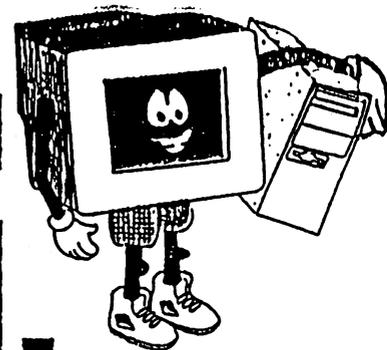




# A.C.E.S.



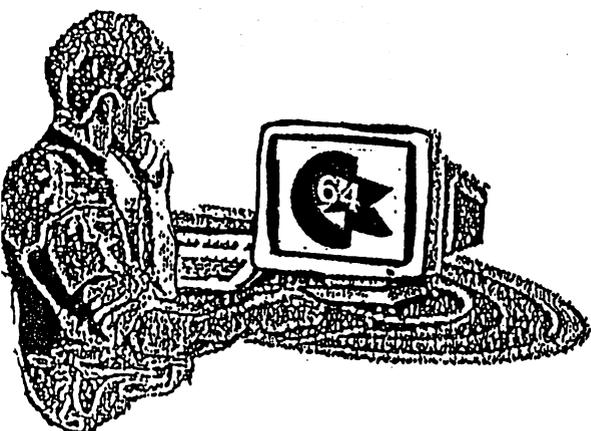
MARCH

&

APRIL

98

## Bi-monthly Newsletter of the Active Commodore Enthusiast Society



### The March Meeting:

Don Gilstrap

The meeting was canceled. Members called in to report absent for the March meeting due to unforeseen events. In other words things just happen. I am happy to report that Dee and Ron Babb are first time parents with a baby boy.

### The April Meeting:

Don Gilstrap

Robert Jewel, our newest member, requested a demonstration on converting Loadstar graphic disks, THE COMPLEAT PS COLLECTION, over to Print Shop or Print Master Plus. I started by formatting a disk using the Print Master Plus program. Using PM+ was not necessarily the only way to format a disk, but after years of being on the Commodore I find that age plays a part in forgetting some of those type in programs in our owners manual. Next I loaded and ran the LS graphics program. A menu came up at this point, I select ONE IMAGE MODE. I told Robert, if I do a bad job of this he could select INSTRUCTIONS for reference. If he had two disk drives he could select SET DESTINATION and cut down on disk swapping. Next, I Selected VIEW BY NUMBER. When ordering PS disks from Loadstar you also get little graphics with numbers under each group on two sheets of paper making it simple to pick out your picture. Next the program asked for FILE NUMBER. I type in 33 and another menu comes up. This time I pushed the up&down cursor key, showing Robert each pic-

ture in that group of nine pictures. How, are we going to use PM+ or Print Shop? And if it's PS is it two or three block? It was Tom Brosher that noticed the look on Robert's face. Tom spoke up "Sometimes Don assumes to much, and forgets how it is to be a new user. The Loadstar graphics can not be used directly by PM+ or Print. Because the graphics are packed, so there for they have to be unpacked onto another disk, that's the reason for the formatted disk." I believe Robert got the idea on how it all works up to this point. Moving on, Tom Brosher had a question. Why does his printer print only left to right and not bi-directionally when using the program Newsroom? John Misiaszek had a idea, Newsroom may be a word processor printing in graphic mode and being in graphic mode it will only print one way. The printer is a Star NX-10. If Tom was using his Star NX-1020 would he have the same problem? Yes I placed my new issue of Commodore World in the middle of the table so everybody could take turns looking at it. On page 35, John M. noticed an Ad. for buying 1581 kits. We also talked about Tom H. and me, opening up a 1750 Super Clone and taking a look inside. We did the same with a C=1764 that was upgraded to a 1750. Both had some kind of processor chip in them.



## The CMD Nirvana: The Guts and Glory

by [Todd Elliott \(telliott@ubmail.ubalt.edu\)](mailto:telliott@ubmail.ubalt.edu)

### Introduction

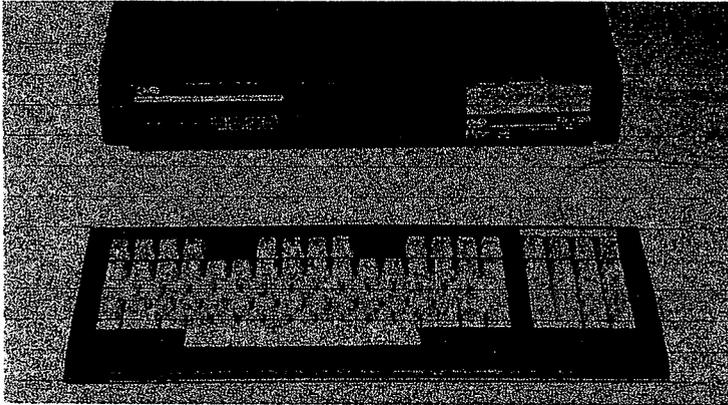
Before you begin, download the CMD Nirvana picture off of my WWW site! Take a good look at the picture, and if it doesn't whet your appetite, this article will! This is the computer that I use at home for my various programming projects and good old fashioned entertainment. It consists of a C128DCR with three built-in foreign components: a 12 VDC fan, CMD HD 85 megabyte drive and a FD 4000 3.5 disk drive. The case is painted obsidian black. It does have a 4MB RAMLink hooked up with a 1750 REU and a Swiftlink or Action Replay cartridge. Other peripherals circling the CMD Nirvana's universe are an 1541, 1571, a SlikStik, MW350 printer interface, in addition to a host of books and magazines dedicated solely to the c64/128 line. (Soon, it will have a SuperCPU 20!) It is a very powerful computer, but it doesn't cure my malady of starting programming projects, but only to leave them unfinished to do the next one. All of this power is corrupting, indeed!

