Commodore Users Group of Saskatchewan

February 1996

1953 Toronto Street • Regina, SK • S4P 1M9 • Tel: (306)522-7083 • BBS: (306) 565-6791

the MONITOR

The Monitor is published monthly by the **Commodore Users Group of Saskat-chewan** (CUGS). Meetings are held on the first Wednesday of every month in **Room 173** of **Miller High School** unless otherwise noted. The next meeting will be held on **November 1**, 1995, from **7:30 to 9:30 P.M.**

CUGS is a nonprofit organization comprised of 64 and 128 users interested in sharing ideas, programs, knowledge, problems, and solutions with each other. Membership dues ($15) are pro-rated, based on a January to December year.

Anyone interested in computing is welcome to attend any meeting. Members are encouraged to submit **public domain** and **shareware** software for inclusion in the **CUGS Disk Library**. These programs are made available to members at $3.00 each (discounted prices when buying bulk). Since some programs on the disks are from magazines, individual members are responsible for deleting any program that they are not entitled to by law (you must be the owner of the magazine in which the original program was printed). To the best of our knowledge, all such programs are identified in their listings.

Other benefits of club membership include access to our disk copying service to make backups of copy-protected software, and any members who own a modem and wish to call our BBS will receive increased access.

President's Report

Well, here it is - our second month of the new executive. How are we doing so far? Thanks to everyone who gave a demo at the last club meeting (E. Carl Reilly on Tundra BBS, Rob Gilchrist on our exchange club disks, and Stan Mustatia for his fine explanation of DCMR). This month's demo is on the internet access for the 64/128 and will be given by Shawn Shafer. A big apology to Stan Mustatia on misplacing his well-written articles in last month's *Monitor*; we'll make sure they make it in this month. Welcome to our newest members (and you can add these names and numbers to your phone list):

Dave Coleman - 154 Fulton Drive; 949-8270

Larry Rathwell - 6 Peart Crescent; 761-1388

Lee Novak - Moose Jaw; 693-9935

It is good to see new blood coming into the club; let's make them feel welcome. Membership dues were payable at the last general meeting; many old-timers did not clear up their dues. Membership privileges (e.g. disk sales, prize draws, voting privileges, etc.) will not be granted to members who have not paid their dues. Please pay up now - remember, we're a nonprofit group. On January 21, 1996, our second executive meeting was held and a number of issues were discussed. It was decided at the meeting that the 64/128 libraries would not be taken to club meetings, and that buying disks would be through an order system through which the disks would be supplied to you as soon as possible. Enjoy this month's *Monitor*; it's a good one! See you next month.

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PEEKs Into Other Clubs

Drew Ruether & Judi Zentner

This month has been a busy one for our exchange clubs. Three new clubs have joined our honourary membership roll.

Clark County Commodore Club of Las Vegas, Nevada sent us five disks which contain their monthly newsletter and well as games, utilities, and GEOS applications.

The Commodore User's Group of St. Louis, Missouri sent us their monthly newsletter, *Keywords*, and the Fresno Commodore User's Group (F.C.U.G.) from Fresno, California supplied us with their newsletter as well as a disk containing suppliers of hardware and software around the U.S.

From the Coos Computer Club we received their three-disk library, which is done with D.C.M.R. like ours. This month's articles reprinted from our exchange clubs are a tour of the 64 circuit board from D.V.C.U.G. and, for our newest club members, an article on how to use Commodore disks, also from D.V.C.U.G., the Diablo Valley Commodore User's Group.

Uncle CUGSy's Tips & Tricks

Drew Ruether

Hello again from the dusty corner of my computer room. I hope these tips come in handy. If you have any tips or tricks, you can leave them with me after the general meeting or give them to Stan for the next *Monitor*.

Quick GEOS tip: After typing some of your work in a GeoWrite file, have you closed the file and then had to hunt for the place you quit? Before closing the file, hit RETURN and type ZZZ. When you reopen the file, get the pull-down menu under "Options", click on "Search" and then type ZZZ and RETURN. You'll be back where you were!

C64 hint: If your cursor keeps jumping to the "home" position (upper left-hand corner of the screen), the most likely cause is the 6510C chip. Try having it replaced; this usually solves the problem.

C128 monitor noise: If at power up or after pressing the RESTORE key or reset button on the C128 you get a background hum from your monitor speaker, try typing PRINT CHR$(7) or pressing CTRL-G. A short tone sounds, followed by silence. No more humming!

