



THE EDITOR'S GODZILLA

-by Lenard R. Roach

Christmas Comes Early To The Roach Center

Nine more months and Lenard should be able to attend the 2015 CommVEx computer show in Las Vegas.

It was a surprise email that came into my inbox one frosty day in November. The subject line said “Commodore Stuff.”

“Lenard (it began), are you still into Commodore? I have a lot of stuff that you can have. Please call me anytime. Jack.” Jack left his phone number along with the post.

Jack was the treasurer of the Commodore Users Group of Kansas City from at least 1995 until the club's disbandment early in the 21st century. I served the CUGKC as its last president. I signed the papers that sent the club's treasury as a donation to the Children's Mercy Hospital in honor of my son who was a patient there in 2004. Since the club's demise, Jack has been sitting on a stock of Commodore 64s, 128s, various disk drives, and a large assortment of software all this time, using his own resources to keep them at the proper room temperatures. He was now contacting me and asking if I wanted to take

possession of the entire collection. I printed the email and put it in my lunch box (aka my briefcase) and made an appointment over the phone to pick up as much as I could in one trip in my small 1997 Plymouth Neon.

One thing I had been trying to do, even as club president, was take a look at all that Jack has stored in his basement when it came to Commodore equipment. Previously I had no storage for all the equipment, and as the years wore on, Jack set several units (both working and non-working) out on the curb for the junk collectors and the trash man. Now here in 2014 I had a place for all of the machinery in my very own house, and a computer room, to put it in.

I stopped in on a Tuesday before Thanksgiving at Jack's place in Kansas City, just minutes before a person would get to Grandview. Jack's wife was waiting for me at the door. She let me down to the basement where Jack was already starting the job of sorting the Commodore hardware and software. Jack instructed me to drive the Neon down the driveway leading to the back of the house and back it up to the garage door. A short minute later I had the passenger's door open and the seat slid forward (my 97 is a two door) and the trunk as well.

I wandered like a kid in a candy store through the shelves of Commodore equipment and software wondering what I should load first. It was a quick realization that I was not going to be able to load everything into the car on one trip, so I asked Jack if it was all right that I took the hardware first, then came back before Christmas for the software. He consented.

I started with the 1581 disk drives since they are a rare find anywhere and loaded them into the trunk of the car. I can always use an extra 1581 since this is a main machine for my conversion of texts from Commodore into PC and Jack had a few. I then loaded two full tubs of cables and cords into

the back seat behind the driver since the driver's seat was broken from a car crash a few months back. After that, I found the 1571 disk drives and started stacking them deep into the trunk of the car. Now came the beauty of loading the ever famous Commodore 128s. As I loaded each computer I checked for markings to see if they may have JiffyDOS installed, and most of the units did. This was a great find since my personal C128 was almost shot due to constant use and I was going to replace my existing unit with one of Jack's computers. Finally came the Commodore 64s. Most of these units had JiffyDOS, and even one was still in the box. It was hard to believe that even after loading all this equipment into the Neon I still had some room left. Now I started loading up joysticks and any loose cables that might be in the basement. Even with all this I had just enough room for two boxes of 5.25 disks to sit on top of everything, but before I buttoned up the car I put a final item into the back seat – a Commodore monitor that was still hooked up and ready for use.

The car was packed to capacity. My years as a driver has taught me to allocate my space well in the Neon. This is where putting together puzzles with Mom during my growing up years paid off, too. I gently shut both the passenger's door and the trunk lid and turned to Jack and shook his hand. I promised him I would be back for the software before the end of the Advent season, which he said would be okay but to be sure not to forget to come for it.

Time and temperature were working against me. The sun was already down and we didn't make it to 35 degrees as a high that day, and my domicile in Kansas City, Kansas was a good 45 minutes away, and it was highway rush hour. The equipment in the cabin of the car would be fine with the heaters running but it was the stuff in the trunk that I wanted to get home before things got too cold. Not to worry as I found out that a quick shot down I-435 west to Metcalf Avenue/US 169

north put me on the right road home. Before long I was backing into my driveway on Corona Avenue and ready to unload my Commodore treasure into the house.

Gabriel, my son, was sitting on the sofa playing a game on the Xbox when I came through the door with the first load of equipment from the trunk.

“What the **** are you going to do with all of that stuff, Dad?” he asked after looking up from a save point in his game.

I explained to him that, once everything has been tested, I was going to make one complete Commodore 128 system available for purchase at the church's Sunday School Store and another complete 128 system will go as a gag gift for the poor soul whose name I pulled out of the basket for Secret Santa at the convenience store.

“What about the C64s?” he asked.

