to the outermost grid when the next reserve ship is put into play.

Green Recognizers move down the tube then change direction and move along a row of the grid before returning to the far end of the tube. The biggest difference between a green Recognizer and its more collision prone orange cousin is that they tend to fire a rapid stream of projectiles the entire time they move along the grid, making defeating them a challenge. While they never reach the end of the tube, they often are a bigger threat than the more common orange Recognizers. Flashing Recognizers are by far the rarest type and act as a combination of the orange and green varieties. Although they move in a relatively straight path and will eventually crash the outer row of the grid like an orange Recognizer, they fire rapidly like a green Recognizer. Shooting a flashing Recognizer will instantly destroy all other Recognizers on the screen and award additional bonus points. Flashing Recognizers seem to appear at random, as in some games they will appear frequently and immediately at the beginning of the game, while other times they won't come out at all.

Unfortunately the Recognizers aren't the biggest threat to the player. Sure the red ones can cause the stage to tighten up after knocking out a layer of the grid but the real danger is the never-ending hailstorm of debris that zips through the tube. Although the junk can be shot and destroyed, the proposition is often a losing battle as there's just simply too much of it. If a Recognizer happens to get some shots off in the vicinity of a cluster of debris, there's a good chance that even the rapid firing twin cannons won't be able to cut through the approaching hazards. The debris also makes traveling around the tube itself a chore as it's all too easy to run into a piece of junk as it exits the tube, even with the fire button firmly held down. Imagine playing Gyruss, except the background stars have to be shot or avoided. It's that crazy and the debris in Hyperspace moves just as fast as the background stars do in Gyruss. I'm all for fast moving action games but to think that the player is expected to dodge so much garbage, all the while wrestling with the Tutor control devices, is absolute lunacy and leads to many cheap, unexpected, and instant deaths. Factor in being moved closer to the point of origin of the debris, as layers of the grid become damaged, and it should come as no surprise that game over can come extremely fast in Hyperspace. It reminds me of Activision's Kaboom! in a sense that the game gets harder as a result of the player making a mistake. In the case of Kaboom!, missing a bomb removes one of the water buckets used to catch the bombs, increasing the difficulty. In Hyperspace, letting a few Recognizers by corrupts a layer of the grid, tightening up the distance between the player and the point of origin of the enemies.

While Hyperspace uses most of the standard and frequently reused Tomy Tutor sound effects, it ties them together perfectly. There is always a quiet background droning sound that lends itself to an electronic pulse and the ship's cannons, even when firing constantly, never become annoying. Exploding enemies use the expected default explosion sound and while it's not uncommon to also have that sound playing constantly, it is in no way as jarring as it can be in other Tutor games. The constant firing and exploding sounds have a strangely satisfying repetition to them here, similar to the sounds in Astrosmash on Intellivision or Astroblast on the Atari VCS. Upon a bonus or end of stage award, musical tunes play that are unique yet sound right at home in a game that originally carried TRON branding. As a whole, the entire sound package perfectly supports the frantic pace and fast action of the gameplay. However maybe it plays a little too fast for the input devices used on the Tomy Tutor. Things don't move as fast as to make the game almost unplayable, as was the case with Torpedo Terror for instance, but it adds a little too much challenge early on. Thankfully the game plays extremely smooth but this rolls back into the pace starting out a little too fast and things only get faster as stages are completed.

Just who developed Hyperspace is a question that has always intrigued me. A number of games on the Tutor are based on Konami arcade titles and are credited to "Konami Industry" as such. However Hyperspace does not bare this mark. Looking at the

release dates, Hyperspace and Gyruss had to have been in development around the same time. Was Hyperspace originally slated to be a Tomy Tutor conversion of Gyruss but the TRON license was made available and the game enemies were instead altered? Perhaps it was meant to be a TRON game of some type from the start and the gameplay concept was simply based on Gyruss. It's nothing but speculation but it is an interesting oddity in both the Tomy Tutor lineup as well as the games that carried the TRON license. No surprise the title was changed for the Tomy Tutor release as the TRON license was carved up elsewhere in the United States but it is unfortunate one of the better action games on the platform was cast aside with such a generic sounding name. Who knows, if the license remained intact this could have bolstered Tomy Tutor awareness just a bit more, at least in retrogaming circles. After all, Hyperspace on the Tomy Tutor is just as, if not more entertaining, than the Intellivision TRON games and is most certainly worth checking out if you're a classic gaming enthusiast.

