** SPECIAL **
VCF East '24
ISSUE

Foenix Rising

A newsletter for developers, users, and enthusiasts of Foenix Retro Systems products

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VCF East 2024 Roundup - 4 Threads of Vintage Glory

This eight-pager recounts a few small corners of the proceedings from VCF East, held April 12th-14th at the InfoAge Science Museum in Wall, New Jersey. I volunteered for the event this year, so much of what I am reporting is blended with behind-the-scenes details. As prior, related narrative from the golden age of computing is woven in where it made sense to do so. I hope you enjoy it.

It is with some regret that I was not able to survey the exhibits as a participant or have a table of my own, but next year is only 300-something days away, as I write this. I did manage to interact with a growing group of friends and enthusiasts and this, for me, is the best part of the experience. Notable discussions this year centered around FujiNet in particular, and all of the great people I met in the Atari classroom. It's also great 'traveling' with the growing population of Foenix owners (you know who you are) while recruiting others to join.

If you are interested in seeing a table-by-table walkthrough, there are a handful of YouTube videos posted, and likely, more to come. Also, recordings from the talks and presentations (including all of the ATARI classroom sessions) will be put online by VCF directly, so keep an eye out.

VCF East is one of the oldest, and one of the original branded events, with roots dating back to 1997. The list of shows in the retro movement has grown dramatically in past years, but East is unique.

If you've not attended, you may be surprised to learn that the event is not held in a hotel or conference facility, but at a 100 year old decommissioned U.S. Navy communications relay base, complete with aged brick and wood framed buildings, radar and telecommunications equipment, and heavy artillery. Several small museum installations occupy a permanent footprint dedicated to radio, model railroad, fire engine, and VCF's own museum. Here is a caption from the InfoAge / Ft. Evans web page:

> ## History Happened Here
>
> Our campus is different than other science centers. We are the stewards of 16 buildings on a historic campus which opened in the early 1900s as a Marconi wireless telegraph station, served as a Navy/ RCA communications laboratory during World War I, and was known as the Camp Evans Signal Corps Research and Development laboratory from World War II until 1997. These events and others earned us designations by the U.S. Department of the Interior on the National Register of Historic Places and prestigious status as a National Historic Landmark. We also became a Save America's Treasures site (Bill Clinton administration) and Preserve America Steward (George W. Bush administration). We are a World War II Living Memorial for the State of New Jersey. Read more about our unique history!

I arrived on Wednesday afternoon and spent two long days with a dozen volunteers hammering up signage, clearing junk out of the exhibit areas, setting up tables, and organizing consignment.

People attended the show from as far away as Australia and the Netherlands, dragging or shipping their exhibits for display and demonstration. The Netherlands "Home Computer Museum" included a pair of early Philips home computers that blended physical attributes from U.S. manufacturers with designs and peripherals (built in mini-cassette) and keyboards that were unique, if not odd looking.

1. ATARI Classroom - Friday was a free day for me, so I spent most of it in the "ATARI Classroom" where I met some old friends and made some new friends. "Classroom" is an annual feature of VCF East and while small (16 vintage workstations), it is wrapped by an organized curriculum aimed at providing valuable background and a hands-on experience. Last year featured Commodore; next year welcomes CoCo.

The ATARI installation leveraged vintage 800XL systems, each equipped with a FujiNet device. Andy Diller was key in helping to organize the event and filmed the sessions. Attendees were welcome to purchase a limited quantity of for-sale 'bundles' containing a FujiNet device (for ATARI SIO), VCF tote bag, ATARI Education tee-shirt, and a copy of Jamie Lendino's book, "Breakout". Jamie also had a table in the Vendor Room, within the exhibit area. I purchased a hard copy of "Breakout" and also picked up a paperback copy of "SPACE BATTLE", which focuses on Mattel's Intellivision.

Jamie Lendino is an author, editor, mix engineer, and technology enthusiast. In addition to his books about vintage computers and video games, he has written for PC Magazine, Popular Science, ExtremeTech, Electronic Musician, Consumer Reports, Sound and Vision, and CNET. Jamie has also appeared on NPR's All Things Considered and other television and radio programs across the United States.