Extending ribbon life: When your ribbon starts to print too light, store it for a few days in a sealed plastic bag with a cotton ball wet with rubbing alcohol. The fumes cause the ink to bleed, extending the life of the ribbon by 25%.

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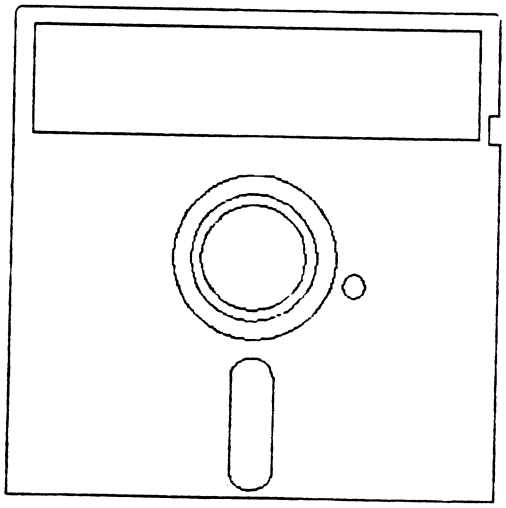
How Do I Use This Commodore Disk?

Joi Ball

So, you've taken a disk from the club's public domain library, or you've gotten some "mystery disks" with some used equipment you've just bought, or you just rediscovered a disk you've forgotten about for a long time. What's on it? How do you make it work? What do you do with it?

The first problem is finding out what's on the disk. In a perfect world, there would be a label on the disk with a title and loading instructions. But we aren't that organized, are we? After the drive stops spinning, type LOAD"$",8 and hit RETURN. After the drive stops spinning, type LIST. The directory (contents list) of the programs on the disk will scroll down the screen. If there are more than a screenful of lines, holding the CTRL key will slow the listing and STOP will stop the listing (use the NO SCROLL key on the 128 to toggle the scroll on and off). This listing will give you many clues as to what to do.



Now that you know the names of the files on the disk, you need to know what to do with them. The first clue is the file type, which is listed in the last column. You will see PRG, SEQ, REL, and USR. The last three types do not run independently! They must be accessed from another program. Almost 100% of the time, SEQ files are text (word processor or game docs, etc.), REL files are database data and USR files are GEOS programs. If you try to load and run these types of files, you will get a screenful of garbage and nothing else! So, when you see SEQ, USR, or REL, this is your clue that that [file] is a support file for some other program, which is hopefully on the same disk.

PRG files are programs that work without a "parent" program. If you are really lucky, the files on the disk are divided into groups of programs that belong together and the first one is the actual program and the other files are called by the main program.

Once you have identified an executable program on the disk, it's time to run it. All Commodore programs load and run with one of two commands: LOAD"*filename*",8 or LOAD"*filename*",8,1. The trick is knowing which command to use. If you have no idea pick one and try it. If it doesn't work try the other.

LOAD"*filename*",8 works with plain BASIC programs. Usually, public domain programs need nothing more than this. After the LOAD command, you hit RETURN. When the drive stops, type RUN [and hit RETURN]. If nothing happens or you get an error message,

something is wrong. If you type LIST, the program listing will scroll down the screen. If there are line numbers and stuff you can almost understand, the problem may be a corrupt file. If you know some programming, you may be able to rewrite the bad lines and get the program to run.

If you LIST and get a screenful of weird characters, changing and flashing colors and something like #STEP, you [probably] used the wrong LOAD command. Reboot the computer and try LOAD*"filename"*,8,1. These are non-relocatable machine language programs. Frequently, they will run automatically after loading. Many commercial programs use this load command. Sometimes, the program is machine language, [will] need the LOAD*"filename"*,8,1 format, but [will] also need an SYS number before it will run. There is no easy way to know a missing SYS number, but there are several "popular" numbers to try. After LOAD*"filename"*,8,1 and RETURN, [and] the drive stops, if the program doesn't start immediately, try typing SYS 49152 or SYS 32592 [you can also try SYS 32768, SYS 32120 or, as your last try, SYS 64738 -Ed.] Hopefully one of these will get the program running.

The name of the program in the listing can give you some clues as to what to do, also. Many program names include a suffix that lets you know what the program is for. There are some PRG files that aren't stand-alone programs. For instance, programs ending with the .MUS suffix are music files that must be run using a SID Player program, and programs ending with the .PIC suffix are pictures that need a graphics viewer program.

Let's assume we have an unidentified game program and, using LOAD*"filename"*,8 or LOAD*"filename"*,8,1, we have gotten it to load and run. Now what do you do?