"InsaneDavid" also covers all types of video gaming at http://www.classicplastic.net/dvgi

Hammerin' Harry

Although it isn't the first time I've brought it up, carpentry has played a very important role in the history of video games. After all, Mario began his legendary and ongoing stardom as a simple carpenter attempting to rescue his girlfriend from a giant ape. While Mario would return to the construction site for a brief stint as a demolition worker in Wrecking Crew, plumbing would be his true calling, eventually becoming one of the most well-known and iconic video game characters of all time. Not bad for someone who began as a little guy with a big hammer. With Mario moving on to adventures in the Mushroom Kingdom, the carpentry profession was ripe for a new hero. (Yes, you read that right.) In 1990 Irem continued the grand tradition of working-class video game heroes with a little arcade action game titled "Daiku no Gen-san," or "Gen the Carpenter." After the Rusty Nail Construction Company demolishes his house, Gen sets out for revenge armed only with his giant wooden hammer. Outside of Japan, Gen was renamed Harry with the title reflecting the change and "Hammerin' Harry" was released to western arcades in the same year. A side scrolling action game with a little bit of platforming thrown in, Hammerin' Harry is a natural progression of Irem's earlier action games Kung-Fu Master from 1984 and Vigilante from 1988. The arcade game would spawn a whole series of games featuring Harry and his hammer, including an arcade to Famicom conversion in 1991. Unfortunately other than the arcade original, none of these games would see release in the USA until 2008's Hammerin' Hero on the PlayStation Portable. Europe on the other hand fared much better with localized releases of the first Famicom title as well as Harry's first Game Boy outing. The 1992 European release of the Famicom arcade conversion is based on the English arcade localization, and will be compared to the western arcade release for the duration of this column.

Hammerin' Harry is an example of a simple concept packed with tons of charm. Controls are simple yet robust with a directional joystick, a button to jump, and a button to swing Harry's hammer. The hammer itself has a litany of uses, both offensive as well as defensive. Sure it can be used to attack enemies directly but swinging the hammer while holding down on the joystick will execute a ground pound that temporarily stuns enemies and knocks them back. This is a very useful move when the action gets hectic as it can buy Harry enough time to get back on the offensive. Pressing up on the joystick makes Harry hold the hammer over his head, protecting himself from attacks from above. Objects can also be hit with the hammer in a number of ways. Using the ground pound next to a crate will break it open while using it next to an obstacle will either pound it apart or knock it into the ground. A regular swing next to an object will knock it across the screen, useful for attacking enemies at a distance or deflecting thrown or moving objects. The regular swing can also manipulate objects such as knocking pipes into water to use them as makeshift platforms. The fluidity of control, coupled with the amount of object manipulation lends itself to more flexibility than the usual side scroller.
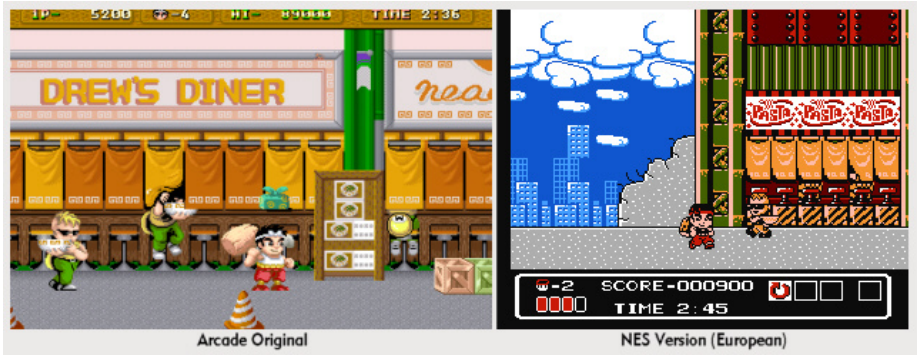
Being that there are only six fairly short stages, the difficulty level has been cranked up but this should be expected. Adhering to the more strict side of arcade scrollers, a single hit will defeat Harry instantly, be it from a falling object or simply being touched by an enemy. Harry's only protection comes in the form of a construction helmet which can be found by breaking open specific crates with his hammer. The helmet will absorb one hit and allow Harry to continue on, working much the same as a suit of armor in the Ghosts 'n Goblins games. Thankfully each stage has multiple restart points so while death can come quickly, there is very little in the way of being sent back once restarting on the next life or credit. In addition to the helmet, Harry can find other helpful items in crates including the extremely useful chili pepper (a bottle of sake in the Japanese version) which allows him to swing his hammer overhead in a circle, essentially increasing his attack range and providing some much needed defense. A POW icon increases the size of Harry's hammer, adding to both its power as well as attack area. Additionally a ground pound with the larger hammer will generate lightning, allowing a ground pound to actually damage enemies rather than simply stun them. Special pants can also be found that, in addition to changing Harry's outfit from red to blue, increase his jumping height.