### Disclaimer:

This article, while resembling a how-to-do-it-yourself article, is only meant for entertainment and informational purposes and is to be used at the reader's own risk. Mr Elliott, Commodore Hacking, nor Brain Innovations, Inc. can be held responsible for any damages and/or injuries occurring as a result of following this information contained in this document. Electronic circuitry is fragile and can be damaged easily. Users must use ground strips or some other means of protecting their circuitry from accidental discharges of static electricity. Also, soldering equipment, electronic outlets, etc. pose a significant danger to self, and extreme care should be used in operating these items or working on electronic circuitry. Be sure to unplug the electronic circuitry before commencing work. I also disclaim any and all warranties, both express or implied.

Tremendous thanks goes to Al Anger, who, with his substantial assistance, made this CMD Nirvana computer a reality. Thanks, Al Anger! For those who don't know him, take a peek at Commodore World's Issue Ten cover, and you'll see his C128T (Tower) computer, plus a host of other hardware projects. But, Mr. Anger did not write this article and is not responsible for its contents, in which the disclaimer above still applies. You can reach Al Anger at [coyote@bridge.net](mailto:coyote@bridge.net). Thanks also go to Max Cottrell, who did the scans of the photographs, courtesy of MC Photography, [mcphoto@izzy.net](mailto:mcphoto@izzy.net). The standard disclaimer also applies to Max Cottrell and MC Photography.

## A Verbal Tour

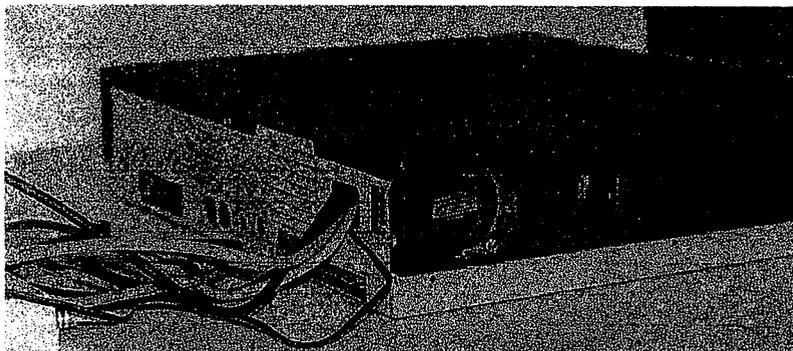
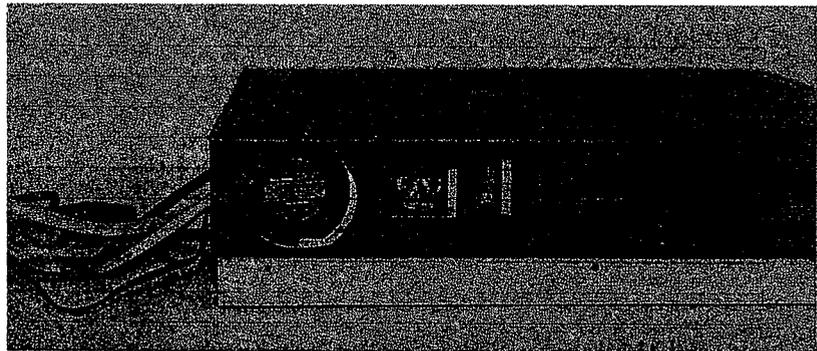


Let's begin with a visual inspection of the front panel: The plastic panel contains a sticker overlay for the CMD HD, which is located on the left side of the panel. The HD sticker overlay is located next to the C128D's POWER-ON LED on its right. The FD 4000 occupies the right side of the plastic panel. The right side of the plastic front panel is used to house a receptacle for the C128D's built-in 1571 disk drive, with a swinging gate. But, the

built-in 1571 drive was removed, and the left side panel was cut and filed smoothly with the correct dimensions to fit a FD 4000 disk drive snugly. (Well, almost.)