From here on out, it's all guesswork. (I know, like all the previous stuff has been an exact science!) As long as there is a write-protect tab on the disk notch, there is nothing you can do that will hurt anything. Try pressing keys. Frequently, the F-keys will access menus or game options. Sometimes the I, J, K, and M keys are redefined to direction keys. P is often used to pause the game. The spacebar can be the fire button.

Before you turn on the computer, plug joysticks into each port. Once the game is loaded, try the joysticks. Joystick Port 2 is used more often, but try both.

The only real hints I can give you here is try everything, and experience helps. After a few games, you'll get familiar with typical game controls that most games use.

So, what should you have learned from this article? First, not every program on a disk will run. Some need to be used with another program, like a word processor, graphics viewer, or music program. Second, try both LOAD commands on a PRG file. Remember, some machine language programs need a SYS number before they will run. And third, once the program is running, try everything. you never know what the programmer was thinking when he was writing the program.

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Programming Graphics On TheCommodore 64

Robert Gilchrist

Hello; it's time for another installment on Commodore Graphics. So far we've dealt with changing the screen, border and text colours, how to move the cursor to the top left corner of the screen by pressing the <Clr/Home> button, and also how to clear the screen of any unwanted characters and return the cursor to the home position by holding down the <Shift> key and pressing the <Clr/Home> key. This week we will make some little images on the screen.

Did I hear someone say "PRINT"? We could do it that way; it is, after all, the easiest way to put something on the screen. All you have to do is type PRINT "Eh" and press the <RETURN> key and the computer will respond, "Eh". Actually, the Commodore 64 will print almost anything placed between the double "quotation" marks.

PRINT's a good guess but we want to be able to move an image freely around on the screen. Trying to program a bunch of PRINT statements to do this would be nearly impossible. So we're not even going to try. Instead we will use POKE statements. It's actually a lot easier this way; believe me.

The Commodore 64 has two sets of character keys. One of them, the normal alphabet keys, you get when you first turn on your machine. The other is accessed by holding down the <SHIFT> key and the <C=> key at the same time and pressing the desired alphanumeric key.

For now we'll use the normal or the alphanumeric keys that you have access to when your Commodore 64 is first powered up. Each of these keys has a numeric value just as the each of the sixteen colours that are available do.

[The number for each of these keys is called its screen display code. The screen code for A is 1, B is 2, C is 3, and so on. We use screen codes when we want to POKE a character directly onto the screen (more on this later). It is important not to confuse screen display codes with ASCII codes; ASCII codes are a different set of numbers used when we want to PRINT characters to the screen.]

The computer sees your screen divided up into many small rectangles called picture cells or PIXELS for short. Here we can use the mailbox analogy again, only this time the picture looks more like a super mail box, or maybe the mailboxes in a very large apartment building. The very first or top left most mail box in this building is 1024 and the very last one is 2023. They are numbered sequentially from left to right and top to bottom.

That's a little much to swallow in one gulp so we will do something to illustrate the point. Power up your 64 and type this in exactly as shown then press <RETURN>.

POKE 1024,1

If all went well you should see the letter A in the top left corner of the screen. If you didn't see the A and you typed in everything correctly don't worry. Not all Commodores are created equal. You may have an older model 64 which is all right. The reason that you didn't see the A is that the computer automatically gives the character the same colour as the screen background. Blue on blue, heart ache on heart ache.

What we just did or attempted to do was POKE a character into the VIDEO MEMORY. What I didn't tell you was that we can also tell the computer what colour we want that character to be. To do this we POKE another stretch of memory called COLOUR MEMORY.

Colour memory is arrayed in a map, just like video memory (the super mail boxes), only the first number in this building is 55296. Each of these addresses controls the colour of whatever is displayed in the corresponding video memory address. Kinda like telling the mailman (postal carrier to be politically correct) to put all your letters in red envelopes because you're colour blind and the inside of the mail box has, for some stupid reason, been painted black and you would like a red letter day.

Now a little math just to make things more even more complicated:

1024+54272=55296

The number 54272 can help us with a general rule that can come in handy later on. If you add 54272 to any VIDEO ADDRESS you can easily find the COLOUR MEMORY address that controls it. To recap:

VIDEO MEMORY ADDRESS + 54272 = COLOUR MEMORY ADDRESS

Try to remember that the background colour is set by POKEing a number to address 53281 and colours the whole screen your chosen colour. Colour memory is divided into 1000 addresses, each of which separately controls the colour of a character in the corresponding VIDEO MEMORY address.

