ColecoVision™

# EXPERIENCE

THE OFFICIAL COLECOVISION FAN CLUB MAGAZINE SUMMER 2022

$9.99

**COMEBACK PREMIERE ISSUE!**


**INTERVIEWS**
Exclusive Interview with Jennell Jaquays!

**UPCOMING GAMES!**
Exclusive Preview of Upcoming Games!

# A LETTER FROM

CollectorVision Games

To Our Readers
Welcome to the comeback premiere 2022 issue of Experience.
This issue is about the excitement of new games, add-ons and great interviews!
It's been 40 years already. As you probably know, the world of video games is changing. It has opened the door to a new era of retro gaming.
Your ColecoVision Video Game System was designed to keep you in the forefront of this Exciting new era. ColecoVision is not only state-of-the-art video game system, but also the only system you should wish for!
Did you know ColecoVision is a system that was never pushed to its full capacity. Believe it or not, CollectorVision will bring you games you thought impossible! Have a look on Page 4. We will bring video games to play to a whole new level of «skills and thrills!»
In this issue we also added a DEV Corner on page 14.
The last 40 years were full of surprises for the Coleco fans. New technology didn't stop us from giving love to our favorite system.
The CollectorVision Phoenix System and the Super Game Module are just two examples of what was done. Of course we cannot talk about everything in only 16 pages, but we can ensure you that there will be even more information in the next issue.
Make sure you look at page 15 to know more about becoming an Experience member!
It's a great issue. We know you'll enjoy it!

Toby St-Aubin,
President,
CollectorVision Inc.

ColecoVision™ EXPERIENCE

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Produced by CollectorVision Games

# IN THIS ISSUE

ColecoVision™
# EXPERIENCE

SUMMER 2022

## MEGA HOT




## ON THE COVER





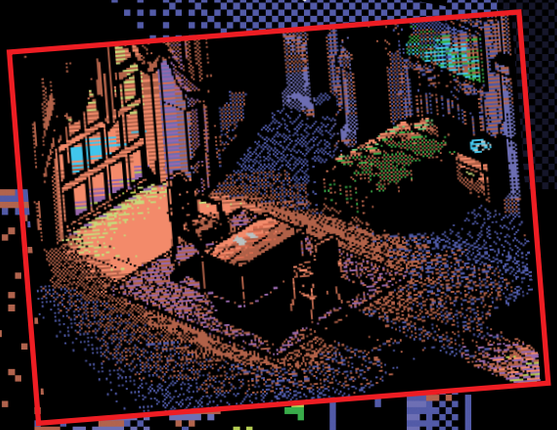

## 40 YEARS OF NEW GAMES

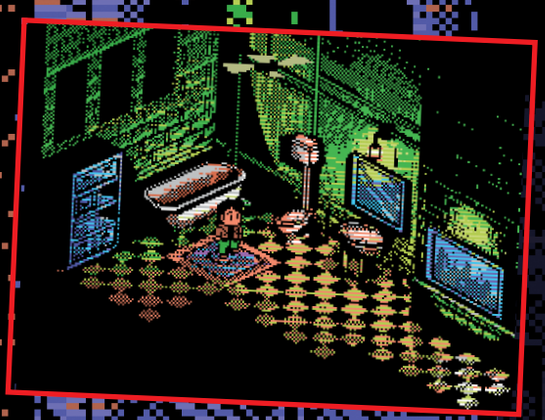
FOR COLECOVISION COMPATIBLE SYSTEMS

# DRACULA

## DRAC IS BACK AND ONLY YOU CAN STOP HIM!

Original Press-Kit





***The press kit boasted, "So much fun, it's almost frightening! Dracula's loose in London, and you're the only detective who can halt his reign of terror! Defeat the monsters and stop the horror! But be careful… the vampire count will use all his Transylvanian tricks to make you his next victim."***

**Dracula** on the Colecovision is almost as mysterious as *Bram Stoker*'s enigmatic character. Only a single mockup was ever published, and it only briefly made an appearance as an unplayable demo during the 1982 *Consumer Electronics Show* (CES) in Las Vegas.

Many of us were excited when we first saw the one and only screen mock-up in **Electronic Games** magazine. The isometric layout with dramatic lighting and shadows made quite the impression. I even carefully clipped it out and hung the page on my cork bulletin board… where it hung for six years until I ripped it down in frustration before heading off to college.

In fact, according to *Jennell Jaquays* (former Colecovision game designer), Dracula never even made it to designing stage!

The mockup Coleco used for their flyer was really just something made up to boost the ColecoVision consoles sales.

Among the many unreleased ColecoVision games, Dracula is probably in your top 5 of those games you wished were released back in the early 80's.

