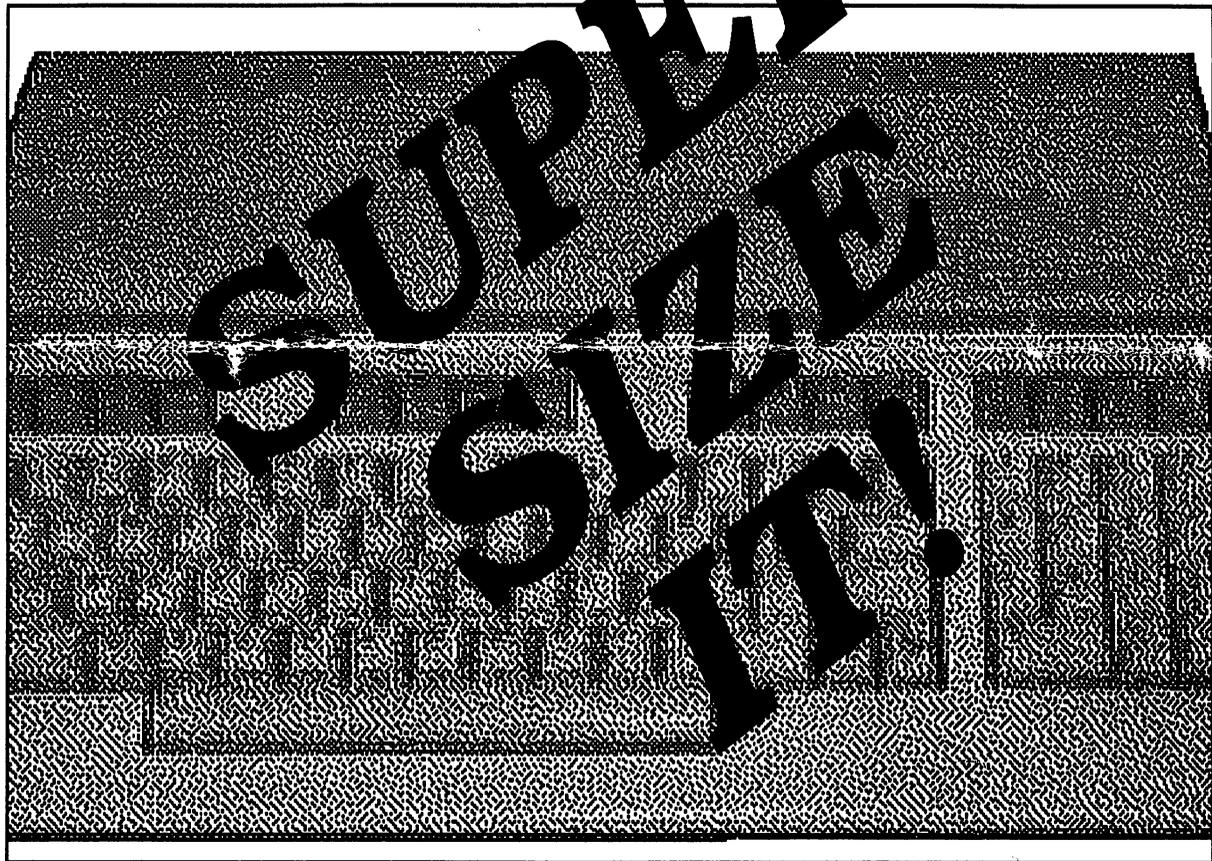


AUGUST

1997

LUCKY REPORT



Print Quality: How to Improve Your Product!

Should You Join a Mail List?

Would You Like to Add an Extra SID Chip?

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TREASURER'S REPORT

by Bill Bunch

---July 1997---

Beginning Balance	\$ 714.59
<u>INCOME:</u>	<u>\$ 113.21</u>
Library	0.00
Raffle	17.00
Dues (5)	95.00
Interest	1.21
<u>EXPENSES:</u>	<u>\$ 106.99</u>
BBS	30.00
Newsletters copied	35.70
Newsletter postage	24.50
Dues Reminder Cards	16.79
<u>Ending Balance</u>	<u>\$ 720.81</u>

An itemized statement of the above is posted at each monthly meeting.

LUCKY, INC. is a Non-Profit Organization whose purpose is to unite and educate users of Commodore computers and related equipment.

LUCKY in no way condones nor allows copying of copyrighted materials at any group function. Guilty parties will be subject to dismissal.

GENERAL MEETINGS are held the second Tuesday of every month at the Beechmont Community Center at 7:00 pm. Demonstrations are given on both hardware and software at these functions, with occasional guest speakers and a regular question and answer session. Also available to Members Only are Public Domain Program Disks from the Club's Library for a small copying fee.

BOARD MEETINGS are held at the Central Jefferson County Government Center, 7210 Outer Loop, at 7:00 on the Wednesday of the week following the General Meeting.

MEMBERSHIP is \$20.00 a year, per family, which includes access to the LUCKY BBS, the LUCKY Library, a monthly newsletter, and special drawings.

The **LUCKY REPORT** is published monthly and is available at the General Meetings. DEADLINE for submissions to the newsletter is two weeks prior to the General Meeting. It is "published" on a C128 assisted by a 40MB CMD HardDrive, an FD-2000, and a 1571 disk drive. Occasionally graphics are captured by a Handyscanner 64. Printing is done using PostScript on a Hewlett-Packard LaserJet IIP.

The IBM SIG for PC-compatibles meets the fourth Wednesday at the Southwest Regional Library at 7:00 pm.

The LUCKY BBS is operated 24 hours a day and is designed with Commodore users in mind. Special access is granted to LUCKY members, but all callers are welcome. The phone number is: (502) 933-5397. You can also E-mail us at luckykds@iglou.com or gfv@iglou.com

The views expressed in this newsletter are not necessarily those of the officers or membership of LUCKY, Inc.

DISK LIBRARY

by Steve Grassman

To avoid confusion, please direct all questions to the Library Assistants at the other end of the table. **PLEASE DO NOT BOTHER THE COMPUTER OPERATOR!!!** This will minimize mistakes on backups being made. *Thank you.*

To order diskettes, fill in the order forms provided by the Library Assistants. Make sure you **PRINT** clearly the information requested on the form. This will speed up the filling of orders.orders.

From the Editor

by K. Dale Sidebottom

SUPER-SIZE IT!

No, you are not at McDonald's. Instead of hamburgers and fries, you get this issue of the *LUCKY REPORT*. It is the largest newsletter that I have published all year, and it is going to put me way over budget! I may feel it necessary to donate my finances in order to help pay for the extra printing and postage expenses. So why do I do it?

First of all, I do it because I am excited that so many things are going in the Commodore world. I remember in 1996 when as members we heard people saying, "Nothing is going on in Commodore. Nothing is happening!" Not to worry. That's certainly not a problem in 1997!

Secondly, I do it because I want you to have as much useful information as this newsletter can provide. This issue concentrates heavily on telecommunication, especially the internet. Imagine, in one meeting here in early August, *LUCKY* members will vote on whether to join over fifty other Commodore BBS's linked through Comm-Net. We will also pass out seven copies of Gaelyne's book, The Internet for Commodore 64/128 Users, which our members purchased in bulk for less than \$24.00 apiece.!