This years curriculum leveraged the utility of FujiNet heavily and the sessions I attended were full. Dean Notarnicola provided an introduction to the ATARI platform and a session on Advanced BASIC and Mark Fisher (visiting from England) led an overview of 6502 Assembly Language using native ATARI tools. Each session leveraged FujiNet, mapping ATARI drive numbers on a respective local machine to wireless network based mounts. The power of the setup was impressive. All that was required to setup the classroom was to organize a series of network shares via WiFi and then plug a FujiNet into the standard built-in ATARI SIO port. All systems/users instantly had access to binaries and text on a read-only basis, and the ability to store data on a series of virtual shares, mounted as read/write. It WAS the future!

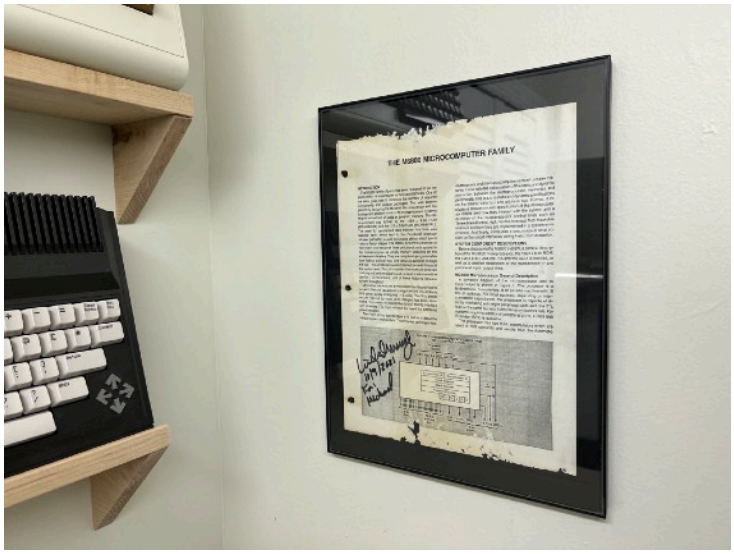
To round-out the experience, Thomas Cherryhomes (a FujiNet principal) provided a deep-dive into FujiNet, demonstrating how easy it was to create a listener on the ATARI, how to pass data to a socket somewhere on the internet from ATARI BASIC, and how to access an HTTPS URL (with a seamless certificate 'get' and encryption offloaded to FujiNet's ESP32). There were other ATARI-centric classes such as one on "Action" that I was not able to attend.

This was my first chance to use an actual ATARI 400/800 since seeing one for the first time in my local computer store when I was a teenager (over 40 years ago). As a result of Friday's session, I am fighting a losing battle against myself to resist buying one now. For those interested in the platform, I learned of a reimagined ATARI clone called 576NUK+, available from an outfit called The Brewing Academy which leverages harvested TIA, ANTIC and other ICs for an authentic build of the original. Build your own with an optional cartridge port and/or embedded FujiNet.

There is also a recommended emulator and an associated virtual FujiNet build that can be downloaded (packaged within a VirtualBox) as follows: Altirra Emulator … FujiNet VM. The ATARI crowd raves about the high level of compatibility which is faithful to the original hardware.

2. CONSIGNMENT ASSIGNMENT - At 5pm on Friday, I was on-shift in the consignment area where volunteers organized items dropped off by a mass of humanity, otherwise known as retro-marketplace connoisseurs. Some people were there to vend their well cared for, long time compute-companions (in good condition); others, stuff they stole from work (just kidding); and some, items that might be considered near-junk to some (but a treasure to the next owner).