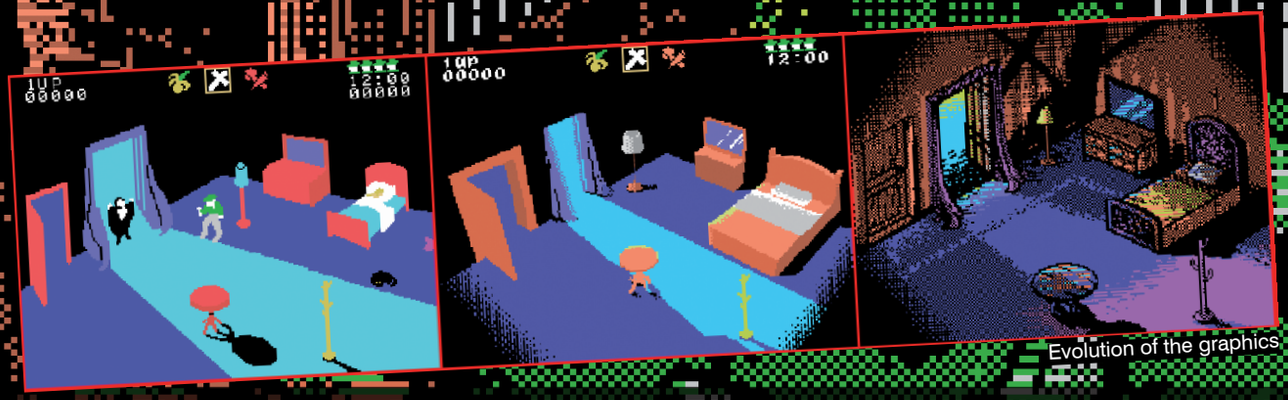
Today *Michael Thomasson* is interviewing *Jean-François Dupuis*, the guy who's bringing this previously unreleased game, to reality!

**The sample screenshot displayed three icons in the detective's inventory: a cross, a wooden hammer and stake, and a third greenish blob. Was that meant to have been garlic?**
Yes, it is indeed garlic. Something we kept in our game design. Garlic will also be an important item to have in your inventory early in the game.

**The comp presented a detective defending a blond woman sleeping in her bed, along with a black cat that seems none the wiser. Will this scene be recreated in the Collectorvision version of the game?**
Yes, we definitely wanted to keep that scene in the game. But our version is a bit different and way more detailed, due to a redesign. In fact, we made an exact 1:1 version along with a few more rooms. But it didn't look as good as we hoped. So, we chose to completely redesign the game from scratch. This time using a brand new approach...

**The mock-up also showed the detective dressed in grey pants and a green jacket. Why did Collectorvision choose to change the protagonist's outfit to green pants and a brown jacket? Fans have been waiting four decades for this game… they WILL notice!**
The screenshot we previously showed features a different color scheme for the protagonist. It is really an early concept of the character. Not quite sure if it will have different colors or not for the final version as we're still testing possibilities.

**Third party *Imagic* published a Dracula title for the Intellivision back in 1983. Did you consider taking elements from that version when** ▶



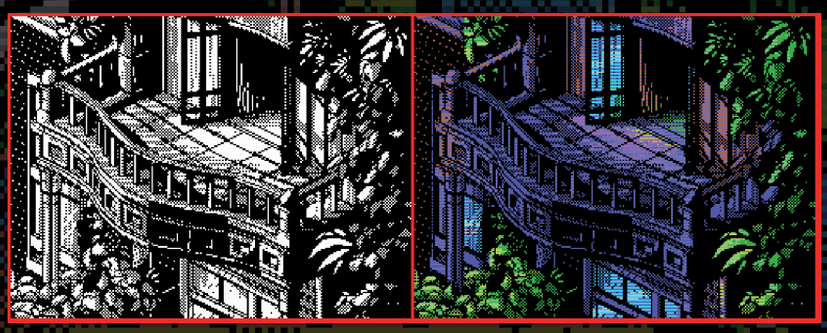
Evolution of the graphics

**building the new Colecovision edition?**
No, we didn't use the Intellivision version as a reference. In 2009, I recreated the orginal Coleco mockup using the actual ColecoVision color palette just to see how it would look like on a real CV console. It would stay on the back burner for more than a decade... The reason I never really followed-up on this game is simply because I could not figure out what the gameplay would be like.
During a meeting, Toby mentioned, ''*We should make games that REALLY push the CV limits to the top without having to use ANY special hardware*'' ''*Something never been done before*'', he said...
It stuck in my mind for quite a while, and one day while I was looking at the Dracula mockup once again, everything just fell into place, ''*What if Dracula would play like an early Resident Evil/Silent Hill game?*''. It was also a type of game that had never been done before on Colecovision... Everything just felt together and I pretty much had the whole design in mind.

**Over a decade ago, hobbyist programmer *Dale Wick* (*Get Booty*, *Mist Maid*, *Niagara*) was working on a Dracula title. Is the new Collectorvision version related to that abandoned project? Is Dale involved with the revived project?**
No, Dale is not involved in this project. I would think Dale was facing the very same problem as we had, ''*What would be a good gameplay for this game...*''
And maybe it could be the lack of free time on his own, who knows?... We've hired a new artist, who's now working exclusively with us to develop new ColecoVision games. I taught him how ColecoVision graphics works and a couple weeks later, he was able to understand the ColecoVision graphic's limitations just perfectly.

**The graphics for the new rendition of Dracula look astounding. Was a new process or tool developed to create such rich visuals?**
No such tools were developed, although we've been using a whole new different approach to make the graphics for this game. Since our goal is to push the CV limitations to the roof, we didn't want to use low resolution backgrounds and single color sprites. ColecoVision can display a total of 32 sprites on-screen, but can only display 4 single color sprites on the same scanline without having any flickering mess. So maybe a game of exploration/investigation would work just well? This way we could do multi-colored sprites since the ''only'' main sprite on-screen would be the main character. We would even use this limitation to our advantage by putting animated celling fan / light fixture and even Dracula where they would never appear on the same scanline as the main character. The game has been inspired by silent movies and of course, the 1931 Dracula movie. We even thought about making the game entirely in black and white at first, but we chose not to. This idea came from the Colecovision graphic's limitations itself, since the ColecoVision can only have 2 colors per scanline in each 8x8 tile, so by using only Black & white colors, it would allow us to draw super intricated detailed backgrounds.
We used that very same idea as a base to draw all of the backgrounds in the game. We started using black and white only and then we added all of the colors afterward. This is how we were able to draw very detailed backgrounds.