A six stage arcade action game sounds like a fairly easy title to convert for a home system however NES Hammerin' Harry only contains five stages and most of them are reworked from the original. The biggest change however, is the addition of a health meter. Harry now begins with three units of health, allowing him to take two hits unprotected and continue on. The bottom of the screen contains a now standard NES status window displaying remaining lives, health, score, remaining time as well as any enhancements Harry may have. The helmet, chili pepper (again, a bottle of sake on the Famicom version), POW icon (now simply a hammer) and pants work as they did in the arcade, although the pants appear as boots on the status window and the helmet is used to absorb the last hit before the health meter is fully drained. New to the NES version are special powerups accessed by pressing the Select button. Harry can only carry one special powerup at a time, with the most recent pick up replacing what he was carrying before. A health drink restores one unit of health, a clock will temporarily slow all enemies on screen, and a lighting bolt will damage all enemies on screen when used. If Harry has three units of health when the health drink is used, he will gain an extra unit but four units of health is his maximum.

Control remains the same as in the arcade however crates can no longer be knocked across the screen and into enemies. Instead the hammer simply destroys any crate Harry is next to when it is swung and there are far fewer crates in each stage. Pounding still works the same but there is a lot less object manipulation in the NES version, draining some of the personality out of the game. Thankfully objects can still be deflected with the hammer although the opportunity to do so is mostly relegated to the first boss fight where object deflection is a flat out requirement in the NES version. Most interestingly the home version begins, more or less, as a clone of the arcade original. The enemies all look pretty much the same as Harry runs past food stands outside of the construction area and encounters the same types of assailants along the way. Once reaching the boss is where things begin to diverge slightly. Originally the boss battle against the site foreman takes place on the ground with a pile of bags of concrete that he will throw at Harry. The bags can either be deflected back at the foreman or Harry can attack him with his hammer directly. The NES version changes this up by having the foreman above Harry on a different platform, throwing the concrete bags down at him below. The bags must be deflected back up, before they reach the ground, to cause damage to the foreman. While it's nice to see the arcade's object deflection used, any flexibility of attack here is disappointedly removed as there's only one way to defeat the boss.