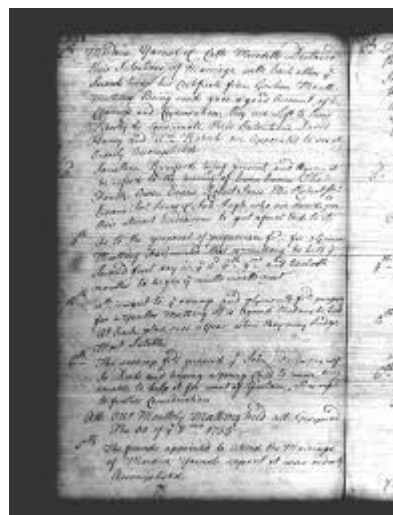
Hmm. Good question. I got about five Commodore 64s with the collection and really don't have a use for them since the good people at Commodore were smart enough to include a C64 inside every C128 built. However, I have noticed that some cartridges and RAM expansion units will not cooperate with the C128 but only on actual C64 hardware. I'll probably sell some units on eBay and take the money to pay for more Commodore goodies. Like I said earlier, most units came with JiffyDOS and therefore should provide a good dime or two on the market.

It took me about four hours to unload the Neon and test as many different pieces of hardware that I could put in my bedroom (the computer room had no access to power with all the newly acquired Commodore equipment taking up space). When I got done I reduced the Commodore equipment down to four C128s, two 1571s, three 1581s, and five C64s. After going through the gear I did have an aftermarket 1541

drive out of the whole collection that was also working well so I may keep that for myself. I know that one of the C128s with JiffyDOS will go onto my personal Commodore stand to replace my failing machine. I also enjoy the 1571 with JiffyDOS, but my initial testing in the bedroom with the hardware showed me that a JiffyDOS 128 and a JiffyDOS 1571 do not like each other. JiffyDOS in the 128 had to be disabled to access the JiffyDOS in the 1571. I'm sure that my testing on these items was erroneous and without proper instructions on how to use JiffyDOS, I am just flying blind here.

Nothing felt better than to have some Commodore units to glean from instead of having to pester FCUG to mail me parts a bit at a time. What I'm going to do with them, I'm not too sure. I know that loading them up and giving them away at CommVEx isn't a good idea since I am limited on space in the car. Ebay is an option, but even then by watching some of the sellers with their Commodore wares not moving, it's not too good. JiffyDOS may help, but even that makes it difficult to sell. Most buyers won't know what JiffyDOS is and I can understand that; but for now all I know is that someone is going to have a Merry Christmas other than me and the church will have a copy of the system that I use to write my puppet skits on. Awesome!

We'll see you in 2015, reader. Have a Merry Christmas and a Happy New Year from all of us at the newsletter staff of The Interface, a division of the Fresno Commodore User Group.



MONTHLY MEETING REPORTS

NOVEMBER 2014

-by Dick Estel and Robert Bernardo

The November, 2014 meeting of the Fresno Commodore User Group marked the 33rd anniversary of the club, founded in 1981. On hand were Robert Bernardo, Brad Strait and daughter Katelyn, Louis and Vincent Mazzei, Roger Van Pelt, and Dick Estel. None were present at the founding, but Dick has been in the club since about 1988, and Robert joined soon after.

We had a slight delay getting started - Roger, keeper of the equipment, is without his car for a while and was unable to use his brother's as usual. Dick made the quick trip to Roger's and brought him and the equipment back, and all was well.

Before the official start of the meeting, Robert showed an on-line video preview of a documentary about Commodore founder Jack Tramiel, which is in production and seeking financial backing. It can be found at <https://www.youtube.com/user/8bitgenerationvideo>

We also saw another short video in which Jeri Ellsworth documented the packing and shipping of the first production unit of the CastAR 3-D gaming glasses she has been working on.
<https://www.youtube.com/watch?v=SlaeIf7CaNk>

Vincent and Louis reported that they are working on a blue VIC-20 with white keyboard for Vincent, to complement Louis' red and white model.

Robert informed us he will be traveling to the Portland area during Thanksgiving vacation, to see the [Trail Band](#) (featuring Rindy and Marv Ross of [Quarterflash](#)). He will also visit Ray Carlsen and will take any equipment that we may have that needs repairs.

Speaking of Ray C, he is now offering a power supply for the Amiga 500/600/1200 to go along with his Commodore line.

In formal business, the club voted to make our annual donation to St. Jude's Children's Hospital and to move the December meeting date to December 14.

Hardware and software activities included a lot of games, including the C64 DTV joystick which has 30 games built in and which Katelyn enjoyed playing with. The club was celebrating the 10th anniversary of the C64 DTV.