What I like about the internet is that it is the great leveler. If you and your computer can navigate the internet successfully, you get respect. If we are using CMD's Turbo Cartridge and fast modems that are now available, we can indeed surf the internet with great speed!

I want to apologize to anyone "breathlessly" waiting for FUN WITH GEOPAINT, Part III. I promised in the last issue that I would tell you about *clipping* on the Commodore. Because of limitations in time and space, I decided to postpone that. Hopefully, it will make September's issue.

I hope that this August issue of the *LUCKY REPORT* will become a reference guide for you, and that you will be able to refer back to it many times for helpful information. Meanwhile, continue to support the *LUCKY* BBS! Remember your roots!

NEWS from CMD

Email Received August 7, 1997
from Randy Harris, President of SWRAP

SuperCPU 128 Update

Alpha testing of the SuperCPU 128 prototype continues. Currently, testing of the 128 mode at 1 Mhz is being performed. After some modifications are done to the prototype, testing at 2 Mhz and 20 Mhz will begin.

In addition to testing information, CMD can now also confirm that some price and configuration changes will be made, and that pre-orders under the current terms will no longer be taken as of August 18, 1997.

[If you want to purchase the 128 SuperCPU and SuperRAM card for a guaranteed price of \$299, you will need to send in your deposit soon!...Editor]

Due to design changes, the SuperCPU 128 will be available in a configuration without the SIMM socket and supporting hardware for expansion SuperRAM card. CMD estimates that this version will cost slightly less, between \$250 and \$280. Users who want expand it will be able to use the SuperRAM card (expected to ship next week to SuperCPU 64 owners), which will be available both separately or bundled with new SuperCPU 128 purchases.

CMD Continues to Ship Product

Just a note of assurance amidst the UPS strike...

CMD is continuing shipments via alternate carriers, including Airborne Express, Federal Express, and the U.S. Postal Service. *[The latter pleases Dan Koleski and myself!]*

Please note that this may affect shipping prices on new orders--until the UPS strike is over, our currently listed shipping prices should not be used to determine your shipping cost. If you need shipping price information on an order you are mailing in, please contact our sales department at 1-800-638-3263.

PRESIDENT'S REPORT

by Larry Bailey

Our last LUCKY user group meeting was on Tuesday, July 14th. For some reason everyone must have had something else to do because only a few showed up. Those who missed it missed out on a lot!

Our vice-president Freddie Frazer set up a Commodore computer and connected it to an out-going phone line. Roger Lawhorn gave a demo on how to get on our BBS which everyone found to be enteraining and informative. The program they chose to demonstrate was the Touchterm terminal program which is very, very user friendly.

We also ordered seven copies of Gaelyne Gasson's book called The Internet for Commodore 64/128 Users. If you have not order one of these, you missed a great bargain. Dale Sidebottom bought his book for \$40.84 including the price and shipping. However, by buying five or more at a time, LUCKY members pay less than \$24.00 per book. This is a great savings! I hope if you missed this opportunity, you will get your order in soon so we can send in another bulk book order in the near future!

Catch you at the next meeting. By the way, we will be discussing and voting on whether we want to join Ron Fick, the Cape Crusader, and his Commodore BBS network. We must decide if we want to hook up to Comm-Net and join the 51 BBS's currently unitted online. At the last meeting, the vote in favor of it was nearly unanimous, but because so many were absent, we wanted to postpone the final decision until the August meeting. We hope you will be there to participate.

Until we meet again,

Happy Commodoring!



LUCKY's E-board Meeting

by George Veltman

July 16, 1997

President Larry Bailey called the meeting to order at 8:15 p.m. The minutes of the June 18th meeting were approved as read.

Larry opened the meeting to old business. Larry brought up the question that had been tabled last month. Should LUCKY join the group called the Comm-Net, which at this time connects more than fifty Commodore BBS's? The purpose, as Larry explained it, would be to accomodate our members who might want to communicate with or ask for assistance from 500 to 1000 Comm-Net users across the nation. We would be able to post messages on our LUCKY BBS which would then be shared with all users of BBS's connected by Comm-Net. Ron Fick's article in July's *Lucky Report* explained how it works in some detail. After a lengthy discussion, we voted unanimously in favor of joining Comm-Net and presenting the program to the membership at the next regular meeting for their final approval or disapproval.

Larry stated that there would be a possibility that LUCKY's yearly dues may have to be increased to support this new feature, but he thought that it would be minimal. It was the general opinion that this increase would not exceed \$5.00 per year, should it become necessary. That would be determined by several factors, one being whether the added feature would attract more people to LUCKY and increase our annual income through additional dues-paying members.

Since the post of one member-at-large was vacant, we elected Don Reis to fill that position. The board showed their appreciation for his faithful and continuing service with generous applause.

LR editor Dale Sidebottom expressed his appreciation to "yours truly" for having helped him get on the board so that the minutes could be transmitted to him by E-mail.

I informed the board that the *Computer Times*, the *Louisville Computer News* and the *Courier Journal* were featuring the announcement of the IBM SIG group meeting.

Larry asked if there was anything else to come before the meeting. There being none, the meeting was adjourned at 8:45 pm.

George Veltman, secretary



PLASMATRON

by Jonathan J. Frazier

Hey, all you space exploration game champs and fans, do you think you've explored the final frontier of space? Think again you, arcade junkies, if you haven't piloted a Plasmatron fighter to the supposedly deserted and peaceful planet, Louton 2! Hey, Star Command said Loughton 2 was safe, so maybe you've got the planet all to yourself, or maybe Star Command was lying. If you are not good pilot then you might as well kiss your tail-rudder "Good-bye" because Loughton 2 will be your final frontier, if you know what I mean.

Get your trigger finger ready to blow away some alien scum! And remember, if you don't get them, *they will get you!* Oh, and if you're too much of a chicken, you'll go up against flying saucers (and believe me they can do a lot more than just fly), indestructible bunkers (and they know you're not indestructible), giant flies (and they would just love to buzz in your ear), countless enemy fighters of all sorts (each unpleasantly accompanied with an assortment of deadly arsenals), a deadly astroid field (and it has a lot more than just big rocks), a gigantic battle station (and it is just patiently waiting just for you), and other horrors to horrible to mention. (*Now isn't that just a horrible thought!*)

Plasmatron Game Tips:

The easiest way to stay in the game longer is to always be at either the top or bottom of the screen (probably towards the back), except when you reach the astroid belt. In the astroid belt, you need to either wait for an opening, blast an opening, or both; but in any case there is no easy way out. When you reach the battle station you can either stay behind it in the upper left hand corner until there is almost no room left for you there because it is about to go off the screen, and then zoom directly under it until it leaves or you can just fly directly under it the whole time.

Closing Comments:

One of the best things about the game Plasmatron is that you can be hit more than once before you go down because you have shields, and you have to get a certain amount of damage before you go down. Another good thing is that you have a everlasting supply of ammunition.

CHOPPER ONE

by Larry Bailey

This is an exciting arcade-style action game for the Commodore 64. Only quick maneuvering and accurate firing can save the day. So hold on and, with joystick in hand, lets kick some booty!

