



THE EDITOR'S GODZILLA

by Lenard R. Roach

THE CURSE OF THE VOID

(Part 2 of 2 starring the Commodore brand of computers.)

As all of you may know from my previous story, I lost a stack of bills that were sitting on my Commodore 128 waiting to be paid. One of our two mischievous cats got onto the Commodore desk, knocked over a placement of artificial flowers that fell onto the stack of bills that were sitting on the Commodore and made the bills somehow vanish from my sight. I looked all over the room for those bills but to no avail. Blessed be, I was smart enough to have saved all the data on disk that were accessible to the Commodore 128 as long as it was in 64 mode. I still got to pay the bills and mail them off in the Saturday, September 4th's mail because I have been saving envelope addresses for over ten years now. This story is about how Detective Lee, my son Gabriel's number one cat, had foiled his brother Tot's plan to hide the bills to where I could not find the let alone pay them.

In the program named "Check It Out," the user can print all the data that would regularly appear on the front of a check. The only problem I had when writing the program for the last issue of RUN magazine was putting account information

in the memo section of a check. I did a "rigging," as it were, by moving the memo line from the bottom of the check to the top. This worked out great, especially when the bills disappeared into the supposed "black hole" that I like to blame on everything that vanishes into thin air around my house, like my bills did when Tot knocked over the flower pot. I know that Tot didn't mean to do it but his curiosity always got the better of the black cat as to where he would begin to dig around where gophers would fear to tread, be it in the house or the yard.

When I wrote out the checks for the bills, the account numbers were already printed on them. They just needed to be mailed. With weird foresight I saved most of my addresses onto disk through The Envelope Addressor program. With the checks already in hand and the Envelope Addressor loaded into my Commodore 128, I printed the face of the envelopes, stuffed the check into the same, sealed, and stamped them. What was started as an undoing from one cat was foiled by some incredible forethought from this user of the 128.

What I thought was paperwork gone forever turned out to be a false assumption on the part of the keeper of the computer. Allow me to explain.

I was sitting in my black high back chair on Labor Day 2021 making out some gift checks for the Fresno Commodore User Group, the Glad Tidings Assembly of God church where I attend, and a belated birthday card for my daughter-in-law Erica. While I was working on these little contributions, Lee, the gray striped tabby, came into the Commodore room and walked up to me where I was sitting demanding some attention. I was too focused on my task of making out the checks in Check It Out that I completely ignored Lee while he was walking about. He started to rub himself on my legs while I was typing so, in a bit of frustration, I gave him a quick pat on the head and let him go about his business. He then

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saw something underneath the Commodore desk and walked in the direction towards the wall where my power supplies were that worked all my Commodore equipment.

Still trying to stay focused on my task at hand, I nearly completed the work when I heard something like a rustling of leaves under the desk. Now how in blazes did leaves get into the Commodore room? I haven't had to open the windows in the Commodore room for years. There was plenty of ventilation in the room to keep me cool in the summer and warm in the winter. I scooted the chair back to see what the cat had gotten himself into this time. He probably found something like paper to chew on. These cats still think that they are kittens and they can get into anything, eat anything, and it will not harm them.

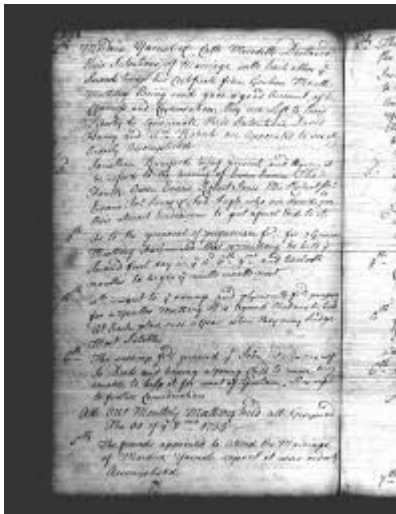
What Lee found was a pile of envelopes and paper gathered haphazardly on the floor. I got out of my chair and began to crawl under the Commodore desk and retrieve whatever it was that was under there. What I pulled out was the missing bills that I was searching for and Lee had found them, but, how did they end up there? It was just a couple of days ago that I had been under the desk looking for the missing documents. I looked up and found two pieces of paper still lodged between the Commodore desk and the sliding table that I used to do anything with my hands like signing checks or making notes of exactly which amount I paid to each bill. A quick bit of deduction revealed that, when Tot knocked the flowers over that were on top of the monitor and somehow, with the constant pulling back and forth on the table attached to the bottom of the desktop, the bills and envelopes slowly pulled themselves out of their hiding place where they fell and worked their way onto the floor underneath. Either that, or the black hole that the cats created to have the bills disappear in the first place found an exit which so happened to be underneath the Commodore desk.

I was relieved to find the missing bills that I was looking for over the last two days but it was a little late. The envelopes I printed off using The Envelope Addressor and the printed checks using Check It Out were already signed, sealed, and delivered to the post office. The only thing to do was to file the bills in the cubbies that the previous month's bills were located and call it a day and yet I still have to put onto each statement the day and check number that they were paid thereupon. A quick bit of thinking and I came up with the idea of accessing Money Manager and, once loaded, to hit the "P" key for previous entry and start looking over the entries that were made.

I slowly climbed out from underneath the Commodore desk and made it back to my black chair where I sat down. Exiting the program that I was currently in, I booted the Money Manager from the start up menu and entered the proper information to which got me to the check entry section of the program. Sure enough, all the information that I wanted was there and saved already on disk. As I put each bill onto the writing table, I began to enter all the dates and digits onto each one of the bills already paid and file them into the proper storage cubby that was in the upright storage compartments that came with the desk. In only a few minutes, I had everything catalogued and put away.

It was a great surprise that Lee had found those bills that for two days were totally elusive. Lee got a treat and an extra can of cat food just to himself for a magnificent bit of recovery, even though the discovery was completely on accident. I know now that, if the documents that I am working on the table magically disappear, I know now to look between the desktop and the table in case they ever did another vanishing act, with no black hole ever to be blamed.

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MONTHLY MEETING REPORTS

by Robert Bernardo & Dick Estel

May 2022

The Fresno Commodore User Group's May 2022 meeting brought together the "usual suspects" – Robert Bernardo, Roger Van Pelt, Dave Smith, Bruce Nieman, and Dick Estel.

The big event of the day was to be a group photo, to update the website front page. Alas, it was not to be. Dick had a new camera, and despite a lot of research on YouTube, had not fully mastered some of the settings. Using the self-timer, Dick was not able to get fully in the frame before the shutter went off, and he was just a blur in all the photos. A couple of weeks later he found that the self-timer was set for eight seconds, not the ten he assumed, and also that he could select a 14-second delay. A re-take will surely produce better results.

Also in the realm of photography, Robert and Roger were going to re-activate Bernardo Studios,

to film a presentation for the Commodore LA Super Show (CLASS) coming up in June. Their efforts produced much better success.

Robert reported on the Vintage Computer Festival East in New Jersey. Speakers included a dozen former CBM engineers, like Bil Herd and Dave Haynie. Though Robert had arrived on the Thursday before the festival's start on Friday, by the next day he was suffering from severe jet lag. However, he filmed about 13 hours of Commodore/Amiga-related video at the festival, and when he returned to California, he posted all of video to YouTube. He considered that the greatest festival moment was when the dozen CBM engineers gathered on-stage and spoke for 2 ½ hours; when would such a gathering happen like that again?! Robert also met a few fellow Californians who had traveled all the way to the festival, too, including Erik Klein, organizer of the Vintage Computer Festival West in Mountain View. VCF West was going to be on a different date this year, and that will allow Robert to attend and have an exhibit table there.

Robert showed a Raspberry Pi 4b which will be connected to the Retro-Printer Module that allows the user to connect modern USB printers to any Commodore. However, the equipment had not been assembled nor configured yet. In fact, Robert had not yet bought the modern printer; he had been eying the Epson EcoTank 3850 printer from Costco.com.

At the end of the club meeting, Robert and Roger tried out three new VIC-20 games: Bloody Xmas, Mystic Sword, and Jovian Moon Lander. In Robert's opinion, the best of the bunch was Jovian Moon Lander, because it had the characteristics of previous Moon Lander games (overcoming gravity, using retro-rocket fire) and combining those characteristics with rescuing people and having to land on various moonscapes.

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June 2022

Robert arrived to the Panera Bread meeting place first, followed by David and then Roger. Setting up the equipment seemed to take longer than usual, probably due to an abundance of small talk.

In old business, Robert reminded that the Commodore Los Angeles Super Show was to happen in 2 weeks (the June 25-26 weekend). He still had to edit the CLASS commercial and Roger's GigaCAD-to-Blender video presentation; he would do the former on Monday and the latter on Tuesday. Talk wandered to Robert's imminent purchase of a new Epson EcoTank 3850 printer from Costco.com. David assured him that the Epson would be a very wise purchase, remarking that the ink in that printer would not be used up for a long, long time.