This idea is similar to what a painter does – first he paints the background on the canvas, then he paints his main subject over the background.

Let's now put some of what we covered here to work by writing a little program. Clear the screen of any unwanted characters by pressing and holding down the <SHIFT> key while you push the <CLR/HOME> key.

To make things a little easier, we will use the variable VA to to represent the VIDEO ADDRESS and the variable CA to represent the COLOUR ADDRESS in the little program that follows:

```
10 VA=1024:CA=55296
20 C=0 30 POKE 53280,1:POKE 53281,1
40 FOR A=0 TO 255
50 POKE CA+A,C
60 POKE VA+A,A
70 NEXT A
```

Line 10 defines the VA and CA
Line 20 selects a value for C, the character colour line 30 sets screen background and border to white lines 40-70 are a loop to poke every character into successive video addresses, beginning with the character whose screen display code is 0, and ending with screen display code 255.
Line 50 POKEs colour memory before
Line 60 POKEs video memory.

ALWAYS POKE COLOUR MEMORY FIRST. If you do it the other way around, the character appears on the screen for just an instant before the correct colour is assigned to it, and this results in a flickering image, which looks bad in video games.

Once you have typed in the program and are sure there are no errors you should save it to disk before you attempt run it. If there is some little error your machine may lock up which will force you to turn it off, then on again to regain control of the keyboard. If this happens your program will be lost. So before typing RUN and pressing <RETURN> type SAVE "FILE NAME",8,1 <RETURN>. The reason for this is if there was a typo in the program that you didn't catch you now have a copy that you can edit later.

Now clear the screen and load your saved program, clear the screen and move the cursor about halfway down the screen and type RUN. If everything is typed correctly, you should see several rows of black characters on a white background with a white border at the top of the screen.

This article is getting a little long so until next month, "So long and keep your stick on the ice," as Red Green would say.

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A Tour of the Commodore 64 Circuit Board

Don Tuleja

Many C64 owners have had their machines for as long as ten years, yet few have actually opened up their computers and had a peek at what's inside. And most of those who have have no idea what they see. So here is a guided tour of what you see when you open yours up.

CAUTION: Be careful when you open your computer! There are many sensitive parts inside that can be damaged by a careless hand. And remember that opening your computer voids any warranty you might have.

First, unplug *everything* from your computer. This includes the power cable, joysticks, fastload cartridges, monitor and drive cables, and modems. Next, flip your computer over and remove the three screws with a #2 screwdriver. Turn the Commie back up and gently lift the top half off. Unplug the keyboard (long plug with lots of wires) and the power-on light (small plug with two wires). Set the keyboard assembly aside.

Now, if you have a 1984 or newer model, you should have an RF shield/heat sink. Using your screwdriver again, remove the five screws holding the circuit board. Be careful not to use a magnetic screwdriver, and not to let the screws roll around on the circuit board. Now you're looking at your computer's inner self.

Refer to my diagram and compare the descriptions to the numbers or letters. You will get a quickie description of each major part and what it does. If you have a different model C64, your chips may be in slightly different positions. The SID and PLA often swap places. Next to the chips on your circuit board will be a placement code (like "UI"). I will refer to them in the descriptions as well as the chip numbers to help you find them. Enjoy your tour!

A. User Port (also called the RS-232 port) - Used for your modems and other RS-232 devices.

B. Serial Port - For your disk drives and printers.

C. Video Port - Plug your CBM monitor cable in here.

D. RF Modulator - Lets your C64 be used with any ordinary television set

E. Expansion Port (also called the cartridge port) - Games, fastload, utility cartridges, and RAM expansion plug in here.

F. Power Jack - Plug your power supply in here.

G. On/Off Switch - If you don't know what this is for, give up computing and buy a Nintendo.

H. & I. Joystick Ports - Plug your joysticks in here

1. & 2. Complex Interface Adapter (CIA) - Control input (like keyboard and joysticks) and output (like printers and disk drives). chip number is 6525. In position U1, U2.

3. BASIC ROM - Contains the BASIC interpreter in read-only memory. Chip #901226-01. Position U3.

4. Kernal ROM - Contains the operating system on ROM. Contains DOS functions and instructs the CPU on protocols. Chip #901227-01. Position U4.

5. Character ROM - Contains the 64's complete character set in ROM. Chip #901255-01. Position U5.

6. CPU (Central Processing Unit) - This is the brain of the C64. It decides what goes on when, performs calculations, reads and writes to 65,536 places in memory, and keeps track of a thousand operations at any given time. Chip #6510 (near identical to 6502 used in other computers). Position U7.