In my years going to VCF, I've only walked through the consignment area once and it was after the masses mostly cleaned the place out.
That year, I picked up two items from the free-pile and bought one item. The dilapidated Motorola 6800 printed manual (the year Bill Mensch presented) was free; the Commodore Datasette instruction booklet was also free; and I paid for a Wheel of Fortune Commodore 64 game in a yellowed clamshell case with a disk inside (hung proudly on my game room wall). For those with an appreciation of history and legends of industry, here is the first page of the MC6800 manual with Bill Mensch's signature, framed and hung proudly in my vintage computer room. Bill and his wife are such nice people:



Items up for sale this year included a two foot tall Radio Shack battery (which was a coin bank), a few 200 pound DEC Alpha servers (good luck with those), pristine Mac G4s and newer Mac Pro servers, plenty of original Macs, PC parts galore, a Mattel Intellivision that tempted me, and tons of everything else you might imagine and cannot imagine. Prices ranged from *free* to *inexpensive* to *overpriced*. Also, this rock:

Speaking of overpriced, I'm afraid to report that I bought something which checks multiple boxes, in fact, it "won me" (sic) a game of bingo (see my hand-crafted BINGO card below). The item purchased was a MSD Systems SD-2 Super Disk Drive. The Super Drive is unique because it has a small footprint (at least that is part of my justification for buying it). That, and the fact that I've seen these come and go on eBay for a higher price tag not including the hassle and cost of shipping.

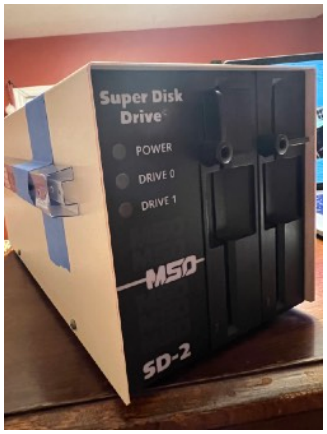
Overpriced	It was purple	Too large to fit in my automobile	Rare find	Going to get me in trouble at home
I like tiny things, so…	Broken	I'll get it working if it's the last thing I do	This item will make me cool	Will flip it on eBay tonight
Revenge purchase	So small, I'll drop it in the parking lot	I don't really need it	Legit good-deal	Lame, but I had to buy it before anybody else did
Always wanted one	Bargain of a lifetime, my life is complete	Immediate regret	Bucket-list possession	Science Project; ends up in parts bin
$100 for a box for a product I don't own	The last time I'll ever do this [again]	Missing piece of my collection	It came in a suitcase so "I had to"	More than likely, unfixable

Please don't judge me. You see, I've been obsessed with Computer Storage my entire life, starting with the experience of being able to save my work to my own cassette tape in Mr. Caggiano's Computer Math class, circa 1981. After working a summer in my Junior year, I funded my first 1541 disk drive, and once in College, I bought a Skyles Electric Works QuickSilver interface and a SFT-1001 disk (an IEEE-488 megabyte floppy that was used to host downloads on my BBS).

I just had to have this item. My MSD SD-1 and CBM 8050 were feuding constantly, the single-drive unit needed the moral support.

For those unaware, MSD is legendary for its build quality, ability to support IEEE-488 natively in addition to IEC serial, and (with a different ROM set), support off-host disk duplication. (the ROMs taped to the side are the original ROMs / the duplication ROMs are installed; see pic below).

What's wrong with it? Not important, and it doesn't matter. Also, none of your business; It's all mine, and I declare "it's a bargain". Purchased for $300, compared to a working model on eBay that might fetch another hundred dollars, this is a rare find.



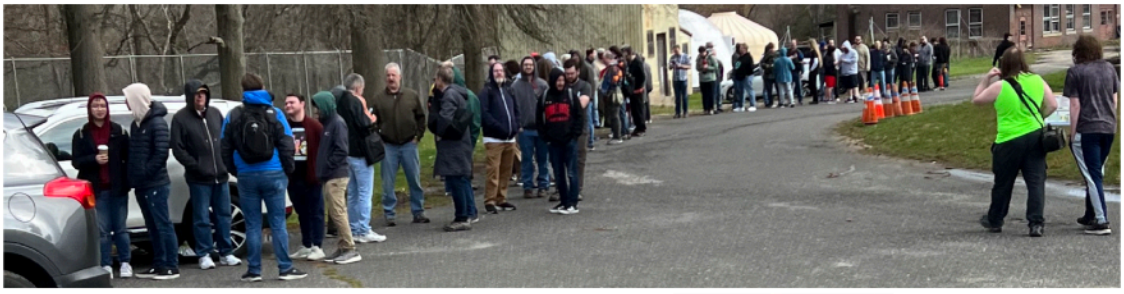
That's what consignment is all about, justifying the cost of discounted and used items to satisfy whim and science projects.

