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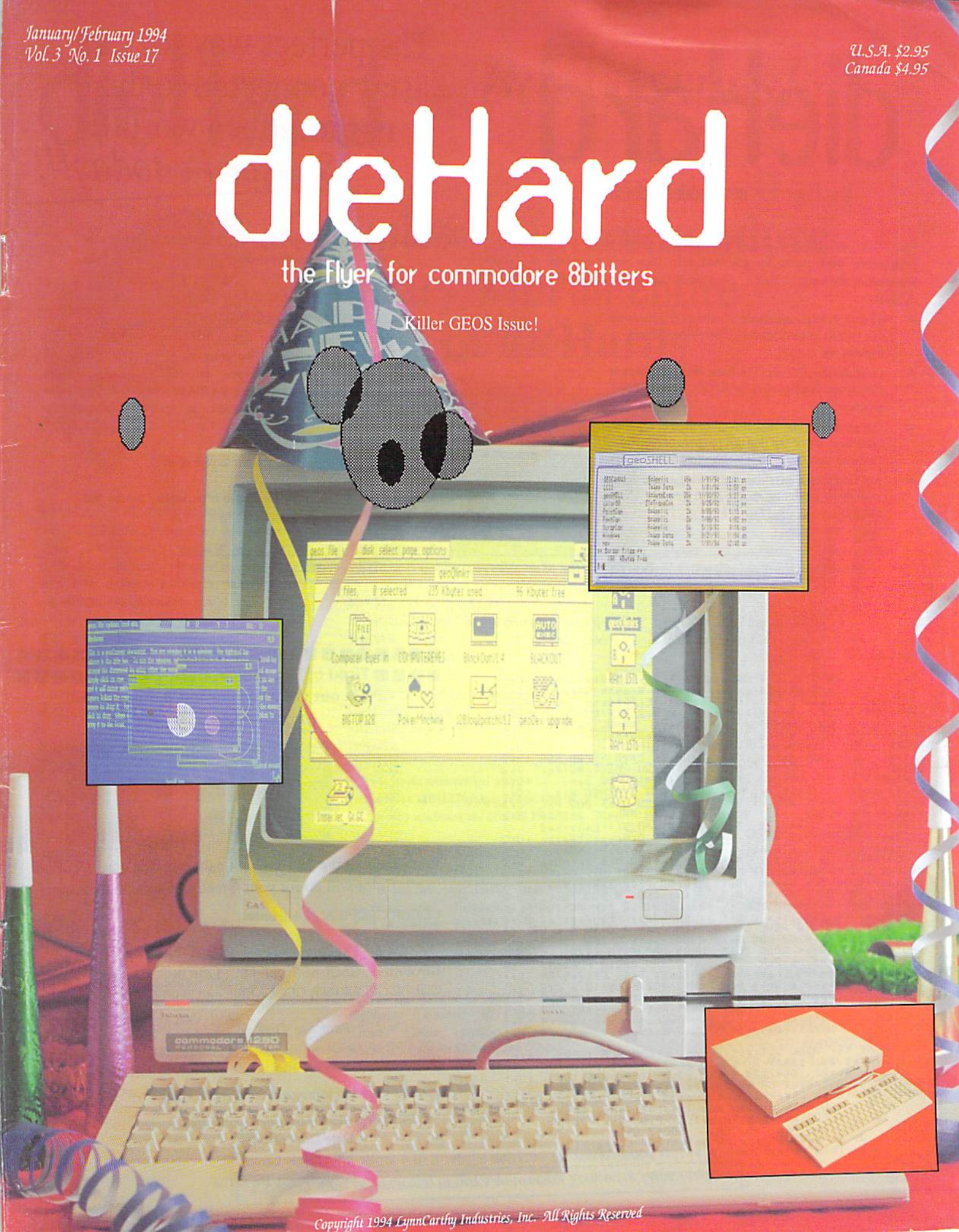
dieHard

the Flyer for commodore 8bitters

Killer GEOS Issue!



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dieHard

the flyer for commodore 8bitters

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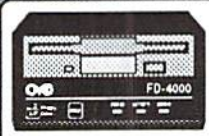

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View From The Underground
by
Brian L Crosthwaite

This month's issue is the much anticipated, loathed, long awaited, feared, joyous, anxious, morbid, loved, hated -- *Killer GEOS Issue.*

Many people love **GEOS.** Many hate **GEOS**. It seems to be a black and white issue. I have never met anyone who said, "**GEOS** is ok." It's either the greatest thing since canned beer or worse than bathing in a mosquito pond!

What makes those who love **GEOS** love it? What causes the disdain in the hearts of those who loath it? I have both sides of the story from my own personal experience. This is *my* story.

My first **GEOS** package was version 2.0. This is the complete package. **geoWrite** and **geoPaint** came with it and I was exposed to what it could do right away.

When I installed it, I just had to buck up and follow the instructions no matter how hard they were to understand. I managed to get it installed with no problems, but was rather dismayed that the instructions were so complex for such a simple thing. It must have been written by an MS-DOS programmer -- "I've got plenty of paper here."

At the time I was using the **Paperback Writer** on my C64. It had an 80 column display. It had everything I wanted in a word processor.

I'd never thought of using any graphics in my documents. If I wanted a picture I'd dump a Simons' BASIC screen to my printer then turn back the paper. This was the extent of my mixing graphics with words. I didn't need any more.

geoWrite only displayed 40 columns on the screen and had that annoying side-to-side scrolling. If I used the option to open the document up to a full page, the screen had to scroll twice, redrawing each time, before I could get across it to the other side. I soon adapted to this, sometimes setting the margin on the right at a point where it wouldn't scroll. I would then go back and move the margin after all my editing was done and I was ready for printout.

The printouts were spectacular on my MPS 1250 printer using the Epson FX80 print driver. But the time involved using the system was almost unbearable. My C64 was pushed to its memory limits and my FSD-1 drive seemed to take forever. I had managed to speed up the FSD by 50% using the Turbo Load And Save cartridge -- but it wasn't enough. I needed an REU. But the prices were astronomical!

Enter GEORAM. The price was a bit step for me at the time but I needed speed. 140 and some odd dollars later I had everything reconfigured. I could now get things done in a reasonable time. I saw what made **GEOS** such a hot software package.

I got a taste of what must have been many a user's frustration when my MPS 1250 ate a power cable.

I hooked up my Banana Gorilla printer with my Card? B parallel interface. It was slower than the 1250 in serial mode! It printed at 60 dpi, took forever, cut off dang near half the page and looked like crud! Needless to say I was glad to get my 1250 back.

My 1581 drive entered my geoLife and things have never been the same. Mass storage and high speed -- who could ask for anything more. I got a C128, then a C128D and soon after I got **GEOS128 2.0**. I got a full 80 columns in **geoWrite** with no sideways scrolling! **geoPaint** worked in both the 40 *and* 80 column modes!

Somewhere along the line I got **geoPublish.** I played with it once and decided it looked better on the shelf in its box... ...until one day.

I was prompted to pull **geoPublish** out and something went snap in my mind. This was easy to use! I didn't need to be intimidated by it. Everything is there on the screen. My computer used to have **GEOS** up and running 1% of the time. Now It's closer to 90%.

My wife, who is a dieHard graphics interface hater, one day told me how she got into **GEOS** and found a file on her disk and printed it while I was not there to help her. She was as proud as our two year old when he first poopooed on the potty!

There will always be those who hate **GEOS** and those who love **GEOS**.

The final string in the bow of my love for **GEOS** was tied by an HP LaserJet 4ML. The most costly addition to the system I now use. It was $999.00 -- that's a G to an accountant (vs a K to a programmer)! **GEOS** speaks its language -- PostScript. This is one of the most awesome programming languages for any machine. This will take your 8 bit C64 or C128 well beyond the 1990s.

I could have scrapped what I had and dropped a load on a clone, but then to get into PostScript would have cost even more. My software collection would have become useless and I would have lost something I truly love -- a colorful machine that I can program with ease. Instead I gained a powerhouse of productivity. Example? This magazine is printed off that laser printer from my C128D.

Not convinced? The most requested back issue of *dieHard* is our **geoIssue**. Enjoy and have a happy 1994!

READY.
■

dieHard
Volume 3 – Number 1 – Issue 17

Killer GEOS Issue
January/February 1994

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View From The Underground..... 4
INPUT;READER$..... 6
C128 Graphic to FGM to GEOS Conversion..... 8
Oops!..... 8
Rarities..... 9
Rarity..... 19
geoTips..... 11
Basic BASIC..... 12
GEOS Meets Laser..... 13
Putting the Impossible on Paper..... 15
To Buy or Not To Buy..... 18
Declare your Independence!..... 19
Cyberspace Cowboy..... 20
Telecommunications, Your Commodore And You..... 21
REVIEW!..... 22
Trader's Corner..... 24
Archaic Computer..... 25
Q & A..... 27
DOS & Don'ts..... 30
PRG..... 31
PIE, HIRES BASE, TEXT PLOT, 3D-Graph

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A few months back I told Brian (on my BBS) that although I liked *dieHard*, it was just a bit too basic for my needs. The November issue has me eating my words. I read the issue from cover to cover three times, and it was just great. The bit from our "Cyberspace Cowboy" was nifty, and the editorial from Roger Gouin brought back many memories from my old VIC20 and CP/M days.

In **Rarities** you mentioned a post from Nymphette on Q-Link and the **C-Net 128** program, which is into version 6.0 at this time. You also mentioned my BBS, the one Brian calls in Florida.

You were correct about a BBS being subject to customization by the SysOp; mine being no exception. Being a programmer, I have written many "Mods" for the code as well as adding a few "bells and whistles." However, **C-Net 128** runs out of the box with very impressive features. It is also the heart beat of the PEARAKO Network, a system of C128 BBS owners that reach from Miami to Alberta, Canada.

Just in case you were wondering, running a BBS takes a bunch of equipment and time. My system has a C128, 9 Meg RAMLink, 85 Meg CMD hard drive, 1571 drive, Aprotek 2400 baud modem and a Magnavox RGB monitor. The entire BBS program runs out of RAMLink, including the information area. That takes up close to the full 9 Megs of space available in the RAMLink. The hard drive holds my program exchange area and all the backup files for the main system. I have hundreds of PD and Shareware programs available for free download.

I, like Roger Gouin, would rather program than use. It's something that gets into your blood and just won't go away. I agree with Roger's assessment of the computer industry. Commodore had been trying to put itself out of business for the last ten years. It almost made it a couple of times. The only thing that keeps the MS-DOS world going (my opinion) is the drastic price reductions that have taken place over the last five years. It sure isn't the "INTEL" chip. It's a wonder the darn thing even works, considering the patches that have been added for downward compatibility. The processor speed is fast because if it was slower it would take forever to get anything done in that miss mash of foolish logic paths. I can still do things on my stock 128 that the 486 machines can't do without extra boards and memory. I have friends who say they are experts on IBM and compatible machines. If I boot their machines and dump them into raw DOS, they can't even format disk or bring up a directory. So much for "the expert."

One of your readers asked about leaving the computer and drives on for long periods of time. My BBS runs 24 hours a day, seven days a week. All the equipment is on at all times. It's been operating that way for over five years. The only time it's been off is a three month period after Hurricane Andrew came ripping through my house and dropped the roof and a ton of water on everything. Even after that, I just opened up all the cases, dried out the guts and put the system back online when we finally got power back. **commodore** equipment is tough stuff folks. It will stand the test of time if you keep it cool. Heat is the number one killer of computers and drives. Michael Eglestone, SysOp DiamondBack BBS, Princeton, Florida.

I read with interest "On the Future of a New Medium" by Roger Gouin. Maybe there are a lot of us out there. I have had my C64 since 1983 and love it more each day. My husband has gone on to "greater heights" by purchasing an IBM-clone notebook and many -- if not most -- friends have the status symbol computers also. I've used my husband's Travelmate (TI) and, yes, it's fun. But, I wouldn't know how to program it if I read every book he has on it; nor would I be able to program the computers of my friends. They're all pre-loaded with such software/Disk Operating System, etc, that make it next to impossible for programmers to be creative.

With my little friend the C64, however, I can flip the power switch and I am ready for a new adventure every day.

The "canned computer" may be fine for many, but has anyone ever noticed one of the most annoying things about commercial software that some of us have? That is many software packages are fun, easy to use, useful and have many leisurable features, BUT, they usually aren't exactly what you're looking for. THEY ONLY COME CLOSE. So you've paid your money, torn open the package, loaded and run it, and then cannot return it. So you keep it and use it, or you just keep it.

So, yes, there are many reasons for owning a C64, but the primary one for a lot of us is the ease of being able to write custom-tailored software that will do exactly what you want, when you want, how you want, and where you want. Long live the 8-bitters. Linda J. Tanner of Black, Missouri.

First I want to say what a great job you are doing with *dieHard*. I am a new subscriber. I was expecting to receive a pamphlet like *Questbusters* or something. Instead, I find a full-blown magazine, very professionally laid out and edited, with loads of useful information. I really was never very satisfied with *RUN* or *Compute's Gazette*. It is hard for me to describe the element they were missing or were short of, but it is something to do with being on the same level as the reader. That is not totally it, but anyway, *dieHard* has that element they were missing, and it makes for very interesting reading.

I also commend you for being willing to print unusual or different points of view, such as found in Roger Gouin's article "On the Future of a New Medium." However, I strongly disagree with Mr. Gouin's entire premise, and with his rather twisted view of computer development history. The idea of a computer being an expansion of one's brain may be a novel idea, but it is not a very accurate one. Computers can certainly be used as learning tools, just as they can be used for other tools such as publishing, printing, telecommunications, playing games, etc. Even though I have become very dependent on using computers in my daily living, both for work and entertainment, I do not need it to help me think. I use it to express ideas, but I can do that with a pen and paper; does that make a pen and paper an expansion of my brain? I think not.