In a hardware presentation, David showed off his recently-received A500 Mini, a machine he had ordered many months ago on Amazon.com. Robert's trustworthy Dell LCD monitor with its many video inputs was not working; in fact, the members discovered that its inner glass panel had shattered. Without a HDMI monitor, David couldn't power up the A500 Mini and demonstrate what it could do. However, Roger and Robert were still very impressed. The Mini was solidly built. Though called an A500, it was more like an Amiga 1200, because A1200 applications could work on the machine. It came with 25 built-in games, had 2 USB ports, a USB-C power port, and the requisite HDMI video port. Its keys and disk slot were there as decoration, i.e., they were non-functional. It could be used with an external keyboard and other USB controllers, not just with the USB joystick and mouse that came with it. It could access a USB stick so that more disk images and files could be loaded and run.

The A500 Mini was still listed on Amazon.com as being available, whereas its sister machines, the 64 Mini and the 64 Maxi were unavailable, and when found on eBay, were being priced at a much higher price than when they were originally offered.

In regards to the Epson printer mentioned above, Robert had printed out the .PDF manual of the Retro-Printer Module. The print-out was very thick! Robert still had not assembled the RPM with a Raspberry Pi 4b, and time was running out before it was supposed to be ready by CLASS time. After reading the manual, Robert discovered that he should have bought the pre-configured microSD printer driver configuration card that was offered for sale. He now had to download an image of the printer driver configuration and get it onto his own card. However, he didn't have the means to get that image onto the card. He hoped that friend Larry Anderson, host of Portcommodore.com/class, could help him image the card.

Robert also showed the print-out of the manual for the Mimic System's Spartan. The Spartan was an add-on box which housed an Apple II+ computer and which you attached to your brown Commodore 64. After participating in a discussion on the Commodore forum of Atariage.com, Robert was convinced to exhibit his Spartan (non-working due to power supply problems) at CLASS 2022. It was last seen at the Vintage Computer Festival West in the mid-2000's. The Atariage discussion centered on the eBay sale of a nearly complete Spartan (computer, original box, manual, foam inserts). That eBay sale eventually ended at \$3,650! And the computer was not proven to be in working condition!

With the Dell LCD monitor broken, the software presentations had to go through the club's CRT monitor. First, Roger ran the CAD-M program on the club C128 in C64 mode. He loaded up the

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CLASS logo he had created. Very nice! In solid fill, the logo had been colored nicely, and the lettering was well-formed. He tried to rotate the logo, even though the computer was in 1 megahertz C64 mode. After the members waited several seconds, the logo would finally move. Later, they tried the logo on the Ultimate 64 and its 48 MHz. acceleration. (See below)

Then they tried the new game, Amaurote 128, which had been converted from the Spectrum computer. Though the opening screen loaded, they could not get the game to run, neither in 80-column mode nor in 40-column mode. They successfully ran Amaurote 64 which used the C64's high-res screen. It was very interesting to control the four-legged walking machine as it walked on the isometric pathways, but other than that, the members couldn't figure out the object of the game, how to release a bomb, and the symbols at the bottom of the screen.

Other C64 apps that were presented: Junior Pacman, Ms. Pacman (both games attracting the attention of others in the restaurant), the new Empire Strikes Back, Street Fighter 2 demo, Italian Star Trek, We Are Stardust, Tasered in the Crotch, and Playpiano. The last seemed to be a program for playing music live, i.e., there was no way to save any composition. Both Roger and Robert agreed that the program would be easier to use with the Incredible Musical Keyboard, a piano keyboard which laid on top of the C64's keys.

Finally, Robert transferred the CLASS logo (mentioned above) from Roger's floppy disk to the Ultimate 64 SD card. Then he ran CAD-M on the U64 and loaded up the logo. Even with the U64's 48 MHz. speed, the logo rotated very slowly, though nominally better than the 1 MHz. original speed of a C64. Why so slow? It was a matter of object complexity. Last year Roger drew the object C= on CAD-M. That rotated speedily, even in solid fill. However, drawing

CLASS was much more complicated. Roger estimated that he had built the CLASS object with 100 polygons, far more than the C= object. The U64 was speedy but not speedy enough to overcome the complexity of drawing all those polygons and rotating them. Roger said that the only way to get more speed was to run CAD-M in VICE on a PC/Mac.



Ukraine Retro-Computing Museum Destroyed by Russian Bomb

by Guest Contributor Dave James

Containing 120 retro computers and consoles, and over 500 tech exhibits in total, the privately owned collection now only exists in memories on-line.

A privately owned collection of more than 500 pieces of retro computer and technology history has been destroyed by a Russian bomb in the city of Mariupol. The war in Ukraine is a tragedy on so many levels, but while it in no way matches up to the senseless taking of lives by the invading Russian forces, the destruction of the Mariupol Computer Museum is still saddening.

The destruction was highlighted by Mark Howlett on Twitter, "It has been reported that the Mariupol

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Computer Museum in Ukraine, a privately owned collection of over 500 items of retro computing, consoles and technology from the 1950s to the early 2000s, a collection nearly 20 years in the making, has been destroyed by a bomb."

...and confirmed by the Ukrainian Software and Computer Museum account, which operates museums in Kharkiv and Kyiv. The owner of the Mariupul collection, Dmitry Cherepanov, is reportedly safe, though his collection of computers, consoles, and assorted tech from fifty years of computing has been wiped out.



"There is neither my museum nor my house," writes Cherepanov on his Facebook page, [it8bit.club](https://www.facebook.com/it8bit.club/).

The museum itself may be gone, but Cherepanov has been chronicling his collection of exhibits for some time now, and though this is all that's left, it is still a resource worth checking out. There are a host of fascinating old machines, including the Commodore C64, which still holds a place in my heart as the very first computer I owned outright myself. Loved that little guy. Though I did trade it in with my brother's Spectrum 128 to buy an Amiga 500.

As well as images and information about all the 120 computers and consoles in his collection, Cherepanov also hosts RetroBit Radio on the site, too. That's also worth spending some time on, if you ever feel the need for an '80s / '90s gaming

mood.

If you have any memories of the music of the old demo scene it will be a real hit of nostalgia. Cherepanov has set up a Paypal account for donations, the details of which you can find on his [Facebook](https://www.facebook.com/it8bit.club/) page, <https://www.facebook.com/it8bit.club/>



SUPER CPU:

Separating Fact From Fiction

by Guest Contributor Shaun Bebbington

The SuperCPU (SCPU) device is a hardware expansion which plugs into the back of a Commodore C64 or C128 (or will plug into the top of a C64 GS if you can find cartridge games to work with it). It has a WDC 65c816s CPU (similar to the CPU found in Nintendo's Super Nintendo Entertainment System) which is clocked at the breakneck speed (for the C64/128 platform) of 20Mhz. It has 128K as standard (I think on both the C64 and C128 models, and both the V1 and V2 units) and allows you to add up to 16MB of RAM that can be seen by the CPU in the cartridge expansion. It was first launched by Creative Micro Designs Inc. (CMD), and there are two different sources for a release date. One

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states Sunday, 4th May 1997, and the other states Saturday, 4th May 1996. I suspect the 1997 date is correct (when I was exactly 20 years old), but either way, new C64 machines had not been manufactured since 1992, and in many regions it was a dead platform.

Consider that the "World Wide Web" was in its infancy, and networked computers and devices were not as common in the home or workplace, so whilst there was an Internet with web pages that one could browse (and at the time, I did my best to do this with my 1200 baud C64 modem), there wasn't a significant Internet community keeping the C64 alive. Most information back then was still spread by magazines and fanzines, and hearsay. In the UK, dial up Internet connectivity was still a luxury, and the cost of dial up Internet was still something that many households would not justify. Either way, launching such a piece of hardware in the mid to late 1990s was a bold move by CMD. And it could do so because CMD hardware was awesome, and kept the C64 or C128 a very usable platform, hence the end user had no immediate reason to "upgrade" to "better" computers, especially I would say those users who had heavily invested their time and efforts into the fabulous GEOS operating system (which CMD supported avidly, and held the rights to distribute). And even now, the RAMLink is one of the best mass storage drives for the C64 or C128, and that was launched in 1990. Maybe I'll tell you more about the RAMLink in another post, as this is another piece of CMD hardware that isn't well understood.

My take on all of this is that CMD had a very loyal customer base because it kept the best computer platform of the 20th century very much alive. Most of the protagonists against CMD seemed to create a myth that it was not okay to upgrade the C64, and that all software must be compliant with the 1982 specification of the machine. Whilst this view is still prevalent today, there are always caveats to it, like "yeah but Sonic

is allowed because [insert arbitrary reason]" or "Sam's Journey uses the REU for NTSC and that's okay because [some other arbitrary reason]". The point is that most personal or home computers worth owning (and even those not worth owning) had upgrades available. I mean, we don't religiously stick to the 1981 specification of the IBM PC, or the 1977 specification of the Apple II, so why is the C64 different? Upgrades and add-ons tended to give a better user experience, that's why cartridges like the Action Replay from Datel Electronics, or the Super SnapShot by LMS Technologies were popular and remain popular today, especially given the slow drive access of the 1541 and the clunky way you performed disk drive commands in C64 BASIC. In my view, CMD made the very best and most compatible add-ons, expansions and upgrades for the C64 and C128. It was a sad day when it left the C64 market for pastures new.