After stage one, an intermission plays of Harry's girlfriend being carried off with Harry giving chase, serving as the introduction to the first NES exclusive bonus stage. Harry's girlfriend dangles from the middle of the screen while enemies jump out of doors from a building above. Every enemy that is knocked away with the hammer will increase a point tally, while hitting Harry's girlfriend will reduce the point tally. The higher the count at the end of the timed bonus round, the better the reward that Harry's girlfriend will present to him. If your score is too low she will give him nothing but her gratitude, however higher results award everything from a construction helmet to a health drink. Stage two follows the same visual convention of the arcade version but the stage itself plays more like an NES platform game with moving elevators and pitfalls to avoid. There is also a mini boss battle that runs into the

boss battle at the end of the stage against a dynamite dropping piece of machinery. Arcade stage two ends with a giant robotic wrecking machine, a battle that is much more enjoyable and visually entertaining. The bonus stage this time is more or less whack-a-mole with a gang of moles popping up around the edges of the screen. This is very similar to the first half of the arcade stage five boss battle. Interesting to note that although the intermission of Harry's girlfriend being carried away is always the same, the fiend that carries her away changes each time to represent the antagonist of the specific bonus stage ahead. I find this to be a nice little touch and a good attempt to recapture some of the colorful visual charm of the arcade version.

Arcade Original   NES Version (European)

Stage three begins at the docks similar to the arcade version but diverges early on when the stage suddenly ends with nothing but open sea and a small boat hanging from some rigging. Once Harry steps onto the boat it detaches and heads out onto the water, acting as a moving platform for half of the stage. Here Harry must battle leaping fish and enemy rocketmen in an area that would feel out of place if it wasn't for the zany art style the series is known for. Once the boat reaches the other side of the dock the music changes and seagulls begin to attack. Advancing through this area is relatively slow as the moment that Harry dispatches a seagull another swoops in to take its place. Eventually a guitar strumming sailor comes into view and knocking him away returns the music to normal and the seagulls become tame and leave Harry alone. This has to be my favorite part of the NES version, as a guitar strumming sailor serenading seagulls to attack Harry adds to the quirky charm that I play this series of games for. The boss battle against a gunner and bomber in a car matches that of the arcade original except there Harry had to contend with two cars full of corporate assassins. The third bonus stage is the weakest of them all with a series of three tubes that drop time bombs. The bombs must be knocked away before they count down and explode but the whole thing feels tedious rather than exciting.

The fourth stage is where things begin to differ more radically between the NES and arcade versions. The graphics and layout are similar to arcade stage six, although as with stage two there's a little more platforming added in. The stage still ends with the main boss's office as at the end of the arcade game but the final boss flies away once Harry reaches him. His secretary, whom Harry had walked past in the previous area, comes into the room and transforms into a caped ninja and serves at the stage four boss. I don't know if that's exactly what they were going for as it's possible that she's supposed to be some Japanese office lady in crazy workout clothes. I can say however she sure as heck isn't the arcade stage four boss which was a giant wrecking crane with an electrode on the end of the wrecking ball. Between stage four and stage five there is no bonus stage which feels a little like the developers were getting lazy since the game is in its latter moments and an extra little diversion would be welcomed.

Stage five is completely unique to the NES version and is a climb to the top of the final boss's mansion. Unfortunately the stage itself is rather boring and mainly has Harry knocking away endless streams of enemies and attempting some advanced platforming that would be more at home in a Mega Man game. It's nothing all that challenging but really does feel out of place in a game built around the arcade Hammerin' Harry. The final boss is a greedy businessman in a flying chair, just as in stage six on the arcade version. His office looks great and matches fairly well to the original, however the battle itself is fairly boring and plays like a much simpler version of the arcade final battle. The ending sequence then shows that Harry got his house rebuilt as the big boss was overtaken by greed, something remedied by a couple smacks to the head with Harry's hammer. After the credits, the game begins again at a higher difficulty with enemies that require more hits to defeat.

As much as the two games vary as they progress, they also have a ton in common. The arcade original features beautiful visuals, bright and colorful graphics with amazing pixel art the designers at Irem were known for. The whole world takes on an over-the-top comic book quality that feels distinctly "Japanese." While such vibrant colors and graphical detail cannot be recreated on the NES, a noticeable effort was put forth to capture the style of the arcade version. The entire game has a cutesy, super deformed quality to it, even more than the arcade original. What it lacks in visual detail it maintains in charm and challenge, lending itself to a very enjoyable experience. Audio work is superb and the NES version features excellent sounding samples of Harry's catch phrase, "Let's get busy!" Additionally Harry's exclamation of "OUCH!" when losing a life and the end of stage cheer, "Harry? Harry!" sound great. The between stage "Hammer time!" sample is missing but considering it sounded like it was directly lifted from MC Hammer, it's not surprising. The rest of the package is rounded out with the catchy music and sound effects expected of an Irem game of this vintage.