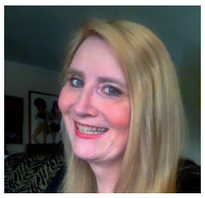
**The project certainly looks ambitious! Exactly how large of an adventure is Collectorvision planning to build? Number of levels? Anticipated play time to completion? Et cetera?**
We plan to have over 60 different unique screens, plus some cutscenes. The game will also feature digitized voices & sound effects. It's going to be quite a large game for the ColecoVision, if not, THE LARGEST Colecovision game ever made running on a stock ColecoVision console without the need of using any extra special hardware. In other words, Dracula will play on a plain vanilla ColecoVision console!
As for the play time, without revealing anything, I would say for your first adventure, your completion time should be around 3-5 hours, at least. BUT, mind you, there are 2 different adventures! ■



## Let's have a chat with...

# JENNELL JAQUAYS

**Michael Thomasson had the opportunity to interview Jennell Jaquays, former Coleco Director of game design.**



***Jennell Jaquays is an American game designer, video game artist, and illustrator of tabletop role-playing games (RPGs). Her notable works include the Dungeons & Dragons modules Dark Tower and Caverns of Thracia for Judges Guild; the development and design of conversions on games such as Pac-Man and Donkey Kong for Coleco's home arcade video game system; and more recent design work, including the Age of Empires series, Quake 2, and Quake III Arena. Some of her best known works as a fantasy artist are the cover illustration for TSR's Dragon Mountain adventure.***

**How did you initially come to work for Coleco?**

Fall of 1980, Rick Loomis of Flying Buffalo introduced me to another young designer, Michael A. Stackpole, who had come up from Arizona with him (where Flying Buffalo was based) to a game convention being held in Michigan (where I lived). Mike and I hit it off as friends. A couple weeks later, Mike called me on the phone and asked whether I might be interested in working on a project with him for a toy company in Hartford, CT. They had hired him for a 9 week contract to work on a simple RPG that they thought might be appropriate for a toy prototype they were developing. I was interested. They flew me in for an interview with the department head. After cooling my heels in the lobby for several hours, I finally had that interview and before I left, had a job offer. That was how I met Eric Bromley, then head of the Advanced Research and Development group (*ARD*), and was hired as a game design contractor for Coleco Industries Inc.

**How long did you work as a freelancer with Coleco before the company hired you internally?**

I started working as a freelancer for Colecos' *ARD* group the first week of December, 1980 on a 45 day (9 week) contract. Coleco offered me (and Michael A. Stackpole) full time positions as game designers on staff in February. So, about two and half months.

**How did your roles change after you hired internally? What were the primary differences between your roles as Manager of Game Design, Chief Game Designer, and ultimately Director of Game Design?**

I was hired into Coleco as a game designer in early 1980. That was my role and title until early 1982 when the ColecoVision project got rolling. In between, *ARD* had recently "lost" an internal political power struggle with the Engineering group and the groups were reorganized and nearly all the technical staff was transferred to the engineering group. What remained in *ARD* was its director, its manager of engineering, its secretary, three designers, and one programmer. When Colecovision was greenlit, the *ARD* group regained its political clout and we began to grow. But, by that time, I was the only designer left on team due to departures for other opportunities outside Coleco by the guys who had been senior to me. I ended up as the manager of design and video game art almost by default. And to be honest, all that really changed over time was my title and my salary. The duties remained the same. Essentially, it was title inflation to keep my reporting relationship with my superiors in the company the same. As my boss' titles changed from director, to vice president, senior vice president and then I think executive vice president, my title was pulled upwards as well. Couldn't have a manager as a direct report to a vice president. When I finally received the promotion to director, game design… all that came with it was a reserved parking space. Which, to be honest, was a great perk. There just weren't enough parking spaces in the Coleco lot.

**The Coleco table top games based on popular arcade games were a big hit for Coleco. What was your role in relation to them?**

*Galaxians* was the first of the tabletops. It came to us in nearly complete form. I think, at that point, it already had a looks-like prototype of the vacuum fluorescent display tube. I remember

testing the prototype while we were in our "exile" offices in a little used corner of the Coleco HQ's basement. I primarily worked on documenting the feature and control updates to the nearly complete game that came to us from the outside. With the *Pac Man* title, I was more involved in the design, including making modifications to the maze to make it more like the arcade. For *Donkey Kong*, I worked with designer/engineer Jay Belsky to document the play of the game and design the way multiple game levels could be made to work with the extremely limiting fixed elements of a vacuum display tube. I created a graphic image that included a Mario character who looked like he could be moving left or right, flames, barrels, and girders. Unlike the previous units, I did the final art that was used for the vacuum display panel. By the time *Zaxxon* and *Ms. Pac Man* came around, I had a team and assigned the main design work to Lawrence Schick for *Zaxxon* and Kevin Hendryx for *Ms. Pac Man*.

**You converted two arcade games for the Colecovision. Did you have access to original documents and code for *Donkey Kong* and *Omega Race*, or did your team have to start from scratch?** ▶

For arcade conversions, the only "original" things that we had to work with were the arcade consoles themselves. No design documents, no code dumps, no graphics. Everything was done by playing the game, observing play (and later recording it with a video camera), a mechanical stop watch to measure timing, and even measuring tapes and rulers to establish proportions of the art. We had to recreate everything from scratch for every arcade. *Donkey Kong* and *Omega Race* were no different.