Continuing with the visual inspection, we turn to the left side of the C128D. The metal casing was cut to allow for the fan, power cord and off/on switch to be accessible. If you note the picture carefully, the cuts on the case aren't in perfect sync with the interior. I guess the design won't be winning any art awards anytime soon. ;)

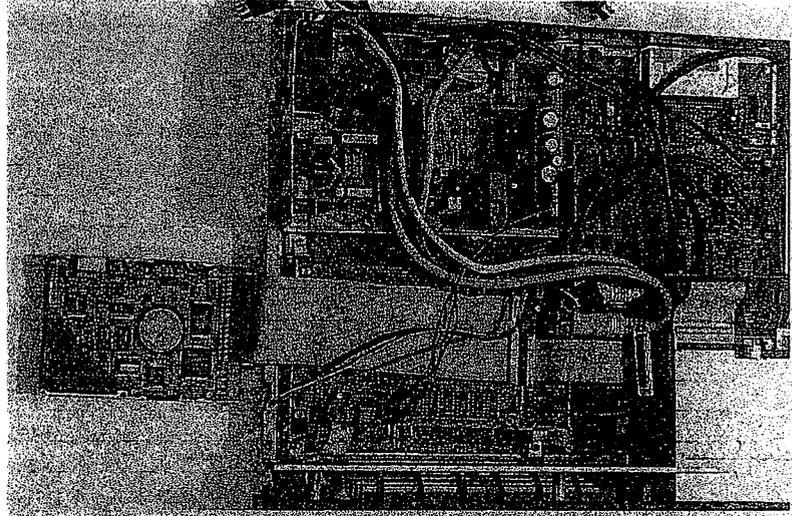
The main thing is that I can access the off/on switch, and be able to plug/unplug the power cord without any difficulty. As for the fan opening, a circular opening as shown in the picture is not needed. In fact, a wave of lines cut on the case would be sufficient to allow air circulation.



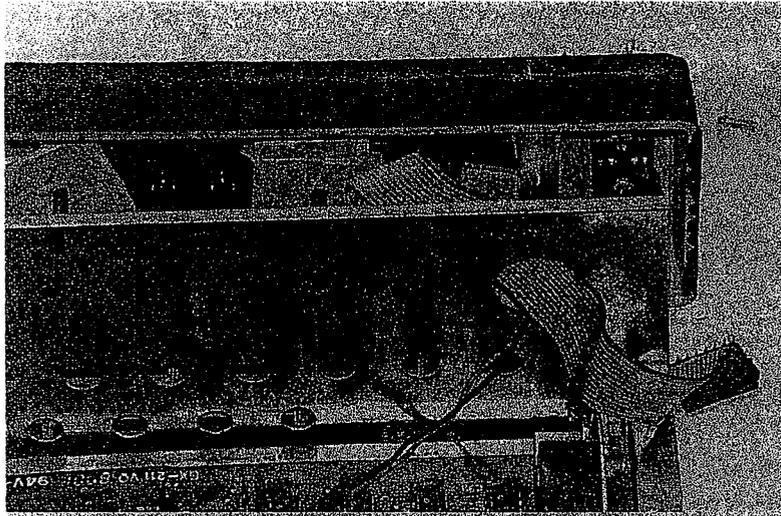
Going to the back end of the C128D, you will see wires snaking out of the receptacle in which the power cord formerly went through.

## Opening the Hood

Let's dispense with the visual inspection and actually open the 'hood' of the CMD Nirvana computer! Yes, I know it's not a pretty sight and may look daunting to you, but it can be done! From the top view, it looks like the power supply for the C128D has been moved from its original position 90 degrees counterclockwise. The CMD HD motherboard now occupies the lower left corner of the C128D case. The FD 4000 juts across the lower right corner of the C128D front panel and the C128D case. As you can see, the internal 1571 disk drive has been ripped out. Wires are everywhere, but most of them settle down in the blank area in the upper right corner of the C128D case.



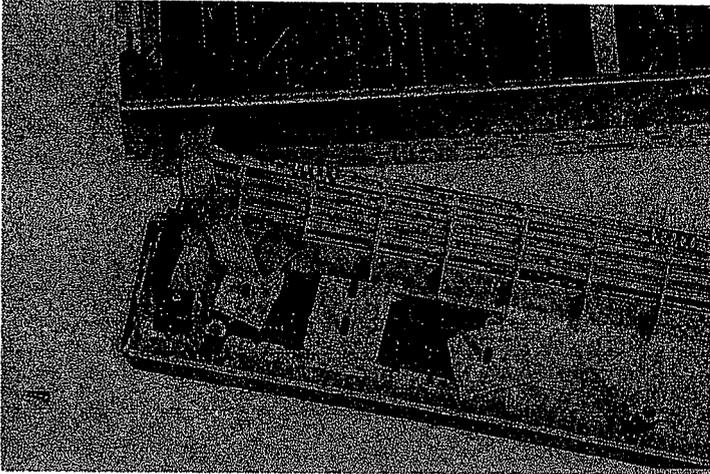
## Digging In



Ah, where will we start? Let's take a closer look at the plastic front panel of the C128D. The CMD HD front panel was inserted and attached to the plastic front panel of the C128D, and is not attached to the metal case of the C128D. The marriage of the CMD HD front panel and the C128D's plastic front panel was accomplished by four screws and three pieces of plastic. First, I used masking tape to cover the CMD HD's metal case on the front side. This front side already has holes drilled on

it by CMD or some OEM manufacturer. I used an X-Acto® knife to cut holes in the masking tape, popping through the holes in the metal case. When finished with the poking of the holes in the masking tape, I have a 'drill image', so I peel off the tape from the CMD HD's metal case, and affix it to the C128D's plastic front panel on the left side. Making sure that everything's aligned, I proceeded to drill holes, following the 'drill image', in the plastic front panel. After peeling off the masking tape, and then doing a test fit with the CMD HD's front panel with its protruding LEDs, and swap buttons, it was a perfect fit! I then made the connection more solid with four screws and pieces of plastic, by attaching the CMD HD's front panel to the left side of the C128D's plastic front panel. Then, I superimposed the sticker overlay for the CMD HD perfectly with the LED's and the push-buttons, and used spray-on glue to make the overlay a permanent part of the C128D's plastic front panel.