You will note here that I've mentioned the C128. That's because CMD's hardware wasn't just C64 compatible, but worked with the C128 as well, not just in C64 mode either, but in its native modes (except for maybe the Z80 and CP/M, but I know nothing about this dark side of the C128 anyway, and it is perhaps the least used feature of the platform). So, if you think that the SCPU is only a C64 upgrade, you'll be wrong. There are two versions of it for the two machines, although the SCPU 128 does require an MMU Adapter which you carefully remove the MMU chip and place it into a new piece of electronics which allows the SCPU 128 to use the 40 and 80 columns mode natively. So if nothing else, any BASIC 7 programs will run faster, and your 80 columns screen will update more quickly. Although it's likely that your primary use would be GEOS or something like NovaTerm v2, or programming, as we know that the number of entertainment software titles available for the C128 is rather sparse though not completely unheard of.

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As the SCPU supports both the C64 and C128 platform, the VICE emulation is only about half of the device, and I'm sure that the real hardware can do more tricks than the emulator does. So whilst the emulator is very cool, I don't think we'll see a full SCPU emulator anytime soon, and perhaps never. Firstly, the C64 scene doesn't really care about the SCPU. Secondly, it's a C64 scene, and the C128 is kind of like a forgotten relative that you don't see very often. And thirdly, I'm pretty sure that VICE is only emulating the SCPU V2 and not the V1. Okay, that latter point may be minor, but overall if you want to see everything that a SCPU can do, you'll need a C128 with MMU adapter and a SCPU 128. Then you'll have potentially at least everything that you'll need. But even with this, SCPU software is so sparse that I don't think we will see every trick that may be achieved with this hardware.

In any case, a short time ago, because of misinformation (or a common myth) that there are only three programs written for the SCPU, or only three programs worth loading, I started to create a list of all SuperCPU software that I could find. I began with CSDb.dk which currently shows 80 releases; many of these releases use the SuperRAM in place of the slower disk access (even with a fast loader, using the SuperRAM will be much quicker than the best 1541 speeds), so these releases may be enjoyed on an unexpanded system, just not these versions. I then started to look for the old sites I would pour over back in the late 1990s and early 2000s (those that I can still find at least). So far, I have 81 releases marked as "Games" (some of which actually for the C128 and even for 80 columns VDC display), 14 marked as "Demos" (no C128 stuff here), four GEOS releases (though I've not yet even scratched the surface), six under "Programming" and 44 other releases or software (including four "In Progress" and seven under the category "Cancelled or unknown"). In any case, there are definitely more than three programs for the SCPU. And of course, there are many different

programs that benefit at 20Mhz. This latter category will take much longer to research and document, but I've at least made a start.

Aside from all of this software that is available, and that list is not just Metal Dust, Wolf 3D, and Doom, there is the question of how many SCPU devices were made by CMD. The total number by Maurice Randall would be easier to count, as this I suspect will be fewer than a couple of dozen. The highest serial number I've seen on CMD SCPUs for the 64 model is somewhere above 5k, and for the 128 model its around the 2700 mark. Now this may seem high, but it makes sense. CMD supported the Commodore platform until 2001. It could not have survived without selling its hardware in particular, as its software sales would not have sustained the company for so long. Its only a shame that more C64 users around that time who knew about CMD didn't support the company more, but then the hardware wasn't cheap. Cheaper than a new PC which be now would be completely obsolete and useless (unlike a C64 or C128 with a SCPU and RAMLink I might add, as although obsolete the very least new software is still being developed for the C64 and occasionally the C128).

Whilst you are reading this, I assume that you're also interested in the SCPU. If you are on Facebook, there is a group that was set up to discuss SCPU coding but is now widened its remit to include software as well.

...it seems like I kind of drifted from my original point a little and missed out a few things that I should mention in passing. Hopefully, this will fill in some blanks. And for that, I may as well start at the beginning, and here's what I know.

Around the mid to late 1990s, I was in regular contact with a Croydon-based guy named Russ Michaels, who was the sole proprietor of a new Commodore C64 start up called Electric Boys Entertainment Software. Russ was quite accommodating, and I stayed at his place a couple of times and at that time I first saw the mythical

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Flash8. Russ had set this up to quickly and reliably copy disks for his Public Domain library and his commercial software. With Future Publishing's Commodore Format magazine still plodding along through 1994 and I think until around 1997 (someone will correct me on that), he naturally assumed that there'd be enough interest in new C64 software to make a living from producing and publishing it, and maybe he'd also be able to develop his own games too.

Russ spoke of a Flashback port and a Defender clone (I think called Defensive). His Scene handle was Ironfist and he was interested and very impressed by what the demo scene was pumping out. I'm not sure what his big plan was, but he was the official importer for Creative Micro Designs (CMD) Inc. to the UK (which if you don't know by now made the best C64 upgrades and hardware, unsurpassed until quite recently really). I imagine that in his head he thought that the fast CMD FD drives coupled with JiffyDOS would allow for bigger and better games with no disk swapping or waiting around for cassette multi-load (even then the datasette was still the medium of choice in the UK). And because of the storage capacity even at the lowest end (~790K per disk), that would be enough to have some great demo-scene like cut scenes and then quickly into the action.

Anyway, Russ was one of the few adopters of the Flash8. He and I loved the potential of the device, and around 1995 or early 1996, I think shortly after CMD launched its magazine Commodore World, he sent over (or arranged for CMD to receive) a Flash8 unit. For those of you who don't know, this device is an 8Mhz upgrade for the C64 that plugged into the expansion port on the C64 or C128 (in C64 mode), and it was powered by a WDC 65c816s CPU. It came with up to 1MB of RAM and I think there was a 256K RAM version too. If this is sounding familiar, then I think you may already know where this is going.

The problem with the Flash8 was compatibility and some general bugs that would cause unpredictable crashes. When it did work, it was great. And obviously copying from the 1MB RAM (essentially disk images) to real magnetic media was fast, efficient and reliable (as I saw for myself). The Flash8 worked with geoPaint - or at least there was a hacked/fixed version of geoPaint that you could use; with geoPaint being a GEOS package, and CMD being the official distributor of GEOS, this sparked some interest. From there, the guys at CMD had a base to work from, and to iron out the bugs and compatibility issues [of the Flash8], and maybe even to make an accelerator of their own, being fully GEOS compatible and integrating with all other CMD devices. Well, that's what happened. You'll note that early versions of the SuperCPU were to be 10 or 20Mhz, but the price difference is unlikely to have been enough of a draw for CMD's loyal customer base. And after all, why would you want a 10Mhz upgrade when the same hardware was offered at twice that speed?

So how good is the compatibility of the SCPU then? Well in a sense, it's very close to 100% compatible, as even with the computer switched on you can switch out the whole unit as required. Simply and gently depress the reset button on the SCPU whilst holding down the CTRL key on the C64 or C128 keyboard, and switch off the unit on the top of the SCPU, let the button go and you're back to your stock C64 or C128 without having to turn off the computer and remove the hardware at all. I've never known this to cause any issues with any software, but also I haven't yet tried every single release on both the C64 and C128 to confirm this for sure (has anybody?) - but even with the unit enabled, the two other switches enable and disable JiffyDOS (again, I've never known a single program to fail or crash with JiffyDOS enabled), and to switch in real time between 1Mhz and 20Mhz (or 2Mhz and 20Mhz if you're in fast mode on the C128).

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On the difference between SCPU 1Mhz and C64 1Mhz, there is not difference that I can tell. When at 1Mhz, the SCPU is synchronised with the C64. The one thing that it won't do is undocumented op codes of the 6510, and this is just how the 65816 CPU works. Whilst in "6502" mode (or more accurately, 65c02 mode), it accepts all documented instructions of the 6510. So there will be some games and demos that will hang or crash because the 65816 doesn't know what to do with the instructions that would otherwise work on a C64 or C128. But as you can just switch the unit out easily, it's not a big issue, at least after you know something doesn't work with the SCPU enabled.

Finally, those games and other programs that do work at 20Mhz. Well, clearly some of them are really responsive and fast. Sometimes too fast. Sometimes just right. But just because it's running at 20Mhz doesn't mean that it will play any different than it does at 1Mhz. This is to do with how the game is coded and timed, which isn't a topic I'm currently too clear on. I'm sure that there'll be C64 coders out there who will know why this is. For now, I'll leave it there. But just before I go, you may be interested to know that @dsp8bit has been mulling over a SCPU clone. That's one of my old spare SCPU's that I kept for parts. Well I figured that it was no good if everything failed, and so at the same price I paid for this spare, I sent it over to North America to hopefully help bring about a modern days SCPU alike device for the masses. Unfortunately, this labour of love has been slightly stalled, but I've heard that developments will be restarting in the Spring. So whilst Russ played a small part in making the original SCPU a reality, I hope to play a small part in making a compatible (though not a 1:1 clone) and new SCPU like device a reality soon. And I'm as excited to see what may be as I was when I first heard about this mythical Flash8 device!