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7. Sound Interface Device (SID) - This amazing little chip can produce sound or music in three voices ranging eight octaves. This is what makes the C64 games and programs sound *soooo* kool! Chip #6581. Position U18.

8. Random Access Memory (RAM) - Eight small chips make up the 64K of RAM the C64 uses. They are part of a crowd of chips in this area of the circuit board. They store all the programs and information the computer needs to work. Chip numbers vary, but most common is the 4264. Positions U9 to U12 and U21 to U24.

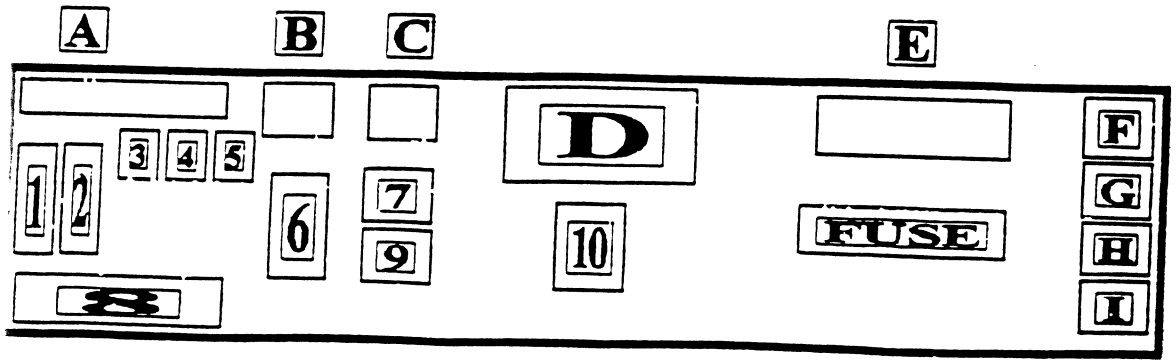
9. Programmable Logic Array (PLA) - Usually the first chip to die on a C64, [it] is also the hardest to explain. Simply, it replaces a thousand little logic gates (like AND-NOR) and puts them all in one place. Chip numbers also vary here, but most common is 906114-01. Position U17.

10. Video Interface Chip (VIC) - Probably the most powerful chip in the C64, it gives this 8-bit computer 320x200 pixel resolution. No small task! It controls virtually all video functions of the C64. Chip #6569. Position U19.

Here's Looking At You!

Name: Gordon Vincer **Age:** 64
Birthplace: Moose Jaw
Occupation: Retired **Phone:** 757-0918
Equipment: C64, 1541 drive, Flight Stick, television monitor
Latest project/software: Golf games, flight simulators
Commodore wish list: Colour monitor, joystick
What direction do you want to see the club go? SIG for beginners
General interests other than Commodore: Model airplane flying, swimming
Expertise: New member to club — much to learn

Name: Aaron Paetsch **Age:** 13
Birthplace: Regina
Occupation: Student **Phone:** 543-2357
Equipment: C64, two 1541 drives, Epson LX90 printer, 1670 modem
Latest project/software: Novaterm, GEOS 64
Commodore wish list: 9600 baud modem, 80 column monitor, C128
What direction do you want to see the club go? Internet/BBS info
General interests other than Commodore: Stereos, baseball, videos
Expertise: New member - lots to learn



Commodore Business Machines
The Legend Of The Company That Changed Computing

by Stan Mustatia

Note: Resources for this article are Loadstar Disk Magazine, "Commodore - An 8 Bit Odyssey"; "History of The Home Computer", by Harry Blake-Knox; and "Nostalgia Corner", from Grapevine Magazine.

Prior to the emergence of Commodore and the long line of computers they produced, computers were primarily found in business, schools, and with the hobbiest. Prices for computers were just too high for the average home user to afford. There were not any software packages out on the market for the consumer market. To tell the story of how Jack Tramiel helped change all that, we must of course start at the beginning.

Jack learned a trade of typewriter repair in the U.S. army. After his discharge he started his own typewriter repair business in the Bronx of New York. Business was only marginally good until Tramiel landed a deal with Czechoslovakia to assemble typewriters in Toronto. he of course, moved his family to Canada. Before long it occurred to Jack that he would be better served to manufacture and sell his own Typewriters, rather than someone else. He bought a Berlin Typewriter company and his company began to grow.