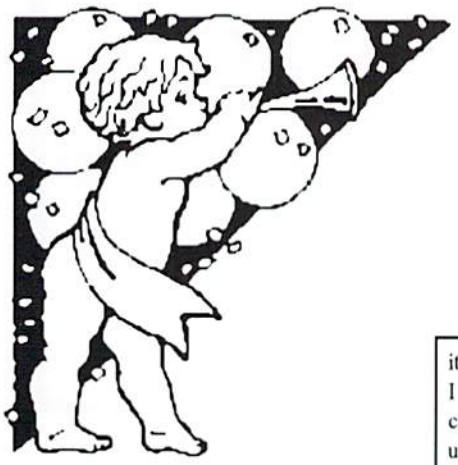
I really take issue with Mr. Gouin's statements regarding multitasking being an unnecessary complication, and that 16 bit computers are too complex. In additional to my C128D, I use an Amiga 2000 and other computers. I often have more than one machine running at a time, and utilize multitasking on the Amiga also most every time I turn it on. It is very convenient to be able to type a letter, play a game, or format a disk while downloading something, and without having to exit a program each time. When I use computers, I often find the need to change tasks, and switch back and forth between them, sometimes several at a time. There is no computer which comes close to the complexity of the human brain. We multitask constantly in our thinking. A computer that can emulate this is a very useful tool.

Another totally inaccurate statement Mr. Gouin makes it that the home entertainment industry is dying. Even though he gives a couple of examples of individual stores that stopped selling software for whatever reason, the computer game industry has never been bigger, and it is growing at a tremendous rate. Walk in to a Computer City or Comp-USA, and you will see shelves brimming with games which are selling briskly, including the new CD ROMs Mr. Gouin scoffs at.

Programming is not an end in itself, nor is

INPUT;READER$

Letters from our readers!



Pisces
Feb 19 - Mar 20

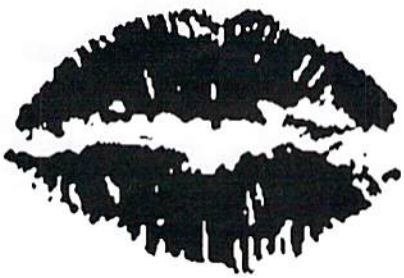
INPUT;READER$

it the purpose of computing. Mr. Gouin implies both. I have nothing against anyone loving to program computers. Without programmers there would be no users; but without users, programmers would have no purpose. He is right the C64 is easier to program than many of the 16 bit computers, but it is also one of the easiest to use as a tool for accomplishing real world tasks. I consider my C128D to be one of the best designed personal computers in the world, but there is no such thing as one computer better than all the rest. Macs, IBMs, Ataris, Amigas, and C64s ALL can do some things better than the others can. They can also communicate and compliment each other in accomplishing such tasks when needed. Because of the different limitations every platform has, the computing world is better off with all of them in it. John Lewis of Irving, Texas.

READY.
■

Happy Valentine's Day!

Aquarius
Jan 20 - Feb 18



Killer GEOS Issue!

C128 Graphic to FGM to GEOS Conversion

R. Scot Derrer

In the December 1993 issue of *dieHard* we published a C128, plus/4 and C16 40 column program, **Christmas Deers**. This program draws two deers on the screen with a message. I ran the program to display the graphic and then reset my C128D with the reset button going into 64 mode. Then I loaded Ron Hackley's **Fun Graphics Machine** and using **FGM**'s Screen Finder, 'grabbed' the Christmas Deers graphic that was still in memory and saved it to disk as a HIRES graphic. In **GEOS**, I converted this HIRES graphic file into **geoPaint** using Joe Buckley's GRAPHIC STORM. As you can see, it worked out quite nicely.

```
READY.
```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Oops! or '$&"%;*!:?@

Issue: Nov 93 Program: ***Print Note 64***

```
80 DATA245,169,13,32,210,255,169
  ,4,32,195,255,32,204,255,76
  ,116,164
```

Issue: Oct 93 Program: ***Decimal To Binary***

```
270 PRINT B$(3)B$(2)B$(1)B$(0)
```

Issue: Oct 93 Program: ***RX Demo Boot***

```
40 AU$="LOADING RX PGM SHELL ..."
```

Issue: Oct 93 Program: ***RX PRG Shell***

The effect of the flashing border can not be seen from the Shell. The Shell was intended to be tied into your own program, but the demonstration of how the flash works got lost.

```
0 FOR T=1 TO 20000:NEXT:SYS
691:REMOVE FOR-NEXT LOOP IN ACTUAL
PROGRAM
1POKE53280,PEEK(267):REMRESTORE
TO ORIGINAL BORDER COLOR
2 PRINTCHR$(147)CHR$(5)"THIS IS A
DUMMY PROGRAM USED TO ILLUS-"
5 PRINT "A VERY LONG PROGRAM."
```

```
READY.
```


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R. Scot Derrer

Rarities

The **geoPublish Compendium** is a must for geoPublishers interested in laser printed documents. Other items available from Quincy Softworks include **TopDesk**, a Windows-type environment for **GEOS**. **BIGSTAMP** is an upgrade from **geoStamp** and provides the ability to "stamp" **GEOS** graphics in a variety of patterns. The **DweezilDisks** are a wonderful collection of useful **GEOS** Applications. **DweezilDisk 1** contains **NewTools2 and Marker**, which lets you put 'pencil' marks on your **geoPaint** measurements, and four **GEOS** pattern utilities with over 90 patterns. **NewTools2** allows you to rotate, arch, and arrow **GEOS** graphics. **DweezilDisk 2** contains **Ultipatt**, a serious **GEOS** pattern program with 1600 patterns, and **The geoGLOBE Collection,** a global time and distance calculator. **DweezilDisk 3.5** contains an upgrade to **DweezilLabel** called **DweezilLabel 28, MYgeoDIARY,** (a **geoWrite** compatible application,) and **geoWORDS,** (a word search game). Personally, I cannot preach enough praise for this software. Well documented, reasonably priced, quality **GEOS** software with a guarantee that "Dweezil Never Bites!."

DweezilDisk 1	$ 17.95
DweezilDisk 2	$ 15.95
DweezilDisk 3.5	$ 20.95
Upgrade from **Disk 3**	$ 5.00
DweezilDisk 3	$ 15.95
TopDesk	$ 19.95
BIGSTAMP	$ 18.95
Upgrade from **Geostamp**	$ 5.00
Geostamp	$ 13.95
geoPublish Compendium	$ 5.00

Contact *Quincy Softworks, 9479 E. Whitmore Ave., Hughson, CA, 95326-9745.*

For $12.00 you can get a set of four MULTI FONT disks from Mary E. Wilson. Each font has seven point sizes and each point size is a different font. Within **geoWrite 128** you can access nine fonts total (including **BSW** and **BSW 128**). Add seven Multi Fonts with seven point sizes each and you have a total of 51 different fonts accessible at one time from within **geoWrite**. This is a very impressive collection of fonts. Write to *Mary E. Wilson, 2300 Chaucer Street, Clearwater, Florida, 34625-4203.*

Spike Dethman has a disk of **GEOS** Shareware/Freeware available for $9.95. **GEOS DISK ONE** contains 13 useful and interesting **GEOS** applications such as **geoPack**, **Print Rotate**, **KoalaVert**, **geoCrypt**, **Port 2 Drivers**, **RAM Boot**, and more. Write to *Spike Dethman, 831 Mercer Street, Atlanta, Georgia, 30312.*

The latest version of **geoCanvas** is available from Nate Fiedler. **geoCanvas 3.0** costs $28.00 (for the 64 or 128 version) and the upgrade from **geoCanvas 64 1.2** is $13 with the old disk. Write to *Nate Fiedler, 5711 Mt. Pleasant Road, Bernville, Pennsylvania, 19506-9313.*

Australia is hopping with kangaroos, er, **commodore** activity these days. Mrs. Jane M. Jones of **JMV Graphics** is currently doing a lot for the **GEOS** world down under. Impressed by her articles in *geoVISION International* [RIP], I just had to send for her advertised booklet, *The World of Geos Handbook* with a companion disk. This is an excellent manual for **GEOS** users and there's a lot more where this came from.

The World of Geos Handbook w/disk	$ 15.00*
The World of Geos Handbook II	$ 15.00*
The World of Geos Handbook III	$ 15.00*
The Handbook of the Commodore 64	$ 15.00*
The Handbook of the Commodore 128	$ 15.00*
The Handbook of Commodore Disks	$ 15.00*
9 Clip-Art geoPaint pages	$ 10 .00*
(First two -- $10 each. Two or more -- $5 each. 9 to 16 graphics in each page)	
Graphic Scanning & Conversion	$ 5.00 + p&h
(First image-$5, each additional page-$2)	
*Postage and Handling	$ 5.00 each

JMV Graphics, P.O. Box 635, Blair Athol, 5084, South Australia. As we find out more about what's available for 8-bitters from Australia, we'll let you know.

Harvey and Associates, Inc. is selling some Public Domain **GEOS** and non-**GEOS** disks. They also sell and service commodore computers and Citizen printers.

12 **GEOS** graphics disks	$ 15.00 + p&h
12 **GEOS** font disks	$ 15.00 + p&h
10 C64 demo disks	$ 12.00 + p&h
7 C64 graphics disks	$ 10.00 + p&h
21 Stereo SID music disks	$ 25.00 + p&h
Postage and Handling (p&h)	$ 3.50
New Commodore 128D computers	$195.00 + p&h
'Super Earl Mouse'	$ 39.95 + p&h

Contact *Harvey and Associates, Inc., 1409 Mill Street, Laramie, Wyoming, 82070.*

A neat disk called **AlbumCopy & ScrapGrab, GEOS Applications & Accessories** by Michael Myers is available. On it, you'll find **AlbumCopy 2.2**, **ScrapGrab 2.5**, **PhotoGrab 2.5**, **InfoBox**, and 7 fonts. Unfortunately Michael had Muscular Dystrophy and recently passed away. We made arrangements to assist Mike's mother sell this Shareware disk so she can raise money to buy a tombstone for Mike. If you're interested, send $12.00 to *MMTS Fund, 1529 Longmont Ave. Boise, Idaho, 83706-3731.*

Bill Zeilinger purchased his first C64 in 1985 to do bookkeeping and correspondence for his graphic design business with intention of getting an Amiga later. With **GEOS** and Q-Link within his reach he drew some pictures and uploaded a couple to the Q. The response was overwhelming. (Who needs an Amiga?) He went back to the computer, made his first three disks, found an online computer store, sold his first order and Those Designers was born.

That was in 1986. There are now 23 **DISKART** disks with three more in the works. Price per disk ranges from $8.50 to $10.50 plus shipping and handling. See Page 19!

Those Designers, 3330 Lewis Avenue, Signal Hill, California, 90807 or call (310) 427-6742 for tel. and fax.

Watch for reviews of the above products in upcoming issues of *dieHard.*

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Epson LX 810	**$ 139.00**	**Joysticks from**	**$ 5.95**
(1) LT. Kernal 64	**$ 395.00**	**(1) LT. Kernal 128**	**$ 495.00**
(1) CBM 40/40 Dual Floppy	**$ 200.00**	**C64 Power Supply**	**$ 39.95**

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geoTips

HELP! = HELP

This tip is for use inside or outside of **GEOS**. Sometime you may find yourself with two files with the same name or worse yet, one with no name at all. Some programs, like **DOS connection**, will produce files with the same name.

If you don't want to scratch the *first* file, there may be some hacking involved to rename or remove the second file. **GEOS** to the rescue! Open the disk from the **DESKTOP**. Highlight the file you want to alter. Press <C=><M> or select the rename option under the *files* menu. To delete any file, with or without a name, simply put it in the trash can! This will work even if there are two files with the same name and you want to scratch the second file.

Which way is in?

If you are using **Wrong is Write** to convert files from ASCII to **geoWrite** with your drives set up as follows, you may be pleasantly surprised.

Drive A is your PETASCII disk. This is good, you need the file on an accessible drive.

Drive B is your REU with **Wrong is Write**. This is good, you want to place the program on an accessible drive.

Drive C is your disk you wanted to put the new **geoWrite** document on. This is not an accessible drive!

While in **Wrong is Write**, you can switch drives, including Drive C! No problem simply keep selecting DRIVE at the File Requester.

Slow Flow...

Some text files, after converting to **geoWrite** from another source, wind up only 40 columns wide with hard returns at the end of each line. About the only way to remove these is to delete them one by one. This is a painfully slow process, especially with a small font size. The screen takes a long time to redraw, much like running through three feet of mud! A larger font helps a little, but it takes longer to draw each individual character.

<C=><V> highlights the screen. <C=><D> puts the line spacing at two or double. You can now go the the last page and, starting at the bottom, work your way up removing the hard returns. The screen-redraws will take a lot less time. When you go to remove the double line spacing start at the first page and work your way to the last page, highlight and press <C=><K>. If you do the reformatting from the back page and work toward the front page, the only page that will stay formatted will be the first page. You see, if a paragraph overlaps from the previous page onto the page you are working on, the line spacing, as well as other formatting, will adjust to the top of the paragraph undoing any changes you have made.

geoZip!

If you are using **geoWrite**, the fastest way to get to the last page is to use the *goto page* option in the *page* menu. But what if you don't know what the last page number is?! There are two ways to approach this.

If you are working with your document on a floppy disk, go to the *file* menu, select *print* . Note the page number after the *Print To* -- this is the page number of the last page. Select *cancel* then select the *goto page* option and enter the last page number.

If your document is in the REU, simply enter a space into the text, then delete it. Then go to the *goto page* option. The text will ripple and display the last page number on the top of the screen where the current page number is usually found. Enter the last page number and hit <RETURN>.

File 16

If you work with your application in the REU, your files on the disk and you have more than 15 files on disk (the limit for most applications), you need not necessarily rearrange files to access the 16th on. Make sure the application is not on the disk, but is in the REU. Now, open the file you want to work with by double clicking on it. It will open up and you can work on it as if you opened the application in the REU and selected it from the requester box. Of course, if you close it for any reason and want to reopen it, you will have to reopen the disk and double click on the file again to access it. (Make sure the data disk and the REU are drives A and B).