If you have read my other posts, you will know that I hold this piece of kit in high esteem, but

more on that at another time. Firstly, let's consider some other fictitious accounts that have seeped into the wider consciousness and have become broadly known as factually accurate. And we'll start with the Maurice Randall debacle.

Before I begin here, I am going to point out that I have no vested interests in defending Maurice. I am however interested in the truth. I found him to be very personable when I spoke to him on the telephone, and he was obviously very knowledgeable. He took the time to help out where he could when I had questions or other issues with not just my CMD hardware, but my C64 too. Yes, he did kind of just disappeared with who knows how many thousands of dollars worth of orders, some people already waiting many months or years before he vanished like an old Oak table. A few may have sadly passed away whilst waiting for an order, and will certainly have done so by now without compensation. But it is not true that he delivered nothing. I have a CMD JAZ HD drive, and had a copy of Wheels 128, and some spare SCPU parts from him, and I wasn't the only person to receive at least partial or full orders from Maurice. Therefore, it's a matter of plain English that any quantity is greater than nothing at all. So whilst I gave up a long (long) time ago of ever seeing the item of mine that he had, it seems to me that the people who get most vexed about the whole Maurice situation are those who didn't actually order anything from him and therefore didn't personally lose out.

What I suspect happened is that whilst the orders weren't enough to sustain Creative Micro Designs, inc. in 2001 when it moved to the PC market, it was too much for one man to handle by himself. As well as the GEOS software that he was developing and supporting, and the CMD HD firmware upgrade that he was working on, he had his personal business to run. He very likely became overwhelmed, and at some point around 2004 or 2005 he reported that his workshop that housed his CMD stock was flooded. This is pure conjecture from me here, but if he didn't have

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suitable insurance, or the insurance company didn't pay out, this would have been pretty cataclysmic. Now I'm not saying that I believe that his Commodore workshop was flooded, but something definitely happened that put him in a situation that he just couldn't do it anymore. He stopped answering the phone, and responding to people's mails. This was indeed a sad event for all involved. Again, I am not here to defend Maurice, but I don't believe that he was a villain, or that he deliberately set out to defraud people by selling C64 and C128 hardware. Anyway, time has passed, and time also heals, so we move on.

There's something else that's factually incorrect about the SCPU that I want to adumbrate, but let's talk about what it's like being a SCPU user first. As I've owned both the SCPU 64 and 128, and owned a SCPU from the late 1990s, I know that the best version to use is definitely the SCPU 128 even if you own a C64. This is because the chips are beefier and better handle timing differences between PAL and NTSC machines, as well as discrepancies between the various models themselves. And by the time CMD launched the 128 model, it had worked out all of the bugs and issues. But there are two issues that won't easily go away. One is power, and the other is heat.

Regarding the power issue, a flat C128 or any version of the C128-D usually has a sufficient power supply to run the SCPU and even SCPU with an REU if your PSU is good. But the C64, well aside from the original PSUs being known as "Bricks of death" now, even good ones don't work well over a few hours (sometimes less). So the power issue is the most pressing. You will need a heavy duty power supply to use the upgrade, especially on the C64.

It is sometimes pointed out that CMD did not make a heavy duty PSU for the C64. This is not actually true. CMD did not ship a heavy duty PSU with the SCPU as standard, that bit is true enough, unless you purchased one with your order of course. But the CMD Heavy Duty power supplies

(which had both C64 and C128 versions) only worked with 120V outlets, and this wasn't much use to users in Europe as the common voltage here is 230v. Now today that might seem a little strange, but back in the late 1990s and early 2000s, having multi-region power supplies that could accept 120v or 230v wasn't really that well heard of. Although it didn't feel like it at the time, they were simpler times.

So the heavy duty power supply problem was a European one (unless you have a C128, but of course most people will not have), and whilst Commodore Scene and Protovision offered their own PSU solutions, these were made to order and prohibitively expensive. The Commodore Scene PSU could power all of your computers and drives though, as well as IDE drives if you happened to own an IDE64 cartridge. Who knows, maybe if more people in Europe had been purchasing CMD hardware, CMD may have made a 230v PSU. But that clearly wasn't the case, and this is again more conjecture from me.

The heat issue may also cause some unpredictable behaviour, and over time residue will build up on the contacts of the edge connector to the computer. I've found that cleaning this with 70% alcohol solution every so often does help. And whilst you may take the lid off the SCPU whilst running it (so that the RAM does not run too hot), I now superstitiously always wear an anti-static wristband if I do. The best solution is of course to to heatsink the chips and have your whole computer system running in a well aired and cool environment. Anyway, hopefully any future compatible SCPU-like device will not suffer from this flaw, or the power issue mentioned above.

...I'm going to quickly give an overview of the three best-known Commodore C64 games that require [the SuperCPU], this precious hardware upgrade. We'll start with the infamous Metal Dust, published by Protovision around 2005.

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And now Metal Dust

Metal Dust (MD) is probably best known as the only SCPU specific game for the Commodore platform. Except of course, that's not true, thanks in a large part to Mathias "AmiDog" Roslund (see below). It has nice presentation, and supports lots of CMD and higher capacity drives, which it had to. There was no way this would comfortably fit onto 5.25" floppy disks without being a worse multi-load than Street Fighter II on cassette. The whole game is spread over four 1581 3.5" disks, two FD2000 disks, or one FD4000 disk, although all CMD floppy disks drives are 100% compatible with the 1581.

MD was the first time I saw a full screen FLI image without the ~16 pixel FLI bug. Beautiful 16 colour [static FLI] screens are presented whilst loading the game, and then between each level. It won't surprise you to know that the pastel shades of the VIC-II chip are quite pleasing in these images - the artist here did a good job.

After selecting your difficulty level, as well one or two players, you are soon greeted with the most difficult part of the whole proceedings if you are new to MD (and sometimes even if you are not), and that is getting through the first few screens worth of attack waves. Hint: if you can't shoot through it, it's not background and you should maneuver to avoid it. Fortunately, MD has a built in auto fire, so holding down the fire button and observing which part of your projectiles hit whatever is in front of you is the best way to learn this game.

I have poured hours into this MD, and could be the first person outside of Protovision to complete it, so I know it pretty well. The trick for a new comer is to listen to the title music for several minutes. If you do, two new difficult settings appear before you begin your game. "Boring" gives each player 99 lives per continue, and "Insane" has zero lives per continue. I recommend anyone to try it on Boring (it's not boring) as it gives you the best chance of learning each section

and eventually each level. Don't be fooled though. It's not easier on "lower" difficulty levels, you are simply given more chances to complete each level.

Regarding how brutal this blast fest is, well that's open to interpretation. Despite what people say, MD is not impossible to complete! I emboldened the font there just in case anyone misunderstood. It's definitely tough, but honestly not the most difficult of shooters out there. Take Loins of the Universe for example. By comparison to Lions, MD is like a children's game.

Like a Boss!

With all of this extra processing power available on a SCPU system, does that mean bigger and better mid and end level bosses? I suppose that's down to interpretation again, but the ED-209 inspired mechanical beast on level two is particularly pleasing, but all are pretty epic with. As you would expect the bosses have some good animation, and the whole game has a very stable sprite multiplexor. If there is any flicker anywhere, you won't notice it unless you have exceptionally keen vision.

Regarding each level, I always thought that they were ordered wrong, and have believed until recently that level two would have made a better introduction to the game than level one. I recently swapped the order of play around and my version now is two, one, three and four. I know now that I was wrong in my assumptions. Whilst learning the first level took a while, it's much easier to complete than the second.

The levels themselves are really quite something to see, and although there were some technical criticisms from some other developers of how things should have been, the road of a thousand miles starts with the first stone. And I haven't seen many other people rush to do things the "right" way. We may have a "Sonic" moment in the future when something is developed for the SCPU that makes it okay to develop for the SCPU (like

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it's now okay to develop for the REU), but that isn't likely to happen soon, which is a shame as clearly MD gives us but a glimpse into what is possible.

To reiterate, this game is not impossible to complete. It's just very tough. But is it worth playing, even for me who has completed it many times? I would say yes. Ultimately, it's fun to play and still presents a challenge for my aging reactions and fading memory.

Entering Castle Wolfenstein

Castle Wolfenstein first appeared on the C64 in 1983 thanks to Muse Software, although this was a 2D affair. After years of some people debating and deliberating on whether a Doom port would be possible for the C64 + SCPU (on places like comp.sys.cbm and others), AmiDog went ahead and ported Wolf 3D by id Software. It's really good too, especially if you use the "Apple II" colour palette option. Of course, the graphics still look like a C64, but the gameplay is fast and responsive (at around 10fps for 16 colours, and faster still with four colour display).

For those who don't know, the premise of the game is set during World War II. You assume the role of William "B.J." Blazkowicz for the Allies, and must escape from the dreaded Nazi prison Castle Wolfenstein, along the way picking up various weapons and rearmaments, and shooting Nazis and their trained four-legged familiars. I always feel sorry for the dogs and try to avoid them though, as daft as that sounds.

Whilst this game is pretty epic, and very playable, the same cannot be said for AmiDog's MIPs recompiled conversion of Doom. Although it's a great achievement, the playability and replay factor is quite low for some technical reasons.