**The *Omega Race* treatment was exceptional and added a great deal of value and additional gameplay over other ports. In many ways it even surpassed the actual coin-op. Whose idea was it to offer the two-player simultaneous head-to-head option?**

Chances are, it was mine, but I don't have specific memories of the design phase of the game. By that point, most of my responsibilities on product involved managing and scheduling my staff, and reviewing and signing off on every single aspect of every phase of design, development, and production for out entertainment video game projects (on all consoles and computers). Being an individual contributor on the occasional project was a reward that I could give myself from time to time.

**Other additions such as the center tunnel, Astro Gates, fast bounce, and reflective wall options really gave the game more depth. Did the original licensor, *Bally*/*Midway*, ever contribute to or limit development of the home ports, or were they out of the picture after the contracts were closed?**

I don't remember having any design issues or interactions with the licensor. While *Omega Race* was a conceptually simple game, it allowed us to add some relatively simple modifications that didn't change the original in any way, step on the IP of their characters, or make it a significantly different game in any way. Again, as far as licensing contracts went, I really don't know. If anything, the most difficult aspect of the game development was simulating the physics and feel of the vector graphics with the more limiting low resolution raster graphics of the TI graphics chip.

**What can you tell us about porting Konami's obscure *Roc' N Rope* title?**

About the only specific memory that I have of that project was what the in-house artist did with the caveman character. We didn't have a lot of flexibility with that game. The enemies had to be simple, two frame, one-color sprites. So when the artist on the project produced a caveman sprite who looked like the Peanuts cartoon character Charlie Brown, I did NOT approve it. I took a pad of graph paper home that night and designed the caveman sprite that appears in the game. While this may seem odd for a design manager to do that, my career in games has been an equal mix of design and art, including years spent as a full-time illustrator, and then later as an environment artist on real time strategy computer games.

**Atari seemed to license the big arcade hits, while Coleco, outside of *Donkey Kong* and *Zaxxon*, seemed to find the sleeper hits. One could argue that a Colecovision treatment of such titles actually boosted their name brand. Your take?**

I won't argue with that. Coleco was a "me too" company. Not in the modern sense, but at the time, their superpower was coming into a market late and creating a product that competed directly against a more popular brand, but doing it better and at a lower cost. While we got lucky on a few big titles (like *Donkey Kong*), we had to find other ways to create video game experiences similar to the more popular titles. That often meant taking low-profile arcades and doing what Atari and Intellivision couldn't: make home interpretations of the arcades that more closely approximated the originals. So instead of *Pac Man*, we had *Lady Bug* and *Mousetrap*. Instead of *Jungle Hunt*, we created similar game play with our license of the *Tarzan* movie.

**What was it like working with licensed intellectual properties? Any issues with Peyo, Arthur C. Clarke / Metro-Goldwyn-Mayer, the Edgar Rice Burroughs estate, or others?**

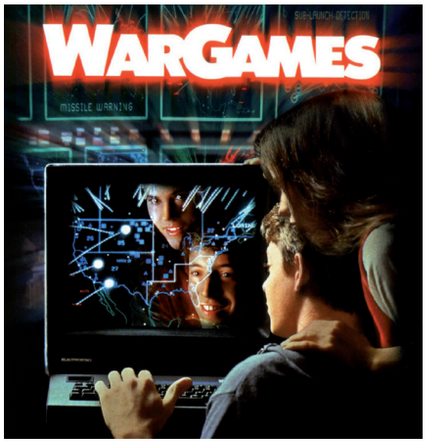
Working with IP licensors was often difficult and unsatisfying… at least for the licensor. With Peyo, we had to explain to them that the Colecovision could not exactly duplicate the exact Pantone blue color they demanded we use for the Smurf's skin tone. They had a choice of two blues. Which did they like better? The Edgar Rice Burroughs estate involved Burroughs widow at the time. She was adamant that because Tarzan was immortal, our Tarzan character could not "die" in the game. We had to rethink what happened during play. So Tarzan is never killed. He is only stunned. I don't remember any issues for *2010* or *Wargames*. We found game design solutions for those that didn't impact was going on in the motion pictures. For *Rocky Boxing*, I think we made the mistake of showing the licensor that beautiful (memory storage expensive) full screen title page of Rocky. We had to leave it in the game, even though it added nothing to play. While it wasn't specifically in my group, I remember that the *Dr. Seuss* estate was deeply disappointed with Coleco regarding the use of their characters in video games. Our marketing and

education groups showed them this wonderful animation our art group did of the Cat in the Hat balancing himself on a big ball. No gameplay, just the large, complex animation. Then we turned around and used their IP in a low resolution Atari cartridge and a static puzzle game.

**You co-designed *WarGames* with Joseph Angiolillo. In 1984, it won the Summer C.E.S. Original Software Award, and is still very unique in gameplay. Did you have trouble building such a complex game at the time in a mere 24k?**

When Coleco obtained the license for *Wargames*, they treated the company to and advance pre-screening of the movie at a nearby movie theater. I didn't know much about the movie or its story at that time. I wasn't particularly inspired until near the end of the movie when the computer began launching simulations of nuclear war scenarios. When I saw those arching missile paths, I knew what our game had to be. I took inspiration from two

additional sources. *Missile Command*, which Coleco would never license, and the stage magician trick of keeping multiple plates spinning at the same time. The latter was a perfect metaphor for my role as design manager, so it was always on my mind. The game would require keeping multiple areas of the USA safe from incoming missile attacks. Those attacks would be




represented by the dotted trails of the missiles as they moved towards their targets. So I get credit for the grand plan and design. Joe took over the day-to-day design and the details on the project. But we made decisions together as we moved forward. The implementation of the game fell to Innoventions, a small Boston area software team who had a history working with Coleco on projects. If you remember the "digital communication pad" used by the Twileck character in the last episodes of the Boba Fett series on Disney Plus, that was actually a prop made from a Coleco electronic bowling game. Innoventions had programmed the software for that game. For *Wargames*, they solved the challenge of creating the missile trails in real time over the maps of the USA. Those were done programmatically, not with premade tiles. That was the programming solution that made the game work.