Robert had brought in a new, sleek, modern, joystick from AmigaKit.com, designed with arcade-type buttons, which we tested with the C64 and VIC-20. It also worked with Amiga and Atari. There's a photo on-line at <http://www.dickestel.com/images/fcug396.jpg>.

For the VIC-20, we tried out new 2014 games, Panicman - a nicely-done PacMan game, Bounce - a slow-moving Pong-type game, and Pulse - a snappy, sideways-scrolling shooter and the best of

the bunch. For the C64, we shot a few World War II targets in the game, Silent Service (but we couldn't look at Silent Service II on the Amiga 500, because we had the wrong video cable).

Robert had a Plus/4 diagnostic cartridge built by his friend Rob Clarke, a British transplant living in Switzerland. Unfortunately, it did not work with the PAL VIC we had on hand, so testing it was delayed until we bring a NTSC Plus/4 to a future meeting.

LINKS:

Ray Carlsen – <http://personalpages.tds.net/~rcarlsen/>

Trail Band – <http://www.youtube.com/watch?v=Qh3CiSWSRkM>

More Trail Band – <http://www.trailband.com/>

Quarterflash – <http://www.youtube.com/watch?v=BaSHtnLvdkS>

More Quarterflash – <http://quarterflash.net>

St. Jude's Hospital – <http://www.stjude.org/>

Etc. etc.

DECEMBER 2014

-by Robert Bernardo

I was 32 minutes late to the meeting, due to my emergency pick-up of v.p. Roger and the club equipment. When we arrived at the restaurant, member Greg was already there, having waited about 20 minutes. After my many profuse apologies, we hauled the equipment out of the car and started setting it up. Eventually, members Louis and Vincent appeared, and we got down to ordering our food.

Under old business, I told of my Thanksgiving trip to the Pacific Northwest which included a visit to Commodore repair tech, Ray Carlsen. I picked up various repaired equipment from him and dropped other items – an Amiga 1080 monitor for repair and many Chinese SID chips for him to test. Those chips had been bought by Louis but had lain for months without testing. He tested them and mailed them back. Most of them were perfect!

The A1080 monitor was a different case. Ray informed me by e-mail that he needed a schematic to repair the beast, and none were available on-line. Louis said that he would try to find that schematic.

In new business, Greg talked about having an arcade party at his house during the Christmas holidays and that we were invited – the date to be announced. Then he gave a \$10 Walmart gift card to everyone at the meeting! We also talked about the May Maker Faire in San Mateo and hoped that there would be another Nostalgic Computers table in which we could show off our Commodores and Amigas.

After lunch, we got down to hardware and software. First up, we examined the new Amiga 500/600/1200 power supply from Ray Carlsen. It is more powerful than the original p.s. and runs much cooler due to its modern components. Then we tried out various programs on the new Kerberos MIDI C64/128 cartridge from Frank Buss of Germany. Though we did not have a MIDI music keyboard to connect to the Kerberos, we were able to play around with the SID and MIDI composing programs stored on the cart. However, without more instructions on how to use them, we could only go so far in running the programs. Because the Kerberos cartridge also implements the EasyFlash cartridge, there was also a game or two stored in its memory.

We were unable to carry on with any further demonstrations (VIC-20 and Amiga) that afternoon. The club's monitor failed in its display, either due to bad video cables but more likely due to loose RCA input jacks in the back of the monitor (not again!). The bad monitor was left with Roger, and it will eventually be brought back to Ray Carlsen for repair. In the meantime, we will use another Carlsen-repaired monitor for future meetings. Even with the difficulties, we adjourned the meeting at about 3:30 – our usual late adjournment.



WHERE DID EVERYONE GO?

-by Dick Estel

When I joined the Fresno Commodore User Group in 1988, we had close to 100 members, and an attendance of about 30 at the Saturday meetings.

A few years ago we had some meetings at which Robert and I were the only ones in attendance. We've been fortunate since then to have a small influx of new members who attend regularly – Roger, Brad, Louis, Vincent and Greg.

This got me thinking about some of our past members, especially when I ran across a folder containing old membership lists. Looking at the roster for late 1995, I found it contained 43 names, of which only Robert and I are still members.

In 2006 we had a reunion lunch, to which we invited every former member we could find.

Quite a few attended, and I talked to others by phone or email. The list contains six names of people that I was in touch with at that time, but not since. (I was also in touch with at least seven people who are not on that particular list.)

The rest of the list breaks down as follows:

9 are known to be deceased
5 have been heard from in the last two years
9 have had no contact with the club for ten years or more
12 are names of people I simply don't remember.
Of course, that also means no contact in a decade or more.