At the very least, we can say that the SCPU passes the "does it play Doom?" test that applies to many devices these days. For all I know, there's a version of Doom that'll run on your washing machine. But this was really meant as a proof of

concept more than anything to set the C64 gaming world alight. Yes, you can play it, but it's slower than many of the Freescape games are on an unexpanded C64, and there is no music nor sound effects. I'm sure that more gameplay could be achieved from this project, as there are likely to be further optimisations that can be applied to the source code, but I'm not in any way technical enough to comment further. There's nothing really more to say here.

For me, if you want a "Doom-alike" game, the best so far is Wolf 3D, and that's not likely to change soon.

Before I go, please consider the following resources:

Metal Dust available on itch.io.

Wolf 3D from csdb.dk.

Doom from csdb.dk.



GAIL WELLINGTON:

Herder of CATS, Mother of CDTV

by Guest Contributor Dave McMurtrie

From the moment I first saw Gail Wellington in Dave Haynie's "Deathbed Vigil" video about Commodore's demise, I knew I had to learn more

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about her. The more I've learned about her, the more I appreciate what an amazing human being Gail is. I hope you'll enjoy reading about Gail as much as I've enjoyed putting this post together.

Early life

Gail Wellington was born in Yonkers, New York in 1940 as the oldest of three children. Her father worked for the Wonder Bread bakery and her mother was a homemaker. Her mother had wanted to be a school teacher, but she graduated from high school during the Great Depression and her family wasn't able to afford college. Gail's mother, not having been able to become a teacher herself, wanted to see Gail pursue a career in teaching.

Gail's family moved to the Boston area in between her junior and senior year of high school which meant she had to finish her final year of high school education at a new school: Malden High School near Boston, MA. When she went to register for her new school, it was still assumed that she was on track to become a teacher, though it wasn't a career choice that particularly appealed to her. Not only did her parents want her to pursue a career in teaching, it was 1950s America so the advisor she was speaking with naturally assumed that she would be following a teaching or otherwise "female-appropriate" career path, and intended to sign her up for purely academic language/arts curriculum. Gail refused. She didn't want to take a third year of Latin, and the alternative was a math/science track. Although she had avoided these at her previous high school, she thought it might be better than Latin. It was a cool day in Boston so Gail was wearing a blazer which happened to have her National Honors Society pin on the lapel. Upon seeing her lapel pin, her advisor relented and enrolled her in chemistry and physics courses. It was during Gail's senior year of high school when she was taking a physics course that convinced her she wanted to be an engineer.

College, marriage, children, early career

When Gail graduated from high school she enrolled in college at Northeastern University in Boston, MA. Her parents were still hopeful that she would get a teaching degree but they allowed her to study engineering, assuming that when she started a co-op job in the engineering field she would realize her mistake and fall back to teaching. Her grandfather, very uncharacteristically for a man born in 1892, had taught Gail that aside from jobs that required brute strength, a woman could excel in any career just as well as a man. Gail set out to obtain a degree in mechanical engineering.

Gail's first job during her freshman year of college was a co-op position working in the drafting room at Itek, a Boston company that made scanning cameras for very high altitude photography. It was at this job where Gail met the man who would become her first husband.

While still in college, her next co-op position was working for Raytheon in their missile systems division. In this role she was writing material handling procedures, safety procedures and other similar documents. She expressed an interest in doing more technical writing to her manager. Impressed by her performance, her manager recommended her for a technical writing role and the next day she had an offer to work as a technical writer at Raytheon beginning the next semester. This technical writing experience would later help Gail land her first job at Commodore.

Before finishing college, Gail put her academic ambitions on hold to marry the man she met at Itek and began a family. They had two children together: a son and a daughter. Once her children became school aged, Gail re-enrolled at Northeastern to complete her studies and graduated from Northeastern University in 1971 with a Bachelor of Science degree in Industrial Technology with a minor in Mechanical Engineering.

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The Commodore Years

Gail's marriages didn't end up being lifelong commitments. By 1981 Gail was married to her third husband. Gail relocated to the United Kingdom in 1981 to join her husband who had to move there for his job. Upon settling in her new home, she saw a sign in the window of an employment agency seeking a person to do technical writing for a computer company. Gail had a background in technical writing and enjoyed the work so she applied. The hiring company ended up being Commodore Business Machines (U.K.) Limited in Slough. Gail interviewed for the job and had a gut feeling that the position was going to be hers, but Commodore hired another applicant. Fate intervened, however, and the candidate they hired never showed up for the job. Gail Wellington was hired by Commodore UK to work as a technical writer on June 1, 1981, reporting up through Bob Gleadow who was the general manager of Commodore UK's Slough office. Gail's direct manager was a man named Pidgeon (referred to by the team as Bird Man due to his surname). Pidgeon reported to Rod Wellburn and Rod reported to Bob Gleadow.

Gail's first assignment was to write a manual to describe how to write software manuals.

Commodore was heavily reliant on third party software companies to write PET software because software drove the sales of their PET hardware. Commodore needed to establish consistency and quality standards for their software manuals. Soon after completing that assignment, Gail was placed in charge of writing user manuals for third party software being published by Commodore. Gail observed a recurring problem in this role: the people writing the software and the people writing the manuals for the software weren't in regular communication. Often, the writers would receive a "finished" piece of software and work through documenting it only to have a new version of the software delivered to them that was fundamentally different than what they had already documented. This contributed to much wasted effort and last minute stress for Gail's team. Despite the fact that it might put her out of a job, she wrote a proposal whereby each technical writer would be paired with a QA person who would act as a liaison to the external developer. Unfortunately, Gail's proposal sat ignored on Rod's desk. Rod was famous at Commodore for having piles of documents on his desk that he never looked at. Gail had a friendly relationship with John Baxter who ran Commodore UK's marketing department and she told John about the problems she was trying to solve and the proposal she wrote that had been ignored by her manager. John Baxter told Bob Gleadow about it and Bob snatched the proposal off Rod's desk one morning. The next day, Gail and Rod were called into Bob Gleadow's office to discuss the proposal. Having read the proposal already, Bob asked Gail some follow up questions about how things would work. Satisfied, Bob looked at Rod and asked, "Who is going to fire Pidgeon, you or me?" With that, Gail was appointed Head of Software Operations for Commodore UK. This was her first chance to really prove herself at Commodore.

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Head of Software Operations at CBM UK

The Slough office where Gail and her team worked was located in what's called a trading estate in the UK. In the United States we'd refer to it as an industrial park. It was a building at 675 Ajax Avenue that was primarily intended to be used as warehouse space with a small, two story section of office space located at the right and front sides of the building. Upon taking occupancy of the building, Commodore's solution to the lack of office space was to section off about a third of the warehouse space and carpet it. This provided for a large open space in the building with the mail order catalogue group located at one end and the software team at the other. There were no walls, partitions or cubicles of any kind.

Gail sought to make the best use possible of the space her team was given. She designated a circular conference table to be the team's private space and meeting area. Because nobody had a private office, if a team member needed time to work on something without interruption, they'd sit at this table. To accommodate her proposal of improving communications between the tech writer and developer, each new software project was assigned a team consisting of a primary documentation person and a quality assurance person who acted as a liaison to the external developer. As new teams were formed they would move their desks to a new spot in the office where they'd work together for the duration of a

software project. The desk relocations were frequent enough that one of Gail's team members complained, to which Gail replied, "When a woman is frustrated or depressed she does one of two things: goes shopping or rearranges furniture. I don't have time to go shopping." Gail's proposal was remarkably effective and Commodore UK became an early software powerhouse within the company.

Jack Tramiel officially formed Commodore International's software division in the United States in April, 1983 and put Sig Hartmann in charge. Sig's first major initiative to increase Commodore's presence in the software market was to launch 70 titles for under \$100 each for Commodore's new Commodore 64 computer. Commodore intended to announce this as part of the 1983 Summer CES show. Gail was already well established in the software business so Commodore UK was a major contributor to this initiative. Gail's strategy was to avoid cannibalizing VIC-20 software sales which were still strong. The VIC-20 was largely a gaming computer so Gail focused heavily on productivity and educational software, but also contributed a few games. Some of the titles that Gail contributed were Easy Script, the well known word processing package which she purchased from Precision Software, Intro to BASIC, Gortek and the Microchips and Andrew Spencer's International Soccer.

C= Electronics Ltd.,

int'l distributor support

Commodore began toying with the idea of opening a manufacturing plant in the UK in May, 1983 when they opened a pilot factory in Corby, Northamptonshire. Commodore was already employing around 200 people at their pilot factory by March of 1984 when they announced plans for a £20 million expansion project to build a permanent 230,000 square foot factory at Corby with capacity to assemble up to 200,000

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computers per month. With the opening of the new Corby facility, Commodore was closing the Slough office. Bob Gleadow was transferred to the Hong Kong Commodore Electronics Limited office and Gail was offered a position with Commodore Electronics Limited at their Maidenhead office where she would support Commodore's international distributors, reporting directly to Bob Gleadow.