**Tell us about your short stint with the French developer Nice Ideas?**

Nice Ideas was a French development company based in Nice, France, near the Mediterranean coast. Hence the name, Nice Ideas (or "Nee-see-day" as it was pronounced). The head of the company was an Englishman, Tim Scanlan. What I remember is several projects. First, the company re-engineered/programmed our *Donkey Kong* cart to get it to fit on fewer ROM parts. I think it also came with the cost of losing some animations of flame creatures on the Rivets level. They were also mostly in the orbit of Mattel, working on arcade adaptations for them. When Mattel bailed out of the video game market in 1984 (I think), Nice Ideas was left with several nearly finished titles. Coleco acquired the rights to *Burger Time* and *Bump 'n Jump*. We worked with Nice Ideas to upgrade graphics and adjust gameplay. I think our *Burger Time* has better graphics than the original arcade (Kudos to our art team member, Frank Lam). We sent one of my designers, Tom Fulton, over to Nice


to finalize the cartridges. I was the first choice, but we had just had a new baby and leaving for an extended time just wasn't in the picture for me. Tom had to jump through hoops to get a passport quickly. Finally, Nice Ideas gave us the rather weird game of *Illusions*… which I think shipped after we were laid off. And I worked with them remotely to develop a game titled *Fireman* which was about putting out fires in a burning building. I was let go, and the team shut down in Hartford before we finished that project. I found this web link from about 22 years ago which briefly mentions Nice Ideas and the other technical accomplishments of Tim Scanlan. (https://www.webtimemedias.com/article/tim-scanlan-cannot-stop-making-inventions). ■

FOR ColecoVision COMPATIBLE SYSTEMS

# BERZERK


**Stern's Berzerk was a huge success in the arcades. Its gameplay was great and it featured innovative ideas with some chilling speech.** Later, this game inspired *Eugene Jarvis* when he created the amazing **Robotron:2084**.

Created by programmer *Alan McNeil*, **Berzek** owes its title to a series of science fiction novels called *The Berzerker Stories*, by *Fred Saberhagen*, which is about a race of robots sent to Earth to destroy all life forms.

In this game, you play a guy – who is one of the very first of its kind to appear in a video game instead of the usual spaceships – who wanders around an endless maze full of psychotic robots, every one intent on your immediate and thorough destruction.

The hero is able to shoot in eight directions, which is a great programming feature for the time.

It is possible at any moment to leave the screen by one of the sides to go to the next screen.

The droids bark less-than-welcoming phrases in their robotic language.

If you stay too long in a screen, *Evil Otto* (who owes his name to Dave Otto, a friend of Alan McNeil with whom he worked at Nutting), in the form of a big smiley face, intervenes, and then it is better not to hang around because he is invincible and passes through walls.

The robots have a basic artificial intelligence: they simply try to get up to the hero to shoot him. Note that they can kill each other, which is one of the main innovations of this game. This is something players can use to their advantage, 'encouraging' the droids to destroy each other.

Graphically, the shifty-eyed robots owed something to Battlestar Galactica's Cylons.

Berzerk is the first video game in history to cause the death of a man. On April 3, 1982, an 18-year-old player named *Peter Burkowski* collapsed after 15 minutes of intensive play and two high scores, struck down by a heart attack in a Calumet City, Illinois gambling hall called The Friar Tuck Game Room. The autopsy revealed two-week-old traces of cardiac alert, but no doubt the nervous tension caused by the game, which easily becomes unaffordable, must not have helped matters.

Berzerk was a great success, although its graphics were not at the level of what was already possible in 1980. Subsequently, an *Atari 2600* version did very well.

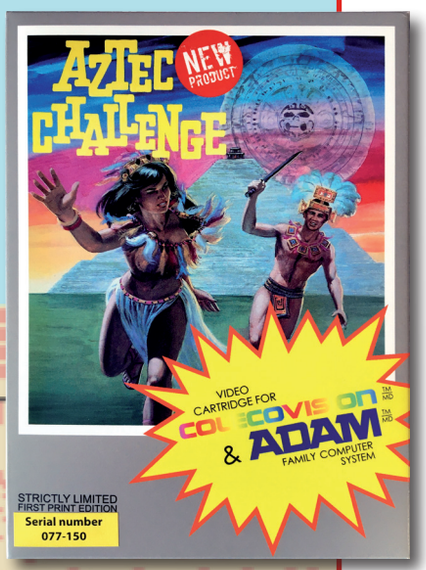
Berzerk was followed by a sequel called **Frenzy**, in 1982, which features slightly improved graphics, no longer electrified but either destructible or fire-reflecting walls, and revised AI for robots.