You are the sole trained pilot for the army's top-secret "CHOPPER ONE," an attack helicopter equipped with a powerful pulse laser. You're sent to defend your city when it's suddenly invaded by aliens. The city's other defense is a glowing force field which hovers above the skyline. The aliens' spaceship passes back and forth over the city while continually dropping bombs which gradually blast their way through the force field and, eventually, into the city itself. The bombs will also destroy your chopper if direct contact is made. You've been sent to destroy the bombs with Chopper One's laser before they reach the city. The aliens' spacecraft is made of an indestructible alien alloy, and it's invulnerable to your laser blasts. It will, however, destroy you if you get in its path!

Put your joystick in port two to control your Chopper One. You can move the helicopter left, right, up, or down with the joystick, and you can fire the laser by pressing the fire button.



SAVE THE CITY

The spaceship is armed with 100 bombs. Should any part of the city remain standing when its supply of bombs is exhausted, you'll receive a bonus which will be added to your score. The greater the amount of the city remaining, the higher skill level increases so that the bombs drop even faster. You receive 10 points for each bomb you destroy. Should a city be totally destroyed before the aliens' bomb supply is exhausted, no bonus will be awarded, and you're given the chance to save another city at the same skill level.

When you see the message "GAME OVER," you can select the level at which you wish to begin by pushing the joystick up or down to change the skill level. Press the fire button to start the game. The army has a supply of four Chopper One helicopters, the first three of which are equipped with emergency escape parachutes. Should the aliens destroy your helicopter, the escape parachute will automatically activate, and you'll land safely. If the fourth Chopper One is destroyed, all is lost. The game ends. You'll find it difficult to maintain your choppers for very long at the higher skill levels.

Quality Output 101



This semester, we will study **Quality Output 101**. The professor is Maurice Randall. I am sure you have heard of him. Although his teaching style may be dry at times, he is yet one of the most exciting personages to be found here at Commodore U. Quiet now, Professor Randall is approaching the podium...

This is the first part in a series of articles that will guide you through the various methods for obtaining good quality output from your printing jobs.

Several years ago, I stated that the only way to make your computer look good was to have a good quality printer. That thought still holds true today, although the standards for what looks good today is much higher than what was acceptable several years ago. Some of yesterday's printers are not up to today's standards.

Let's take a look at what makes up the contents of a page as it is produced and printed. The first thing we need to learn about is *how is an image applied to the paper as it is printed*. In all cases, we will be using a standard 8.5 x 11 sheet of paper for our studies.

Certain areas of that paper cannot be printed on. Printers are mechanical devices and have limits on where they can apply ink. Some can reach all the way from the left edge to the right edge of the paper, but most cannot. Let's assume that we have a printer that can print within one quarter of an inch of the edges. This gives us a width of 8 inches to work with. This 8 inch amount will take care of just about any printer you will be using. And if you share your work with others, you can pretty much be assured that others will also be able to handle an 8 inch printing width.

In the vertical direction, most all printers can print to within one quarter of an inch of the top and bottom edges of the paper also. Printers with tractor feed paper can print over the perforations, but there is no benefit to this. With these printers, we should stick to the thought that the top and bottom quarter of an inch will be left empty. (Remember, we want our work to be usable on anybody's printer.)

We know now that we have a printable area that is 8 inches wide and 10.5 inches high. This will be the same no matter what printer we end up printing on. This figure is the most common size that is used in this country, and we will be using it in our work here.

Within this printable area, the printer will apply ink.

Black and white printers can print in two different colors. . Black is printed using the ink that is in the printer and white is printed without applying any ink. No matter what type of printer is used, the ink is applied in the form of a single little dot. To make up the images that are seen on the paper, many little dots are applied. How those dots are applied can vary between the different types of printers, and this is the part that makes one printer look better than another.

Some printers have higher resolutions than others. What this means is that they can put more dots on the page within the same given area. Generally, this results in a better looking page, but not always. In order to print 360 dots per inch as compared to another printer that is only capable of 60 dots per inch, each individual dot must be smaller in order to fit. In most cases, the dots are large enough so that the dots that are printed next to each other will tend to overlap. If the printer is making round dots, the overlap is needed to completely eliminate any white from showing. In some cases, even if the dots do not overlap, the ink will spread slightly before it dries and cause the overlap to occur anyway. This effect is not only varies with the type of ink that the printer uses, but it can also be influenced by the type of paper being used. If the ink flows too much, the images produced may not look as expected. Generally, if you are seeing too much ink flow, using a smoother 24# paper as opposed to common 20# paper will improve the appearance of your work.

A laser printer does not suffer so much from ink flow problems. They are also very accurate at applying dots to the paper. The resolution is quite high and, if you study the appearance of the dots closely, you might notice that the shape of the dots tend to be more square than round. This squareness tends to fill up the white space between the dots without using any overlap. Generally, any irregularity of the shape of a dot from a laser printer is caused by the quality of paper that you use. The flatter the surface of the paper, the better the image will appear. To our eye, flat paper looks smoother and shinier. Smooth paper is more important with a laser printer than with other types of printers. The dots won't flow and spread like they will with other printers that apply wet ink from an ink tank or ribbon. If your paper has little hills, valleys, and crevices, there will be tiny little spots that may not receive a portion of the dot that the laser printer is applying.

Ok, so you're not interested in printing dots on the paper. You would rather print characters and graphics. Well, no matter what you are printing, you are still applying those same little dots of ink. Every single letter of the alphabet is drawn using little individual dots of ink. It is not at all like we would do with our own hands using an ink pen or pencil. With our hands, we would draw our characters using lines and curves. Imagine how bad our handwriting would look if we drew characters using dots. Our hands are not as accurate at applying dots in certain places as the printer is. And likewise, most printers do not have the mechanical capability to hand draw characters like we can with our hands. There are plotters that have this capability, but that is another specialized area that we won't be dealing with here.

However, *keep the previous paragraph in the back of your head!* The very principle of how we perform handwriting will be related to next month. We will begin a study of the actual characters that we read on a page and how they get there.

Should You Join TIFCU?

---K.D.S.---

The main reason I included the article in column two was to introduce the concept of *Mail Lists* to our members. This is quite timely in view of our interest in Gaelyne's book, The Internet for Commodore 64/128 Users. She also moderates a *Mail List* for Commodore users who want help on the internet, called TIFCU, an acronym from the title of her book.

I have been receiving E-mail from TIFCU for over a month now and I really enjoy it. Almost every day, I receive something to do with Commodoring the internet. Not every message is meant for me, but I learn anyway. Some of the information is "right down my alley."

To show you how you can get valuable information this way, I have included list of sources for Commodore files on the internet that I received from TIFCU just recently. I think you will be impressed by the breadth and quality of the information! The following article list places from which you can download Commodore files, in most cases, via FTP.

If you are not familiar with how to do that, I challenge you to read Gaelyne's book or join TIFCU. To subscribe send Email to majordomo@videocam.net.au in the body of the Email type: *subscribe tifcu* . It's that easy! Certainly there are many, many more *Mail Lists* that you might want to join at some point in the future, but I recommend that you 'get your wet' with this one first and see how you like it.

Join a Mail List (on the Internet)

by Joi Ball

(*Pixel Pages*, May 97, MPCUG, Bloucester, VA
via *RANDOM BITS*, newsletter of the NOVACOM Computer Club.

This article has been abbreviated to fit one column)

Do you race to check your E-mail only to face the disappointment of finding little or nothing? Looking for personal contact in the oh-so-cold world of computer-generated messaging? Join a *Mail List*!