Commodore's structure in 1984 was that Commodore Electronics Limited was the principal operating entity of the Commodore group of companies. CEL reported directly to the parent company, Commodore International Limited. CEL was responsible for all aspects of producing finished goods including forecasting, purchasing and coordinating manufacturing. Commodore set up sales/marketing subsidiaries in Germany, The Netherlands, Italy, Sweden, Canada, France, Austria, Norway, Denmark, Australia and Belgium. These subsidiaries were 100% owned by Commodore but operated as independent companies reporting up through Commodore Electronics Limited. In addition, Commodore set up a worldwide marketing group located in the U.K. under John Baxter and out of the United States headed by Jim Dionne. The U.K. marketing effort focused on Eastern Block countries, India and Africa. Jim Dionne focused on Central America and South America. These worldwide marketing groups would sell product to independent distributors in their home markets and each independent distributor had a network of dealers they would distribute product to for retail sale.

Gail's role was to provide software sales and support to the independent distributors which were under John Baxter's purview which included Thailand, India, Singapore, Malaysia, Indonesia, Turkey, Greece, Israel and South Africa. Her support role included things such as coordinating with distributors to help companies adapt software to the native languages in their local markets.

Amiga Development + Launch

In the spring of 1985 while at a CeBit show, Bob Gleadow asked Gail to travel to Los Gatos, California for three weeks to work with Commodore's Amiga development team. Commodore had purchased Amiga Corporation in August 1984 and their revolutionary Amiga computer wasn't yet ready for production. Commodore-Amiga, Inc was created and new office space at 983 University Avenue in Los Gatos, California was set up to house the new team from Amiga Corporation. Commodore marketing on the East coast of the United States would be joining the effort with the original Amiga engineers on the West coast to bring the new machine to fruition. Gail was needed to act as a liaison between the West Coast and East Coast project teams, and to keep management on each coast informed as to their progress. Gail arrived at the new Commodore-Amiga West Coast offices in March of 1985 to begin what would end up being over three months of work instead of the originally agreed upon three weeks. After the initial three weeks had passed, Gail was in a meeting with VPs from the East Coast and West Coast and she asked how long she would be in California. They asked Gail if she needed to return to the UK since her initial three weeks was up. "No", Gail replied, "I need to know if I'm going to need to purchase summer clothes or not. I don't need summer clothes in the UK so I don't have any with me." Wanting to make sure Gail remained involved, they said, "Gail, take the afternoon off today and go to the mall to buy some summer clothes."

As the Amiga launch date loomed, the engineers were working at a frenetic pace and Gail's travel schedule became equally frenzied as a result. For the final five weeks leading up to the Amiga launch event she would fly overnight Tuesday from Los Gatos to New York to meet with representatives from Caribiner International during the day on Wednesday. Caribiner was the

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company Commodore hired to produce the Amiga launch event at Lincoln Center and Gail was actively involved in coordinating and planning the event. When she wrapped up her Wednesday meetings with Caribiner she would take the train to Philadelphia and then be driven to West Chester, PA to meet with Clive Smith on Thursday to provide status updates. Finally, she would fly back to Los Gatos on Friday and work over the weekend. Everyone involved was working seven-day work weeks leading up to the launch of the Amiga. One day after a particularly grueling week, Gail got off the plane in Los Gatos and told her secretary, "That's it! I'm going to eat. Then I'm going to sleep. Then I'm going to wake up and eat again. Then I'm going to sleep again. You'll see me when I wake up after the 2nd time."

The Amiga launch event took place at Lincoln Center in New York, New York, USA on July 23, 1985. It was a lavish event with celebrities Andy Warhol and Debbie Harry having been hired by Commodore to take part in the presentations. On the technical side of things, three brand new Amiga computers were connected to projectors that would be doing live demonstrations of the Amiga's capabilities for the eager crowd. The Amiga video signals were being fed out to the projectors through Genlock devices which were still in the prototype stage. In fact, there were only five Genlocks in existence at the time of the launch event. It was Gail's responsibility during the event to coordinate the Amiga operators and the projector operators. They were all in communication via headsets. The plan was that if one of the three Amigas required a reboot, Gail would have them begin projecting the display from one of the other two Amigas so the techs could resolve the issue without the audience knowing. The entire presentation went off without a hitch. A few reboots were needed, but as planned, the audience was never aware of them. One part of the presentation involved ballerina Gelsey Kirkland dancing live on stage while an animation of a ballerina generated by an Amiga

computer was projected for the audience. Gail was involved in the production of the Amiga ballerina animation sequence, working with Island Graphics who created the animations.

Post-Amiga Launch, back to the UK

After the Amiga launch Gail briefly remained in West Chester, living in a hotel near the West Chester University campus. The hotel was five miles away from Commodore's US headquarters in West Chester, PA. Gail had stuck around to assist Commodore with exhibiting the Amiga at the first round of trade shows and Commodore's US management was impressed enough by Gail's work that they asked her to stay in the US. Gail countered that her real value to the company was in the relationships she had built with the software houses in the UK and she proposed that she would instead return to the UK and begin building developer interest in the Amiga. Gail returned to the UK in October, 1985 to continue working for the Commodore Electronics Limited UK marketing group.

Upon arriving back in the UK, Gail immediately began to strategize how she could ignite developer interest in the fledgling Amiga platform and she quickly recognized that a developers conference would be the perfect vehicle. She asked her secretary, "How quickly can you organize a get together for about 300 of my closest friends?" The answer to that question ended up being 8 weeks. In early December, 1985, the first European Amiga Developers Conference took place at the Grande Hotel in Eastbourne, England. Over 300 people from 100 different software companies paid £325 each to attend the three day event.

The first night of the conference had a Victorian theme. For the dinner service the waiters were dressed formally and all meals were served with exquisite silver plate covers. Everything on the menu was named after a Victorian character. The second night was a "futures" night that featured green cocktails with Amiga boing ball stirrer

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sticks. Gail wore a leather outfit and spiked her hair. A synthesized voice on an Amiga announced dinner that night: “ladies and gentlemen, dinner is served”. Everyone was initially served 3 smarties candies for dinner as a joke, foretelling that dinners of the future would consist simply of pills. After the joke was revealed, the actual dinner was served. Everything on the menu was named after people from the Los Gatos Amiga team. Ironically, they did not have Beef Wellington on the menu.

The members of the Amiga development team were each given a silver jacket with the Amiga Boing ball logo on it. There were black jackets created also, but the silver jackets were reserved exclusively for the original team. The original Amiga development team flew to the UK to attend the conference and brought Gail’s silver jacket with them, but it was somehow lost at the airport. For the duration of the conference, Dale Luck shared his silver jacket with Gail, which she kept at the end of the conference and still has.



Promoting Amiga / being Worldwide Amiga Product Manager

Still working for the CEL international marketing group, Gail remained active in the continuing promotion of the Amiga. She coordinated the activities of the country support managers,

product introduction and developer support programs. Given that her role had international scope, the job involved international travel, typically for the purpose of doing Amiga demonstrations. Gail visited eleven different countries in 1986, including a visit to the Soviet Union. The Cold War was ongoing and relations between Western nations and the Soviet Union were tense. The UK Software company Mirrorsoft was one of Gail’s contacts and they were involved in English/Soviet trade. Incidentally, the popular videogame “Tetris” had been created in 1984 by Soviet software engineer Alexey Pajitnov and it was Mirrorsoft who would bring the first commercial release of Tetris to the market, including to the Commodore 64, in 1988. In early 1986 Mirrorsoft organized a meeting between Gail and a group of key engineers from the Soviet GKNT, the Soviet State Committee for Science and Technology, for Gail to present the Amiga. Gail did not speak Russian so a Russian translator was provided for her presentation. Two things became clear to Gail during this presentation. The first was that the translator didn’t understand computer terminology well enough to translate it from English to Russian. The second thing was that the engineers in the audience seemed to all speak English. Each time the translator made an error in translation, engineers from the crowd would yell out corrections.

During her visit to the Soviet Union, her activities were organized and overseen by a Soviet handler. This was common practice due to the Cold War relationship between Western nations and the Soviet Union. Gail’s handlers took her to see the Bolshoi performance of Don Quixote at the Kremlin theater and to a hockey game between Russia and Finland.

Commodore Applications and Technical Support

Commodore’s senior management recognized Gail’s contributions to the company’s bottom line

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and her strengths in promoting the Amiga product line. In October, 1986 Gail accepted an offer to return to the United States to become the Worldwide Amiga Product Manager. 1987 saw Gail continue her globetrotting ways evangelizing the Amiga, but she moved back to live in West Chester, PA in the United States and was now based out of Commodore's 1200 Wilson Drive headquarters in West Chester, PA. Gail had a true passion for demonstrating Commodore's products, going back to her earliest days with the company and starting with the Commodore 64. She loved to see people's faces light up when they'd see what Commodore hardware could do. Doing Commodore hardware demonstrations wasn't just a job for Gail; It gave her personal fulfillment.

Because nobody had back-filled Gail's former position when she left the UK, Commodore's international distributors were now left without a support system. To remedy this, Commodore's Chief Operating Officer Henri Rubin chose to tap Gail's knowledge and experience to form a new department in October 1987 named "World-Wide Software and Support Group", which Gail then renamed to Commodore Applications and Technical Support, perhaps more well known as CATS. Henri Ruben had been running the South African Commodore distributor prior to being directly employed by Commodore, and he knew Gail from her days with Commodore Electronics Limited.