Getting back to the plot, VCF East used a new point-of-sale system this year, allowing sellers to log their items into a web portal using barcodes; this helped to accelerate checkout, tracking/audit, and made markdowns easier. Items sold are subject to an 18% 'take' by the house (supporting VCF, which is a 501(c)3 non-profit). Everybody wins.

Most everybody left happy with arms and hearts full. I managed to buy my pride and joy mid-Saturday, just as we were closing or lunch (1pm). One of the rules of volunteering at VCF is we are not permitted to take advantage of our access. Everything is for the good of the mission. Due to this, the early hours of the morning, and even the drop-off period the evening prior were not easy for me!

Despite the high price of this item, I was convinced it would not last. Luckily, my streak of being wrong, continued; this time, in my favor. I'll never match Robin's collection of Commodore Storage devices, but with this item in my possession, I'm well positioned to host 2MB of spinning media for use on my old school BBS. Ah, the thrill of being woken up at 1am by the sound of a scratchy drive mech spinning when some kid on the East Coast is downloading *Jumpman Jr.*, well past his or her bedtime. I was once *that* kid and abused bedtime and my home landline so wildly, my parents got into the habit of throwing the circuit breaker at 10pm on weeknights. But their parenting strategy didn't work. Fifty years later, I'm still at it.

To give you an idea of the crowd and 'collection', here is a picture of the line taken at 8:55am, just prior to opening (about 80 people). If you are interested in a pre-opening walk-through (very Apple focused), check out this link; finally, see the makeshift pano with a few callouts that I took the night prior, during staging.



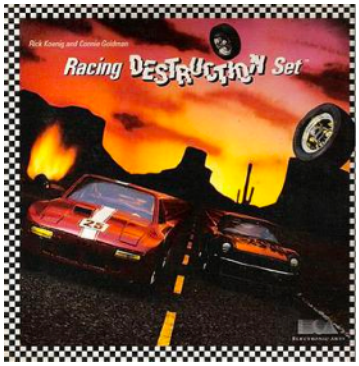
<< Intellivision with 8 carts including BURGERTIME (I almost caved) $100

typewriter / $59 >> (circa 1916)

3. A CONVERSATION WITH BurgerBecky - Saturday featured a roundtable on early gaming and included Rebecca Mercuri, Joyce Weisbecker, and BurgerBecky (Rebecca Heineman). A casual observer might miss the connection between these three amazing women, but after the introduction, it was clear; Each had a background in some type of gaming, was a pioneer in some sense, and was prolific in their specific line of work. Together, they represented a continuum of the transition from board games and puzzles to research to early computer gaming, to the best of the 80's and early 90's video game coding and design. The discussion was self-moderated and covered a wide range of topics. I will update this document with a link to the video, once it's posted.

This portion of my VCF Roundup concerns a conversation had with BurgerBecky, prior to Saturday's roundtable. It was based on a focused 5 minute conversation, but I've rounded out the chat with lots of related detail that might be of interest to you if you had a Commodore 64, ATARI, or Apple system… OR if you are aware of Becky's work over the years. At some point, I'd like to interview her for a more comprehensive article for one of my long-form Foenix Rising newsletters.

Some background - As Jeffrey Brace and team were working on the show program, I spotted a note in Becky's bio that mentioned her being responsible for porting Electronic Arts (EA) early hit "*Racing Destruction Set*" (aka RDS) from the Commodore 64 to ATARI 8-bit platforms. I was a big fan of EA titles and the C64 version, specifically, when I was in college. That motivated me to corner Becky away from the presentation area to ask her a series of questions.