Most *Mail Lists* generate at least a few messages each day. Since YOU decide what lists to join, the topic should be of interest to you. And if you participate in a good *Mail List*, the other members will quickly become real friends of yours, even though you only know them electronically.

Mail Lists are generally run automatically. This means that while a person or organization oversees or owns the list, message sending and maintenance are run by a 'robot' without much human intervention. Once you join (subscribe) to a *Mail List*, messages will be sent directly to your E-mail account. The first message is usually an automatic information message with details on how to send messages to the list, whom to contact if you are having problems, and how to unsubscribe if the list isn't needed anymore.

Mail List come in two varieties, what I call "two-way mail" and "one-way mail." Two-way *Mail Lists* are sort of half-way between regular E-mail (private messages from one person to another) and Usenet Newsgroups (public messages from one person to anyone who happens to read them). You write a message and send it to the *Mail List* where it is automatically forwarded to everyone who is a member of that *Mail List*. All members can then read it and reply (or not). Replies sent to the *Mail List* will be forwarded to all the members, who can read them and reply, and it can go on and on.

If this is a popular list with many 'talkative' members, this could generate a lot of messages! These "two-way" *Mail Lists* may give you the option of receiving the mail in digest form - it saves up to messages to some pre-set size or time period and then mails the combined messages as one larger message to your E-mail box.

There are zillions of *Mail Lists* on almost every conceivable topic. One palce to find a listing of some of them, with descriptions and subscription information, is to search *the List of Lists* at <http://catalog.com/vivian/interest-group-search.html>. This site has a searchable database of *Mail Lists* and access to download a 1056K (ASCII) text file of *Mail Lists* (well over one thousand!). Topics can be favorite movies, TV shows and actors, or groups of people having the same hobby or interests, or employees of the same company, etc.

For the most part, members of "two-way" *Mail Lists* are very easy to get friendly with. After all, you already have something in common with the other subscribers -- whatever the topic of the *Mail List* is!



Quality Output 102

by "Professor" Maurice Randall



Now that you have finished Quality Output 101, I'll bet you are anxious to see what's in store for the second semester. Well, you are in luck! Professor Randall has postponed his sabbatical and is now ready to start class.

If you've worked with a bitmap drawing program such as GeoPaint, RunPaint, Doodle, or any one of many others, then you have a basic understanding of how to draw a dot or line or even a curve on the screen. If you've ever used a font editor to create a new font or change one character of an existing font, you may not realize it, but you actually used a bitmap drawing program to do so. Font editors allow you to design characters the way you would like them to appear.

Most of us, however, are not artistic enough to design a decent looking font, or perhaps we just aren't patient enough to take the time required to design and draw each individual character. But that's OK. We can go a lifetime without ever having to design a single character since there are so many fonts already available for us to use.

Some people in the industry use the term 'typeface' to refer to a font.* We will simply use the term 'font' in this article. Too many terms that mean basically the same thing can be confusing. A font sounds like one thing [and it is], but contained within a font are each and every letter, number, and symbol that can be printed in the design that the font represents. Those individual pictures that make up the characters are all contained within the font. But where are these fonts stored?

You might go your entire computing life and never actually encounter a font file. Some wordprocessors do not even care about fonts. Others do. So, what's the difference? The difference is in how the individual wordprocessor works.

Let's take two popular wordprocessors and compare them, **The Write Stuff (TWS)** and **GeoWrite**. They both allow you to type text that is displayed to the screen for editing. The document you are creating can also be saved to disk. In the case of **GeoWrite**, this is an automatic thing. Each wordprocessor stores each individual character as one byte on the disk. The image or appearance of the character is not defined in this one byte, only the character that it represents is defined. The letter 'A' is stored as a value of 65 while the number '1' is stored as a value of 48.

There are charts available [in ASCII or Pet-ASCII] that will tell us how each character is stored, but for the most

part, this is not really important to us. The wordprocessor takes care of all this for us. What we see on the screen is the picture of the letter 'A', not the number 65. Likewise when we print our document, we will see the picture of the letter 'A' appear on the paper, not the number 65. But in the computer's memory and in the file that's saved to disk there is no picture of a letter, but merely one byte with a value of 65 representing the letter 'A.' By having only one byte representing each character, our wordprocessors save a great deal of memory and disk space. Since each letter 'A' in the file will look alike, the actual picture of that letter only needs to be stored one time within the font file. But you use **TWS** and you don't know where the font file is! **GeoWrite** users are familiar with font files, but for **TWS** users, they are not needed.

That is because **TWS** uses the fonts that are stored inside your printer, while **GeoWrite** uses the fonts that are stored on disk. When you are finished with your document and are ready to print, **TWS** sends a single byte to represent each character to the printer. **GeoWrite**, on the other hand, loads the font file into memory and finds the picture of the character in the font and sends the image data for this character to the printer. The printer thinks it is printing graphical pictures instead of characters from its own built-in fonts. With **TWS**, the printer does basically the same thing within its own memory and looks up the picture of the character within its own font and then proceeds to draw the character on paper as a little graphic. The end result is still the same, a little graphical image is drawn on the paper by the printing mechanism. The printer still produces dots like we have already talked about to construct each letter.

Take a look at your screen and you might realize that the very same thing happens there. **GeoWrite** finds the picture of the letter 'A' in the font and then draws the character to the screen as a little graphic image. **TWS** on the other hand sends the value of 65 to the operating system (or directly to the hardware of the computer) and the end result is that the video display chip inside your computer will find the picture of the character within the font that is stored in memory and display it to the screen. Do you see the similarity between your screen display and the printed output coming from your printer?

TWS is considered to be a text-based wordprocessor while **GeoWrite** is graphics-based. This means that **TWS**

sends the actual text (each individual character) to the printer and **GeoWrite** sends graphic images. **GeoWrite** actually has to send more than one byte when it prints one character. A character from a small font that is 8 dots wide and 8 dots high would require 8 bytes to send for that one character. There are 64 dots that make up the picture of this character and since 8 dots (or 8 bits) makes up one byte, 64 divided by 8 gives us 8 bytes. Larger fonts require more bytes. This can help to explain why **GeoWrite** is slower with both its screen display and its printer output. But since **GeoWrite** allows you to work with just about any design of font that you can imagine, the possibilities are limitless. For the most part, **TWS** is limited to the fonts that are contained within the printer, or ones that can be downloaded to the printer if that feature is supported by the printer. Chances are, you will never use that feature.

But the advantage of **TWS** is speed and good quality printing due to the use of the printer's own internal fonts which are always printed at the printer's resolution. The disadvantage is when you are using a printer that supports only a small number of fonts and other features. **GeoWrite** allows large fonts and various other styles. These all work with the printer because the images are drawn in the computer and sent to the printer as a graphic. The printer merely applies the dots to the paper that it is told to draw. One major drawback to **GeoWrite**, however, is the slower speed and the low resolution supported by Commodore **GEOS**.

Since **TWS** lets the printer handle the font, the printer can print a high quality character using its maximum resolution which can be quite high such as 240 dots per inch (dpi) or even 300 or 360 dpi.

But in graphic mode, **GeoWrite** is sending an image that is 80 dpi and the printer is printing the image at that resolution. Various programmers have improved on this low resolution problem through special printer drivers and other utilities.