CATS could be thought of as the aggregate of Gail's experience at Commodore. Everything she excelled at during her prior six years with Commodore was combined into a single team that she was responsible for. CATS oversaw all worldwide developer activities, ran the Amiga DevCon events and ensured the successful sale of Commodore proprietary products by creating the availability of quality third party applications software and hardware. CATS consisted of technical, administrative, marketing and evangelical staff. According to Gail, the unsung

heroes of CATS were the technology group, headed by Carolyn Scheppner. Reporting to Carolyn were Dan Baker, Matt Blaze, Adam Levin, and David Junod. What made their job so difficult was that it was relentless and they never had an opportunity to finish anything. The documentation side of CATS could start on a project and work on it until it was completed. The technology folks were presented with a different technical problem to solve at any minute of any day. Before they'd finish helping one customer, there would be another one waiting.

Commodore Dynamic Total Vision (CDTV)

Gail was a female working in a male-dominated field in the 1980s, but from 1981 until 1990 this was never an issue. Her grandfather had instilled the belief in her that she could excel at whatever she put her mind to and that stuck with her. She was proving this to be true at Commodore. Aside from Gail having the confidence and ability to achieve whatever she set out to do, she never felt that anyone treated her any differently at Commodore because she was a woman. In fact, Bob Gleadow was one of her biggest supporters. Gail was given increasing levels of responsibility throughout her years with Commodore because she continued to prove her worth. In her own words, "When something needed to be done, there was no notion that a man or woman should do the job. Whoever knew how, did it. The industry was brand new and there were no assigned roles." This changed when Mehdi Ali became the president of Commodore International in 1989. In January 1990, Mehdi brought in Jeff Scherb, a former VP from Cullinet Software, to replace Gail as the head of CATS. This was done under the guise of an overall strategy of bringing in more professional and business oriented management from the outside, but Gail believed Mehdi's cultural beliefs prevented him from seeing her value as a leader in the company, because she was a woman.

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Gail was transitioned to the position of Director of Special Projects, reporting directly to Mehdi Ali. Her first project was to be the development and launch of Commodore's CDTV home entertainment console. Commodore set up a two-story block of offices near the back corner of the warehouse area at their 1200 Wilson Drive headquarters in West Chester for the CDTV team. Gail would oversee the software side of things with her team on the second floor and Don Gilbreath was responsible for the hardware side with his team occupying the first floor of offices. New products at Commodore took on internal code names to avoid unintentional leaks to the media. The CDTV project had the code name "Gail's Baby". As a funny side note, there was significant internal buzz about the project so the term "Gail's Baby" was making the rounds through the grapevine, eventually leading people to mistakenly believe Gail was pregnant.

Commodore knew the importance of having a strong software library to support any new hardware introduction so one of Gail's project responsibilities was to get developers on board and have them start creating software. Gail had extensive contacts in the software industry so encouraging CDTV development was certainly within Gail's wheelhouse. As the CDTV project progressed, Gail was able to once again return to her true calling – doing product demos. Gail would set up demonstrations of the CDTV at trade shows for external developers by appointment only. Initially, there wasn't even a prototype CDTV for her to show off. Instead, she was using a mocked up version that consisted of an Amiga 500 and a separate CD player. Gail's demonstrations were aimed at selling developers on the concept rather than showing them an early preview of the actual product. Despite this, there was tremendous anticipation among industry insiders and there would be lines of people waiting eagerly to see Gail's demonstrations. At a World of Commodore event in the UK she was in a building adjacent to the main event, while at a

CES she worked out of a trailer set up in the parking lot. The popularity of her CDTV demonstrations become legendary to the extent that a publication printed a cartoon of people waiting in line to see her demo with the caption, "Which is the real tradeshow?"

Even though Gail was successful at garnering early developer interest, there was a problem for external developers. CD was still a relatively new medium and it was prohibitively expensive to create one-off CDs. Once external developers had CDTVs in their possession to allow them to begin writing CDTV software, they had no way to create CDs so they could test their software. Commodore solved this problem by purchasing a CD mastering machine from Yamaha at a cost of \$125,000 with which they could create CDs as a free service for their external developers. It was one of three CD mastering machines in the United States at the time it was purchased, the other two being owned by IBM and Apple. The machine was installed just outside the CDTV office space in the back of the warehouse area. Developers would send physical hard drives to Commodore containing images they needed to have burned to CD. It took roughly three hours for Commodore to burn an ISO image to CD using the Yamaha machine, after which they'd return the hard drive and CD to the developer to allow them to continue their development and testing work.

Nolan Bushnell, famous for being one of the founders of Atari, was hired by Commodore in May, 1990, ostensibly to head the CDTV project. The reality was that Nolan's role on the project was for PR purposes only. He was never involved in any aspect of the actual product development. Gail occasionally met with Nolan and provided him with updates so he would know what to say to the press.

CDTV release

The CDTV was introduced to the public in January, 1991 at the winter CES in Las Vegas. Philips was releasing their own CD-I system as a

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direct competitor to Commodore's CDTV. When Philips staff visited the Commodore booth to see the CDTV they were astonished to see that Commodore had an extensive software library available for CDTV at launch. Gail attributed this to the fact that the CDTV was based on the Amiga and there was plentiful development expertise for the Amiga platform which put developers 3/4 of the way to developing for CDTV. Existing Amiga developers mainly had to learn the different UI patterns to transition to CDTV development. Philips did not enjoy this same advantage.

In May, 1991, Commodore began shipping CDTV units to stores in five California cities with a list price of \$999 and a general rollout began shortly thereafter.

End of the road at Commodore

The CDTV was a brilliant product for its time. It was Commodore's attempt to move the computer into the consumer's living room. Unfortunately, it was not a commercially successful venture for Commodore, mainly due to the price tag. Consumers simply weren't willing to spend \$999 on a living room entertainment device.

Despite Gail's best efforts, by 1992 it was clear that the CDTV wasn't going anywhere. In July 1992, 11 years and one month after her humble beginnings as a technical writer at Commodore, a friend who worked in HR called Gail down to her office and told her she was being laid off. Gail had a close relationship with Commodore's CEO, Irving Gould, so she returned to her office and called him to ask if he was aware that she was losing her job. Irving responded, "Yes, I heard. I'm sorry but I can't change that." Gail acquiesced and then asked Irving if she could use him as a reference. Irving said, "Of course." and their conversation ended.

Post-Commodore years

Prior to leaving Commodore, Gail and her daughter purchased Three Peas in a Pod Florist in

Royersford, PA. Gail's daughter was already an experienced florist and Gail took on the business side of things, but Gail was not intending for this to be a full-time job for her.

In late 1992, Gail attended a Software Publishers Association Symposium. It was a paid event, but Gail had amassed so many contacts in the industry throughout her career, she was able to attend without registering or paying. Nobody even questioned her being there because she was so well known in the industry. During the symposium Gail attended a panel discussion about interactive media. At the conclusion of the panel discussion, the panel moderator was soliciting questions from the audience when he recognized Gail sitting in the audience. He asked if she had anything she wanted to say. Gail was instantly nervous, but after gathering her composure and standing up from her chair she said, "Yes, I'm looking for a job." Conveniently, an employee from OptImage Interactive Services in Des Moines, Iowa was among the attendees. He approached Gail in the common area of the conference and asked for her resume. She began working for OptImage as their Vice President of Marketing and Sales in November, 1992.

OptImage had been formed in October 1986 as a joint venture between R.R. Donnelley & Sons Co and Philips Gloeilampenfabrieken to provide authoring tools and related services to authors and publishers of materials for CD-I. Gail's time with OptImage was relatively short lived. She moved back to Pennsylvania and started working with her daughter at Three Peas in a Pod florist at first part time while still working part time for OptImage. Eventually she left OptImage and began working full time with her daughter at Three Peas in a Pod Florist where she continues to work today.

Gail remains extremely active. She writes a local community neighborhood newsletter which is published in print and online. She volunteers for a group called "Art Goes to School" which does art appreciation sessions with students in the

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Delaware Valley and she's the president of the board at Art Fusion 19464, a small art school. As a hobby, Gail is active as an artist, painting in pastels and watercolors. Some of her artwork is printed as greeting cards which are sold at the florist shop she owns with her daughter. Her other passion goes back to her Commodore roots. Gail is an avid fan of the Premier league Chelsea Football Club, which Commodore UK sponsored during her time in the UK.



MEETING CHUCK PEDDLE

by Guest Contributor Leonard Tramiel

(Leonard Tramiel speaks about his dad, Jack Tramiel of Commodore Business Machines, and Chuck Peddle, father of the Commodore PET and VIC-20.)