The ColecoVision already had the game Frenzy, so it was about time to have Berzerk released for our beloved system. It is now reality thanks to **Tony Cruise** from *Electric Adventures* who did a tremendous job in programming this version as close to the original as possible. Thanks to him, you will once more get the real arcade game at home! ■

# AZTEC CHALLENGE

**In this classic C64 game of 1983, you must reach and explore an Aztec temple while avoiding a variety of dangerous obstacles. Each level is like a whole different game, with different challenges and different types of scrolling and exploration.**

**The game was programmed by Brian Beuken and Allard van der Bas. It is published by Jan van Rosmalen who made this project come true with permission of the original author, Paul Norman.**

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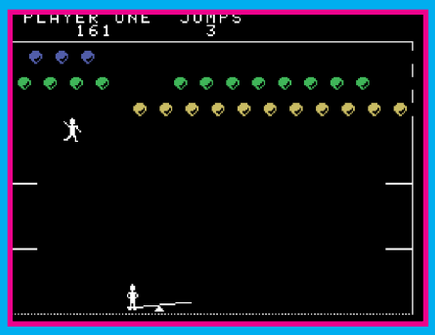
PREVIEW

# CIRCUS




Circus is a block breaker arcade game released by Exidy in 1977. It is a re-themed variant of Atari's Breakout, where the player controls a seesaw and clown in order to pop all the balloons in the level. A clown appears from the edge of the screen where there is a jumping board, and the player must move the seesaw located at the bottom of the screen so that the clown can bounce back off the seesaw once he jumps off from his starting position. The clown on the other side shoots off into the air towards the balloons. Hitting any of the balloons with the clown causes them to burst.

**Jean-Michel Girard** (aka *Alek Maul*) disassembled the arcade game ROM to analyze the game's particular physics in order to program this ColecoVision version from scratch and to offer the closest version to the original game.


# SUPER UWOL



**Super Uwol** is the following of **Uwol, Quest For Money**. These games were originally made by the **MOJON TWINS**.

Uwol enjoys a quiet retirement at his cozy house on the beach of Pepinoni (province of Badajoz), so he doesn't realize that somebody has stolen all his money from the bank. Luckly, his good ol' friend Meemaid, the evil sorceress-turned-super heroine learned about the incident as she was using the ATM in the very moment the bank was being robbed.

Uwol and Meemaid get through the new Storm Palace to get his money back. Now they're lost and you have to find your way out with the money!

This game offers a co-op 2 players mode for more fun.

# W.i.P?

WHERE IS IT?
The Quest For The 10TH Island


Hounded by the dreadful Drühl, an intergalactic bounty hunter robot, Reko, managed to send an SOS despite his maneuvers to avoid Drühl's shots. Out of energy, Reko must land on a planet called «M33».

To leave this planet, he must first cross the «M.33 matrix archipelago» which is composed of 9 islands and then, go to the 10th. But… WHERE IS IT?

**Eric Mendel** developed this game where your speed and observation skills will be essential!

It becomes quickly addictive and you will enjoy the challenge!

PREVIEW

# HARD HAT MACK



All you have to do is finish the building. Sound easy? Then you're forgetting about certain government regulations, the neighborhood punks, and the fact that falling bodies (including your own) accelerate at the rate of 32 feet per second/per second. It's a tough life, maybe, but it makes your beer taste better.

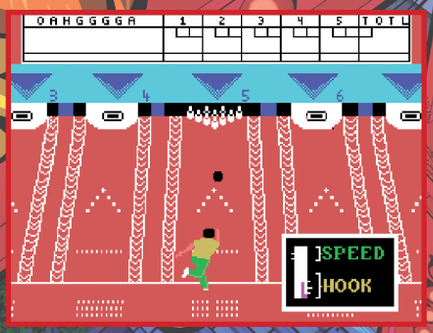
Clearly inspired by Donkey Kong, this game was made in 1983 by **Michael Abbot** and **Matthew Alexander** for the Apple II computer.

One of the villains in the game is a OSHA agent. OSHA (Occupational Safety and Health Administration) enforces Federal Health and Safety rights within the workplace in the USA and at least one California State Senator publicly accused the game of being anti-worker for depicting OSHA agents as villains, which prompted some retail stores to pull the game from their shelves.

## SUPER ACTION™ BOWLING

Get out that shirt, put on your bowling shoes and get ready to roll with **Super Action Bowling**! This simulation gives you the look of «real» bowling. With multiple levels of play, realistic pin action and automatic scoring, this is a bowling experience the whole family can enjoy.

Three skill levels are provided - Kids level sets the speed and hook automatically, while Amateur has more margin for error with hook/slice than professional. The game is played from a plan view, with four other (empty) lanes visible. Single matches or a league structure can be played. This port of the MSX game **10th Frame** is the opportunity to expand the sports games list for the ColecoVision. After baseball, football, boxing, skydiving, ping pong, golf… You are now able to play bowling at home on your favorite console!




FOR ColecoVision COMPATIBLE SYSTEMS

# Williams ROBOTRON: 2084

The game **Robotron : 2084** tells the story that in the endless quest of mankind for technological progress, Humans created the Robotrons in the year 2084: a kind of robot so advanced compared to their creators. Guided by their infallible logic, the Robotrons quickly concluded that humans are of no use and should be destroyed. You are the last chance of humankind: thanks to an error in a genetic manipulation you have super powers. Your mission is to stop the Robotrons and to save the last human family.

And this is how, with such a déjà vu scenario, you get a video game which a lot of people consider to be the best ever.