Personally, I've been porting tiny examples of vintage code from 8-bit platforms to the Foenix F256 Jr. I started with a Rockwell AIM-65 program that generates large Mersenne Prime numbers for the C256 Jr. development system (you can read about it in Foenix Rising Issue #4). I also ported an Apple II graphics demo (by Stephen Edwards) to the F256 platform to demonstrate the power of the F256's MMU (see Issue #5). And most recently, I ported the core of the SID music code and all of the song data from the famed Commodore Christmas Album Demo. I've also started a port of Activision's Pitfall to the Foenix F256, but I didn't get very far in my first attempts (I may pick that project back up at some point).

But Racing Destruction Set? That's next level. A Foenix-friend and I were just talking about the vintage time-machine-fantasy of going back to the 80's to be a game programmer, with the caveat that we would do so knowing everything we know today. Developers of the first generation of 8-bit systems did not have the advantages that we have today. I mention this to say that sophisticated cross-assemblers, music trackers, graphics and content tools, and debuggers were in their infancy.

With that backdrop in place, what follows is the essence of my conversation with Becky. It was brief but meaningful to me, and while I'm not a gamer by any means, I thank Becky for all that she's done across many many years on numerous platforms.

"… if you remember …" - After a leading question, I started to say "not sure if you remember any details about the time you ported …" then I quickly corrected myself after remembering who I was speaking with. Fact is, she remembers every single detail in 1000x magnification.

Becky was given source from the C64 version, however, EA originally developed it on an IBM PC based cross-assembler and the source was poorly documented. Becky's dev platform at that time was an Apple] [+ with an Axlon RAM disk 320 and a 4 MHz. CPU Accelerator. In the early days, portability between systems was challenging and often, assets (graphic and otherwise) had to be harvested from original platform (Commodore 64) media or redrawn on the target platform. Becky had to do both. To

her benefit, she had a growing box of tools of her own making, including the affectionately titled "Sluggo II", named after the adversary/villain of 70's SNL claymation skit "Mr. Bill". While not relevant to RDS or Commodore/ATARI platforms, Becky subsequently created "Sluggo III" for Apple IIgs for work on SNES titles. You can read about it in this transcript from a 1992 Apple developer roundtable, here.

Cracking the code - For those unfamiliar with Commodore's 1541 disk format, ordinary files are composed of linked sectors that originate from directory table entries beginning on track 18, sector 1. The architecture is akin to a `vtoc` (volume table of contents) on a modern file system but far less sophisticated. A small set of kernel calls exist to LOAD files from disk to a predetermined memory address. But unlike modern file systems, there is no mountable super-block, inodes, single or double linked redirected blocks; it is a low budget affair with fixed width limits and documented byte offsets.

The reason for mentioning this is to give a glimpse of the complexity and bespoke nature of platforms of the day. Enterprising kids with the simplest of tools (a file copy utility) could easily duplicate software titles that leveraged file-based loaders after defeating the 'normal' copy protection logic that typically existed in boot-loaders.

Aside: What did the 'Wacko Cracko Bros.', Silicon Pirate, and Daddy ZER0 have in common? They all endeavored to defeat the copy protection schemes of software companies such as Electronic Arts.

While researching for this article, I happened upon this gem, specific to *Racing Destruction Set* on the Commodore platform. The subject of the post/response is a recent discussion about moving this title to a cartridge to improve game play:

```
In addition to the "FAT Track 34/35" copy protection, the game even has some protections inside:

. Main Menu encrypted and will lead to a crash, if original loader bypassed
. Stealth protection #1, leading to exploding cars from time to time incase original loader is bypassed
. Stealth protection #2, leading to yellow car flipping onto roof and not recovering if memory modified
```

Electronic Arts (EA) went further. They stored much of their data as raw bytes within sectors and used a custom loader to place the data into memory. I was never sure if the loader descrambled data along the way (some did), but the simple unstructured block scheme stymied 99% of the general public, preventing them from copying files or posting them on BBSes for download because files did not exist. Of course, Becky's port to ATARI was contracted by EA and thus, she did not have to worry about such detail but she still had to shuffle sector data between systems.