We've honored a few of these long-gone members with our Memory Lane series, and we'll have a few more of those. But looking at this list brought back some memories, and also made me thankful for the small but faithful group we have become.



COMMODORE 128 – THE MOST VERSATILE 8-BIT COMPUTER EVER MADE

-by Ian Matthews of Commodore.ca

July 11, 2003 – Revised June 12, 2012

In the summer of 1984 Commodore decided that they needed a replacement for the amazingly successful C64. More accurately, they decided that the TED / 116 / Plus/4 / 264 Series was a

failure as a replacement for the C64.

This machine would be Commodore's last 8-bit computer; after this they would produce only 16/32 Bit Amiga's and IBM PC clones.

Customer reaction to Commodore's failure to provide native CP/M support in the C64 and (much worse) their failure to provide C64 compatibility in the Plus/4 / 264 Series taught Commodore engineers some hard lessons. Commodore's founder and visionary, Jack Tramiel, had quit months earlier, and the new management team wanted to just forget the Plus/4 / 264 Series fiasco. Fortunately, the engineers knew they needed to fulfill promises of compatibility.

Bil Herd got the top job as 128 lead engineer because of his vocal criticism of the new management team's lack of vision. "No one dreamed that C64 compatibility was possible, so no one thought along those lines. I had decided to make the next machine compatible with *something* instead of yet another incompatible CBM machine. (I won't go into the 'yes Virginia there is Compatibility' memo that I wrote that had the lawyers many years later still chuckling; suffice it to say, I made some fairly brash statements regarding my opinion of product strategy.) Consequently, I was allowed/forced to put my money where my mouth was, and I took over the C128 project."

Under management's guidance, the first C128 concept machines (pre-prototype) made no attempt at C64 compatibility. Bil recalls, "I looked at the existing schematics once and then started with a new design based on C64ness. The manager of the chip group approached me and said they had a color version of the 6845, if I was interested in using it. [It] would definitely be done in time, having been worked on already for a year and a half..... And so the story begins."

Commodore needed its next computer to be a serious upgrade from the C64 if it was to successfully battle its arch nemesis; it needed to keep Jack Tramiel’s Atari from being successful with their rumored new “ST” line. In 1982 Commodore released the world's first multi-processor personal computer, called SuperPET, but it was targeted only at the education and scientific markets. The Commodore 128 was to be the world's first mass market multi-processor computer. It would also have two video subsystems, one of which would allow it to connect to a TV.

A reviewer from Your Computer magazine wrote, “The dowdy shoebox image of the Commodore 64 has been replaced by a slimline beige console that any style-conscious businessman should be pleased to have on his desk. A full-size, typewriter-style keyboard has 92 keys that travel and locate well.” The 128’s 80-column display mode would produce 640x200 which was better than the CGA mode that IBM PC’s could produce even in the early 1990’s! This new and powerful machine would act as three completely separate computers in one:

Commodore 128 Mode - 2 Mhz speed (8502 CPU), 128K memory, very nice 80x25 RGB display, advanced Basic 7.0

Commodore 64 Mode - 1 Mhz speed (6510 emulation in the 8502 CPU), 99.8% compatible with 64 hardware and software, accessed by booting the machine while holding down the Commodore key or typing GO 64

Commodore CP/M Mode - 1-4 Mhz speed (Zilog Z-80 CPU), 100% compatible with the huge volume of CP/M business applications such as Turbo Pascal and WordStar (an excellent program I used personally for years on a Sanyo!) Note that the Z-80 processor was originally spec’d by Commodore management to be the same external expansion cartridge used on the C64. However,

to resolve several other engineering problems, Bil Herd designed the Z-80 into the main board. This mode required CP/M software disks to be loaded on boot up. All this would sell for an initial price of just \$300; half of the Commodore 64 price when it was introduced two years earlier.

MOS 8502 - CPU – Yet another derivative of the 6500 series

Zilog Z-80 – Improved version of Intel 8080 CPU designed by the same Intel engineer

MOS 8563 - CRTC / VDC – Video Display Chip 80 column x 25 rows 640x200 (128 mode only)

MOS 8564/6 - VIC – Video Interface Chip (NTSC / PAL) – used in 40 column x 25 row

MOS 8721 - PLA

MOS 8722 - MMU – Memory Management Unit

MOS 6581 - SID – Sound Interface Chip

MOS 6526 - CIA – Complex Interface Adaptors (2 of them!)