Bolding Blues

So you've finished a document in **geoWrite** but forgot to bold (or italicize, underline, etc.) a word you have throughout the document. With the cursor at the top of the document's first page call up the search box <C=><S> and enter the word you need to alter into the *Search For* box. Hit <RETURN>. This will zip you to the first instance of the word (unless it is the first word in the document -- you'll just have to highlight that one first and bold it using <C=><B>). While the word is highlighted press <C=><B>, then <C=><N> and the next instance of the word will appear. Repeat the process until you wind up at the first instance of the word again, it will be bolded.

You can do this with any of the text style options, simply enter the <C=> key combination to alter the text. If you need to alter the word (correct spelling, make plural, etc.) enter the desired replacement into the *Replace With* box back in the *search* requester. Instead of <C=><N> use <C=><Y> to replace the word *after* you alter its style.

This method will turn into a nice rhythmic series of keystokes that make the altering of text fast and easy.

The Final Word

The quickest way to get to the bottom of the page is to click on the window bar inside the page number box and drag it down to the bottom of the box. Even if your page is only 1/4 page in length you will still be at the bottom of the text and the window bar will reset itself to the proper location.

To zip to the end of the last line of text you can also scroll the text up by pressing <CRSR DOWN> key. Once the cursor is on the last line one more <CRSR DOWN> will usually cause the cursor to jump to the end of the line.

READY.

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Basic BASIC looks at Programming GEOS!

by R. Scot Derrer

If you like **GEOS** and are interested in developing **GEOS** compatible programs, then you're in luck. **geoBASIC** and **BeckerBASIC**, are BASIC programming languages, both of which work with **GEOS**.

Becker BASIC

Originally developed and distributed by ABACUS, **BeckerBASIC** was introduced as an easy way for programmers to write **GEOS** applications in BASIC.

The **BeckerBASIC** system expands the C64's BASIC 2.0 by offering 273 new BASIC commands. Machine language programmers can then create their own commands (programming is done outside of **GEOS**). Commands are numbered and listed by category: sound, high-resolution graphics, sprites, disk commands, memory access, program development, and input/output. **BeckerBASIC** provides three different interpreters (systems): Input, Testing, and Run Only.

The Input system resembles the C64's screen editor, and can be used to create programs to run from the Testing system. You can toggle between these two systems without losing the program. Once programming and testing is completed, the program can then be run from the Run Only system. The shortcomings are few, but noteworthy. There is support for only a few **GEOS** features. It is not easy to access icons, alternate fonts, or disk turbo routines. Text entered in BASIC must be converted to true ASCII, which **GEOS** uses, before it can be displayed.

geoBASIC

RUN was instrumental in developing the newer **geoBASIC**. You must have **GEOS** to execute **geoBASIC** programs. Existing BASIC 2.0 and 7.0 programs will not work within **geoBASIC** and **geoBASIC** programs will not work outside of **GEOS**. **geoBASIC** applications will work within **GEOS 2.0** (40 columns only), but will not work with earlier versions of **GEOS**. Since it was written with C64 compatibility in mind, it lacks some C128 compatibility. All faults aside, **geoBASIC** makes programming very easy, simple, and almost effortless. Programmers of all skill levels will like this product. Akin to the spirit of **GEOS**, it utilizes drop-down menus and the mouse for its options.

geoProgrammer

There is a non-BASIC **GEOS** programming application -- **geoProgrammer**. **geoProgrammer** is a powerful and sophisticated set of assembly language programming tools designed specifically for building **GEOS** applications. There are three components to **geoProgrammer**: **geoAssembler**, **geoLinker**, and **geoDebugger**. This package is one of the most powerful development tools offered for the C64. In the hands of a skilled assembly language programmer -- who knows what new programs could be developed?

READY.

■

BeckerBASIC
geoBasic
geoProgrammer

Available from:

Creative Micro Designs
P.O.Box 646
E. Longmeadow, MA 01028

Software Support International
2700 NE Andresen RD
Suite A-10
Vancouver, WA 98661

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64 DISK CONNECTION

4291 Holland Rd., Suite 562 · Virginia Beach, VA 23452
(* Formerly RVH Publications)

GEOS Meets Laser

by Douglas Bober

Have you ever wondered if your C64 or C128 could print high quality documents? Something better than 80dpi -- "typeset quality?" 80 dpi is all right but for truly professional looking documents, you really need something better. Especially if you own a small business and design your own business forms, flyers, etc. Being in the printing field, I know how much typesetting can cost. Now, as **GEOS** users know, with **geoWrite** and **geoPublish**, you can easily design some great looking documents. Take this magazine for example, it is written and designed on **commodore** 8 bit equipment, then printed on a laser printer using PostScript, a page definition language. More on that later...

But it isn't as simple as buying a printer and "plugging it in." In order to print 300 dpi you first need a laser printer that is PostScript compatible. The fonts you have been using so far only print 80 dpi on your dot matrix printer. These fonts will print on a laser but only at 80 dpi. To get "typeset quality," you need a PostScript Laser Printer and the LW_Fonts found on your **GEOS** Master Disks. (There are seven additional LW_Fonts on Q-Link.) Some laser printers come with PostScript already installed. Most do not, in fact some of the cheaper printers are not even PostScript compatible. Make sure the printer you are considering is! That is very important, without it you will never achieve 300 dpi. Isn't that the objective with a laser printer? You will also need a way to connect your printer to your **commodore**.

For this article, I will use my equipment as an example. You don't have to use the same exact printer, PostScript cartridge, etc. I only cite these brands because they are the ones that I have experience with.

Hardware

I have a Hewlett Packard LaserJet IIp *plus*. Its features include a 70 sheet paper input tray which also feeds envelopes, transparencies, and labels. PCL 4 printer language (this is only used when printing **geoPaint** files), 512K of memory which is expandable to 4 Megs, and a replaceable toner cartridge. Hewlett Packard's user manual is very easy to understand. You'll be a pro in no time.

Next is PostScript. I use the PacificPage PE PostScript Language Emulation Cartridge. This cartridge contains the 11 Apple LaserWriter fonts. The cartridge just plugs into the cartridge port on your printer, following the instructions for your printer of course. With the PacificPage you get a disk containing the matching screen fonts for Windows 3.1 which is useless to us. The LW_Fonts found on your **GEOS** Master Disks contain the screen fonts and the PostScript printing codes.

PostScript requires at least 2.5 Megs of RAM in the printer. The HP IIP+ comes only with 512 K. You will need to expand the memory with a memory expansion board. You can buy these boards in 1 Meg increments. If you decide to increase the memory, then all you have to do is press more DRAM chips in on the board. The manufacturer supplies you with the chip numbers. I think all you really need is 2 Megs unless you are using a lot of bitmaps with 300 dpi smoothing. Even with all the bitmaps in this magazine, I never ran out of memory. Make sure the expansion board you purchase is designed for your printer.

Interface

There are two ways to connect the printer to your **commodore**. The first is to use an RS-232 interface. This is the way **geoLaser** and **geoPubLaser** were designed to work, if you can still find this interface, it would be the easiest way to go. But an RS-232 interface is very slow, because it sends data to the printer one bit at a time. The preferred way is to use the geoCable. This cable (available from George H. Wells) connects directly from the printer's centronics parallel port to the **commodore**'s user port, without any type of interface. This cable transfers data one byte at a time. It is therefore much faster. **geoLaser** and **geoPubLaser** are the programs that actually print your **geoWrite** and **geoPubLaser** documents respectively, not the print drivers that you are used to. They were originally designed to work with the (slow as molasses) RS-232 interface, not the geoCable. In order to use the (faster than a speeding bullet) geoCable, **geoLaser** and **geoPubLaser** must be modified with the **PS.Patch** program (available from CMD on the **Collette Utilities** disk). The **PS.Patch** will patch **geoLaser** and **geoPubLaser**, so that they will work with geoCable! I know, that was really confusing! Go back and read that paragraph again, I'll wait.

Parallel

Ok! In my opinion the geoCable is the best way to go. Sure, it means patching **geoLaser** and **geoPubLaser**, but once you are set up and running, you will appreciate the speed of file transfer. One page, full of type, with no bitmaps, takes about 30-45 seconds to download and print. Bitmaps and non-LW_Fonts take extra time. Complex bitmaps can take as long as 20 minutes to print (especially if you choose "smoothing" in **geoPublish**) The reason is, bitmaps are not PostScript addressable. Remember, the fonts are actually "in the cartridge," they are addressed and placed in thier proper place by the PostScript codes from **GEOS**. When it comes to bitmaps, PostScript must calculate and then place each individual pixel on the page. This is actually done in memory, not on the sheet. Once the page has been "painted" in memory, it is then printed on the sheet. That is one of the many reasons why you need the additional memory.

Serial

For those of you who want to use the RS-232 interface, just follow the instructions in the **GEOS** and **geoPublish** manuals. For those of you that want to use the geoCable, read on...

Printing from geoLaser and geoPublaser

Copy the **PS.Patch (GC)** program on to a disk with both **geoLaser** and **geoPubLaser**. If your version of **geoPublish** came with two disks you will need to use the **GEOPUBLASER1.8** instead of the one that came with your **geoPublish**. If you have the single disk version of **geoPublish** you will need **GEOPUBLASER3/10/93**. Neither of these come with the right **geoPublish**, but can be found in the Q-Link Libraries. If you do not have the

GEOS Meets Laser

correct version of **geoPubLaser** you will not be able to make a working patched **geoPubLaser**.

Double click on the **PS.Patch (GC)** icon and follow the instructions on the screen, it's easy! This program will patch **geoLaser** and **geoPubLaser** to send the PostScript data from **GEOS** via the geoCable. This patch strips the 9600/1200 baud Dialog Box. There is no reason to choose the baud rate since the data is being transferred via the parallel port

Printing from geoWrite and geoPublish

There are no patches to make to **geoWrite** or **geoPublish**. You get used to the WYSIWYG (What You See Is What You Get) format in **GEOS**. Everything that you type as it appears on the screen, will print the same way on your dot matrix printer. This is not necessarily the case when your document is laser printed. Do not use spaces to align your text. Use tabs and movable margins to position your text. Left, center, right, and full justification work as usual, just don't use spaces to center or right justify any text. Remember to keep a copy of the LaserWriter 2.1 driver for serial RS-232 use or LaserWrtr 2.1_GC (**Collette Utilities**) for geoCable use on the disk with **geoWrite**. Laser printers have a longer page length than dot matrix printers supported by **GEOS**. This printer driver will set the correct page length in your document so the top and bottom margins will be even. There is no need to do this for **geoPublish**. All graphics created in **geoPublish** will print at 300 dpi, because they are PostScript addressable. You can create some really great looking graphics in **geoPublish**.

Printing **geoWrite** and **geoPublish** documents is easy. Just follow the instructions in the **GEOS** manual. As stated earlier, the baud rate Dialog Box will not appear, so just ignore that part of the manual. Also, when using **geoLaser** or **geoPubLaser**, the screen will not blank. Instead, it will fill up with "garbage" any time data transfer takes place. The reason is that **geoLaser** and **geoPubLaser** use some memory space allocated for the Video Interface Controller (VIC) chip. This is normal. Think of it as a screen saver! It will clear-up when finished. This only occurs in 40 column mode. You will not get reliable results from 80 column mode with the patched version of **geoPubLaser**, simply use it in the 40 column mode.

Here is a listing of what you need and where to get it.

1. geoCable $25
   George H. Wells, Jr.
   1620 Victoria Pl.
   La Verne, CA 91750

2. Collette Utilities Disk $19.95 + p&s
   (PS Patch/LaserWriter 2.1 GC)
   Creative Micro Designs
   P.O.Box 646
   E. Longmeadow, MA 01028

3. Additional LW_Fonts
   GEOPUBLASER1.8
   GEOPUBLASER3/10/93
   Q-Link
   Also try GEnie, and your local BBS

If you have any questions, you can contact me on Q-link. Send E-Mail to RENTaLASER. I'm also on GEnie; you can reach me at D.Bober. Or you can mail me at:

Douglas W. Bober
905 Tidal Terrace Drive
Allison Park, PA 15101

Printing from geoPaint

Printing **geoPaint** documents is a different story. You do not need PostScript. The printer instructions will explain how to change from PostScript mode to PCL 4. Now your printer will act like a dot matrix printer. geoCable users will have to change drivers (if you already have the LaserWriter 2.1 on the same disk) to LaserJet (GC). That driver is available on Q-Link. For some reason LaserJet (GC) doesn't set the proper page length in **geoWrite**, therefore you'll have to swap drivers when printing **geoPaint** documents. The LaserJet (GC) driver is designed for geoCable. LaserWriter 2 works with the RS-232 Interface. Just follow the instructions for printing **geoPaint** docs in the **GEOS** manual.

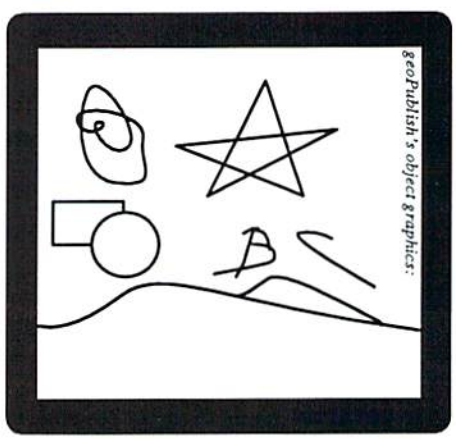
The Future

The C64 is now 12 years old. The industry has dropped the 8 bit computer for the newer and faster 16 and 32 bit machines. Computers made only a few years ago are now "obsolete", the INTEL 486 has a maximum clock rate of 66 MHz. A bit faster than the 6510 or the 8502, which run at 1 and 2 MHz respectively. **GEOS** took the **commodore** into the eighties, **GEOS** with a laser printer will take the **commodore** into and beyond the nineties. Just think of it! What computer has ever lasted this long and still had this much support. Whoever thought that with **GEOS**, these little computers could do the things they do, or that laser printers, one of the most advanced pieces of computer equipment, could print high quality documents created with an 8 bit **commodore**!

Of course, you don't need to buy a laser printer and a separate PostScript cartridge. There are many printers made now with PostScript installed. And they have come down in price since I bought my LaserJet (Rats!). As I said earlier, it isn't one of the easiest things to undertake, but when that first page comes out of your printer, you won't believe your eyes!