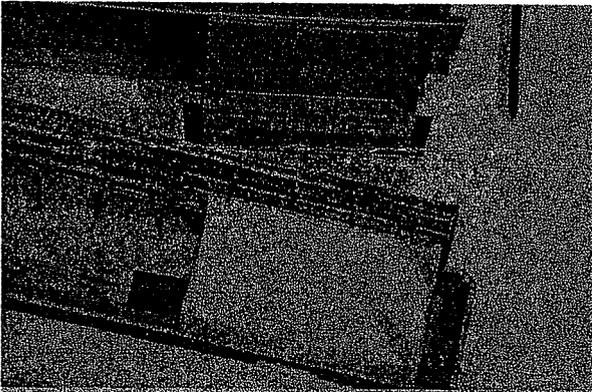
## Preparing the FD-4000



As for the FD 4000, I used a saw to cut off portions of the plastic front panel of the C128D where the internal 1571 disk enclosure used to be, cut in correct dimensions to fit the FD 4000. It was still rough, so I used a file to smooth the edges, on a gradual basis, until the FD 4000 made a snug fit. I measured the front cavity of the FD 4000 and used those same measurements to make the cut on the C128D's plastic front panel on the right side. As you can see from the picture, there is little room for error, especially at the top

of the plastic front panel. Generally, the cut was made as far as to the right side of the C128D's plastic front panel as possible.

## Preparing for the CMD Hard Drive



Now, to the internals of the C128D. I had to move the power supply counterclockwise 90 degrees to make room for the CMD HD. I quickly ran into a snag, as the power connector between the PCB and the power supply was too short. I had to cut off all the wires on the power connector, then enlarged it by soldering all wiring to a cannibalized wiring from a power supply wire to both ends of the power connectors. For further clarification, a close-up of both ends is supplied. The cannibalized power wiring was very convenient, as they were color marked, and

it was easy for me to make sure that the wiring corresponded with each end of the power supply connectors. Next, I spliced the +12 VDC wires on the power supply connector to supply continuous power to the fan. Usually a fan comes with black and red wires. Splice the black wire of the fan to the black wire of the power supply. Splice the red wire of the fan to the yellow wire of the power supply. Next, the fan was attached to the power supply with screws, to the right of the power cord connector.

The structural improvements to the PCB was made by bending the PCB power connector end at a 45 degree angle, for it would collide with the position of the CMD HD's PCB. Last, I connected one end of the entire power supply to the back edge of the C128D's metal case. This was accomplished by bending the end of the power supply at a 90 degree angle and screwing it together to the metal case of the C128D. However, one end of the power supply remained unsupported and would tip over onto the PCB, causing possible malfunctions for the C128D. So, a makeshift support was propped upon the C128D's PCB to support the remaining end of the power supply. This support, like all other supports used, were fitted with black electrical tape at the bottom to prevent shorts on the PCB. The massive heat sink covering the VIC - II chip and the 80 column display chip supported the other end of the power supply.

## Installing the HD

With the power supply situated 90 degrees counterclockwise, we now have room to insert the PCB for the CMD HD 85 megger. I took the CMD HD's PCB out of its original metallic case that CMD supplied. (NOTE: If you do that, you may void CMD's warranty on the unit.) But the CMD HD's PCB could not just sit atop the C128D's motherboard, for there may be accidental electrical shorts or other problems. So, the CMD HD's PCB just hovered above the C128D's motherboard by approximately 1/4 of an inch. This was accomplished by erecting two support beams above the C128D's motherboard. The beams were obtained at a hardware store. They are aluminum and are easily malleable with pliers. I screwed down one end of the beam to the middle edge of the motherboard, leaving the other end of the beam covered with electrical tape. I could have screwed down the other end, but might have cut the motherboard in a way that Commodore never intended and screwed up the whole thing. All supports listed in this article are screwed down on existing 'drilled holes' in the c128d's PCB. Please note that the support beam is nearly aligned with the motherboard's power connector. I put electrical tape on top of the support beam, as this top will support the CMD HD's PCB. This is to ensure a smooth operation of the unit without any electrical shorts or other problems. Also, look at the rear view of the support beam in the picture, for it can give you a clear idea of how tall it is in relation to the C128D's motherboard.

As for the other support beam, it is screwed down on both ends to the C128D's motherboard on the far left side. This support beam is taller than the one explained earlier. The reason is that the CMD HD's PCB will be screwed on that support beam, so this support beam would have to be aligned parallel to the top of the first support beam. Then the second support beam is covered with electrical tape and two holes are drilled at both ends, which align perfectly with the CMD's HD PCB's drilled holes. (See photo for further clarification.)