This technically complex machine would present serious engineering and marketing challenges to any company. Bil Herd recalls, “It was sometime in September (1984) when we got 8563 (new 40/80 column color video chip) silicon good enough to stick in a system. ...One concern we had was it occasionally blew up.... big time.... turn over, die, and then smell bad.... But then all of the C128 prototypes did that on a semi-regular basis as there wasn’t really any custom silicon yet, just big circuit boards plugged in where custom chips would later go... but you can’t wait for a system to be completed before starting software development. When this problem still existed on Rev. 4, we got concerned. It was at this time that the single most scariest statement came out of the IC Design section in charge of the

'63. This statement amounted to 'you'll always have some chance statistically that any read or write cycle will fail due to (synchronicity)'."

"Synchronicity problems occur when two devices run off of two separate clocks, the VIC chip hence the rest of the system, runs off of a 14.318 Mhz crystal, and the 8563 runs off of a 16 Mhz Oscillator. Now picture walking towards a revolving door with your arms full of packages and not looking up before launching yourself into the doorway. You may get through unscathed if your timing was accidentally just right, or you may fumble through losing some packages (synonymous to losing data) in the process, or if things REALLY foul up, some of the packages may make it through and you're left stranded on the other side of the door (synonymous to a completely blown write cycle). What I didn't realize that he meant was that since there's always a chance for a bad cycle to slip through, he didn't take even the most rudimentary protection against bad synchronizing. As it turns out, the 8563 instead of failing every 3 years or so (VERY livable by Commodore standards), it failed about 3 times a second."

In addition, the yield on these video chips was about .001%. Commodore's chip division, MOS Technologies, could only get three or four working chips the per run. "A run is a half-lot at MOS and costs between \$40,000 and \$120,000 to run. Pretty expensive couple of chips."

As if these problems were not enough, the power supply needed to be adjusted for each chip, or they would literally burn up. "No single custom chip was working completely as we went into December (1984), with the possible exception of the 8510 CPU... At this point, all I did have to lose was a HUGE jar of bad 8563's. (One night a sign in my handwriting 'appeared' on this jar asking, 'Guess how many working 8563's there are in the jar and win a prize.' Of course, if the number you guessed was a positive real number,

you were wrong.)"

With only five or six weeks to go until the January Consumer Electronics Show in Vegas "... finger pointing was in High swing, (the systems' guys should have said they wanted WORKING silicon) with one department pitted against the other, which was sad because the other hard-working chip designers had performed small miracles in getting their stuff done on time... .. Managers started getting that look rabbits get in the headlights of onrushing Mack trucks -- some started drinking, some reading poetry aloud, and the worst were commonly seen doing both. Our favorite behavior was where they hid in their offices. It was rumored that the potted plant in the lobby was in line for one of the key middle management positions."

Unbelievably in this time of crisis, both MOS chip designers went on Christmas vacation and "a sprinkler head busted and rained all over computer equipment stored in the hallway. Engineering gathered as a whole and watched on as a \$100,000 worth of equipment became waterlogged.... I can honestly say that it didn't seriously occur to me that we wouldn't be ready for CES. Here were just too many problems to stop and think what if."

"Von Ertwine was developing CP/M at home (consultant). Von had wisely chosen not to try to follow all of the current Revs of the 8563; instead he latched onto a somewhat working Rev 4 and kept it for software development. Later we would find out that Von, to make the 8563 work properly, was taking the little metal cup that came with his hot air popcorn popper (it was a buttercup to be exact) and would put an ice cube in it and set it on the 8563. He got about ½ hour of operation per cube. On our side there was talk of rigging cans of cold spray with foot switches for the CES show."

Bil Herd stated that a number of "odd engineering

fixes", often conceived after consuming a few beers at the bar beside the MOS factory, resulted in seemingly insurmountable problems being quickly resolved. The most important of these "fixes" was the integration of a Z-80 CPU into the main board. In addition to resolving several taxing electronic problems, it elevated the C128 into the realm of the business computer. "A True Miracle and was accompanied by the sound of Hell Freezing over, the Rabbit getting the Trix, and several instances of Cats and Dogs sleeping together. This was the first time that making CES became a near possibility. We laughed, we cried, we got drunk."

"We averaged 1-3 of these crises a day the last two weeks before CES. Several of us suffered withdrawal symptoms if the pressure laxed for even a few minutes. The contracted security guards accidentally started locking the door to one of the development labs during this time. A hole accidentally appeared in the wall allowing you to reach through and unlock it. They continued to lock it anyways, even though the gaping hole stood silent witness to the ineffectiveness of trying to lock us out of our own lab during a critical design phase. We admired this singleness of purpose and considered changing professions."

"We finished getting ready for CES about 2:00 am in the morning of the day; we were to leave at 6:00 am."