The printer you use is also very important. We've talked about dots being applied to paper. We've also talked about how the data is sent to the printer, in the form of one byte per character or a whole picture per character. These aren't the only methods we can use. Remember the little talk about our own handwriting, how we draw our characters using lines and curves? Some printers allow this very same type of method to be used. Some printers can be told to draw a line from one point on the page to another or to draw a curve in any size or shape. They can even draw characters using this method. The nice part is that such a printer can use its maximum resolution as it draws its character images. Printers with these capabilities have software contained within them known as **PostScript**. *And our favorite wordprocessors can still be used with these printers.*

In Part III, we will look at the various ways we can improve the resolution of our documents as well as taking a look at **PostScript**.

Report on the SuperCPU and SuperRAM Card

by Maurice Randall

The Super CPU for the 64 has been available now since last fall and many have been sold. Those people that have purchased it have been very satisfied with the speed increase that it has given them. However, we haven't seen any new software written specifically for the new SuperCPU yet. So what? The mere addition of the SuperCPU to your system greatly enhances most of the software you already have! This is especially true of graphics intensive software, such as **GEOS**.

Until now a programmer could write a program designed for a stock 64 and have it work well on any stock 64. But having a SuperCPU plugged in makes that program run a great deal faster. No sense in writing a program just for a C64 equipped with an accelerator. The same program can be used by anyone, with or without a SuperCPU.

All that may soon change. **CMD** has finalized the development of the SuperRAM card. This plug-in unit fits inside your SuperCPU into a set of connectors that is already built in. The SuperRAM card contains a socket for inserting a 72 pin SIMM chip which can be 1, 4, 8, or 16 megabytes [MB] in size.

Adding a SuperRAM card to your SuperCPU is not the same as adding a 1750 REU to a RAMLink. The SuperRAM card provides real additional memory to your system. Just like the 128 has more memory than a 64, a SuperRAM card provides more memory for the SuperCPU equipped 64, up to 16MB in size. This actually becomes resident memory in the computer. This is memory that allows new programs to be larger in size instead of being limited to 64K as we have in the past.

To give you an example, if you load up your favorite wordprocessor and you have 20 kilobytes [K] of memory left over, your file size can't be any larger than 20K. *[The exception here is GEOS which allows the use of VLIR files. These automatically allow you to switch sections of a file in and out of your computer's memory.]*

With a SuperRAM card, the 64K limit will change. Not for your existing software, but new software can be written to take advantage of this new capability. In the past, programmer's found it hard to write certain programs for the C64 due to its memory limitations. This will not be a problem any more.

At first, the only software that will be compatible with the SuperRAM card will be **GEOS 2.0** because a patched version of the **CONFIGURE** file will be packaged it. You

will be able to use the first 2MB of the SuperRAM card for ramdisks just like you would if you had a 1750 REU expanded to 2MB. Outside of GEOS, the RAMLink will be fully functional. Within GEOS, the SuperRAM card's new CONFIGURE file will be unable to support the RAMLink.

The New-GUI [*as I call it*] now under development by Maurice Randall, will fully support the SuperRAM card for up to 16MB and fully support the RAMLink along with it. This system will allow you to use your RAMLink as you currently do with its partitions and have additional ramdisks on the SuperRAM card. Also, new applications will be able to allocate the extra memory for their own use.

CMD is expected to start shipping the SuperRAM card within about three weeks. The price of the unit is as follows:

- SuperRAM card alone.....\$79.00
- with 1MB memory.....94.00
- with 4MB memory.....119.00
- with 8MB memory.....149.00
- with 16MB memory.. .199.00

BITS of PRAISE by Dale Sidebottom

I want to personally thank Jim Brain for all he is going to promote Commodore. I asked him to put space on CaBooM! where I and other editors can share articles. He has been working on it, off and on I imagine, for several months. I received the following E-mail recently alerting me to his success.

From brain@jbrain.com Tue Aug 12 07:58:57 1997
C Your News, [pronounced 'see your news'] is the service we talked about. The WWW site will be www.jbrain.com/cnews. Submissions should go to cnews-submit@mail.jbrain.com

People will be able to get information on the system by emailing: cnews-info@mail.jbrain.com Start letting people know. I should have the WWW site complete in the next week or two, and E-mail addresses are already live.

I am not sure exactly how successful the idea will be, but as I envisioned it, this would make it much easier for Commodore newsletter editors to produce good publications. After all, it is unusual for a club to produce as many as five good articles in any month. But imagine being able to pick the best of the best every month. I try to do this now, but I am sure there are many fine Commodore newsletters out there that I never have a chance to see!

I also want to praise Jonathan Frazier for his faithfulness in writing an article for this issue. It was really good, wasn't it. Be sure to thank him. I thank Larry and George for the great work they do also. It helps to have folks you can always rely on. Also, consider writing an article yourself. If every person wrote just two a year, this "cup" would overflow!

Commodore FTP Sites for August 1997

Received in Email from TIFCU,

[The Internet For Commodore Users]

Last Revised: August 1, 1997

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A +++ before an entry indicates that the entry is new, or has been updated, or has changed, since the last Listing.

A --- before an entry indicates that the `_prior_` entry was removed from the list, since the last Listing.

=====

This is the list of FTP sites containing software and programs specific to the Commodore 64 and 128 computers, and one Vic20 site, as well as one for the PET. When available URL addresses are also listed, for alternate access.

To use this list on a UNIX system, just type 'ftp <sitename>', where <sitename> is any of the Host or FTP sites listed below. Use 'anonymous' as your login, and your E-mail address for the password. Or, use the newer and easier, NcFTP. Type NcFTP <sitename>. If you find yourself at the FTP> or NcFTP> prompts, type OPEN <sitename>. You can change and list directories with 'cd' and 'dir', respectively, and download files to your system using 'get'. Be sure to specify either 'binary' if you are getting a program, or 'ascii' for a text file before you begin the download.

=====

+++

FTP: [ftp.jbrain.com](ftp://ftp.jbrain.com)

URL: <ftp://ftp.jbrain.com/pub/cbm/>

Last updated: 01 Aug 1997

Directory: /pub/cbm

Description: Major site for the latest C64, C65 and C128 software.