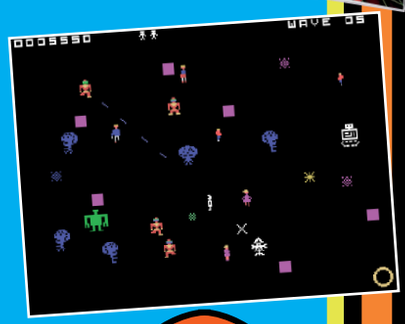
As soon as he could figure out how to adapt the amount of on-screen characters and the dual-joystick mode, *Charles Spencer* decided to port this famous game to the ColecoVision. The game also supports two other single-controller modes, one with the keypad to shoot in the eight directions, the other one with the two side buttons to shoot forward or backward. The dual-stick mode is great if you have got a roller-controller expansion module to house the controllers.

Thanks to Charles Spencer's talent, we now have the best possible version of Robotron:2084 for our beloved ColecoVision. Toby St-Aubin has just interviewed him.

**First, tell us a little more about you. Who is Charles Spencer?**
I'm a 51 year old software engineer living in a Massachusetts suburb with my wife and two cats. My other passion is music and I have a room full of guitars, drums, and amps that attest to that. When the pandemic set in, I put playing out with bands on pause and I had recently taken up writing games for Colecovision as a hobby because the programming I was doing for work had become terribly routine and tedious. I needed a creative outlet that would reignite my joy of programming. The Colecovision was the game system I had as a child and after all these years I was curious about the hardware and the code was behind the games I loved.

**You've been programming for how long and in which languages?**
I started programming computers when my father gave me a ZX81 for my 11th birthday. Like other kids, I worked with Basic, moving from the ZX81 to a TS2068 and then a Z-100. I shifted over to Pascal in high school and up to C and C++ when I started college. After entering the work force, I worked on Visual Basic applications using C libraries to communicate with database engines executing 4GL query languages. Those Visual Basic user interfaces were replaced by Java and browser-based applications and then lastly the applications became HTML and Javascript powered by server based Java. With Coleco game development in C and Z80 assembly language, it has been fun to get back down close to the hardware and memory. It's a sharp contrast to my daily work, the results of which is Java bytecodes executing within a virtual machine in an operating system that itself is hosted in a virtual server environment. I always found that writing games was a good way to learn a language because you'd naturally find yourself exercising most of the features of the language to simplify the development and to manage complexity.

**What do you like the most about programming a game?**
Game coding is a great outlet for exercising creativity and problem solving and with a very rewarding result. When you write a game you're creating a miniature world with the characters and environments that you choose to create. The biggest thrill I get is when ▶

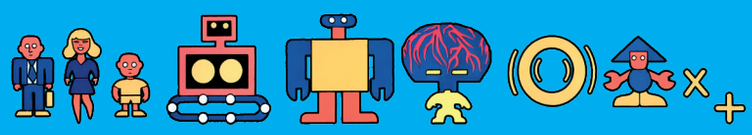
I add some small AI that brings a non-player character to life and makes it respond to its environment and to hazards and to behave in an intelligent fashion. When I wrote my port of *Asteroids* I found that the resolution and scale of the playing field was such that the UFO ships would too easily be destroyed before being a threat to the player. I added code to have the ship look where it was heading and blast obstacles out of its way while also adjusting its course. As soon as I did that the UFO seemed alive and intelligent and it felt like a real adversary. In addition to AI it's also fun to introduce physics into a game as the result is a more satisfying and interesting game experience. It was a thrill when I got angular acceleration and momentum working for Asteroids and I had fun just flying the ship around (it was my first game after all). At some point I'd like to recycle that game engine to make a game that involves more flight and that introduces gravity as well. All this being said, what I really like most about programming a game is the knowledge that people are having fun playing the finished product. The thrill I get entertaining a crowd from a stage is the same gratification I get when people are entertained by the games I've coded.

**Why did you choose Robotron as a project?**
There is a core set of classic games from the 80 to 84 era that I feel like every platform should have available and Robotron is one of these. The game has such great and unique characters: the indestructible lumbering hulk, the brain that programs humans to become zombie berserkers, spheroids and quarks spawning enemies, and the humans themselves strolling amongst the chaos and carnage. I always liked that the game had a story line and like its predecessor *Defender*, your character had a positive mission: you were meant to protect and rescue, not simply destroy. I kept the project in the back of my mind for a while, puzzling over how I could get so many characters on the screen without flicker. Eventually I saw a demo of the game ported to the TI-99 where they had used characters rather than sprites and that got me thinking because the grunts already move in a clunky fashion so making them characters was acceptable. Once I got the human characters animated to move smoothly as characters I was off to the races.

**What is the most difficult part when programming a new game?**
From a purely coding standpoint, the primitive debugging options available can really slow things down. I'm accustomed to sophisticated development environments in which you can set breakpoints that halt execution and let you step through source code when specific conditions have been met. This would be very useful for determining why every once in a great while the logic that controls a game character sends it scurrying off in the wrong direction. From a program design standpoint, the answer depends on whether the game is a port of an existing arcade game or an entirely new creation. If you are porting an existing game, there is a very high bar set by Colecovision's programmers for the accuracy with which a game can be reproduced and gamers expect you to meet that standard. The challenge is matching the detailed nuances of the original game so when you pick a game to port you have to weigh in the strengths and weaknesses of the platform. There are games I'd love to port but there would be sufficient compromises in the translation that I'm hesitant to try because the result might not be satisfying. The challenge of creating a totally new game is one of imagining a whole new miniature realm and coming up with those key elements and variations that make it a game you'd want to play over and over. Atari's *Adventure* is a great example of how adding the right elements makes what is visually a very simple game so very engaging.