Finally, to attach the CMD HD's PCB to the two support beams, I made sure that both beams were in alignment and supported the PCB in a level fashion, almost parallel to the C128D's motherboard. I attached one end of the CMD HD's PCB, which has no cable connectors, to the second support beam on the far left of the C128D's motherboard. Two screws were used to make a secure connection to the support beam. The other end of the CMD HD's PCB, the one with all the cable connectors, rested on the first support beam, but was not screwed down. It could be done, but as the PCB was already secured, I didn't bother. The cables running out of the CMD HD's PCB are in a tight space, due to the FD 4000. As you may note from the picture, there is no room for the internal 1571. If you decide to do an internal CMD HD operation on your C128D, you must sacrifice your internal 1571 drive.

## Installing the FD

[C= Hacking Home](#) | [Issue 14 Contents](#)

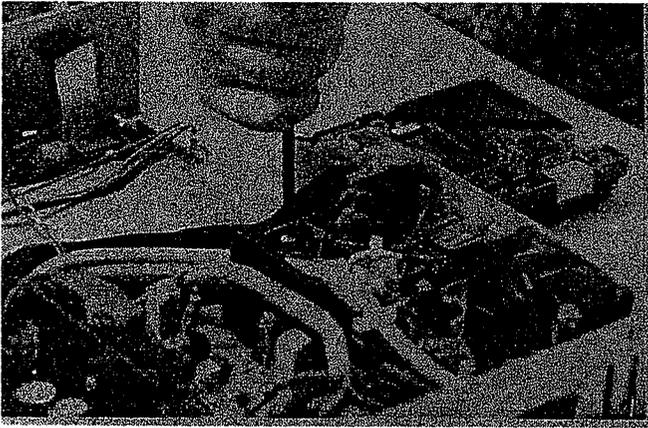
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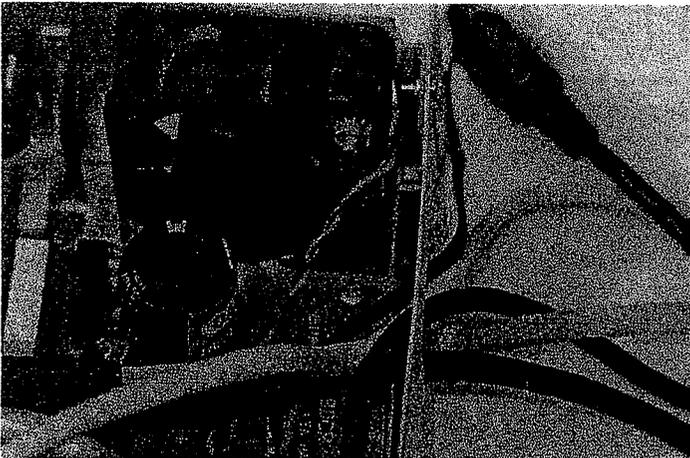
*Brain Innovations, Inc.  
10710 Bruhn Avenue  
Bennington, NE 68007*



With the CMD HD PCB out of the way, I began work on the FD 4000. Before the FD 4000 was inserted, I cut off pin one of the C128D's chip U113. This pin gives a signal that the internal 1571 drive is in existence. With that pin cut, the C128D no longer recognizes the existence of the internal 1571 drive. It will, however, recognize any peripherals using the serial bus, as I use an external 1571 as Drive #8 in my system. I took the FD 4000 mechanism and the motherboard (it's built as a single unit) out of its original case that CMD supplied.

(NOTE: Doing so may void CMD's warranty on the FD x000 unit.) I used trial and error to position the FD 4000 drive in the C128D's metal casing. This is to ensure that the FD 4000 would not protrude too far out of the C128D's plastic front panel, or intrude too far inside the C128D's plastic front panel. As you can see from the following picture, the FD 4000 unit protrudes from the C128D's metal case by approximately 1 1/2 inches.

Lastly, I attached a support beam to the bottom right in front of the C128D's metal case. This involved some cutting on the edge of the bottom of the C128D's metal case in order to make the FD 4000 fit the C128D's metal case. The bottom edge of the C128D's metal case was not cut out completely, rather, it was bent inwards with pliers, creating a small surface for the FD 4000 to rest upon. Again, trial and error was used to determine how much to cut and bend the bottom edge, so that the FD 4000 unit would fit the C128D's metal case and the plastic front panel. Finally, the FD 4000 unit was screwed upon the support beam. This FD 4000 also rests upon the bent in bottom edge. This creates a stable surface for the FD 4000 unit to operate without having to insert a second support beam onto the C128D's motherboard to support the other edge of the FD 4000 unit.