Shortly after Commodore bought MOS Technology Dad told me that he needed my help to evaluate a proposal he had been given by an MOS employee. [That employee,] Chuck Peddle [had] told my father that he was going to build a personal computer. If Commodore wanted the product, he would do it as an employee. If [Commodore] didn't, then he would quit and do it on his own. The fact that Dad wanted my opinion was quite a shock. I was in my early 20s at the time, and the idea that my dad would ask for my help on a business decision was unprecedented. I

had worked at Commodore during the summers while in college, starting with working in the warehouse. One summer, based on my interest in science and technology, I learned to repair electronic calculators. Yes, there was a time when that was possible. I learned a LOT that summer. During a later summer, I went to work with Dad and went to the group designing Commodore's most advanced calculators. These were based on fully custom chips of this group's design and running firmware written by [the group]. Dad introduced me to the head of the group saying, "This is my son. Give him something useful to do." I was handed the instruction set for the custom processor and the firmware listing for a four-function calculator and was told, "Come back when you understand." That summer I wrote the firmware for 3 calculators. I learned even more.

I hadn't realized it, but Dad had come to trust me on technical questions. We went to a trade show in southern California, and in one of the strangest conversations I've ever had, Chuck Peddle described the world he wanted to live in. It was the world in a sci-fi story we had both read, *The Door into Summer*, by Robert Heinlein. Chuck was an absolute visionary, and I got completely absorbed in the vision of the world he was describing. One where nearly everything had a computer in it. Chuck thought that before people would accept this kind of world, they would need to be comfortable with computers, so he wanted build a machine that was inexpensive but powerful enough to learn to program and experience the power of personal computing. Before that, there needed to be a very inexpensive yet powerful microprocessor, so he spearheaded development of the 6502 [microprocessor]. Now it was time to go on to the next step. He described a computer very much like the PET. I lost track of time, and I really can't say how long we spoke. I tried to portray the vision to Dad, and I succeeded well enough that he gave the go ahead for the project. Chuck moved out to California and

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assembled a small team to produce, in an astoundingly short time, the PET computer.



TRAVELS WITH THE PET

by Guest Contributor Leonard Tramiel

In early 1977 the prototype PET computer, now in the collection of the Computer History Museum in Mountain View, CA, was shown at a large electronics trade show in Hanover, Germany. I was given the task of taking the machine. Since it was a fairly delicate device that used an internal card cage with wire-wrapped cards, it had a ticket for the seat next to me on the plane.

There was a lot of concern about how to best handle customs going into Germany when we landed in Frankfurt. A customs broker, in addition to a representative of Commodore Germany, tried to meet me to get through customs in time to make my connecting flight to Hanover. This utterly failed. I don't remember all the details, but I handed the customs forms I was given to the officials and was told in broken English, "You must pay duty". I said that the machine was only going to be in Germany for the trade show and was told, "You must not pay duty." I was then asked what the device was. This changed the instructions to "You must pay duty." This went on for quite a while.

Unknown to me, the customs broker and Commodore representative were having a similar experience with other officials, but they had two big advantages over me. First, there was no language barrier. Second, and not doubt far more important, they knew what they were doing. After a few hours, I was allowed to leave the customs area where I was met by someone from Commodore Germany. When I say this was a large trade show that is quite an understatement. The show not only roughly doubles the population of Hanover, it also exhausted the supply of rental cars in Frankfurt. We rented a VW bus, and I sat on the floor in the back and kept the PET in my lap to prevent it from sliding around and getting damaged.

We arrived at the Commodore booth just after the Faire had closed for the day. We plugged in the PET and turned it on. It didn't work. A quick examination revealed that the reset button in the back had been ripped loose, and only one of the wires was still attached. This PET prototype had a poor relationship with the RESET signal going to the 6502.

The timetable for the development of the PET prototype had a very clear target. The Consumer Electronics Show in Chicago in early January. With only a few days to spare, everything worked... well almost. The PET was developed using a device called the MDT (Microprocessor Development Terminal). The MDT was plugged into the socket that would hold the 6502, and it allowed debugging of the system. The machine worked just fine with the MDT acting as the processor, but when a real 6502 was used, nothing worked. After a few frantic days, it was decided that the PET would not be shown on the show floor while plugged into the MDT but would instead be demoed only in the Commodore suite at one of the convention hotels. The machine, despite the MDT, was a big hit. Not long after getting back to California, the cause of the problem was discovered. The RESET pin on the

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6502 is connected to 0 volts to reset the system. To allow multiple circuits to cause a reset, none of them supply the 5 volt level that allows normal operation. This is provided by what is known as a pull-up resistor. The prototype PET was missing that device. The MDT had one built in, so the system worked anyway if the MDT was used. A pull-up was added to the prototype, and it worked.

Until the reset switch broke loose. After an international phone call and a search for a soldering iron, the machine was repaired, and we left to go to the hotel.

The PET caused a *lot* of excitement. Some of Commodore Germany's management was from HP, and there was a steady stream of people from HP and other companies coming by the booth to see the PET. Most stood silently and watched me demo the machine, asked a few questions, and left, shaking their heads in disbelief.

After the Faire, the PET and I were brought to London and hosted by Commodore UK. There were more demos given for the UK press as well as various retailers. It made quite an impression there as well.



**The PET Prototype,
May, 1977. Photo
by John Feagans**



THE SECRETS OF SPACE INVADERS

**The gripping sounds, key to this
videogame's success, were an accident.**

While the sound of footsteps slowly growing louder may be a sure sign of impending doom in any horror film, the pulse of video game players quickens to a different beat: the drumming of approaching space invaders.

"My heart used to beat in time to that sound," says one fan of the 1978 hit game, *Space Invaders*. So, apparently, did many others. In Japan, where *Space Invaders* was invented by engineers from Taito Inc., people became so addicted to stuffing the game with coins that the government reportedly faced a yen shortage. Within a year after *Space Invaders* was introduced in the United States, the game could be found behind a crowd of people in arcades and bars across the land.

Designers can only speculate on why players found *Space Invaders* so engaging. Perhaps it was the predictable march of the aliens; if a player was annihilated, he could not blame bad luck—only himself. Next time, he swore, he would do better. Or perhaps *Space Invaders* was a hit because it was among the first games with a "character"—a player did not just move blocks

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around; rather he was on the screen, a lone earthling besieged by approaching aliens.

Most gripping, however, was the sound. The more aliens a player shot, the faster they approached; their drumbeat quickened, the tension mounted. Ironically, says Bill Adams, director of game development for Midway Manufacturing Co. of Chicago, Ill., which licensed *Space Invaders* for sale in the United States, these features of the game were accidental.

“The speeding up of the space invaders was just a function of the way the machine worked,” he explained. “The hardware had a limitation—it could only move 24 objects efficiently. Once some of the invaders got shot, the hardware did not have as many objects to move, and the remaining invaders sped up. And the designer happened to put out a sound whenever the invaders moved, so when they sped up, so did the tone.”

Accident or not, the game worked. As of mid-1981, according to Steve Bloom, author of the book, *Video Invaders*, more than 4 billion quarters had been dropped into *Space Invaders* games around the world—“which roughly adds up to one game per earthling.”



(This article was first published as "Space Invaders: the sound of success." It appeared in the December 1982 issue of *IEEE Spectrum* as part of a special report, "Video games: The electronic big bang." A PDF version is available on IEEE Xplore.)

○ NEXT ISSUE

Greetings to all the faithful readers of The Interface!

Somehow, we have grown a peculiar affection for incredible Commodores, and I personally want to thank everyone who has read and enjoyed all the great Commodore computer articles, commentaries, and stories that The Interface has presented ever since the newsletter's resurrection over a decade ago. I am blessed and privileged to be a part of such an important endeavor as The Interface. Robert, Dick, and other authors have written about their personal Commodore experiences and have made The Interface the successful newsletter that it is today.

With that said, I would like to let everyone know that next issue will be our annual Independence Day celebration issue. I always scour the Internet, looking for a comic book superhero who best displays patriotism and courage that will remind all of us that we live on the best and most blessed country on the planet.

If you have a Commodore story or article that you would like to submit for possible print in The Interface, then please send that piece to one of the club's staff, and they will forward it to the editing department in Kansas City.

Thanks again to all of you who have made The Interface the successful publication that it is today.

We gone... 10-10.

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Club Officers

>>--> Officers and Keypersons <--<<

President Robert Bernardo
Vice-president Roger Van Pelt
Secretary/Treasurer Dick Estel
The Interface Editor Lenard Roach
Librarian Roger Van Pelt
Club equipment Roger Van Pelt
Meeting place reservation Dick Estel

-The Small Print-

The Fresno Commodore User Group is a club whose members share an interest in Commodore 8-bit and Amiga computers. Our mailing address is 185 W. Pilgrim Lane, Clovis, CA 93612. We meet monthly in the meeting room of Panera Bread, 3590 West Shaw, Fresno, CA. The meetings generally include demonstrations, discussion, and individual help.

Dues are \$12 for 12 months. New members receive a "New Member Disk" containing a number of useful Commodore 8-bit utilities. Members receive a subscription to The Interface newsletter, access to the public domain disk library, technical assistance, and reduced prices on selected software/hardware.

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Our disk library contains over 3,000 public domain programs for the C64 and C128. Members are entitled to copies of these disks at no cost if a blank disk is provided. We do not deal with pirated, copyrighted, violent, or obscene programs. Please call our attention to any programs found in our library which may violate these standards.

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