In the U.S., there was a growing demand for mechanical calculators, which were added to his line of goods. In 1962, Jack named his business Commodore Business Machines, Canada, and went public. Tramiel named himself as Chairman and President. When some unpaid loans and suspect financial dealings put pressure on the company, Tramiel was forced to give up the position as Chairman in return for investment from a Canadian investor, Irving Gould.

Japan soon started to flood the market with cheap mechanical calculators. Commodore was having trouble competing. Jack Tramiel decided that a trip to Japan to get a look at the competition was in order. While there he got a first look at an electronic calculator. He realized that electronic calculators would soon replace mechanical ones. Commodore was fortunate enough to be the company that introduced the electronic calculator to the American consumer. They featured a Bowmer LED display and Texas Instruments integrated chip.

When Texas Instruments saw the huge success of the pocket calculator, they decided to produce their own line of calculator. Because of the lower cost for Texas Instruments to use their own components in their product, the price of calculators fell. Commodore was left with warehouses full of more expensive calculators. The competition hurt so much that Commodore experienced a $5 million dollar loss on $50 million dollars in sales.

Tramiel decided to never rely on outside suppliers for key components. Irving Gould helped secure a $3 million loan to acquire MOS Technology in 1976. A fateful day for Commodore. MOS was a manufacturer of calculator chips and semiconductors. In their employ was an unknown Engineer by the name of Chuck Peddle. Before the take over by Commodore Chuck designed a new chip. It was named the 6502 chip. It was Chuck who convinced Jack Tramiel to build a desk top computer based on the 6502 chip.

In 1976, the micro computer industry was mainly made of hobbiests and hackers working in their basements. There were no

commercial personal computers because there simply was no market for them. Tramiel decided that the public just didn't realize what they really needed. The only available computers available at this time were mostly in kit form, such as the Apple IS. It is noteworthy to mention that 1976 was the year that Gary Kildall released CP/M.

In 1977 Commodore released their first microcomputer, the 'Personal Electronic Transactor', or by the more popular nickname of the PET. The PET was debuted in June, 1977 at the Consumer Electronics Show. In any event the PET was quite ready, and Chuck Peddle had to work 3 sleepless days just to get it well enough for display. The first prototypes were completely hand built with wooden housings painted to look like metal. Zenith television sets were built into the housing simply because a hardware store down the street had some on sale. The tv's were gutted and rewired as black and white monitors. They added their own circuitry to Sanyo cassette machines to use as data storage. The keyboard was a patchwork of metallic calculator style keys.

These first 8K machines sold for an amazingly low price of $795 dollars. This was a third of the price of other machines, such as the Apple II and the TRS-80 model 1. Commodore's PET 2001 was the leader. Commodore's leadership would come back to haunt them eventually. The early PETs used true ASCII character sets, which set capitals as the initial character. The lower case letters were accessed by a command, POKE 59468,14, (the SHIFT key). In 1979 The WordStar word processor appeared on the market. Commodore decided that shifting to get lower case letters was unnatural. It was then that all Commodore computers after the PET 2001 flipped the lower case with the uppercase case letters in text mode. All compatibility with ASCII was lost. That is why we have to use an interface to send text to a non Commodore printer. It is argued by some that this creation of a non-industry standard helped lead to some of Commodore's troubles later.

At the time, Commodore decided to commit most of it's resources to the European market where the PETs were selling at double the price as North America. In less than two years Commodore had 80% of the market in Germany and the United Kingdom. In the U.S. they fell to third place behind Apple and Radio Shack. Meanwhile, the Commodore subsidiary, MOS Tech had developed a chip they were trying unsuccessfully to sell to the new game console industry. It is necessary to backtrack a little to the year 1972. This is the year that the original PONG game machines were introduced bars and pinball arcades across North America by the new kid on the block, Atari. Soon clones were introduced that could be attached to the average tv at home. Atari hired Jay Miner (who later went to work for Commodore and helped develop the Amiga) to design the Atari 2600 game machine. Any game could be played on it by simply inserting a game cartridge. They sold for $200 - $300 and in 1979 several million were sold alone. The home video game became a huge fad.

By 1980, Commodore was the main supplier of ROM chips for the Atari game cartridges. They had also produced the previously mentioned chip that they couldn't convince anyone to use. The VIC (Video Interface Controller) chip provided the bridge between tv sets and the CPU of the game machines. It even supported graphics and color. Still, in two years nobody would buy it.