"Advertisements in the Las Vegas airport and again on a billboard en route from the airport inform us that the C128 has craftily been designed to be expandable to 512K. Now it had been designed to be expandable originally and had been respecified by management so as to not be expandable in case next year's computer needed the expandability as the "New" reason to buy a Commodore computer. That's like not putting brakes on this year's model of car so that next year you can tote the new model as reducing

those annoying head-on crashes."

"Upon arriving at the hotel, we find that our hotel reservations have been canceled by someone who fits the description of an Atari employee. Three things occur in rapid succession. First, I find the nearest person owning a credit card and briskly escort her to the desk where I rented a room for all available days; second, a phone call is placed to another nearby hotel, canceling the room reservations for Jack Tramiel and company; third, several of those C64's with built-in monitors (C64DX's??? Man, it's been too long.) are brought out and left laying around the hotel shift supervisors' path, accompanied by statements such as "My, my, who left this nifty computer laying here? I'd bet they wouldn't miss it too much."

"The next day we meet up with the guy who developed CP/M (Von) for the C128. As I mentioned earlier, someone forgot to tell him about the silly little ramifications of an 8563 bug. His 'puter didn't do it, as he had stopped upgrading 8563s on his development machine somewhere around Rev 4, and the problem appeared somewhere around Rev 6. As Von didn't carry all the machinery to do a CP/M rebuild to fix the bug in software, it looked like CP/M might not be showable. One third of the booth's design and advertising was based on showing CP/M. In TRUE Animal fashion, Von sat down with a disk editor and found every occurrence of bad writes to the 8563 and hand patched them. Bear in mind that CPM is stored with the bytes backwards in sectors that are stored themselves in reverse order. Also bear in mind that he could neither increase or decrease the number of instructions; he could only exchange them for different ones. Did I mention hand calculating the new checksums for the sectors? All this with a disk editor. I was impressed."

"Everything else went pretty smooth[ly]. Every (power) supply was adjusted at the last moment

for best performance for that particular demo. On the average, 2 almost-working 8563's would appear each day, hand-carried by people coming to Vegas. Another crisis... no problem... this was getting too easy."

Commodore did not produce many peripherals designed exclusively for the 128 line. Instead they relied primarily on C64 devices, like the 1541 floppy drive. An exception was the Commodore 1902 monitor for \$400 (\$100 more than the price of a new C128!) which was required to use the new 128's advanced 80-column mode. The C1750, a massive 512K RAM expander, was another new product. The most anticipated new peripheral was the 1571 double-sided floppy drive which, at 360K, provided more than double the capacity of the 1541. Much more importantly, it was a whopping 7 to 10 times faster!

Many Bulletin Board Systems (BBS's – pre-Internet for those of you who were born after 1980) also jumped on the C128 mode bandwagon. There are a number of historians who site Commodore as the unsung development partner of the Internet. While it is certainly true that the US military and several universities developed ARPANET, its transition into the Internet would not have been so rapid had online communities not been created with extensive use of Commodore hardware: the amazingly inexpensive VIC Modem (and its descendants, the 1600, 1650, 1670) combined with powerful C128 mode functionality allowed thousands of BBS's to spring up from nothing. The 128 produced: a large supply of online information; consumer awareness, which created demand; and telecommunication capacity and skills -- all of which are were required to develop and commercialization [for] the Internet.

In an effort to extend the life of this powerful, multi-talented machine, Commodore introduced a slight derivative of the 128 called the Commodore

128D in 1987. The idea was to make a cleaner, smaller footprint for the 128 so that it might appeal to the small business segment dominated by IBM at the time. Commodore 128D models looked a lot like Apple Mac computers of the late 1990's. They came in a square desktop box, featuring an integrated a front-loading Commodore 1571 high-capacity floppy disk drive, and a separate keyboard. A monitor could sit nicely on top of this chassis, again reducing desk space requirements and clutter. The price of this system [was] just \$500, a third the price of an IBM PC. In a cost saving effort, D's were manufactured with less expensive “upgrade” versions of the SID (sound) chip, called the 8580 SID, and were sometimes referred to a 128DCR's (Cost Reduced).

The first European 128D's chassis were made of plastic. They came with a keyboard dock and carry handle! The North American model came in standard beige steel chassis without the carry handle or keyboard dock. On an amusing note, I have often been asked questions from non-Commodore collectors about a super-rare prototype called a Commodore 1280. Of course this is simply a misreading of the Commodore 128D name.

Today (in 2003), 128D models are highly sought after by collectors and enthusiasts, usually garnering more than triple what a standard 128 sells for.