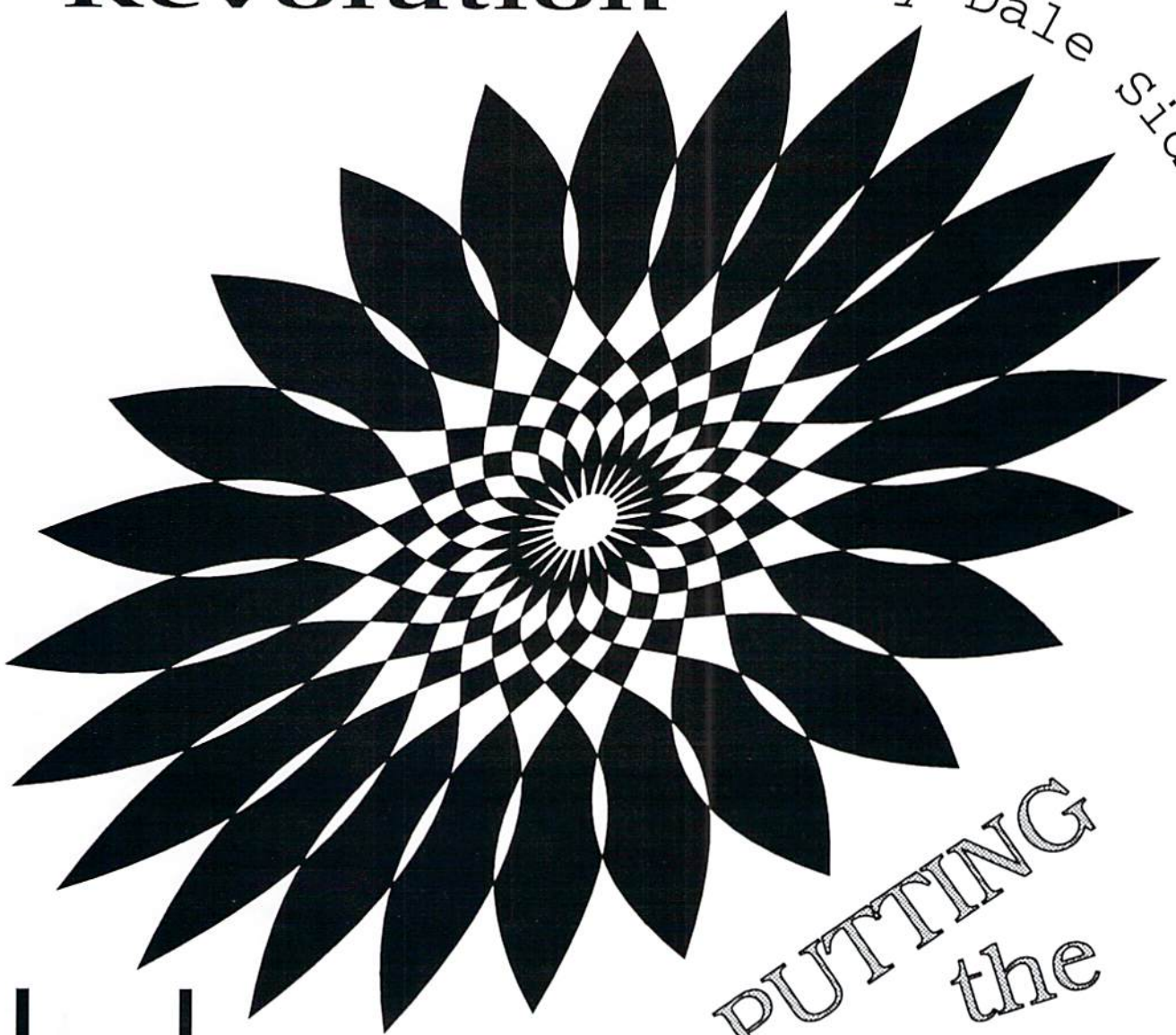
Happy GEOSing!

```
READY.
```



Commodore's PostScript Revolution

By Dale Sidebottom



Look Ma, NO Jaggies!

PUTTING the IMPOSSIBLE on PAPER

Can your **commodore** print what you see on the opposite page? Oh yes, it can!

Ever since it practically invented "desktop publishing," PostScript has been the rage. It is widely regarded as the very best of its type. Other desktop publishing languages may be faster, but none combine the quality, power, and flexibility of PostScript.

PostScript believes in equal opportunity. Like BASIC or Pascal, it is composed of commands sent to the printer from ASCII files. It does not care if you use an Atari or a Cray super-computer. Nor does it matter if you bought your computer for $10 at a yard sale or for $10 million from a defense contractor. If you send exactly the same code, you get ***exactly the same results!***

We, as **commodore** enthusiasts, can now share in this rich bonanza. However, it is sobering to realize that when many of us bought our first **commodores**, laser printing was just a gleam in the inventor's eye. Not surprising, the development of PostScript capabilities within the **commodore** world makes an interesting story all in itself.

Should the history of the "PostScript Revolution" ever be written, the victory will have many heroes. But if you were to ask me for my "short list", I would give you four: Berkeley Softworks, *geoWorld* Magazine, Jeanine Cutler, and Jim Collette.

Berkeley started the ball rolling in 1987 when they released **geoPublish**. To provide us with the highest print quality possible, they included an application called **geoPubLaser**. It could convert **geoPublish** documents (as **geoLaser** could convert **geoWrite** documents) into PostScript files and then send them to an Apple LaserWriter. For you and I , there was only one little glitch. The going price on an Apple LaserWriter was about $8,000!

The next big step forward was the advent of *geoWorld* magazine. As *geoWorld* was laser-printed from actual **geoPublish** files, many of us got to see for the very first time what that could mean. It helped to build an appetite for better things to come. It advertised folks who could laser print your files for you. I think it cost about $3 for the first page and $1 each, thereafter. *geoWorld* always pushed us to get the very best from our machines.

One person strongly influenced by this was Jeanine Cutler. Seeing what could be done in *geoWorld*, she decided to "bring it home." She studied everything she could find about laser printers and PostScript. Everyone told her she would have to buy an Apple LaserWriter. But she refused to accept the idea that the laser printer should approximate a new car in cost!

It become her personal crusade to find an economical way to laser print at home. After spending *two years* and nearly *$2,500*, she found an answer. What she discovered was spelled out in her article published around January 1990, in issue #25 of *geoWorld*, entitled "An Affordable Laser Printer." Today a significant number of **commodore** users are hooked up to laser printers in their homes, and many solely due to the legacy she has given. I, myself, am one of those lucky beneficiaries.

Jim Collette, the last (though never least) of our four heroes, is the only **commodore** programmer I know of who has been able to make substantive improvements in **geoLaser** and **geoPubLaser**. He also created a PostScript application able to send PostScript code (as ASCII files) directly to the printer, essentially bypassing Berkeley's laser drivers.

To fully appreciate his contribution and to understand how far we have come, travel back with me in time to June 1988, five years ago. We have just received issue #14 of *geoWorld* and are reading a subscriber's letter published in Randy Winchester's column.

The subscriber talked about the ease of finding LaserWriters hook up to PCs at print shops. Since programs like **Big Blue Reader** could convert files from **commodore** computers to PCs it should be easy to get PostScript output from **GEOS** to an MS-DOS disk except for the lack of a version of **geoLaser** or **geoPubLaser** that could write a postscript file to disk. If something of this nature were to come into existence, it would revolutionize desktop publishing via **GEOS**.

Randy agreed overwhelmingly, since it was something he had wanted for quite a while, hoping that from the programmers who read his column, he might "any day now" find a patch file from one of them on Q-Link.

Well, "any day now" stretched into a year, until *geoWorld*, issue #21 of June 1989, finally declared, "The PostScript Breakthrough." Randy Winchester, again, calls the action, where he touched on the painfully cumbersome process of sending PostScript output via **geoPubLaser** over a modem.

But those days had gone, since Jim Collette had come up with a patch program that could alter the preexisting **geoLaser** and **geoPubLaser** to send output to a file. [These patched drivers usually have ***.PS*** or ***(Disk)*** at the end to distinguish them from the originals.]

The reason Jim wrote **PS.Patch** was to laser print his school paper. He was using **geoPublish** at the time, and he knew if his father could take the files to work, they could be laser printed there. So he wrote **PS.Patch** to solve his problem and ours.

A few years later, as Jeanine's homework began to pay off for **commodore**-type laser-lovers across America, we found ourselves laser printing from the serial port with the original **geoLaser** and **geoPubLaser** applications. Most of us had geoCables connecting our dot matrix printers to the parallel port. Could someone please give us a parallel version of **geoLaser** and **geoPubLaser**?

Not long after Jeanine Cutler's article appeared in *geoWorld*, she received a nice letter from Switzerland. It seems that a man there named Dan Frey was currently using a laser printer in his business hooked up to a **commodore**. Jeanine was excited to learn that he used a parallel printer driver! He, however, was reluctant to sell her a copy of it until he had made contact with the American author. Jeanine begged and begged him to send it to her for nine months before he relented, saying he could not seem to contact the author. She promised not to give it to anyone until the author could give consent to its sale.

So now Jeanine has it. She tells me over the phone how absolutely marvelous this program is. She simply connects her HP Laserjet IIP directly to her **commodore** via **geoCable** and prints with abandon! Well, she is happier than a mosquito in a nudist colony, and I am going nuts, begging and begging her to send me that parallel laser driver!

Finally, Dan Frey decides that he can and should simply give Jeanine the author's name and trust her to make contact in the U.S. Who do you think it was? Jim Collette, of course. So she calls Jim. "Hey, Jim, I have a copy of that wonderful parallel laser driver you wrote a patch for. Would you please sell it to these people who are bugging me to death for it?" [Maybe not her exact words, but close.]

After Jim had written **PS.Patch(Disk)** in 1989, this man from Europe asked him to write a parallel patch. After several attempts, Jim found

The Title Page...PUTTING the IMPOSSIBLE on PAPER

The Title page to the left illustrates some of the great things you can do in PostScript that are impossible in **geoPublish** unless you resort to bitmaps and jaggies. *Upper left:* This shows gradient variations going from light to dark as the word moves forward. *Upper right:* The line of text can curve down, or even up, if you like! *Center:* This impressive repeat-pattern design is simple to write and beautiful to see. The coloring was created by the command eofill. This means even/odd fill, as it fills in the first row in the design and leaves the next row empty and continues in that pattern. *Lower left:* Can you believe that all four of these words started out as 40 point LW_Giannini (AvantGarde) font? PostScript can change the scale of the letter on both axes, change the line width, and much, much more! *Lower right:* The subtitle is shown in a fan design by simply rotating the text. It may be a bit gaudy, but I loved the challenge of this design.

the right combination to make it work. (Is it only in Europe that we find someone commercially laser printing with a **commodore**?)

Fast forward to the end of 1990. There is now a new phenomenon -- non-commercial laser-printing! But it has been awhile since Jim wrote the original, so he needed Jeanine to send him the program she had received from Switzerland, so he that could rewrite the parallel patch! As you may imagine, **PS.Patch(GC)** can now change the serial versions of **geoLaser** and **geoPubLaser** into parallel versions, usually designated by a *.GC* on the end for **geoCable**.

Next, Jeanine decides that **commodore** users should be able to print documents in landscape, as well as portrait mode. Landscape mode means the print is going sideways. She knew it could be done, if Jim would do it. So she sent him a gift -- a book called ***Learning PostScript: a Visual Approach*** by Ross Smith. Then, because Jim is busy, she called him occasionally to ask if he had had time to read the book and gotten any good out of it.

Eventually, Jim did read the book and promptly wrote the **PS Processor**. This application will allow you to turn pages 90 degrees or print out documents on an 8 1/2 x 14 sheet of paper. It can do amazing things! (All of these great programs are on CMD's *Collette's Utilities* Disk.)

Recently I called Jeanine to get the name of this book, which she recommends highly, and to learn where to buy it. I ordered it from Peachpit Press, and it arrived in a week. Suddenly, I had a chance to learn what all the excitment was about! I had always thought PostScript would be like assembly code, you had to be a genius with a photographic mind to write it. Not so! I found this book to be wonderfully easy to read and understand. You simply type in the programs listed on the left page to achieve the results seductively illustrated on the right. This is why the sub-title reads, *A Visual Approach.*

When I decided to try some of the less complex examples, I suddenly realized I had a problem. The book said that all PostScript commands are sent to the printer as ASCII code. That is simple for some, but I do not know how. How was I going to convert PostScript commands into ASCII code?

I called Dave Ferguson. Long ago Jeanine suggested that I buy his pamphlet called ***The GeoPublish Compendium***. It indicated that he had studied PostScript quite a lot. I asked if he knew how I could use **GEOS** to create ASCII files from PostScript. It's easy, he suggested, just use **Wrong is Write**. This wonderful utility by Joe Buckley is perfect for converting PostScript (ASCII) files into **geoWrite** files and then back again.

I was almost there! I had a way of creating simple PostScript code within **geoWrite** and putting it into ASCII form with **Wrong is Write**. But how was I going to send it to the printer! I called Jim Collette, asking if I could get his **PS Processor** to send my PostScript (ASCII) files to the printer. He said no one had ever asked him that before. **PS Processor** had been written to process files by page number. He could not be sure if it would process my ASCII files (examples from the book) which had no page numbers. He advised me to experiment and see what might happen.

For those of you unfamiliar with the **PS Processor**, some explanation is in order. It was written to rearrange the pages of **geoWrite** or **geoPublish** documents into booklets or brochures, if desired. You must, therefore, have an additional **geoWrite** document called a "script file" which tells the **PS Processor** how and in what order these pages are to be printed. For instance, to print a single-page document, previously saved to disk by **geoLaser.PS**, your "script file" could read:

```
parallel  (or serial)
origin 0 0
include 1 0 0
print
```

This means to access the [***parallel***] or the [***serial***] port, [***origin 0 0***] start document in the usual place, [***include 1 0 0***] includes page one at the normal position, and [***print***] sends it to the printer.