The "/pub/cbm" directory breakdown for this site is as follows:

```

BROKEN      :
commercial  :
data        :
demos       : demos for the C64
faq         :
hw          :
INCOMING    : directory for new uploads
mags        :
os          : alternative operating systems for the C64/128
ref         :
reference   :
software    :
trivia      :
tutorial    :

```

FTP: **ftp.funet.fi** (128.214.6.100)
URL: <http://www.funet.fi/pub/cbm/>
Last updated: 01 Jun 1997
Directory: /pub/cbm

Description: This is a major world site for all CBM software.
Most files in /pub/cpm and pub/cbm/cpm run on the C128's CP/M. Also, major site for Vic20 and Plus4 software collections. Largest selection of Vic20 programming here. And, a major site for PET programs and software. (See the 00README file in the pet directory) for an explanation of what the different files contain. PET Files contributed by Olaf Seibert <rhalto@mbfys.kun.nl>.) Following is a list of some of the directories:

- /pub/cbm/archiving
- /pub/cbm/c=hacking
- /pub/cbm/c128
- /pub/cbm/c64
- /pub/cbm/c64/emulation
- /pub/cbm/c65
- /pub/cbm/commerce
- /pub/cbm/csbruce
- /pub/cbm/documents
- /pub/cbm/faq
- /pub/cbm/firmware
- /pub/cbm/geos
- /pub/cbm/incoming
- /pub/cbm/maps
- /pub/cbm/pet
- /pub/cbm/plus4
- /pub/cbm/programming
- /pub/cbm/transfer
- /pub/cbm/vic20
- /pub/cbm/c64/demos/pal
- /pub/kermit/c64
- /pub/amiga/audio/misc/sid-tunes
- /pub/cpm

FTP: **ftp.eskimo.com/u/v**
URL: <ftp://ftp.eskimo.com/u/v/voyager/Novaterm>
Last updated: 15 Jun 1996
Directory: /voyager/Novaterm
Description: The official support site for Novaterm 9.5.
Directory: /voyager/Novaterm/Deutsche
Description: A German translation of Novaterm 9.5.

FTP: **ftp.Uni-Koeln.DE**
or: [ftp.rrz.Uni-Koeln.DE](ftp://ftp.rrz.Uni-Koeln.DE) (134.95.100.202)
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last updated: 15 Mar 1995

Directory: /usenet/comp.archives/auto/comp.sys.cbm
Description:
FTP: **nexus.yorku.ca** (130.63.9.66)
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last updated: 15 Mar 1995
Directory: /pub/Internet-info
Description: Contains an older version of this listing.

FTP: **oak.oakland.edu**
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last updated: 01 Apr 1995
Directory: /pub/cpm
/pub2/cpm
Description: CP/M software, most all of which will run on the C128. See C128 and other branching directories for 1,000's of files.

FTP: **src.doc.ic.ac.uk** (146.169.2.1)
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last updated: 01 Apr 1995
Directory: /usenet/comp.archives/auto/comp.sys.cbm
Description: Some files of interest.

FTP: **wuarchive.wustl.edu** (128.252.135.4)
URL: <http://wuarchive.wustl.edu>
Last updated: 01 Feb 1996
Directory: /systems/amiga/incoming/misc
/systems/cpm/c128
/systems/cpm/c64
Description: CP/M software, most all of which will run on the C128. Be sure to check the other directory locations too.

FTP: **ftp.demon.co.uk**
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last update: 01 Apr 1995
Directory: /pub/cpm
Description: CP/M and various system files. Also available by email from mail-server@nowster.demon.co.uk

FTP: **ftp.inf.bme.hu**
URL: [ftp:// ...](ftp://...) (site name) / ... (directory)
Last updated: 15 Oct 1996
Directory: /pub/cbm/
/pub/cbm/c64/
/pub/cbm/coding/
/pub/cbm/demos/
/pub/cbm/emulation/
/pub/cbm/games/
/pub/cbm/incoming/
/pub/cbm/musics/
/pub/cbm/utility/

/pub/cbm/plus4/
/pub/cbm/delta.system/
Description: Demoscene-oriented, a lot of demos, magazines, tools. Also, major site for Plus4 programming.
FTP: **watsun.cc.columbia.edu** (128.59.39.2)
URL: ftp:// ... (site name) / ... (directory)
Last updated: 05 May 1994
Directory: /kermit2/old/c64
/kermit/bin
Description: check /kermit/c for latest

FTP: **ftp.cs.columbia.edu**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 01 Jul 1996
Directory: /archives/mirror1/kermit/
Description: The official Kermit support site containing the latest C64 Kermit and support files. 80 columns C64 and C128.

FTP: **flubber.cs.umd.edu** (128.8.128.99)
URL: ftp:// ... (site name) / ... (directory)
Last updated: 01 Jun 1997
Directory: /rec/Programs/generic
Description: Ballistic programs and source code. Read the READ.ME file in the /generic directory with the MORE command.

FTP: **nic.switch.ch** (130.59.1.40)
URL: ftp:// ... (site name) / ... (directory)
Last updated: 15 Mar 1995
Directory: /mirror/kermit/bin
Description:

FTP: **ftp.gmd.de**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 03 Jun 1994
Directory: /if-archive/games/c64
Description: Contains a few PD text adventures.

FTP: **x2ftp.oulu.fi** (130.231.48.141)
URL: ftp:// ... (site name) / ... (directory)
Last updated: 01 Jun 1997
Directory: /pub/cbm
Description: This site supports ONLY technical documents, references and specifications for CBM 8-bit programming. (For example, memory maps.) No binaries allowed.
Directory: /pub/cross
Description: Miscellaneous cross-assemblers.

FTP: **ftp.ucsd.edu** (128.54.16.1)
URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 May 1996
Directory: /midi/software/c64
Description: Information on MIDI for the C64.

FTP: **ftp.hrz.uni-kassel.de**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 01 Jun 1997
Directory: /pub/machines/vic-20
Description: A Vic-20 ftp site, administered by Andreas Heitmann aheit@physik.uni-kassel.de

FTP: **rtfm.mit.edu**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 24 May 1995
Directory: /pub/usenet-by-group/comp.sys.cbm/main-faq
Description: A place for the latest release of The COMP.SYS.CBM FAQ

FTP: **frodo.hiof.no**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 01 Jun 1997
Directory: /pub/c64
Description: C64 emulators and sid music.

FTP: **ftp.rz.uni-hildesheim.de** (147.172.16.34)
URL: ftp:// ... (site name) / ... (directory)
Last updated: 18 Oct 1994
Directory: /pub/c64/
Description: The directory oldcbm.pics contains scanned PET and other 8-bit Commodore Machine pictures. (54 at the moment) Each picture is about 200Kb in size. All in JPEG format.

FTP: **ftp.cs.tu-berlin.de**
URL: ftp:// ... (site name) / ... (directory)
Last updated: 15 Mar 1995
Directory: /pub/c64
Description: Site for c64 software.

FTP: **ftp.giga.or.at**
URL: http://www.giga.or.at/pub/c64/
Last updated: 15 Nov 1996
Directory: /pub/c64
Description: This site has demos from about 165 demo groups (50+ MB) a lot of GEOS shareware and freeware, many C64 and C128 tools, emulators for most platforms, transfer tools, diskmags, and more. Official Vandalism News and Domination release site. More than 110 MB on-line. The directory tree is:

INCOMING/ : Directory for incoming stuff
archive/ : C64 archiving tools

demos/ : PAL Demos sorted by corresponding
groups
groups/ :
diskmags/ : Diskmags sorted by mag-names
different_mags/
emulators/ : C64 emulators for different platforms
amiga/
macintosh/
msdos/
st/
unix/
geos/
geos128/
archive/ : Archivating tools
demos/ : GEOS 128 Demos
desktop/ : Alternative desktops and accessories
games/ : Games for GEOS 128
graphics/ : Graphical tools for GEOS 128
misc/ : Miscellaneous stuff
modem/ : Telecommunication tools
printer/ : Printer tools and drivers
screen/ : Additional tools like screensavers
text/ : Tools for wordprocessors under GEOS
geos64/
archive/ : Archivating tools
desktop/ : Alternative desktops and accessories
developer/ : GEOS programming languages and tools
disk/ : Disk tools
games/ : Games for GEOS 64
graphics/ : Graphical tools for GEOS 64
misc/ : Miscellaneous stuff
modem/ : Telecommunication tools
printer/ : Printer tools and drivers
sid/ : Tools for the audio abilities under
GEOS
text/ : Tools for wordprocessors under GEOS
geos_lq_fonts/ : Fonts for GEOS LQ (Perfect Print -
GEOS)
library/ : Interesting articles for the C64 &
C128
misc/ : Miscellaneous stuff
nostalgia/ : Introduction demos from the early 80's

c128/
c64/
operating_systems/ : Various alternative operating systems
ace/ : Advanced Computer Enviroment (Unix
like)
lunix/ : LUnix - Little Unix
party/ : Party demos/musics/graphics and
results

several_parties/
sid/ : Tunes collections, music tools &
editors
supercpu/ : Directory for CMD's SuperCPU
tools/ : Various C64/C128 related tools
amiga/
pic_conversion/ : Picture conversion from Amiga to C64
c128/
disk/ : Disk tools for the C128
games/ : Games for the C128 (freeware only)
graphics/ : Graphical development tools for the
C128
misc/ : Miscellaneous stuff
modem/ : Telecommunication tools
scsi/ : SCSI tools (CMD HD required!)
text/ : Editors
c64/
assembler/ : C64 assemblers
cartridge/ : Tools for common cartridges
conversion/ : Convert different formats from/to C64
disk/ : Disk tools for the C64
games/ : Games for the C64 (freeware only)
graphics/ : Graphical development tools for the
C64
misc/ : Miscellaneous stuff
modem/ : Telecommunication tools
music/ : Tools for the SID
note_maker/ : Various note makers for the C64
packer/ : Various packer and cruncher
scene/ : Scene related tools
text/ : Editors
msdos/
64net/ : 64net shareware version
ascii_conversion/ : Conversion from C64 to ASCII in
MS-DOS

c-compiler/ : C-Compiler to develop C64 software
crossassembler/ : Crossassembler for PC and C64
geos_conversion/ : Conversion to GEOS formats under
MS-DOS
pic_conversion/ : Conversion to C64 formats under MS-DOS

unix/
pic_conversion/ : Conversion to C64 formats under Unix
transfer/ : Transfer tools: C64 <=> other
platforms
1541-pc/
amiga-c64/
pc-c64/

FTP: ftp.armory.com

URL: ftp://ftp.armory.com/pub/user/spectre/ ... (directory)

Last updated: 15 Jun 1997

Directory: /pub/user/spectre/

Description: A site, with lots of new .lnx format games and new CWI programs, from Computer Workshops, a little SW group. There are also utilities, decoders, games, and lots more. The directory tree is:

CWI-C64/ : Commodore 64 shareware and freeware releases, in .lnx format; includes Lynx

CWI-MSDOS/ : MSDOS & Windows shareware & freeware in .zip format

D64-FORMAT/ : .D64 & .T64 games for C64S, X64 & PC64 (with conversion to .p00), in .zip format

EMUL-UTIL/ MS-DOS emulation utilities, viewers for 64 files, .D64 to GCR converters (Trans64, 64cpy212), etc.

NEW: Joe Forster's Star Commander 0.80 is now here!

GAMES-C64/ : Commodore 64 games, in .lnx format

UTIL-C64/ : C64 utilities, interfaces and management programs

ETC-C64/ : Various other C64 utilities

UNIX/ : Unix utilities

TEXT-ARCHIVE/ : Text files of interest, usually in .gz format .

The latest copy of the Commodore FTP Sites list, this

Listing, in zipped format, ftp-sites.zip

incoming/ : Your uploads are welcomed here

FTP: ftp.indirect.com

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Aug 1996

Directory: /www/dynamite
/www/dynamite/mods

Description: Contains the files necessary for operation of Color 64 BBS (/dynamite directory) and many of its mod files (/dynamite/mods directory). No uploads allowed.

FTP: hal9000.net.au

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Jul 1997

Directory: /pub/cbm/INCOMING

/pub/cbm/browser

/pub/cbm/desterm

/pub/cbm/graphics

/pub/cbm/novaterm9.5

/pub/cbm/qwkie

/pub/cbm/qwkri

/pub/cbm/terms

/pub/cbm/unarc_unzip

/pub/cbm/utils

/pub/cbm/info-txt

Description: Site covering the basics of telecommunications for the C64 and C128. Support site for Rod Gasson's QWKRR128 and Browser programs. 'info-txt' directory has QWK and mail related text files for programmers/developers. Site maintained by Gaelyne Gasson (gaelyne@hal9000.net.au). When accessing via URL omit "/pub" from the path.

FTP: ftp.channell.com

URL: http://www.channel1.com/users/amazon/

Last updated: 01 Mar 1996

Directory: /pub/users/amazon/cbm/64

/pub/users/amazon/cbm/128

/pub/users/amazon/cbm/geos

/pub/users/amazon/cbm/emulation

/pub/users/amazon/upload

Description: A new site with games, and some Christmas Demo's and other software. Much of the software is in SFX (self extracting) files, for the user's convenience. Uploads can be placed in the upload directory.

FTP: utopia.hacktic.nl

URL: ftp://replay.com/pub/c64

Last updated: 15 Jun 1996

Directory: /pub/c64

Description: The Digital Dungeon Site for C64 demos.

FTP: rsls6.sprachlit.uni-regensburg.de

or: rsls4.sprachlit.uni-regensburg.de

URL: ftp:// ... (site name) / ... (directory)

Last updated: 01 Mar 1996

Directory: /pub/c64/

Description: This site contains technical documents, tools, and demos. No games. Uploads welcomed. The directory tree is:

INCOMING/ : all incoming stuff

emulation/ : emulators (x64, pc64win etc.)

misc/ : stuff which doesn't fit in the other categories

programming/ : programming-related stuff (assemblers, c, etc.)

demos/ : demos

graphics/ : graphics

music/ : music

tools/ : all kinds of tools (archivers,packers,noters etc.)

doc/ : documentation about everything

magazines/ : C=Hacking, disk magazines and disk books

os/ : place for alternative os's. At the moment only linux

transfer/ : utilities to transfer between computer systems

FTP: ftp.df.lth.se

URL: ftp:// ... (site name) / ... (directory)

Last updated: 01 Apr 1996

Directory: /pub/c64

Description: A new site maintained by TRIAD, electronic punks of Sweden, for distribution of TRIAD software. Due to space limitations, no uploads allowed.

FTP: **ftp.eskimo.com/u/t/tpinfo/C64**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Jun 1996

Directory: /tpinfo/C64

Description: Major online resource for NTSC demos, magazines, and utilities. 12mb of files online, and growing.

FTP:

URL: **http://www.herne.com/cpm.htm**

Last updated: 15 Nov 1996

Directory:

Description: Mike Garamszeghy has released Herne Data's commercial C128 CP/M programs as freeware, at his WWW site. Included is Jugg'ler 128, which will read/write more than 140 types of CP/M disks, Scramb'ler 128, a disk encryption system, and, C-128 CP/M Hacker's Toolkit, a group of several highly useful CP/M tools, including SPORT.COM which allows owners of CMD HD's, RAMLink's, and FD series drives to change partitions and directories from within CP/M. Also, technical info on C128 CP/M and disk drives, mainly for the programmer. As a long time user of many of these programs, it is impossible to overstate how useful, reliable, and powerful this software actually is. Anyone using the C128's CP/ side should not be without. This site is available only as a WWW page. C128 users can access this site by running LYNX from their ISP's (Internet Service Provider) shell account.