Early in the process, a team of experienced hardware and software engineers were assembled and they left their personal mark on the their machine with an “easter egg”. Type SYS 32800,123,45,6 on your 128 and you will see a small list of development credits. Note the spelling of the word Hardware -- presumably a tribute to Bil Herd.

Bil Herd explained his team as follows:

Bil Herd - Original design and hardware team leader.

"RIP: HERD, FISH, RUBINO"

Dave Haynie - Integration, timing analysis, and all those dirty jobs involving computer analysis which was something totally new for CBM.

"The syntax refers to an inside joke where we supposedly gave our lives in an effort to get the FCC production board done in time, after being informed just the week before by a middle manager that all the work on the C128 must stop as this project has gone on far too long. After the head of Engineering got back from his business trip and inquired as to why the C128 had been put on hold, the middle manager nimbly spoke expounding the virtues of getting right on the job immediately and someone else, *his* boss perhaps, had made such an ill-suited decision. The bottom line was we lived in the PCB layout area for the next several days. I slept there on an air mattress or was otherwise available 24 hours a day to answer any layout questions. The computer room was so cold that the Egg McMuffins we bought the first day were still good 3 days later."

Frank Palaia - One of three people in the world who honestly knows how to make a Z80 and a 6502 live peacefully with each other in a synchronous, dual video-controlled, time-sliced, DRAM-based system.

Fred Bowen - Kernal and all system-like things. Dangerous when cornered. Has been known to brandish common sense when trapped.

Terry Ryan - Brought structure to Basic and got in trouble for it. Threatened with the loss of his job if he ever did anything that made as much sense again. Has been known to use cynicism in ways that violate most Nuclear Ban Treaties.

Von Ertwine - CP/M. Sacrificed his family's popcorn maker in the search of a better machine.

The 128 went on to be a notable success for Commodore but not because of its new power. Unfortunately, most software developers ignored the new and advanced C128 mode functionality. Why develop software for a new, relatively small product like 128's native mode when you can write software for the wildly successful C64 and know that your code will function on a 128 operating in 64 mode. There were some notable exceptions, such as the Graphical User Environment called GEOS which created a powerful 128 mode version.

Dave DiOrio - VIC chip mods and IC team leader. Ruined the theory that most chip designers were from Pluto.

Victor - MMU integration. Caused much dissension by being one of the nicest guys you'd ever meet.

Greg Berlin - 1571 Disk Drive design. Originator of Berlin-Speak. I think of Greg every night. He separated my shoulder in a friendly brawl in a bar parking lot, and I still can't sleep on that side.

Before its demise in 1989, the Commodore 128 sold a respectable four million units, but this number could have been dramatically larger. Much like the Amiga to come, Commodore was incapable of promoting the C128 to the appropriate target markets. 128's were insanely inexpensive when compared feature for feature with its of the day. If Commodore had developed and pushed the D models to the small

Dave Siracusa - 1571 Software. Aka "The Butcher"

"The names of the people who worked on the PCB layout can be found on the bottom of the PCB."

business market in 1986, the 128 could have been a serious contender in that space.

The last gasp was a very small production run Commodore 128CR's (Cost Reduced) released in North America in 1988 or 1989. They were identical to the 128DCR except they did not have an integrated floppy drive. I have never seen one of these units... not even a picture! If you have one, please email a picture to us and we will add it to this site with credit to you.

On a sad note, the 128's CP/M was almost never used because CP/M was quickly losing ground to Microsoft Disk Operating System (MS DOS), by then running at version 2. MS-DOS was of course popularized by the IBM PC and seemingly endless line of IBM clone machines. Business developers had all but abandoned the old standby CP/M in favour of the new and rapidly expanding DOS market. The Commodore 128 was CP/M's last big play, but the 128 just did not have the market penetration to keep CP/M alive.

1984

January 13th – Commodore shows off prototype 264 and 364 at CES and indicates they should be in production by June

January 15th – Commodore's founder, visionary and CEO, Jack Tramiel quits Commodore with secret plans to buy the near bankrupt Atari

April – Commodore launches its first IBM clone, the Commodore PC, at the Hanover Fair in Germany

April – Commodore shows the Commodore Z8000 at the Hanover Fair in Germany

Mid-Summer – Commodore decides the Ted / 264 / 116 / Plus/4 Series will not sell as a replacement to the C64

September – Bil Herd appointed lead designer on C128 project in an effort to get a new machine ready for show at CES in Las Vegas, the 2nd week of January 1985

November – New chips are still not close to stable

December – Z-80 CPU incorporated into motherboard design – chip problems start getting resolved quickly

December – A 16K version of the 264 called the Commodore 116 is for sale (at least in Germany) Intel introduces the 80186, 80188, and 80286 processors

Motorola unveils its 68010 CPU chip

1985

January – The last VIC-20 rolls off the line and into the history books

January – Serious design problems still exist but are being resolved daily

January – C128 prototypes completed at 2 am, just 4 hours before the trip to CES

January – Commodore's hotel rooms have been canceled, possibly by their former boss-turned-competitor, Jack Tramiel

January – Prototypes shown at CES are unstable, going through two 8563 video chips per day, but the audience is unaware of this

January – Atari introduces the 130ST: 128KB RAM, 192KB ROM, 512 color graphics, MIDI interface, and mouse for \$400.