I tried to simplify this. Knowing that my ASCII file had no page number, I tried using just the ***parallel*** and ***print*** commands, and it printed a totally blank piece of paper. Not good enough. Next I reinserted the ***origin 0 0*** between them to anchor the thing, and it printed out perfectly! Now I had a way to create my own PostScript files. I had a way to create designs and access options which I had never known before!

It is fascinating to know Jim has written a program so good. It can do everything he intended and even more! **PS Processor** can print **geoWrite** and **geoPublish** (ASCII) files, and it can also handle straight PostScript instruction code which will allow your printer to do things that seemed IMPOSSIBLE up to now! And there is more to come! Jim is now working on an improved version of **PS Processor** that will enable us, if we chose, to put additional PostScript code right into the "script file", thereby simplifying communication with the printer.

Let us go back to the conclusion of Randy Winchester's article four years ago where he discusses the capabilities that postscript files possess. These files can send PostScript commands for special characters not accessable from the key board, rotating text and other things that **geoPublish** doesn't support.

The perfect PostScript file editor would be **geoWrite** if it could only directly read ASCII files. Randy suggested the solution to this drawback as Joe Buckley's **Wrong is Write**. Telecommunications networks and BBSs carried (and still do) Public Domain versions. [An 80-column version is available from the author.]

This was good news indeed, PostScript was now an integral part of **GEOS** with files created with patched versions of the **GEOS**'s PostScript drivers converted into **geoWrite** with **Wrong is Write** for editing. He wrote, *"The forces of the universe are now in harmony. What more could we want?"*

Did you notice what a blunder I made! Randy described in detail how to create and convert PostScript files four years ago! Why I was bothering poor Dave Ferguson in July? Didn't I already have the information I needed? Why was I unable to remember even a single word of Randy's cheerful closing? **What more could I want?**

I mean no disrespect to anyone, but four years ago there was something more I wanted, and I wanted it very badly. Our forefathers called it Independence. When I contemplated that my **commodore** must go over to another computer and ask permission to print PostScript, well the forces of ***my*** universe were ***not*** in harmony!

For years, our beloved "dream machines" have been maligned, *forced into indentured servitude* to larger systems required to print PS files. The PostScript Revolution, which I have outlined here, has won for us a large measure of autonomy in handling PostScript! Even when we do ask other computer systems to laser print our files, we can feel better knowing that we do this out of convenience, rather than necessity.

I encourage you to get the book, ***Learning PostScript: a Visual Approach***, and to buy Dave Ferguson's ***The GeoPublish Compendium***. I also encourage you to buy the programs by Jim Collette and Joe Buckley. I encourage you to bite the bullet and, if within your means, to purchase a laser printer of your own. Most of all I encourage you to **join the revolution!**

READY.
■

Declare Your Independence!
See page 19!!

(I don't think the C64 or C128 is a servant when an MS-DOS machine does it's bidding -- Ed.)

Enter Sidebottom. Sid. To buy, or not to buy,

When Jeanine Cutler wrote her article, "The Affordable Laser Printer," she gave direction to many of us who longed to make **GEOS** sensational in print. Actually I had never considered buying a laser printer before I read her article (which appeared in issue #25 of *geoWorld* in January of 1990). Afterwards, I thought of nothing else!

I was once editor of *The LUCKY LINE*, my computer club's magazine. I volunteered to become editor after buying **geoPublish**, because I knew that it would force me to learn the program thoroughly, or I would embarrass myself severely. Actually, I accomplished both!

When I began using **geoPublish** to print the club magazine, I received a lot of "flack" concerning the print quality, or lack thereof. As one club officer expressed recently, "The biggest mistake **GEOS** made was in not having a good print program. They have 100's of fonts and all of them are lousy! Other than a laser printer, the only decent thing I've seen is **Perfect Print**. Now there's a good program."

As geoFanatics, we strongly disagree with such negative sentiments, but these opinions are not confined to a few. As the club magazine editor, I came to realize that laser printing was the only way I could achieve my goals (using **geoPublish**) and keep everyone happy.

I would like to tell you how I scrimped and saved, after reading Jeanine's article, to prudently purchase a laser printer, but I'd be lying. Actually, my method was more direct; I applied for a credit card. When it came back with a credit limit of $1500, that was a whole $50 more than I needed!

Some of you who read this article will also want to buy a laser printer, though I hope your financial acumen exceeds mine. You have to want it badly to consider spending $1,000 plus merely "to put your dreams on paper." But if you own a business, you can write it off. If someone is bugging you to get a bigger computer, tell them you can buy it later; you urgently need a laser now! If a laser printer "floats your boat," you'll know it, and this article may help you.

Some important things to remember are these. Most laser printers have only a half megabyte (Meg) of on-board memory. That is not nearly enough. Make sure it has at least 2 full Megs or that you purchase them before you attempt to do PostScript. Secondly, PostScript is not standard on most machines. If it does not already have a PostScript interpreter on-board, you will have to buy it in a cartridge. Some cartridges are PC compatible and some are Mac compatible. You will more likely use the latter.

For my $1,450 I purchased three things: a Hewlett Packard LaserJet IIP, a Pacific Page PE (PostScript Language Emulator) cartridge, and 2 additional Megs of memory. This set-up was recommended by Jeanine and, I believe, is the one she personally uses. There are other options out there, and as a group, we need to know them. Perhaps, other laser users who have a different setup will send this info into *dieHard*, so we will have a more complete list of the possibilities.

I think of Jeanine Cutler as our **geoLaser** Godmother. If you would like to ask her any questions about buying or printing with a laser, she will be glad to try and help you. Her number is (803) 972-3330. Her address is: Lakeshore Campground, 231 Lakeshore Drive, Fair Play, SC, 29643. (My address and phone number are listed in the box below.)

Just a warning! There was one big disappointment which I experienced when I started laser printing. People would look at my work and hardly notice my sizeable investment! It is this "familiarity of the style" which laser printing provides that may cause some people to be "underwhelmed" by your efforts, but is it so bad when people think your copy looks like what they see in *Time* or *Newsweek*? Let me express it another way...when you laser print, you create copy that spells "CLASS" anywhere in the world. And THAT to me is forever exciting!

READY.
■

A Personal Challenge

Make this ***your personal challenge***! I urge you to make a commitment to have something you have personally created in **geoWrite** or **geoPublish** laser-printed before you receive your next issue of *dieHard*. Try to find a geoFriend nearby you who owns a laser printer or, perhaps, a shop that will print your files. Every **commodore** club in America should make laser printing available to its members. No matter what, make a resolution to get it done!

You may be asking, "What if I come up blank? What if I have exhausted every avenue and still cannot get **GEOS** files laser-printed?" No problem! If you are willing to risk $5.00 and up to 5 documents on disk (**geoWrite** and/or **geoPublish** files with a maximum of 5 pages), then I will do my best to get it done for you. Print your documents out on your printer first to get the "before and after" effect. Then send them to me: Dale Sidebottom, 1001 Estate Circle, Georgetown, IN, 47122. My phone number is (812) 951-3588. Be sure to include your phone number in case I have questions. Add $3.00 for Priority Mail if you are

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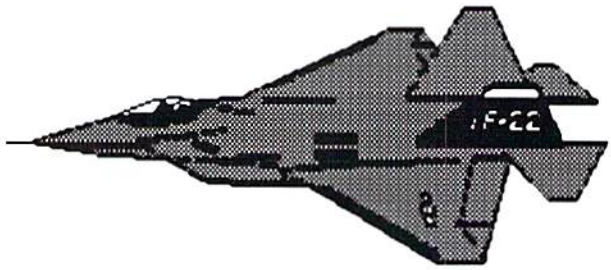
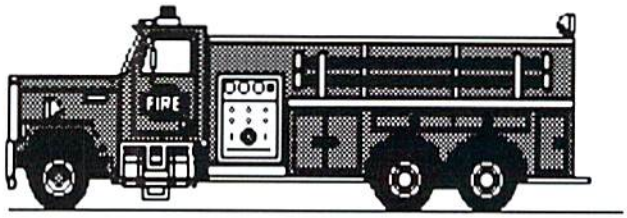
[Includes the 80-column **Wrong is Write**, plus many other fine programs. Cost...$20.00]

Rarity

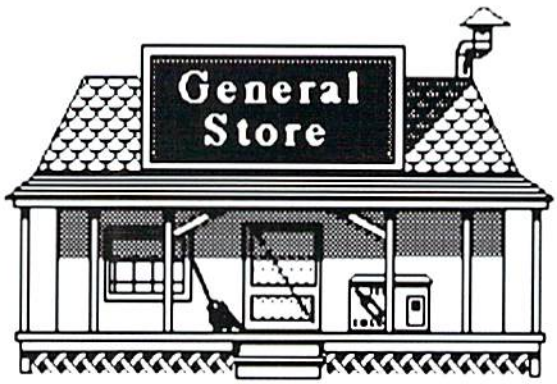


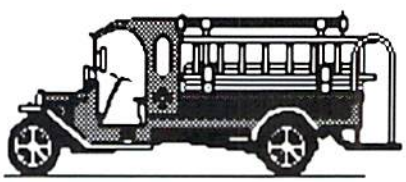
Lockheed/General Dynamics YF-22
Advanced Tactical Fighter

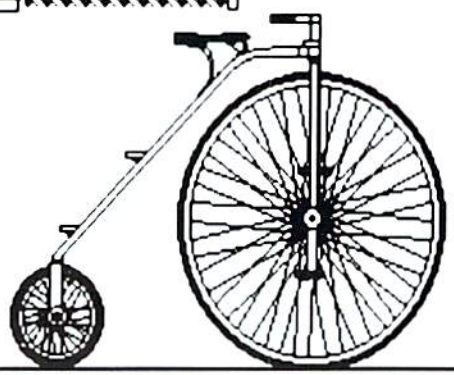


DISKART 16
Fire Trucks
Buildings 1
Buildings 2
Bicycles
Stealth Planes

DISKART by Those Designers speaks for itself! These are clip art collections for use with just about any **commodore** format. They come in the form of **geoPaint** or **Print Shop** or whatever you need, ready to scrap into your newsletter. Disk prices vary from $8.50 to $10.50 and are packed with pictures. For more information, write: *Those Designers, 3330 Lewis Ave., Signal Hill, CA, 90807-4706.* Or log on -- CompuServe ID: 72571,725 or GEnie: B. Zeilinger.



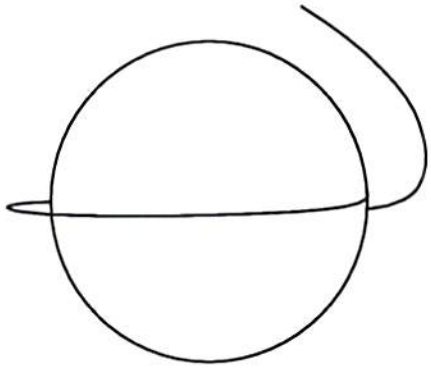




R. J. SMULKOWSKI

IS

CYBERSPACE COWBOY



Hello again. By now you know that the Internet Gopher is up and running in the **commodore** area on Delphi, and it has been added to the menu so that all can see the new option. Well, the latest news is that we dieHard **commodore** enthusiasts now have Usenet newsgroups available from our area too. To understand what a Usenet newsgroup is, imagine a message base on your favorite local bulletin board. Now imagine that message base being networked to sites all around the world, and you begin to get an idea of what Usenet newsgroups are all about. A typical session in a newsgroup might find you reading (and replying to) a user in Helsinki, Finland, discussing anything from backing up Electronic Arts software to debating the C65's physical status (reality or vaporware?).

More Delphi news: I have been made a member of the Delphi Commodore "family." I am an assistant SysOp in the **commodore** area, and I want to tell you that it is an honor and a pleasure to have been offered the position.

Yet more Delphi news. If you happen to visit the BBS area on Delphi, take just a moment to look at the welcome screen that greets you there. It was the winning entry in a recent contest held in that area, and was designed by (in case you haven't guessed yet) your's truly. But enough chit-chat. Let's talk about setting up a BBS.

So, you've decided to take the plunge and set up a BBS. Congratulations! This can be a very rewarding experience. The hardware requirements aren't necessarily all that great. I'm sure many of you have the makings of a decent message-oriented board just sitting around waiting to be put into service, and there are several fine pieces of software available through Delphi, Genie, Q-Link, or local boards which will work quite well for you. **EBBS** by Ed Parry comes to mind, and it has a superb user access level editor built into it. I have seen **EBBS** run on as minimal a system as an unenhanced C64 and two 1541 drives at 2400 bps.

If you would like to offer online games to your users, I strongly recommend **Color 64 BBS**. Sorry, but there aren't any test drive versions of this great software package available for download. You will just have to visit some **Color 64** boards and decide for yourself if it is worth the fifty dollar registration fee. I also recommend that if you run **Color 64** without the benefit of a hard drive that you use a RAM expansion unit to load in your overlays. This will speed the operation of the board tremendously, greatly enhancing your users' pleasure. **Color 64** in its latest form will display ASCII, **commodore** color graphics, and ANSI. It can also be made to network and exchange messages and mail with other **Color 64** boards.

The final expense will be your telephone service. If you choose to not offer networking to your users, you should be able to set the billing of your data line to "measured service". This means (in my area at least) that, as long as you are just receiving calls and not originating them, your monthly bill for the data line will be about one third of what it would be for a line with unlimited local dialing privileges. I feel that a dedicated line to allow 24 hour access to your BBS is an absolute necessity.

Probably the hardest part of setting up your BBS (and for many this is the most enjoyable part as well) will be deciding on the theme or focus of your board. Think this over carefully, and try to find something that is original in your area while at the same time seems to have the quality of endurance.

READY.

■

A couple of **Color 64** boards for you to check out:

West Coast - a great **Color 64** board
AMME Jr. BBS, Olympia, WA
(206)491-4125

East Coast - home of **Color 64** BBS
Sonic Temple, Baltimore, MD
(410)285-0428

Color 64 BBS is copyrighted by:
Anthony Tolle and Fred Ogle
236 Pinewood Road
Baltimore, MD 21222-2345

Telecommunications, Your Commodore And You

or Modems R' Us by Michael Eglestone

Last month I said that I would try to stick with the basics, so let's move on to terminal programs. This is where the real fun starts.