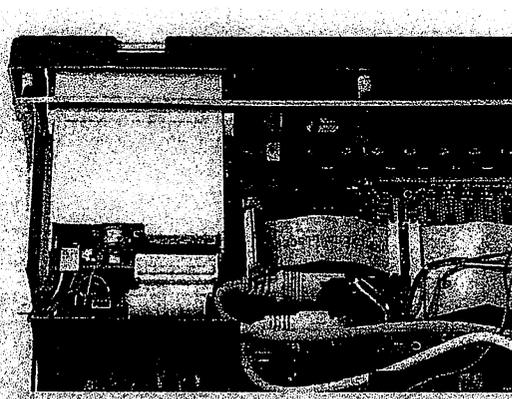
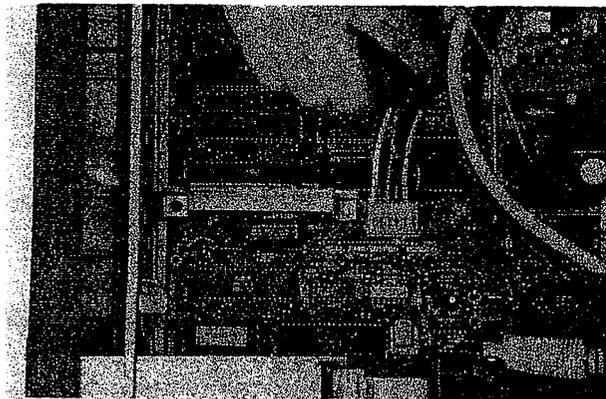


Finally, I connected the cables to the CMD HD's PCB and the FD 4000, and attached the ribbon cables to the CMD HD's PCB, including that of the hard disk drive and the front panel controls. I extended the length of the power-on LED wire for the C128D's power supply. This extension was made by adding more wire and resoldering the connections. This was necessitated because the 90 degree turn of the power supply made all the wiring too short. :( Ah, the wisdom of CBM to cut costs by making everything short and sweet! I made sure that the CMD

HD and the FD 4000's on/off switches were already in the ON position. Last, I bought Velcro® from an art supply store, and liberally applied it to the CMD HD 85 MB drive mechanism. The opposite end of the Velcro® attachment was pasted on the inside of the top metallic case of the C128D. This was positioned roughly 3 inches from the front edge of the top metallic case. Trial and error was used here to determine the optimum measurements. The CMD HD 85 mechanism was then attached to the inside of the top metallic case of the C128D unit by Velcro®. This is a safe method, for the CMD HD has been running for almost a year without any glitches. Close the case carefully (The HD is on the

case, after all!), and attach all the power to a power control center with individual switches. The individual switches then can be used to control a specific peripheral such as the internal FD 4000 or the CMD HD 85, without having to open the unit to access the off/on switches, or drilling holes in the case of the C128D to attach these same switches. Convenient, isn't it?

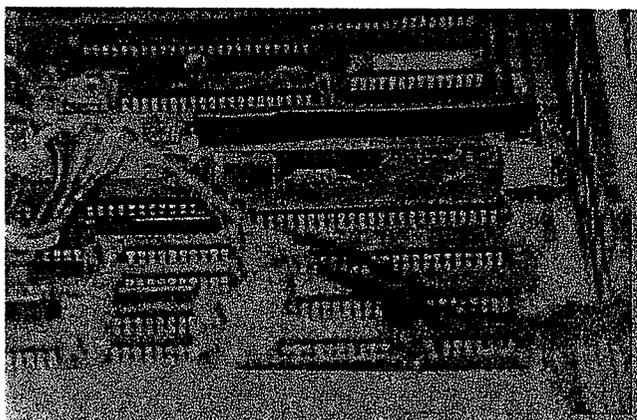
## Lessons Learned



Before

concluding the article, it seems possible that one could put a 1581 drive in lieu of the FD x000 drives. It's possible, but I do not own a 1581, so I really cannot comment. I would guess that the general guidelines for the FD x000 drives would apply to the 1581. Granted, all of this looks quick and dirty. But when I first started out with this project with Al Anger, we didn't have step-by-step manuals, or other references. It was truly a new territory for me. (Al has already done such hacks for his C= computers before me, and his experience was invaluable.) However, there were some bloopers. One, the c128d died upon powering up. It turned out that the fan +/- 12 VDC wiring was connected to the wrong wire, and shut down the system. With that fixed, the c128d powered up okay, but now, the CMD HD died. If that wasn't frustrating enough, it was difficult to find out what went wrong, and I was wondering if the FD 4000 would be next. The culprit was a break on the CMD HD PCB. I accidentally drilled a cut on the PCB. With some soldering, I fixed it by building a bridge between the break in the CMD HD PCB. Whew! Everything now worked, and has worked since. Consider those bloopers invaluable lessons learned in dealing with sensitive electronic circuitry.