If there is anything wrong with the NES conversion of Hammerin' Harry it's that I would have liked it more if it stuck closer to the arcade original. The first stage mirrors the arcade first stage within reason and if the entire game followed in suit it would have been fine. The added platforming really doesn't work all that well and there is one jump in stage two in particular that seems like it wasn't tested enough as it's way more difficult than it has any right to be. If not to follow the arcade version directly, the entire game should have been reworked into more of a unique platforming title, rather than a hodgepodge of arcade accuracy and NES conventions of the day. As to why Hammerin' Harry never saw release in North America on the NES, that's hard to say. Perhaps it was just a little too light on content for 1992 on the NES but it's certainly a lot better than a lot of other games released that same year. This is a title definitely worth playing, especially if you are a fan of the original. Interestingly my introduction to the original Hammerin' Harry didn't happen in an arcade but instead at school. During my freshman year of high school in 1996, on the last day of the school year, three arcade cabinets were placed in the cafeteria. For whatever reason I happened to be at school an hour or so before class was to start and saw the games through the windows as I was walking by. One of those games was Hammerin' Harry. That hour was quickly burned through playing the game with another student as we slowly worked our way to the final stage, probably throwing down ten dollars each before finally having to bail and go to class. I've never seen a Hammerin' Harry arcade machine since and that's a shame as it's a great quarter muncher with an interesting attack mechanic and an appealing main character. More than just another little guy with a big hammer, Hammerin' Harry is a great arcade game that had a very entertaining home conversion that was sadly left abroad.

"InsaneDavid" also covers all types of video gaming at http://www.classicplastic.net/dvgi

Turn To Channel 3
by Nick DeMarco

Keith Courage In Alpha Zones Review

Trying something new can be dangerous. Yes, that's how I begin the following review. For you see, dear reader, the whole idea of purchasing and thus enjoying a Turbo Grafx 16 was considered risky business in our neighborhood of North Scranton, Pennsylvania in the late 1980s. You were generally considered an idiot if you preferred Sega products or any other video game products that did not have that commercialized and highly overused Nintendo Seal Of Approval stamped on it. Still, my brother

and I were lured in by the idea of getting a free game along with our purchase and thought that perhaps we had stumbled onto something that would change the course of video game history. Oh sure, at age 8 and 12 respectively we probably weren't thinking that at the time. We were probably just hoping kids at school wouldn't laugh at us when we explained to them a system that no one in the Western hemisphere would really end up truly understanding, and thus, one of the major video game industry flops would come to pass. Still, I couldn't help rooting for the system, and I really couldn't help rooting for a guy by the name of Keith Courage? What's that? Never heard of him. Well, here's hoping I shed a bit of light on the ol' chap in this review.

To be brief, and blunt, Keith Courage was the guy who was going to introduce this Turbo Grafx 16 to the masses. He was going to be bigger than Sonic, bigger than Mario, and even though Bonk, that little caveman dude, would go on to be more of a mascot for the system than him, Keith was the guy who was going to make players question their loyalties to these other big name systems. Of course, as history dictates, he did everything but that. Still, I have a soft spot in my heart for Keith and his Alpha Zones, so much so that recently I purchased a Turbo Grafx 16 with Parasol Stars, and, as expected, Keith Courage in Alpha Zones, complete with horrible game case art and all. Placing the credit card sized game into the slot, ignoring even years later the inability to play any two player games on the system (seriously, they only have a port for one controller) I fired up the game and returned to the Alpha Zones over 20 years later. What did I discover? Read on, friends.