My experience as a SysOp (System Operator) on a BBS has given me the chance to try out many different terminal programs over the years. When I was brainstorming for this article, I boiled them down to my four favorite choices. I will separate the programs into two categories, those for the C64 and those for the C128. The C128, of course, will run them all.

For the C64 and the new modem user, I would recommend a program called **CCGMS**. It's simple, it's widely used in the BBS world, it has many, many versions, and it has stood the test of time for excellent color graphics, decent compatibility with most modems and a command structure that's very easy to learn.

CCGMS is Shareware. It's available through almost any **commodore** BBS, Q-Link, and from me.

For the C64 user who wants a full featured program that supports a number of expanded emulation modes I recommend a program called **Nova Term**. **Nova Term**, in my opinion, takes the C64's available memory to its maximum capability. The programmer has gone to extremes to pack just about every feature you will ever need into this well designed system.

Nova Term is Shareware and available through the same sources as **CCGMS**.

For the C128 user who has an 80 column RGB monitor, my first choice would be **Desterm**. **Desterm**, like **Nova Term** is packed with just about any feature a user could ever want. It supports baud rates up to 38.4K by using the Swift Link RS-232 interface command set. Full ANSI support sets are included as well as a number of subsets. All the popular VT systems are supported and a large buffer with an excellent editor system is included. **Desterm** comes with a 69 page instruction manual that is absolutely super.

The draw back with **Desterm** is that it's so packed with options that a first time modem user will most likely require the assistance of an experienced operator to set it up for the first time.

Desterm is also Shareware. It's available through the same sources as the others. One minor problem. Nobody can find out where Matthew Desmond lives, so it's difficult to send him his money. I hope that he will see this article and let us know how to reach him.

The last program on my list is **Dialogue 128**. Again, a full featured program that's packed with options. I have only been able to get my hands on the Demo version, but from that small sample, I will toss it on the pile right next to **Desterm**. It appears to be very user friendly in all aspects.

Dialogue 128, which is not Shareware, is available through CMD (see ad on page 3). If anyone is interested, we can write a full review for you at a later date.

Possibly the most frequently asked question on my BBS is:

"Why are the upper and lower case letters reversed, and how come I get all sorts of strange codes on the screen when I call your system?"

What they are seeing is the result of an improper setup in their term program, or the wrong emulation selection when they signed on to the BBS. It's also possible that it's both.

"Holy nitpickers Batman, the fool just said he wasn't going to get technical!" I lied a bit, just to give you time to relax.

We really need to cover some of the most common SETUP problems that people encounter when using a term program. It will be fairly painless. It's something you are going to have to deal with here, with me, or later with your term program. Your choice, the nasty old term program or cute, loving me!

Glad to see that you're still with me. I have said that a few times on the BBS and ended up losing half my readers.

The best way to describe a term program would be to compare it to a product in a department store that says "Some Assembly Required." My personal favorites are the ones that say "Can be assembled by a 10 year old child in less than 30 minutes." I have often wanted to find that kid and smack him around a little for making me look so darn stupid.

Term programs fall into two categories "Nearly Fool Proof" and "You Had Better Know What You're Doing." In both cases, some assembly is required. This is known as a "SETUP."

The **CCGMS** program I mentioned above falls into the "Nearly Fool Proof" category. The rest of them fall into the latter.

As a minimum, you need to know the name and model number of the modem you're using, its maximum baud rate, and the specifications that we covered last month. Armed with this information, you should be able to get through a simple setup procedure without calling 911 for assistance.

I really hate to do this to you, but it must be done. We are going to cover some of the basic terminology used in the world of telecommunications. If you just glance at the stuff for now, it will reduce the shock value a bit when you're confronted with the words later on during a setup procedure. I'll meet you half way in this matter. I'll pretend to teach you, and you pretend to learn.

1. **Duplex**: Also known as ***Echo*** in some programs.

Two modes are available in the Duplex/Echo mode. The terms are as follows.

a. Full Duplex.....Echo Off
b. Half Duplex.....Echo On

Full Duplex/Echo Off: Sends all key strokes to the modem, and expects the modem on the other end of the connection (remote) to return them for display on your screen. In Full Duplex, nothing will be displayed on your screen that isn't returned by the "receiving system" including your own typing. Nearly all bulletin boards and online services operate in this mode (GEnie being the exception). The remote modem/computer will return (echo back) your inputs for display on your screen. This is just dandy, because if you press the letter (d) and the letter (d) shows up on your screen, you can rest assured that the receiving modem and your system agree on that key stroke. Keep in mind, you really didn't send the letter (d) to that other modem. You sent an 8 bit binary representation of the letter (d) which was received and returned to your modem. This is a form of error checking, which we will cover later in the "Protocols" section of this article.

Half Duplex/ Echo On: In this mode, your key strokes are sent to both your own screen and the remote modem at the same time. No return echo is expected or required. This is the mode that you would use when connected to a friend's computer by modem to modem direct connection. It's faster but contains no error checking. The person on the other end of the connection may, or may not, be seeing exactly what you type on your keyboard.

Question: How do I know which one to select?

Answer: If you're connected with another system and nothing you type on your keyboard shows up on your screen, your in the wrong Duplex Mode. Simply change it! If everything you type shows up

twice it's the same story.

If you managed to muddle your way through that one, the rest of the stuff will be simple. Well, fairly simple. You should know by now that I tend to lie a bit now and then.

I learned everything I know about the next three subjects from three sources. The old **Common Sense** term program which came with my 300 baud 1660 modem, Blind Luck, and Matthew Desmond's docs for his **Desterm** program. I don't care to go into great detail about any of them. I feel that if I give you the accepted setting for each of these selections in a basic setup, you should be in fairly good shape when asked for an input from your term program.

The terms are as follows:

Stop/Start Bit, Data Bits and Parity Bit.

1. **Stop/Start Bit**: Start and end a byte of data. Remember when we talked about 8 bits making one byte? Darn stop bits and start bits also get added to the string. Those little guys are like the period at the end of a sentence and a "get ready fool" when the next character is about to be sent. If this looks like 10 bits per byte, you are correct. I won't get any more technical than that. In most cases the Stop/Start Bit can be set at one. In some cases two are required. (Some systems are like children; you must tell them twice to get your point across. I wish my kids only required two commands for the proper response. It usually takes 10 "STOP!s" and 27 "NO!s" to get the desired reaction!)

2. **Data bits**: You have two choices 7 or 8. Use 8. If you call a mainframe system, ask first. They can be setup for 7 or 8.

3. **Parity bits**: Gads, what a term. I suppose "way back when" it was a good thing. I have my doubts. I really think some fool tossed it in just to mess with our minds. Set parity at none; take a shot. It works 90% of the time.

The rule of thumb is that if your system is working with data bits set at 8, no parity bit is required. If you must setup your data bits at 7, then you need to call the other system operator and ask about parity bits. One phone call and the confusion is over. I'm done with this topic.

For most of your work, this is your selection:

Stop bits (1) Data bits (8) Parity bits (None)

All three of these bit types enter into a combination which forms one full data byte or a single keystroke if you prefer to think of it that way. Your setup and the receiving system setup *must match*. If not, errors will be generated. You will end up with a screen full of garbage that will make no sense at all.

For those of you who just must have a full working knowledge of those three items, I suggest that you obtain a copy of the documentation for Matthew Desmond's **Desterm 128 V2.0**. Matt went into great detail about many areas of telecommunication that had confused me for quite a few years. It's an absolutely superior piece of work.

Most of the simple term programs that are almost fool proof have these items pre-set. It makes **commodore** to **commodore** work quite easy, but limits access to other systems.

Next month we'll pick up the discussion with emulation mode. Until next time -- Happy New Year!

LASERCOSMICS BY BLC

READY.

■

Michael W. Eglestone is a retired Senior Master Sergeant (USAF). His BBS Diamond Back is open 24 hours: (305) 258-5039. For a copy of **CCGMS** send a blank disk and two postage stamps to: *Michael W. Eglestone, 14612 West Pawnee, Wichita, KS, 67235.*

REVIEW!

geoCANVAS 128 V3.0

created by 1992 Nathan Fiedler

reviewed by R. Scot Derrer

If you're a serious geoArtist, there is an alternative to **geoPaint**. Nathan Fiedler has created another **GEOS** paint program that has the power of **geoPaint** plus many options not available in **geoPaint**. **geoCANVAS 128 V3.0** is an 80 column only (**geoCANVAS64 V3.0** is a 40 column) program that has many enhancements from the original V1.2 40 column version. Since I have not seen and used the original version I cannot compare them. Both the C64 and C128 versions of **geoCANVAS V1.2** have upgrades.

The documentation on the disk is complete. You just have to print it all out. The only problem I had was installing **geoCANVAS** into my system. This was because I had been using other applications prior to installation. Everything worked out fine when I turned off my computer, re-booted **GEOS**, and clicked on **geoCANVAS**. The installation instructions could have been a little more precise about this.

Although **geoCANVAS** is very similar to **geoPaint**, there are some impressive features offered in **geoCANVAS**. First, the windows. You can open up to three windows and resize them. Work can be done in all three windows simultaneously and graphic scraps can be swapped between them. Imagine working on three different documents at once. If you have the 64K VDC upgrade chip in your C128, you can have color in 80 columns. These are cool features.

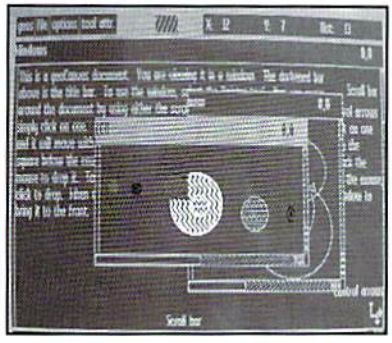
The tool box is movable and the tools are independent of **geoCANVAS**. Should any new tools be developed they can easily be added. The current **geoCANVAS** drawing tools include PENCIL/ERASER, PAINT, RECTANGLE and ELLIPSE, FILL, LINES, RULER, PIXEL, TEXT, COLOR, and EDIT. Some differences from **geoPaint** tools worth noting are: the ruler has a tic-mark option, rays and ellipses can be drawn, and text handling is more precise.

Three utility programs included in this package are **PaintCan128 V1.1**, **FontCan128 V1.0**, and **Scrap-**

REVIEW!

Can128 V1.3. PaintCan128 is used to convert **geoCANVAS** files to **geoPaint** and back. This is very useful if you want to load a **geoCANVAS** file into **geoPaint** or a **geoPaint** file into **geoCANVAS**. **FontCan128** is for adding a delete character to a font's character definition table. It seems that some fonts are not defined correctly at birth and when deleting text in **geoCANVAS**, sometimes garbage appears.

ScrapCan128 is a program that will let you copy and paste any size photo scrap.



geoCanvas means Power!

Probably as protection against software piracy, the installed version of **geoCANVAS** will only work on the system it is installed on. And it does work well.

It is refreshing to have alternative products such as **geoCANVAS** available. The unique features **geoCANVAS** has makes it a wonderful and useful addition to our ever expanding **GEOS** library. I have to admit that when I first heard of **geoCANVAS,** I wasn't too excited. **geoPaint** was doing a fine job, etc. Now I use **geoPaint** and **geoCANVAS** together for even more control over my graphics. This, of course, means POWER!

READY.
■

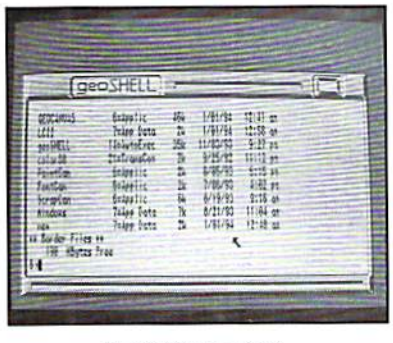
geoShell v2.2

1992

created by Maurice Randall

reviewed by R. Scot Derrer

geoShell is an exciting new development to the world of **GEOS**. Since I have also worked in the IBM realm, this 'Command Line Interface' (CLI) product was easy to adjust to because of the similarity to the MS-DOS (as well as CP/M) operating system's CLI. **geoShell** provides an environment where you have a command line in which you enter all of your commands. And yes, it is quite different from the icon-based **GEOS** environment. In fact that's the only disadvantage. The advantages of **geoShell** over **DESKTOP** are that it's faster, easier, and expandable. Let's just say that when you combine both **geoShell** and **DESKTOP**, you'll have a lot of horsepower. This is so different from the icon/mouse world we know and love, that a demo version of **geoShell** should be made available by Maurice.



Now GEOS has a CLI!

When **geoShell** is executed, it appears with its own window and the **GEOS DESKTOP** screen disappears. Within this window, there is an area for commands to be typed and an area for information to be displayed. The patterns and colors of the window and its background can be changed if you like. **geoShell** can be executed from the **DESKTOP** or it can be made into an auto-exec file that executes automatically when you boot **GEOS**.

geoShell uses Startup files when it executes to tell it how to set itself up. Customized Startup files can be created using **geoWrite** and tend to personalize your system to suit your specific needs. For example, you can define your f-keys as you like. The Startup files can be customized differently on different disks as your needs change. **geoShell** is keyboard intensive, except for opening files using the mouse.

The CLI commands were well thought out and are quite useful. Some of them are stand alone commands and some require additional parameters to accomplish their assigned task. The manual addresses three types of CLI commands: RESIDENT, INTERNAL TRANSIENT, and EXTERNAL TRANSIENT. Resident CLI commands are exactly that and are loaded when **geoShell** loads. Transient CLI commands are governed by the Resident CLI commands. Like Resident commands, Internal CLI comands are present when **geoShell** boots. External Transient CLI commands must be loaded into **geoShell** when needed. You can concatenate commands to execute multipe with one keystroke by

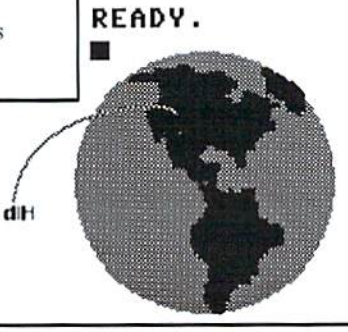
using ^ as a terminator between commands. As Maurice develops new commands, they may be easily added to **geoShell**.