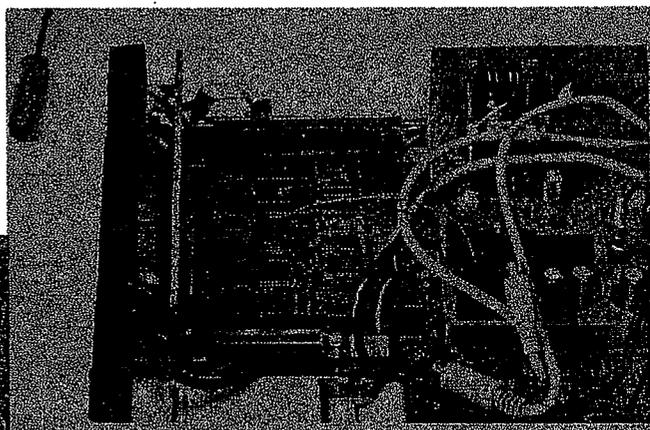
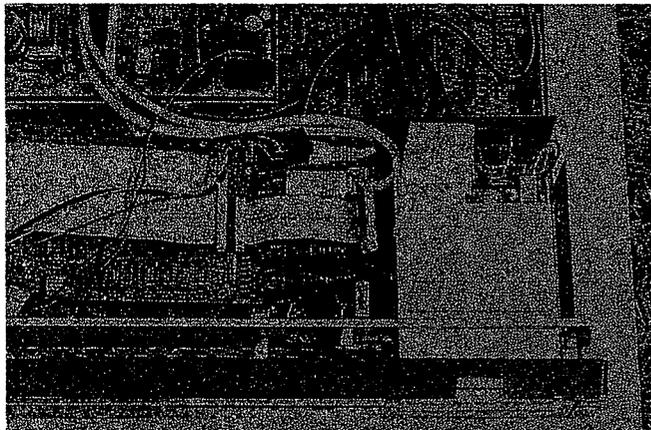
## Conclusion



These are just general guidelines and are meant for entertainment purposes only. It serves as an inspiration to those who always dreamed of building their own C= beasts. I'm sure that there are countless users that have customized their computers, and with these general guidelines, undoubtedly, some users will want to create such a monster with rich C= 8 bit computing power!

## Postscript

For those Commodore users who do not have access to graphical browsers, you can contact the author for a Word v7.0 document printout with pictures. The cost is \$3 dollars for people living in the U.S. Canadian readers will have to pay slightly more in U.S. dollars.



Here is a one-player game for the Commodore 64, 128, or (any memory size) computers. This program was developed by Charles Brannon, COMPUTE! Publications' program editor, from an idea by Charles Bond published in COMPUTE! Magazine. Before you type the program, turn your machine off, then on, to clear out anything in memory. Type the BASIC program exactly as shown (though you should just press the SPACE bar when you see the word [SPACE]), being careful not to omit any punctuation or special symbols. Press RETURN at the end of each line. When you've finished your typing, you can store the program on a cassette tape or disk drive.

To store your program on tape, just type SAVE "MAZE" and then press RETURN. If you want to save your program on disk, type SAVE "@ 0:MAZE", 8 then press RETURN.

When you're ready to play, turn on your computer and type LOAD "MAZE" to restore the program to memory from cassette. Use LOAD "MAZE", 8 to read the program from disk. (Always press RETURN after you've finished typing a line.) You do not need to load the game more than once unless you have turned off your computer or have started another program.

To start the game, type RUN (and press RETURN). The screen should immediately turn red, and you'll see a blue square drawn. The screen shows the title of the game and a message "SETTING UP MAZE" appears. Strange characters will appear as the maze grows. However, if the program suddenly stops with an ERROR message, it has detected a typing mistake. Check the line: enter LIST to display the program.

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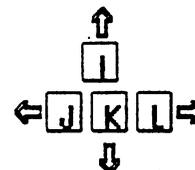
100 DIMA(4):V=PEEK(0)=76:W=40+18*V:SC=1024-6656*V:
    C=55296+16896*V:L=25+2*V
110 IFV=0THENPOKE53280,0:POKE53281,2
115 IFVTHENPOKE36879,40
120 A(0)=2:A(1)=-W*2:A(2)=-2:A(3)=W*2
130 WL=160:HL=32:A=RND(-TI):A=SC+W*4+3
140 PRINTCHR$(147);:FORI=W*3TOL*W-W*2STEPW:FORJ=2T
    OW-4
150 POKESC+I+J,WL:POKEC+I+J,14+8*V:NEXT:NEXT
160 FORI=2+L*W-WTOL*W-4:POKESC+I,239:POKEC+I,6+2*V
    :NEXT
170 FORI=W*4-3TOL*W-W-3STEPW:POKESC+I,246:POKEC+I,
    6+2*V:NEXT
180 POKEA,4:PRINTCHR$(19);CHR$(158):PRINTCHR$(18);
    CHR$(142);CHR$(8);
190 PRINT TAB((W-8)/2);" AMAZER "
200 PRINT CHR$(153);TAB((W-17)/2);" SETTING UP MAZ
    E "
210 POKEA,4
220 J=INT(RND(1)*4):X=J
230 B=A+A(J):IFPEEK(B)=WLTHENPOKEB,J:POKEA+A(J)/2,
    HL:A=B:GOTO220
240 J=(J+1)*-(J<3):IFJ<>XTHEN230
250 J=PEEK(A):POKEA,HL:IFJ<4THENA=A-A(J):GOTO220
260 PRINTCHR$(19):PRINT:PRINTTAB((W-18)/2);"PRESS
    {SPACE}IJKL TO PLAY"
270 POKEA,81:J=2:CC=C-SC:P=A:I=0
    