**How long did it take you to program Robotron?**
The initial prototype came together in a little over a month which sounds like a really short time but it was built on a framework I've developed starting with my first game so there's a lot of code recycling. However, I quickly saw that the prototype was not going to scale up to the number of characters that were needed on the screen and with the smoothness of animation that I wanted to see. I spent some time discovering how I could modify the C code to improve the compiler's generated assembly code but it wasn't nearly enough so it was at this point that I dove into the deep end and learned Z80 assembly language and also researched the Coleco BIOS source code. I moved a lot of C code out to assembly and even replaced some BIOS routine calls with more specific and efficient code. A large portion of the development time, apart from all the optimization, was due to working with a mix of sprite and tile based game characters which resulted in double the amount of code for collision detection and a lot of code related to up-scaling and down-scaling between pixels and characters. Reproducing the sounds of the original using the Colecovision's hardware was also a serious challenge as the original cabinet's motherboard has a very sophisticated sound processor. To reproduce the sounds as best I could, I played recordings of the original game at quarter speed over and over. In the end, I believe the total time for game development was around four months. For comparison, *Asteroids* and *Missile Command* took me a little over a month each to develop.

**What do you have in mind for your next projects?**
I have a couple original games *Deep Space Swarm* and *Infiltrator* well into development and I have a couple others in their early stages. I just worked out some scrolling routines so that opens the door to many other games I can port. I recently picked up the steering wheel and roller controller expansion modules because it will be fun to play around with alternative controllers. I threw together a quickie racing game demo that will turn into something real before long. I'd love to port *Pole Position* but it's going to be a lot of work. For the roller controller I've wanted to make a port of the original Atari football game. ■



## DEV'S CORNER

# BANK⇔SWITCHING

***Famous retro programmer, Jean-Michel Girard, aka AlekMaul, tells us about MegaCart, the solution to expand the ColecoVision cartridge capacities.***

**In 2019, I programmed «L'Abbaye des Morts», a game in which you have to help «Frère Jean» to collect 12 crosses and to find out the secrets of the abbey.**

When I began to write the game, it was clear to me that it would fit in a standard cartridge of 32 Kilobytes.

During development, I added all the rooms of the game and the numerous enemies. Everything was just fine. Then the game mechanisms were made and all played well but… in silence.

Finally, a friend sent me the music which was really great but when I tried to put it into the program, I realized sadly that I had a big problem: size of the ROM exceeded the 32 KB limit!

I desperately needed to find a way to manage to keep that music. Fortunately, in a case like this, there is a solution nowadays! We, programmers, are much luckier now than in the 80's thanks to the use of a specific cartridge, namely «**The MegaCart**»!

MegaCart is a system allowing to swap the upper 16 KB of the ROM to increase available memory space.

It works like a normal 32 KB cartridge and can support up to 1 MB thanks to this bank switching technique. Note that there is no extra RAM in a MegaCart, it is only a card dedicated to ROM expansion.

The MegaCart does not require any special device such as an Expansion Module. It runs on any stock ColecoVision system.

Each part of 16 KB memory is named a bank. We can use 8 to 64 banks (used only for a 1 MB card). 8 banks are used for cartridges of 128 MB or less.

The 1st MegaCart was developed by **Bryan Edewaard** in 2005. The very first ColecoVision game that used MegaCart was *Pac-Man Collection*, and the 2nd one was *Mario Brothers*.

To swap the upper 16 KB ROM of the cart, you need to read an address which is on the high part of the ROM address (FFC0h to FFFFh).

For example, the 8 banks can be switched with a memory reading of FFF8h to FFFFh for a 128 KB cart. You read something at FFF8h and you will have the last 16 KB of the ROM switched with this bank, FFF9h for the second one, etc…

You must bear in mind these mechanisms when developing a game using MegaCart. The first thing is to decide what will be in the 1st 16 KB of the ROM (which will not be updatable) and what will be in the last 16 KB. You must remember that the ColecoVision will only "see" 32 KB for your game, the rest is not available except if you change the upper 16 KB of the ROM.

The picture below shows how I dichotomized my use of graphics for each part of the game. I also put the dedicated music to each part inside the same bank that the graphic uses.

1st bank is dedicated to game introduction. The second one too, when you begin the game.


Last bank (bank 6) is dedicated to the end of the game.

As you can see, when you master how to manage bank switching, it is a great thing to have MegaCart on ColecoVision. You can improve games with a lot of graphics, music and really enhance the colecovision system without adding any expansion module.

This allows to develop huge adventure games, with lots of areas to explore. The ColecoVision will handle them without any problem.

To conclude, it is now up to us to develop the best games for ColecoVision, to expand "The Vision" of the 1980's to the future. ■

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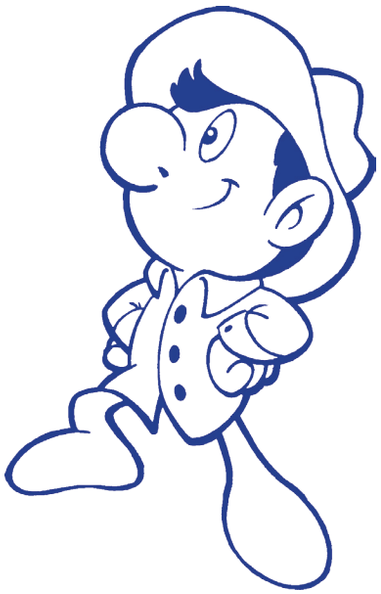

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Team Pixelboy

Team Pixelboy was created in 2009 and is devoted to the release of ColecoVision games.

**www.teampixelboy.com**

CÔTÉ GAMERS

The French publishing house Côté Gamers also publishes games for various systems including the ColecoVision.

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