Space constrains detail about each command here, but here are a few examples. Type the command 'dir', 'directory', 'catalog', or '$' and the directory of the current disk drive will be quickly displayed in the viewing window. The disk drive access is much faster in **geoShell** than in **GEOS** because you don't have to open a drive icon first. To change from drive a to b and read a directory would be 'b: dir'. Displaying files with date and time stamps lets you list files you created by day or past a designated time. To do this use 'cdir 122093' or 'cdir 0800p'. The 'color40' and 'color80' commands allow you to change to colors of the background, shell, text, pad, and border in 40 or 80 column modes. Each area can be a different color. Printing a file is as simple as 'print filename.'

Being able to customize **geoShell** is a wonderful feature. The already defined f-keys may be changed to suit your specific needs. Another customizing feature is called 'hotkeys.' A hotkey is a combination of two keys typed in from the keyboard used to load and run an application or desk accessory. A sort of shorthand. For example, 'WR' loads and runs **geoWrite**. 'PA' loads and runs **geoPaint**. **geoShell** has many hotkeys already built-in that can be changed and redefined by using the setkey command. These hotkey definitions can be different for the C64 and C128 since **geoShell** uses a different storage area for each computer.

geoShell is designed to work with all disk devices compatible with **GEOS**, like CMD's HD and FD series drives and the RAMLink and RAMDrive units. You can use **DOS Wedge** and **JiffyDOS** commands too. This alternative to the **DESKTOP** is a welcome sight to novice and seasoned **GEOS** users. The versatility, ability of customization, compatibility, and thorough User Manual make this product a worthwhile addition to your **GEOS** collection.

— Resident —		— Transient —	
		Internal	**External**
a:,b:,c:,or d:	print	atype	backpatt
always	ptype	custom	color80
basic	rename	dcopy	external
boot	rgb	defkey	format
catalog	root	exec	getkey
cdir	run	fcopy	help
input	s40, s80	info	hotkey
insert	slowdir	install	internal
key, key1	startup	swap	learn
load	status	type	lock
mono	stype		pcode
onboot	switch		remove
output	time		rtc
parent	wait		savekeys



Trader's Corner

Got something to trade? Need something? Try here. Maybe one of our readers has just what you're looking for. Or perhaps they want what you have. **Trader's Corner** is free to subscribers looking to trade or buy only. TCs will be listed for three months. Classified ads are available for $0.25 per word. To respond to a **Trader's Corner** ad, please write to dieHard, Trader's Corner, P.O. Box 392, Boise, ID, 83701-0392. Be sure to include the name and number of the person to whom you are writing.

Wanted: Transactor, Commander Magazines. Cartridges for Plus/4, C16, VIC20. CBM 4040. SuperPET system disks. Compute!, RUN, Ahoy, and Transactor disks. BLC #000000.

Wanted: **WordWriter 128**, have documentation, need to replace damaged disks. H.A. Hamm #C000652.

Wanted: Speech 64 cartridge. Dennis Ward, #C003367.

Wanted: BASIC 8 on disk or chip for the C128. Also, a Super Graphix Gold Printer Interface. Joey Holman #C003416.

To Trade: I have a Plus/4 and a 1520 printer-plotter that I would like to trade for a C128 with a good working mother board and power supply (a good keyboard is not a requirement). William B. Wells, #C000336.

Wanted: C128D System Guide and/or User Manual, CP/M disks for C128. Owners Manual for Digital's Rainbow work processor for the model PC100. Joseph A. Kaiser #C002955.

To Trade: 1541 drive or GEORAM (512K REU) for two Timeworks programs with documentation: Wordwriter 128 and Database 128. J.R. Crawford, #C004243.

Wanted: Working Cardco Write Now Cartridges, with manuals. Cecil M. Howard, #C000574.

Wanted: Commodore 64/128 compatible hard drive, RAM drive, RAMlink, Quick Brown Box, etc. Mark VanderVoord, #C001490.

Wanted: Games or programs for an old TRS-80, cassette only. Can trade for VIC20 games. Marc Lafreniere, #C000377.

Wanted: **Wordwriter 128** most recent version. Dennis Fry #C003966.

Wanted: Information! Help me try out my swap meet Blue Chip disk drive. What power supply voltages go to which pins? Jeff Fleming, #C003979.

Wanted: **Electric Evangelist** by Jim Strasma in the public domain. I am also interested in getting a Bible program. Harold E. Evans, #C000480.

Wanted: MICROLOG disk and/or cartridge variously known as "Airdisk / Airrom / Airdos / SWL" for either the VIC20 or C64. Bud Hesedahl #C003651.

Wanted: **Master 64** by Abacus Software for the C64. Don Cigelske Transmissions, #C004020.

Wanted: **Fleet System** 3 or 4 spellchecking disk. I have the documentation but need the disk. Richard W. Herbert #C001855.

Wanted: Working copy of Addison-Westley's **THE HOBBIT** to restore side A of my original disk. Side B and docs are not necessary. G.M. Walter, Jr #C005478.

Wanted: Looking for a copy of Lothar Englisch's book, "The Advanced Machine Language Book for the Commodore 64" (published by Abacus but now out of print). Darren P. Polgardy #C001883.

Wanted: Owners Manual/instruction manual for the Xetec Super Graphix Jr. David Lyons #C000438.

Wanted: C or Pascal compilers for the C64/128 that wasn't made by Abacus. Job Cacka #C000278.

Achaic Computer

The Computer Store Of The Past

introduced by Brian L Crosthwaite

1987. I remember getting my new modem from RUN Special Products -- 300 baud. It was listed at $10. I got onto Q-Link. The **commodore** world was opening up to me.

I used **GEOS** on my trusty C64. I bought the Better Working Turbo Load and Save cartridge. Disk access with **GEOS** sped up wonderfully. (Since then I have found no other cartridge that can actually speed up 1541 drive access with **GEOS** -- none.)

I bought the then new GEORAM. TENEX and Berkeley Softworks were the only places you could get it.

I bought Commodore's new printer -- the MPS 1250, an 80 dpi MPS 801/803 compatible printer. I was playing **Echelon** and life was good.

Terms like "power user" were popping up in **commodore** users' vocabularies. **commodore** 8 bit meant power. Let's take a journey to that special time when GeoWorks was Berkeley Softworks and still developing new **GEOS** stuff. Join me now, in the long ago, in the Computer Store Of The Past.

commodore 128D

commodore 128D

created by Fred Bowen, Terry Ryan, Von Ertwine, Bil Herd, Dave Haynie, Frank Palaia, and Mike I.
1987 Commodore Business Machines Inc.

reviewed by Brian L Crosthwaite

Evolution of a Species

The **commodore 64** is one of the only computers to remain unchanged since its introduction in 1982. BULL-ONY. There has been a gross conspiracy, a shadowing of the facts. You see, the **commodore 128** is just an overglorified **commodore 64**.

Ok, maybe things are not that bad. Overglorified may be a bit extreme. Some may argue that the C128 is *not* a C64. But that's not the point. The point is Commodore didn't just stand idle while time and technology marched on. I consider the **commodore 128D** to be the highest evolutionary point that the **commodore** 8 bit computers reached. And what a high point it is.

The highest point in 8 bit evolution.

Along the line of time, Commodore found that it cost the same to manufacture the Amiga 500 as it did the C128D. They were also selling *more* Amigas for *more* money. It seems that the C128D was another idea of Commodore's that came too late and unsupported.

Buyers of the C128D were starved for commercial exploitation of this vastly powerful machine. By the time the C128D was released, all the bugs had been worked out of both the drive's and the computer's ROM. It made it to the point of being 99% compatible with software designed to run on the C64. But its life had been cut short -- Commodore discontinued it. Over the next two years they slowly disappeared.

The End.

NOT!

Commodore recently cleared out many of its warehouses here in the US and abroad. The C128D has resurfaced. For those looking for a first computer, or even a second computer, the C128D may be just the computer for you.

The Machine

This computer's brain is the 8502 and runs at a screaming 2MHz! This machine has three main operating modes: C128 mode, C64 mode, and CP/M mode.

There is a built-in 1571 disk drive whose ROM routines have been all cleared up. The 1571 has 1541 mode, as well as burst mode that can dump ML programs from disk to chip in a fraction of a second. However, if you don't have a 1541 there will be some programs that are few and far between that simply will not load on this drive. I recommend a 1541 as a second drive.

A separate keyboard with keys that feel great sets this machine off as Commodore's top-of-the-line 8 bit computer.

C128 mode 80 column and blanked 40 column screen mode gives 2MHz speed. The VIC II chip times the C128 to 1MHz and is a lot like the C64. 80 column output is sent out to an RGBI or monochrome monitor (not included). The 40 column comes out of the computer via an 8 pin din, just like the C64. The 1080, 1084, 1902A and 2002 monitors will work rather well with this machine (be sure to ask dealer if the model has RGBI; the new 1084 will not work with this computer). You can even use two monitors on this computer! There is even a TV RF out for the the 40 column -- just like the C64!

A Business Machine

All the tech manuals will tell you that the Z80A chip is in this machine. I have yet to see one, they all (including the C128) have the Z80B which is a 4MHz monster accessed via *Control Program for Microcomputers version 3+*. The timing is reduced to 2MHz by the 8502 bus cycle. CP/M mode has both 40 and 80 column display modes. CP/M opens up a whole new world of computing for the **commodore** owner. Boards like Q-Link are loaded with CP/M software. The latest CP/M version of **Wordstar** even works with this machine! At one time CP/M was synonymous with "business."

But a C64?

Is this machine truly compatible with the C64? I mentioned earlier that the machine is 99% compatible. Some older programs like **Koala Draw** need to have the <CAPS/LOCK> button depressed in order to work. The **Koala Draw** cartridge does not work with this machine. A few programs -- very few -- will not load with the 1571 drive, even in 1541 mode.

All the peripherals for the C64 work with the C128D -- the disk drives, REUs, mice, joysticks, modems, printers -- even the datassette!

BASIC 7.0

The C128D has extensive graphic and sound commands added to its BASIC. GRAPHIC1,1 will take you instantly to a cleared HIRES screen. There are commands for using sprites, quite a few actually. There is even a sprite editor to design and save sprites to memory. BSAVE will allow you to save graphic screens and sprites instantly. And they can be loaded as fast with BLOAD. Sound commands let you easily compose music and play it via the powerful SID chip.

What else?

There is an expanded DOS that allows you to type simple instructions that mean something to you *and* the computer. The f-keys are easily defined from BASIC. There is 122K of memory free for BASIC programs. The 80 column screen offers pixel resolutions of 640 x 600 in interlace mode because of the 64K video RAM. There is even a built-in machine code monitor for use in 128 mode! Oh yes, let's not forget the C128. All programs for the C128 will also run on the C128D.

Mind Expansion

The C128D is able to handle 512k memory with bank switching. I'm not talking about the REU RAM disk, I'm saying you can put 512K of user RAM inside this machine and can actually access it. This is a major undertaking, but it's possible.

The computer can be expanded in several ways. For instance, you can add 16 Megs of RAM via RAMLink. This RAM acts like a super fast disk drive. There are other devices available such as the 1750 Super Clone, a 512K REU. The 16 Megs, of course, will cost a lot more than the 512K.

Speed

These REU's can be used with various programs like **Fleet System 4** (see November '93 *dieHard* page 24) and **GEOS**. Speaking of **GEOS**, **GEOS** screams on the C128D -- even on the 40 column screen.

The C128D need not stop there. CMD makes floppy drives that can store 3.2 Megs of info! And if the speed of the 1571 isn't fast enough, **JiffyDOS** (see September '93 *dieHard* page 9) is available. **JiffyDOS** brings your drives up to modern standards of speed and reliability. To speed access up even more CMD carries a full line of hard drives (see ad page 3).

There is a little empty socket on the mother board to place EPROMs into. You can alter your computer's reality with the right programming, like changing the boot up colors. The KeyDOS ROM chip (see October '93 *dieHard* page 8) can easily be installed into this socket and will change the way you use *and* program forever.

I give the **commodore 128D** a:

* * * * * *

STUPENDOUS!!

```
READY.
■
```

The C128D is available from many **commodore** shops and mail order houses, and is also available from the following *dieHard* advertisers: Tech Star (p10), Sodak Electronics (p28), Grapevine Group (p33), Computer Bargain Store (Classifieds below).

Trader's Corner

Wanted: "Commodore Interfacing Blue Book", or any books on interfacing projects. Brad Howard #C001266.

To Trade: I have a 1525 commodore printer. Will trade for almost anything. William Evans #C002686.

Wanted: A good genealogy (family tree) program. I prefer one that will do both ancestry and descendants without having to re-enter the same data. William Evans #C002686.

Wanted: Software to convert Cardco Writer-Now PRG files to SEQ ASCII files. Dennis Olivares #C000734.

Wanted: I am looking for an 8k expander for a VIC 20. Ed Bittick #C004253.

Classified advertising!

For Sale: NEW AND LIKE-NEW COMMODORE 128D computers with built-in 1571 disk drive and 30 day guarantee. Runs all Commodore 64 and 128 programs. Compatible with all accessories. This is the best of the 64/128 series. For more information call 801-466-8084 from 4 - 6 p.m. Mountain Time or write: Computer Bargain Store, 3366 South 2300 East, Salt Lake City, Utah, 84109.

For Sale: Commodore 128 computer complete with 1571 disk drive, monitor, printer, manuals and programs. Call (605) 783-3769 or write: Ken Everson, RR 2 Box 134, Hayti, SD, 57241-9520.

For Sale: **UNUSUAL 64 SOFTWARE.** GREAT FOREIGN-AMERICAN Utilities, Graphics, Hacker, Ham and Arcade Games. 25 Adult Disks -- Full disk sides $2 to $5. $0.29 stamp gets new catalog. Home-Spun Software, PO Box 1064DH, Estero, FL, 33928.

??Q?Q??