January – Atari introduces the 520ST: 512KB RAM, 192KB ROM, 512 color graphics, MIDI interface, and mouse for \$600.

June / July – C128 production begins and units are to sell for just \$300

April – IBM stops production of the IBM PCjr

May – Microsoft demonstrates Microsoft Windows 1.0 at Spring Comdex. Release date is set for June, at a price of US\$95

September – Apple Computer co-founder Steve Jobs resigns from Apple Computer and founds NeXT incorporated

Commodore stops production of the 64 several times (presumably in favor of the much more powerful 128) but restarts it because of demand

1986

January – Apple Computer starts producing the Macintosh Plus, with 1 MB RAM, support for hard drives, a new keyboard with cursor keys and

numeric keypad, for \$2600

Design of the 128D, business-style case with neatly integrated 1571 floppy disk drive, begins

Germany celebrates its 1,000,000 C64 with a Golden Jubilee version

March – Microsoft goes on the stock market at \$21 per share. This raises \$61 million.

June – In an effort to revitalize sales, Commodore releases a sleek new 128-like case, changes the name to 64C, and bundles it with GEOS

August – Intel ships the 80386

September – Plus/4 was in full liquidation [and was] selling for a mere \$79

September – IBM announces the IBM PC-XT Model 286, 640KB, 20MB hard drive, 1.2MB floppy, serial/parallel ports, and keyboard for the low low price of \$4000

1987

128D’s hit retail stores in Europe and North America for about \$500

February – Commodore announces the Amiga 500 and 2000

April – IBM and Microsoft announce Operating System/2 – OS/2.

June – Atari releases the Atari XE Game System, with 64KB RAM, supporting 256KB game cartridges

October – Microsoft ships Windows 2.0

1989

Production of all 128 models stops

Total Commodore 128 sales are in the four million unit range

Intel introduces the 80486 microprocessor at Spring Comdex in Chicago. It integrates the 80386, 80387 math coprocessor, and adds a primary cache. It uses 1.2 million transistors. Initial price is US\$900

Commodore 128 Credits - SYS 32800,123,45,6

NOTE: commodore.ca would like to thank Bil Herd and C= Hacking, fontanes.yves@free.fr, chris@gondolin.org.uk, tresmont@wxs.nl,

rene.van.belzen@xs4all.nl, jakubaschk@web.de and others, who were very helpful in providing information...



MEMORY LANE

-by Dick Estel

INTRODUCTION

This is number 11 of a limited series of articles saluting some of our past members, people who have made a significant contribution to the club. Our more recent members did not have the pleasure of knowing these men and women, many of whom have passed on. However, they made a lasting impression on the club and the author.

Questions and comments to our web address, info@dickestel.com, are welcome.

BERNICE LALLO and ZELLA MALLARD

For some reason I always think of these two ladies together, although they had different backgrounds, different interests, and made different contributions to the club. However, if my memory is correct (which is by no means certain), they both served as club secretary for several years each.

Bernice was married to Tony Lallo, a local musician, and I don’t know anything about her career away from the club. As far as I know, they

had no children. She was a charming and delightful person to know, and we were saddened when she left us much too soon after a short battle with an aggressive form of cancer.

Zella was an interesting personality – a retired teacher, and a person who did things her way. She was an early riser, and never attended our evening meetings back when we had both a Saturday meeting and a regular Thursday night gathering. One reason was her desire to get to one of the local farmer’s markets early to get the best produce at the best price.

I last spoke with Zella when we had our reunion lunch in 2006 and she was still going strong at the time. There’s no reason to doubt that she still is.

Club Officers

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Secretary/Treasurer: Dick Estel 298-4163
The Interface Editor: Lenard Roach 913-304-1238
Librarian: Dick Estel
Club equipment: Roger Van Pelt
Meeting place reservation: Dick Estel
Grand poobah of the VIC-20: Vincent Mazzei

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 Bobby Salazar's Restaurant, 2839 North Blackstone Ave., 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.