In 1980, personal computers were far from being the fad that game consoles were. The PET cost $800. An Apple or radio Shack was several times that figure. Computers were still relegated to schools or businesses. They needed a monitor, had no color and only primitive keyboard graphics. Hardly a gamers dream. On April 14, 1980, Jack Tramiel decided to instruct Chuck Peddle and associates to develop a color computer based on their VIC chip. It was to compete with new color computers just introduced by Apple and Atari. His engineers felt a new new low cost color computer was not possible. They wanted to upgrade the PET for the business industry. Tramiel wanted to use the VIC chip because no monitor was needed. He wanted Commodore to build the first computer to sell for under $300. Pandemonium erupted. Next, he mentioned that he wanted to integrate music, expanded BASIC, and forty columns. Stunned silence ensued, and then Jack laid down the law. He said, "The Japanese were coming - and we will be the Japanese first. Like the Japanese, we have to compete with ourselves." He set a one year deadline.

The new computer was introduced at the Consumer Electronics show in mid-1981. It ha da cartridge port, the ability to play through a tv, built in BASIC, a keyboard and a 22 column screen. It was the first low cost, mass computer. It had 5K memory, state of the art features and a price tag just slightly higher than a home game console. The VIC 20 was born.

Establishment produced computers sold for between $1000 and $5000. The VIC 20 sold for $295. Computers were sold by electronics stores. Commodore started to sell directly through department stores. Everyone naturally was alarmed. The VIC 20 was the first computer marketed as a consumer item. It was introduced as a "wonder machine of the 80's". Commodore decided to support the new machines by producing a line of peripherals for it. They introduced the 1540, the first popular priced disk drive. Memory expansion cartridges of 8K and 16K were offered. The VIC modem sold for $100, one quarter the price of other modems. Commodore Information Network became the busiest area on Compuserve. Game cartridges appeared. Commodore produced two magazines, Commodore Microcomputing and Power/Play. The VIC 20 was the first computer to sell 1,000,000 units.

Another game oriented machine was introduced in early 1982 by Commodore. It was the Ultimax. It had 2K memory, no expansion option, 40 column screen and 3 voice sound. All programming was on cartridge including the BASIC language. The Ultimax was renamed the Max Machine and dumped on the Japanese market. The same year Commodore introduced the PET 128, the BX256 16-bit microcomputer, the B128 microcomputer and the Commodore 64 (originally called the VIC 64).

The success of the C64 surprised everyone, including Commodore. The earliest models were housed in modified VIC 20 cases and used the VIC line of peripherals. The dealer price was a firm $595. Between September 1 and December 1, 1982, 65,000 C64s were sold. The Commodore 64 had advanced graphics, 3 voice synthesized sound and an entertainment value beyond any existing game console. With 64K of memory, a 40 column screen, and an easy to use operating system in ROM, it offered a state of the art computer environment thAt was both affordable and accessible.

The C64 was then sent to Commodore, Japan for Cost reduction. By 1983, the estimated production cost was about $65. The price was then lowered to such that any competitors would have to lose money to match the price. Soon the price ha dropped to under $400 and the VIC 20 was selling for under $100. In June of 1983, the price dropped again to $250. This kind of price paved the way for what became known as the famous "Christmas of The Computer". By 1984, Commodore was shipping 3.4 million units a year. One out of every four computers sold worldwide was a C64. This kind of market share has never been equalled by a computer. That same year, Commodore introduced the first portable laptop, the SX64. It was a little hefty by today's standards, but was still in good demand.

The success of the C64 accomplished a number of things. It prevented the Japanese from exporting into the lucrative C64 market where they couldn't compete. This would not change until IBM invested millions to convince home buyers they needed systems compatible with the MS-DOS based business machines. That created the clone market that dominates the industry today. Ironically, it not only contributed to the decline of Commodore, but to IBM as well. But That is a different story for another time. Secondly, before the C64, software was only produced at high cost for the business industry and cottage industry hobbiests. With so many C64s in our homes, mass produced, high quality software was feasible. The resulted in many major software companies serving today's consumer market.

The most significant result was how the C64 changed Commodore itself. Jack Tramiel would reward engineers and key management personal with stock options. During the more aggressive years, Commodore stock appreciated quite a bit. Profits went through the roof. Many of the key players at Commodore retired as milionaires, the least of these not being Jack Tramiel himself. He retired from the company in 1984. This is also the same year as the first issue of RUN MAGAZINE appeared on store shelves. Commodore acquired the AMIGA Corporation that year. Jack's retirement, some feel, signaled a passing of an era. He went on to buy ATARI from Warner Communications.