```

As the traveling "worm" burrows through the maze, it must trace backwards along its path after it gets stuck in a dead-end. After it's twisted its way back, it's free to roam, creating the maze.

When the maze is complete, a wandering miser (represented by a yellow sphere) starts off on his journey through the maze. He follows a simple rule: Whenever confronted by a wall, he simply turns left, following the leftmost wall of the maze. His plan works well, but causes him to search endlessly. Even when he reaches the exit, he turns left and continues back into the maze. Thoroughly confused by all this meandering, the miser randomly drops dollar bills from his sack of money.

Like the miser, you start out at the beginning of the maze. You press the keys I,J,K, and L (see figure) to move the hollow sphere, your character. As you try to find your way through the maze, the time displayed at the top of the screen adds up, encouraging (but not requiring) you to race against the clock.

As an added complication, you must avoid direct contact with the miser. You can pick up and keep the money you find, but should the miser bump into you, he'll take all his money back, forcing you to start over. Try to gather 20 of these dollar bills. Watch out for dead-ends; they make the miser reverse direction, possibly straight for you. Remember that the miser only makes left-hand turns.



PROGRAM HERE

```

280 POKEP,87:POKEP+CC,1:B=A+A(J)/2:Z=HL:IFRND(1)*T
    >.94THENZ=164
290 IFPEEK(B)=WLTHEN320
300 IFB=PTHEN400
310 POKECC+B,7:POKEB,81:POKEA,Z:POKECC+A,13+8*V:A=
    B:J=(J+2)+4*(J>1)
320 J=(J-1)-4*(J=0):GETK$
330 IFT=0ANDK$=" "THENI$="000000":GOTO280
340 IFT=0THENPRINTCHR$(19):PRINT:PRINTTAB((W-18)/2
    );" TIME USED:";TI$;" ":T=1
350 IFK$>="I"ANDK$<="L"THENI=- (K$="I")-2*(K$="J")-
    3*(K$="K")
360 NP=P+A(I)/2:PK=PEEK(NP):IFPK<>WLTHENPOKEP,HL:P
    =NP
370 IFPK=WLTHENI=4
380 IFPK=164THEND=1:S=SC+W*L-W*W*D:POKES,164:POK
    ES+CC,13+8*V:IFD=20THEN400
390 PRINTCHR$(19):PRINT:PRINTTAB((W-17)/2+11);TI$:
    GOTO280
400 PRINTCHR$(159);CHR$(19);
410 PRINTCHR$(5);TAB((W-13)/2-2);" YOU FOUND $";S
    TR$(D)
420 PRINTCHR$(158);:PRINTTAB((W-19)/2);" PRESS
    {SPACE}";CHR$(18);"RETURN"
430 GETK$:IFK$<>" "THEN430
440 GETK$:IFK$<>CHR$(13) THEN 440
450 RUN
    
```

Announcing...



The all-new  
operating system  
upgrade for  
GEOS

Known as "Project G" during the last several months of its development, the new *Wheels* graphical operating system has evolved from the highly popular GEOS operating system that has been available for the Commodore 64 for quite some time.

*Here's just a sampling of the new features:*

**Dashboard 64** - This is the all-new desktop designed to get you in and around your system with a friendly, easy-to-use, flexible control over your system in this multi-window environment.

**Toolbox 64** - Remember the old Configure and how many different versions there were? Those days are over as everything you need to configure your system is contained in this one powerful application. All the popular disk drives are supported as well as the various types of ram expansion devices.

**MakeSysDisk** - Once you've installed your new system you can use this new utility to create your own custom boot disks or boot partitions.



*Wheels has a few simple requirements:*

- 64 or 128 (in 64 mode)
- 1541/1571 drive for initial installation
- GEOS 64 V2.0 system boot disk for initial installation

Once installed, the *Wheels* system requires ram expansion. Any of the following may be used:

- 1700, 1764, or 1750
- CMD 1750XL or any 1750 compatible
- Expanded 17xx series
- geORAM
- BBORam of any size
- RamLink/RamDrive/DACC partition
- SuperCPU w/SuperRAM of any size

The heart of *Wheels* is made up of a completely redesigned operating system kernel along with many new functions and routines added to assist programmers in developing new and more powerful applications for future use. The new system is filled with power for new applications, yet still retains compatibility for your old GEOS 2.0 applications.

Native mode CMD partitions are fully supported not only by the new applications, but by the operating system itself. You can freely switch between 1581 and native partitions with ease. Copying files between the different partitions and subdirectories has never been easier. Even old applications can make better use of partitions and subdirectories with some innovative routines built into the new system.

**NOW ACCEPTING ORDERS**  
(shipping sometime in February)

**only \$36**  
plus shipping

\* add \$4 for North American addresses or \$6 International

*Wheels 64* includes a system disk and a nicely bound owner's manual. To get your own set of *Wheels*, send a check or money order for \$40 (\$42 for overseas addresses) in US funds to:

Maurice Randall  
% Click Here Software Co.  
P.O. Box 606  
Charlotte, MI 48813

PH: (517) 543-5202 for more info  
(128 version available soon)

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To