FTP: **dhp.com**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Oct 1996

Directory: /pub/c64

Description: Temporarily down.

FTP: **arnold.hiof.no**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 01 Jun 1997

Directory: /games/

Description: Major site for Commodore games. Most files are in *.zip format.

FTP: **replay.com**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 01 Jun 1997

Directory: /pub/c64

Description: Demos, magazines, tools, etc.

FTP: **seattlelab.com**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Oct 1996

Directory: /C64S

Description: Most files are ms-dos self-dissolving executables (300k+) or *.zip's. Apparently these are for the Commodore ms-dos emulator. Emulator files can be converted to run on the C64. See John Iannetta's C64 utility program on CompuServe.

FTP: **mcftp.mclink.it**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Jan 1997

Directory: /mcprog/?

Description: ? is the first letter of the filename. Files are included in directories: c, e, i, m, p, and others. There are C64, C128 and CP/M programs and games.

FTP: **merv.martnet.com**

URL: ftp:// ... (site name) / ... (directory)

Last updated: 15 Jan 1997

Directory: /pub/Commie

Description: Mirror site. The directory tree is:
/arnold.hiof.no : mirror of arnold.hiof.no
/ftp.funet.fi : mirror of ftp.funet.fi

FTP: **ftp.fix.no**

URL: ftp://ftp.fix.no/pub/mirror/c64/

Last updated: 01 May 1997

Directory: /pub/mirror/c64

Description: Mirror site for arnold.hiof.no

FTP: **users.aol.com**

URL: ftp://users.aol.com/adettke/

Last updated: 01 May 1997

Directory: /adettke/godotstuff

Description: Support site for GODOT additions. GODOT is the well known commercial C64 painting program.

FTP: **ftp.eskimo.com**

URL: ftp://ftp.eskimo.com:~drray/discovery

Last updated: 15 Feb 1997

Directory: ~drray/discovery

Description: Site for accessing Discovery magazine. Files appear to be in dos and Unix format. C64 users may(?) find their Unix shell commands helpful in converting files.

Adding An Extra SID 6581 Chip

by Charlie Young



HOW TO DO IT



Bend out pins 1, 2, 3, 4, 8, 27 of your new 6581 SID chip.

If you want things to run cool, you can make a heat sink. Find a thin narrow strip of metal that is longer and narrower than the SID chip. Cover the top of the original chip with a thin layer of heat sink grease. Lay the strip on top of the original chip. You might fasten it with a small spot of glue to make sure that it does not move and short the pins later. Now smear the bottom of the second chip with a thin layer of heat sink grease. Make sure the notches face the same way, and make the sandwich. Bend the heat sink strip over the end and top of the top chip. You will want this strip to touch the top shield when you replace it.

Solder one of the 2,200pf capacitors to pins 1 and 2 then solder the other 2,200pf capacitor to pins 3 and 4. The capacitors control the cut off frequencies of the SID chip. *See the C64c filter note at the end of this file.*

Now solder the remaining pins (excluding the ones we have bent out and also removed 1, 2, 3, 4, 8, 23, 24, 26 and 27) to the original SID chip. You may have to bend the top chip pins inward just a little for them to get a good grip on the bottom chip. Now that you have the chips soldered together place the SID chips back in the socket.

DESELECT SWITCH

Your second SID chip will work without this switch, but some of your cartridges may not. You can skip this section and install the switch later if needed.

With the switch off, the second chip is invisible to the computer -- the chip select pin stays high all the time which keeps the chip from responding to any reads or writes. If you turn the switch off while chip 2 is generating sound, the sound will continue, but the chip will not respond to any further instructions until you turn the switch back on.

Drill a hole and mount the SPDT switch in the computer. I used the space between the RF modulator and the video/audio DIN connector. An original C64 has more room above the RF connector, so that may be a good place. Solder a piece of wire to pin 2 of the cassette connector. Looking at the back of the computer that is the second pin from the left.

Chip Select

Solder a piece of wire to pin 10 of the cartridge connector. With the computer facing you, the connector is at the back right. Pin 10 is the 10th pin from the left. Solder the other end of the wire to the bottom terminal of the switch.

Solder a wire to pin 8 of the second SID chip. Solder the other end to the middle terminal of the switch.

Alternative address

You could use pin 7 on the cartridge connector for address \$DE00. You could actually have a total of 3 SID chips. Chip 2 - \$DF00 Chip 3 - \$DE00
Don't know of any player that addresses 3 chips though.

AUDIO AMP

Mount the two RCA connectors on the back of the computer. Use shielded audio cable to connect the right channel center wire from the center pin of the RCA connector to the negative side of the 10uf electrolytic capacitor. Connect the left channel center wire to pin 3 of the audio/video connector. If you mounted the RCA connector close to the audio/video connector, you do not have to use shielded cable for this connection.

ADDRESS

The address of the second chip is \$DF00 hex 57088 decimal. The address of the original chip is \$D500 hex 54528 decimal. Any basic program that uses the SID starting address as a variable, can be easily changed to access the second chip. Example:



10 s=54528 Change to: 10 s=57088

Try running the program with the variable set to the original value. You should hear sound from the left speaker and TV or monitor. Then run the program with the variable set to the new value. You should hear the identical sound from the right speaker only.

USING STEREO SID PLAYER 10.3

Stereo SID Player does not check to see if you have a second SID chip. You have to go to the second menu and change NORMAL to STEREO. Also make sure that the address for the second chip is set to \$DF00 (if you used pin 10 on the cartridge connector for chip select). Save the setup on disk. The next time you load Stereo SID, it should remember the change you made - you do not have to change the menu every time you load Stereo SID Player.

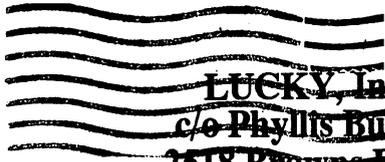
Enjoy the world of 6 voice stereo sound. :)

C64c NOTE:

Does this sound familiar. You had some neat games and SIDs that ran fine on your old C64, but when you upgraded to a C64c, you were missing some sounds or voices? You probably thought that there was something wrong with the SID chip in your C64c. Nope. Commodore built the C64c computers with 470pf capacitors in the SID filter circuits. This causes any voice with the high filter turned on to be inaudible. That is why certain games and SIDs sound fine on an old C64 or C128, but don't play on a C64c. While you have the computer open you could replace the original capacitors with the correct value. Alternatively use a SID edit program to turn off the filters on all voices that will play on the original SID chip.

-- PCBoard (R) v15.3/M 2

* Origin: The Ether Net Amateur Radio BBS (1:3821/7)



LUCKY, Inc.
 c/o Phyllis Bunch
 2518 Browns Lane
 Louisville KY 40220

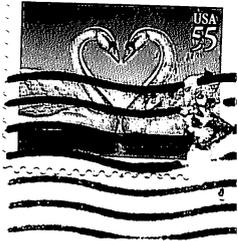


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IT'S WILD!