Other dev tools? - From an assembler perspective, Becky leveraged Merlin 8 and job-one of the dev cycle was to convert the source and assets into Merlin to assemble it so that it could be pushed back to the Commodore 64 to confirm that it played properly. Once accomplished, the port to the ATARI platform could begin.

Becky and I chatted about the fact that aside from the title screen, RDS had no real soundtrack; just some engine noise and other sound effects, which were relatively easy to implement. The fact that the Commodore had the highly capable SID chip and ATARI leveraged a somewhat basic square wave generator with a noise capability (POKEY) was not a major factor of the port. RDS was all about the graphics and realism of game play. It mattered not that the tire screech was more of a beep on the ATARI platform than a screech. EA's packaging, and the depth of the game made it worth the money.

If you've not played the original, you'll be impressed by what aboriginal 8-bit systems were able to accomplish. This game features a tilted 3D perspective (see images on next page), simulated the physics of gravity, and varying road surfaces (which differed in each layout/environment). RDS gave the player a choice of vehicles, each with different handling characteristics and used a split screen for each of the two players. All of these features added complexity. To my memory it was the first title to show players in each other's view in a 3D format. Of course, full credit for this belongs to the original development team (Rick Koenig, Connie Goldman, and Dave Warhol, pictured to the right.

mid-80's game developers or Queen? >>
EA promoted their developers like rock stars!

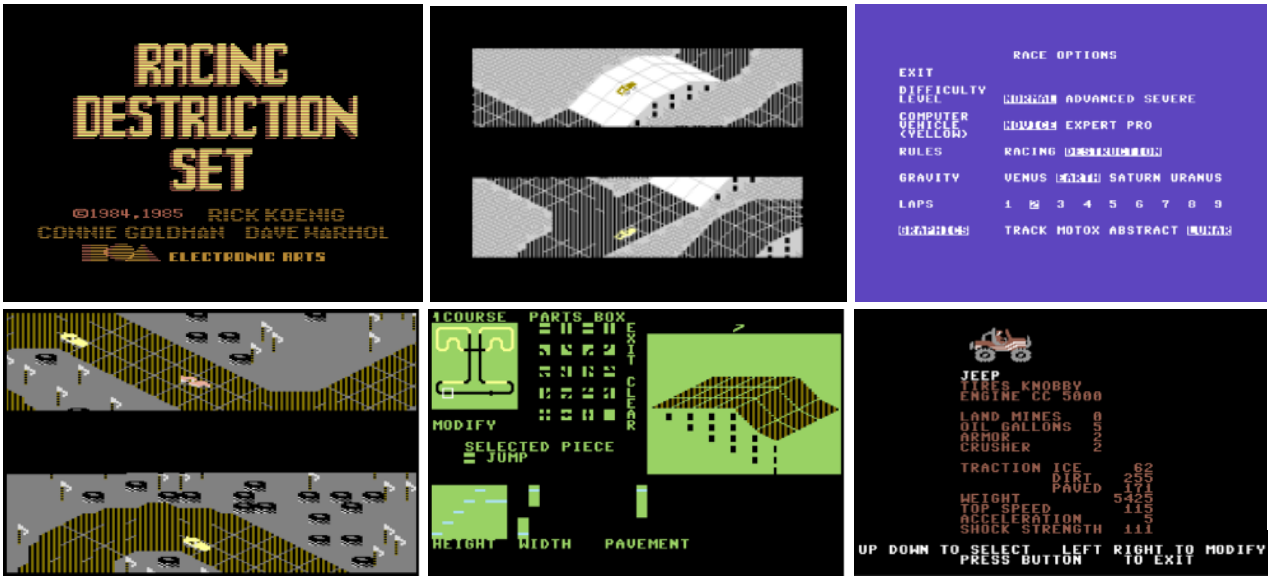
Vintage system advantages and differences to resolve - Porting in general was not an easy task. Games native to a given platform had to exploit the strengths and techniques that worked well for that platform in order to squeeze every ounce of power from the system. Any discussion or debate (and there were many) comparing platform power of respective systems ultimately boiled down to which system had the best graphics or sound for a given application. When a port of a particular game of the same title from the same software company landed on competing platforms, winners and losers were fairly easy to identify.