Sound 7

Now this may get a bit confusing, but the sounds you hear in this game aren't necessarily terrible as much as they can get annoying rather quickly. The overworld music is pretty bland, and the music that plays when you enter houses is a bit better, but the underworld music is where the game really shines. It has a very dark, ominous, and futuristic feel to it. The sound effects are kind of clunky, and the underworld is again where things are at their best. You have the sounds of Keith's Nova Suit and his sword going after enemies, some explosions, things of that nature, which are a lot better than the little whine of Keith's tiny sword or the sound it makes when it hits an enemy in the overworld. The intro music in this game on the title screen is pretty good too, but to be honest, as epic as the music is to get you going, it really sets you up for a huge letdown in other areas of the game.

Graphics 8

Wait a minute, is that a double rainbow?
OMG! A Double Rainbow!

Even years later I feel Keith Courage In Alpha Zones has graphics to really go toe to toe with some 16 bit system games of the same era, and are definitely a lot better than most NES and Sega Master System titles of the time. The game has a very futuristic, very Japanese cartoon feel to things, with some bright colors contrasting with some dark hues of the underworld levels. Even watching the emergence of the Nova Suit is a sight to behold years later. It really is a shame that the sounds in this game are a bit annoying and that the gameplay isn't quite up to par because this really is a fairly well designed game otherwise.

Gameplay 7

The fact is, when you really get down to the skin and bones of things, Keith Courage In Alpha Zones just doesn't have the depth other games do, with the same formula throughout most levels. You go through an overworld level, collecting weapons and replenishing your health, until you get to the portal to the underworld where you get clad in the Nova Suit and do battle with some monsters. Rinse, wash, repeat, as the saying goes. When you are younger, it's easier to ignore such repetition. But when you're 32 and playing games from your youth, it really does make you question why you liked this game in the first place.

Overall 7

Honesty being what it is, who knows what the fate of this system would have been had they decided to go with Bonk or another character for their pack in game and not Keith Courage, but I can say without question they didn't make a sound decision. Keith Courage in Alpha Zones is not, by any means the worst platform game ever made, or even the worst game made for this system, but if you're a gamer looking for variety, even in the realm of classic games, you may want to avoid this game. However, if you're like me and have a soft spot for true commercial flops like the Turbo Grafx 16, there is certainly a place in your collection for this title. I mean, come on and help Keith out. He's been out of work for over 20 years.

I hope you enjoyed this review. Look for more from me in the coming months. Take care and **GAME ON!**

Before we part, I want to mention that the Portland Retro Gaming Expo will be going on from October 5-6 at the Oregon Convention Center. There are going to be some new games unveiled at the show by AtariAge (Space Rocks, Seaweed Assault, IXION, and Frenzy) and even a Polybius 2600 homebrew by Lost Classics! For anyone that is in the dark about Polybius, check out http://en.wikipedia.org/wiki/Polybius_%28video_game%29 for some info. I should warn beforehand that even though you should never say never, it was all along most likely a hoax (the original arcade Polybius, not this upcoming 2600 release).

I remember coming across the Polybius arcade rumors in the late 90s on coinop.org by doing an Internet search for early 80s arcade games. I still remember thinking about what it would have been like to have played a game like that and what the nightmares would have been like. However, after years of no new info and the fact that coinop.org said they had a ROM but could only release a screen shot of its title screen, I now realize it was most likely a hoax created by coinop.org themselves. If you know what the manufacturer's name is in German (Sinneslöschen, meaning "deletion/erasure of senses"), it should have alerted you to the chance of it being a hoax, as I'm sure a top secret arcade game from the government would not have made it that obvious as to what the game would do…or would they?

Looking back, I'm sure coinop.org never thought Polybius would get the notoriety that it did, but it sure took the classic gaming scene by storm in the late 90s and still holds intrigue today for those that hold hope that there's some truth behind it all.

Regardless if it's fact or fiction, there's no better way to kick off Halloween than thinking about Polybius and its nightmare inducing gameplay! Hope you all have sweet dreams and a happy Halloween!

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