In 1985, the Commodore 128 and the AMIGA 1000 appeared on the market. The 128 did not receive the support of the C64 and had only moderate success. In 1986, GEOS 64 debuts from Berkley Softworks. In 1987 Commodore releases the AMIGA 500 and AMIGA 2000. GEOS 128 is released that year. By 1988, inroads made the the AMIGA line start to affect the sales and support of the C64 and 128.

The rest of the story from this point until Commodore's ultimate bankruptcy in April 1993, will always be great subject of debate and controversy for Commodore users of all stripes. Many argue that Commodore wanted to move onto other projects, and systematically tried to kill off the C64. This might be unlikely as sales of the C64 still produced many Commodore Executives with nice golden Parachutes. Ten years after it's introduction, the C64 was still generating good revenues.

A year after bankruptcy, what was left of Commodore were purchased by ESCOM of Germany. Their main reason was to get their hands on the AMIGA technology. ESCOM decided at this time not to kill the C64, but channel sales into the growing

Chinese market. They felt that the C64 was the ideal computer for emerging markets. Domestic North American C64 and 128 users need not despair though. There are a number of very inventive people and companies still supporting the 8-bit market of the Commodore. The most significant of these has to be CMD (Creative Micro Designs). As long as these individuals and users groups like ours keep promoting these amazing and useful machines, the C64 and 128 machines should never have to relegated to closets. Many components, software and peripherals are still to be found. As long the demand remains, so will these computers.

The story is far from over.

How To Use DCMR To View CUGS Library Files

By Stan Mustatia

All members in good standing will receive a copy of the CUGS Library disk containing DCMR and all of our current program files. The disk will be updated periodically as new disks are introduced to the library. Updated disks can be exchanged for your old ones when the new ones are issued. Full documentation is included on disk, but I will give a brief overview of the program in this article. I would suggest that you print out your docs before using this disk.

DCMR stands for 'DISK CATALOG MANAGER/REPORTER'. As a member we need only concern ourselves with the 'REPORTER' aspect of the program. The beauty of DCMR is it's simplicity in use. From Your startup screen type LOAD"DCMR",8 and then press [RETURN]. At the RUN prompt, press [RETURN] again. When presented with the welcome screen, you are allowed three choices, all performed by the press of a single letter. Press 'C' to continue loading, or 'P' to load the printer setup program. There are a number of built in printer configuration drivers included with this disk. Hopefully one will work for you, or you can revise an existing .cfg file to work on your printer. Your third choice is print the docs for DCMR. If you are a first time user, choose this option now.

Press 'C' to continue loading. You are presented with menu options from A-J. Let's say we are looking for a particular program. All of the library files are stored by category, just like they are in the printed disk catalog. The major difference between the catalog and this disk is how they are presented. The catalog displays everything by disk, everything on the disk is listed in the order as they appear in the directory, with a brief explanation about the program, graphic, or music. The library disk uses the same category names, but the program files are all listed together in thge category in alphabetical order. There is no explanation on what the program is or does. You can however, use the four character ID to go back to the catalog for the description.

Let us find a label printing program that we can use in the GEOS environment. We would Choose the letter 'F' (LOAD A FILE/START A NEW FILE). When prompted, press 'L' for load a file. You are

asked to type in a file name. You can do two things here. You can use the printed reference sheet that you received with the library disk or, you can have earlier have used the directory command from the main menu to look at all the categories on disk. There are files on both sides of the disk. Hopefully, we would already know that our category to type in would be 'GEOS 64/128'. Press [RETURN]. We are brought back to the main menu area. Select 'C' for Display all entries. We can even change the way the files are displayed. We don't have to leave them in alphabetical order. In this case we will leave them in alphabetical order. We will choose the first option and display all entries starting at the top. We can now cursor down through the list and look for any label programs for GEOS. There are several.

If you would prefer, you can send the file to your printer. Just use option 'E' from the main menu. You will have to set a number of options that your particular printer might support, such as printing in three columns. Follow the prompts as they are presented to you will printing in no time at all. There are more specific printer setup instructions in the on disk documentation.

There are many more features to this excellent program. I have only just skimmed the surface. Print and read your docs. Make a backup disk to use instead of your original. This way, if you inadvertently destroy some files when experimenting, you can always recopy the files back to your working copy. The greatest thing about this disk is amount of space it doesn't take up on your desk and how quickly you can look up a certain program if you know the name, but not the disk it is on. I am sure that it will become your chief source of reference for the club library files.