For a great example, examine the difference between Mario Bros. on an Apple II+ versus the same game by the same company as ported to a Commodore 64.; in some cases, well written games exploit features in system architecture, and between Apple, ATARI, and Commodore, the three systems could not be more different. Leaving audio out of the discussion for the moment, Apple II shape table methods versus Commodore 64 sprites versus ATARI player missile graphics only tells part of the story.

Bitmapped screens, redefined character sets, smooth scrolling, and raster tracked mixed modes varied wildly between platforms. Consider a simple bitmap graphics example; the Apple's memory layout is fragmented, requiring a lookup scheme to manage and no hardware to assist. Meanwhile, the C64 had a contiguous memory map and was straightforward to manage. It also had simple registers to manipulate smooth character scrolling and raster interrupts. Then there was ATARI; on another planet entirely with their Display Lists architecture. ATARI's clock also ran faster (1.79 MHz. vs. ~1 MHz) but the graphics engine required a new set of techniques, miles away from a simple grid of contiguous memory. Becky had to resolve this within her port while dealing with everything else.

There's lots more to talk about as it pertains to the subject of cross-platform development, porting of classic software, and the tools and techniques leveraged by old-school (and modern) software developers. Keep your eye on future issues of Foenix Rising for content related to not only the Foenix platforms, but retro in general. Click here to access all of the Foenix Rising articles and related content.

Here are a few screen grabs[1] of the Commodore 64 version.



Want even more? - Check this link for more about RDS; it is Commodore specific but has a complete scanned copy of the packaging/manual; click this link for more on BurgerBecky's work and look for her at a vintage expo near you.

[1] from the king of grabs web site

4. Europe's premier Home Computer Museum pops up at VCF East

Despite VCF East's advertised theme this year ("Rise of the GUI"), it is always packed with surprises. I was surprised to learn about a pair of vintage Philips computers in a pop-up museum of sorts, thanks to Bart van den Akker, from the Home Computer Museum of Helmond, Netherlands.

Helmond is located in the southeast of the country, approximately 40 minutes from Nettetal, Germany in one direction, and about the same distance from the border of Belgium in the other direction.

Bart was kind enough to volunteer for VCF this year. He also hosted an exhibit promoting his passion, and gave a talk about it subtitled "An Interactive Computer Museum as a Business". In addition to being self funded, his outfit is one of the largest independently run computer museums in the world.

One look at the brochure or web site will cause a row to be appended to any vintage enthusiast's bucket list. Installations are complete with period specific furniture and decor, and it's not *just* computers. They also have a healthy installment of gaming consoles, boxed PC games[1], and a Philips CD-i collection (1991-1996) that is ready to use.

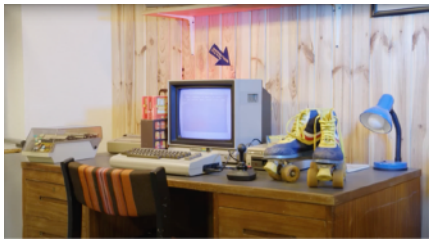
[1] World's largest collection of boxed PC games, universally recognized by Guinness World Records

A description from the 3-panel color brochure:

UNIQUE COLLECTION: The HomeComputerMuseum has a number of unique objects in its collection, including the Amiga 4000 used for the movie Titanic, a Commodore Amiga 2500 used by NASA, an IBM Aptiva painted by Herman Brood, an Acorn System 1, and the first IBM PC in the Netherlands.

The Dutch computer history is also shown with the entire Tulip and Philips collection. Also, lesser known brands including Holborn, Aesthedes, Aster, Genisys and Laser Computers are present and we are happy to share their stories first hand.

Here are a few pictures and links to social media resources:



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