Q: I've run into a problem with **geoFile** that I can't figure out. I'm using **GEOS** 2.0, **geoFile** v1.4 and have set up a database using a C128 in 64 mode and had no problem entering data. There are 32 fields in the database. The file had grown to about 21k when the problem came up. I went to a C64 and entered more data. When I had typed a few new forms I got "ERROR I:FD Buffer Overflow". I went back to the C128 (in 64 mode) and the error didn't recur. I thought that I had a corrupted **DESKTOP** or **geoFile** on the work disk. So I went back to the original disks for both programs to see if that was the problem, but the error occurred again. I have a C64/128, 1571 drive, 1750 REU, 1804S monitor, and Card? interface hooked to an Okidata 400 laser printer on one system; a C64, 1541 drive, 1764 REU, 1702 monitor and a Star-NX1000C printer on the other system.

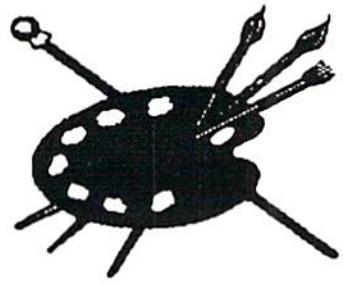
I tried to see if I had a hardware problem using **64 Doctor** and didn't see any problem there. Is this problem related to any chips I can replace like the SID or something?

Well, I went back and tried to duplicate the error before I sent this letter. As I thought about the error message, I wondered if it was an input device error. So I unhooked the joystick from port one and had no trouble after that. Could that have been the trouble? After I had entered about eight forms, I plugged the joystick in and on the next new form I got an error message saying there was no data-disk present. I couldn't recover from this error and I had to shut off the C64. Shawn Campbell of Elmendorf AFB, Alaska.

A: It sounds like the joystick has a shielding problem, or possibly an electrical short that is sending erroneous information to the system. I recommend trying a different joystick. If it solves the problem, you're home free. If you have access to an ohm meter, you can check out the wiring on the joystick.

End of joystick cable.

Pin 8 is the ground. Pins 1 though 4 are the joystick switches and pin 6 is the fire switch. They should all be open unless the joystick is moved and then should only connect to the ground. Be sure to check 5, 7, and 9 to make sure there are no connections.



Q: I've been away from the **commodore** scene lately and find on my return to it that there's a lot of unfamiliar hardware which will, as an example, facilitate the use of **GEOS**, which I remember as very drive-intensive. Could you recommend a tutorial which defines the various devices or describe a "dream" system, something at entry level, and something in between? Jim Sitton of Los Angeles, California.

A: I know of no tutorials that explain these devices for use with **GEOS**. However a beginner system may consist of **GEOS 2.0** software, a C64, a 1541 drive, a 1581 drive or a 1750 Super Clone, joystick, and Epson compatible printer. I highly recommend a RAM Expansion Unit or REU. The Super Clone is one that provides the 1750's 512K of storage with the same speed. However, you will not need to upgrade your power supply or make any more room for cartridges than a normal cartridge takes up. You will want the best printer you can afford and the Epson FX-80 is *the most supported printer* that works with **GEOS**.

A more powerful system might include both a 1581 and an REU and use a mouse. If you really want power, the C128 or C128D in conjunction with **GEOS 128 2.0** offers speed (even on the 40 columns) as well as an 80 column screen for **geoWrite**, **geoSpell** and **geoPaint**. The latter of which also runs in 40 column mode.

The extra storage space on the 1571 drive makes it a worthwhile drive to add to any system. But if you are stuck with an either or choice, the 1581 has twice the storage and well over twice the speed.

I find the mouse more convenient since it sits on its pad rather than a joystick that you have to pick up and put down between uses. I also prefer the feel of the mouse to the joystick. I have not used the light pen on any set up, but have had a chance to use the Koala Pad -- I don't recommend it on the C128 system since it creates too much extra movement. A good friend of mine on Q-Link uses his Animation Station with the original driver on the C64 and says it is rock steady.

If you move over to a C128 keep in mind that you can install the system to your present **GEOS** software. I have used both **geoPaint** and **geoWrite** from the C64 **GEOS** package on the C128 **GEOS** software as well as **geoPublish** (which was originally installed into the C64 system).

The **GEOS** package includes the operating system, **geoWrite**, **geoPaint**, **geoMerge** and **geoLaser**. Other applications are available such as **geoCalc** and **geoFile** as well as some third party software that supports the **GEOSphere**.

A mega killer dream system might consist of the following hardware and software items:

C128D -- built in 1571 drive for fast loading and lots of storage. It has 64K video RAM supported by some third party **GEOS** software.

JiffyDOS -- for millions of things outside **GEOS**.

M3 mouse -- both mouse and joystick mode *and* paddles mode -- I love old games!

Epson 24 pin color printer -- color that is presently supported. I'd rather include the HP DeskJet 550C here, but I know of no color driver for it.

16 Meg RAMLink -- lots of storage for more than just **GEOS**.

1750 REU -- for software outside of **GEOS** use.

Final Cartridge III -- mega programming cartridge that usually does not get along with the 1570 REU, but does with the RAMLink!

80 Meg Hard Drive -- mass storage and mega-fast **GEOS** booting!

FD 4000 disk drive -- mass storage that can leave the room.

??Q?!!Q!!

1670 modem -- works well with *RUN*'s **geoTerm 128**.

geoCable -- fast parallel access to the next item

HP LaserJet 4ML -- *GREAT* output from my humble little game machine!

Q: I have a question about **geoFile**. I have been unable to find out how to change fonts in **geoFile**. All I get is the basic font BSW. The **geoFile** manual mentions you can use different fonts but I can't seem to find the right procedure to call them up, even when the font icon is placed on the **DESKTOP**. What's up? John Summers of Princeton, Indiana .

A: The fonts inside of **geoFile** cannot be changed. However you *can* get the fonts you want for printout. The easiest way to do this would be to set up a merge document within **geoWrite** and merge the information from the **geoFile** document. You can format the **geoWrite** document the same as your **geoFile** document or set it up differently according to your needs.

You will want to select the *File Output Mode* to send the info to a **geoWrite** file. You can do any touching up you need later. It also allows you to run the file through **geoLaser** for laser printer output. **geoMerge** is a very powerful tool and is included with many **GEOS** applications including **geoFile**.

Q: I have and use **GEOS 2.0**. After I changed to the 1541 drives (A and B) I found that my 1351 mouse did not work anymore. I can click on *mouse* and the mouse icon comes on okay. I can click on *Joystick* and it works great. The left button on mouse works. It will change pages in **DESKTOP** but will NOT move the pointer. Do you think the mouse is defective? Or is it me? Are there reconditioned 1351's on the market and where? Also, how do I check the mouse to see if it is hung up some place? Robert Carter of Phoenix, Arizona.

A: It sounds as if your mouse is going into joystick mode when you swap drives. Play around with the software that came with your mouse to see if it is functioning okay. You might also see if cleaning the mouse doesn't make a difference.

If it turns out that your mouse is bad you might drop Computer Bargain Store (See classifieds), CMD (see ad page 3), Tech Star (see ad on page 10), or Sodak Electronics (see page below) a line. Many local commodore Stores have mice for sale.

Q: I am looking for the **geoChart** program. Berkeley no longer produces this program. I am either trying to find an existing original or find someone who has the program and would be willing to send me a copy. If I could obtain a copy, maybe I could send that copy to GeoWorks, and they could reinitialize the disk to work with my system. Bob Fitzpatrick of Patton, Pennsylvania.

A: CMD carries **geoChart** for $29 plus postage (see ad on page 3).

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Lamar Nance
603 S. Mable
Sioux Falls, SD 57103
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Q: I own a C64, a 1541 disk drive (actually 2) and a VIC 1525 printer. Therein lies the problem. The software that I use (**GEOS** and sometimes **Print Shop**) is great, and almost as sophisticated as the software of my IBM friends. The problem is that when I print, the dot-matrix look is quite dated. I want to upgrade my printer, but when I walk in to any computer store, I have yet to find someone who has even heard of a Commodore 64, let alone anything that might be compatible.

I even called up Commodore, and they were no more enlightening. The best information I got was from a mail-order house, TENEX, who said they could set me up with a printer and interface, but they did not know of any software that would support the latest printers. (The model I have my eye on is the Canon Bubble Jet 200).

So, my question is, what printers are available that will give me laser look, near letter quality, something better than the 9 dot, and can use **GEOS** (I can live without **Print Shop** if need be)? TENEX said that the Canon Bubble Jet 200 could be "physically" connected with the Supergrafix interface, but do you know if there is an appropriate printer driver (I called Berkeley Softworks, but at this time they no longer support Apple or Commodore).

Thank you so much for any help you can give me. I cannot begin to tell you how much I love the C64, and how much use I get from it! I really don't want to have to buy an IBM just for a better hard copy. Ellen Orlanski of Flushing, New York.

A: *Let's talk interfaces.*

You will need to go parallel, since serial interfaces for the C64 are scarce to say the least. The Super Graphics and Super Graphics Jr are both great interfaces. Both of these interfaces can emulate the VIC 1525/MPS801 printer and will work well with **Print Shop** as well as some of the older programs aimed only at the early **commodore** printers.

The geoCable compatible cable is a good choice if you plan to only use your printer for use with **GEOS**. There are many print drivers that support this option, however I know of none for use outside **GEOS**. Unfortunately you can kiss **Print Shop** good bye.

9 pin, 24 pin, inkjet, or laser?

You can get great results from the

!!Q!!Q!!Q!!

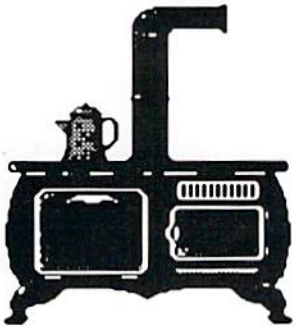
C64/**GEOS** combination. Just about any Epson emulating printer can give you great results with CMD's **Perfect Print**. While it does not yet support inkjet printers, it does offer support for a wide range of printers. Nine pin printers, as well as 24 pin printers, can achieve excellent results -- even from **geoPaint** documents!

One of the best sources for Epson emulating printers is Epson itself, although many other printers emulate the Epson FX-80.

There is no doubt that 24 pin printers yield excellent results from **GEOS**. But, with the proper driver the 9 pin can as well. The 24 pin printers only use 9 pins when printing **Print Shop** graphics, but are much faster when it comes to **GEOS**.

On the HP Deskjet you get 300 dpi, but your number of lines on the page is limited and therefore will not work with **Print Shop**. Also keep in mind that the single sheet feed printers don't allow for banners. I can only guess about the Canon BubbleJet. I'd ask to find out what the length of the page is before I bought one.

A laser printer is the best bet for compatibility and speed. Keep in mind that in order to get better output than a DeskJet the laser printer will need to have PostScript language either built in or in a cartridge.



Q: I have a C64, Indus GT disk drive, and a Star NX-1000C printer. I like to use the **GEOS** 1.2 for my word processing but it won't print the NLQ that is imbedded in the printer. I subsequently learned that **GEOS 2.0** has a print driver called **commodore** that is supposed to print fonts in the printer. I purchased **GEOS 2.0** to use this flexibility and much to my disappointment, I learned that **GEOS 2.0** will only operate on a 1541 disk drive. Is there any way to solve this problem without having to purchase a 1541 disk drive? Sidney R. Watts of Keysville, Utah.

A: You should be able to load the new version of **geoWrite** while using **GEOS 1.2**. If you can get it to work with the old operating system you should be able to access the NLQ with no problems. To access **geoWrite**'s NLQ mode properly you need to find the **commodore** font found on page 3 of the Applications disk (disk 2, side 2) and place it on the disk with **geoWrite**. Select NLQ spacing from the *page* menu within **geoWrite**. When you go to print your document select NLQ in the requester box that pops up when you select *print* under the *file* menu. If the contents of the document are all written in the **commodore** font you will get the printer's darkest NLQ font in your printout. Unfortunately underlining, bold, etc., are not supported by this option and you can only access one internal font unless you can select fonts from the printer's control panel or interface.

Q: I have a 1764 REU that has been expanded to 1 Meg by an outfit in Texas. When used with **GEOS** as a 1581 second drive it works great when swapping files. However, when trying to store files in the REU from my 1541-II drive, into the memory of the 1764, nothing loads.

From the startup menu for the 1764 REU I install the REU as unit #9 and use the default interface specified in the users guide of 207 ($CF00). I then initialize the REU and run a diagnostic test which states the 1764 "passes." I then load the File Copy Utility for the 1764 REU, and at the prompt "Enter Template or Return" is when the problems arise. Whether I enter a wild card or hit <RETURN> the directory is read and I get a statement that the files I am trying to copy from the 1541-II already exist in the REU and I am asked if I want to replace the file. If I answer "yes", the file is scratched and I am again told the file exists do I want to replace it. If I answer "no" I get a statement "file not copied." If I run a directory for the 1764 as unit #9 I get the error statement, "no files found." No matter how often I try, I cannot load any files from the disk drive into the 1764 REU. Walter Asp of Florence, Oregon.

A: The problem lies with the new configuration of the REU when it was expanded beyond the 512K point. The RAMDOS startup program will not work. If your REU has a switch to put it in 512K mode you should be able to run the setup program as you did before the expansion and everything should work fine. Maybe some of our readers know of a version of RAMDOS that will work with 1 Meg or larger REUs.

Just a note, the 1764 REU test program will unformat everything in the memory of both the REU and the C64.

Q: When using double sided/double density disks on C64/1571, how do you know which side the data is on? I've read the 1571 manual but must be missing something, or does it matter? Rodman H. Williams of Albany, Georgia.

A: In 1571 mode, the data is stored on both sides of the disk -- top and bottom. In 1541 mode data is written on only the bottom side of the disk. On a C128 or C128D in 128 mode the 1571 defaults to 1571 mode upon power up of the computer. If you power up in 64 mode, use a C64, C16, VIC20 or plus/4 the drive will default to 1541 mode.

To get into 1571 mode, with a formatted disk in the drive, type:

```
OPEN15,DV,15,"U0>M1":CLOSE15
<RETURN>
```

To go into 1541 mode type:

```
OPEN15,DV,15,"U0>M0":CLOSE15
<RETURN>
```

DV= the drive number of the 1571 disk drive.

```
READY.
■
```

DOS & Don'ts
by Jimmy Weiler

DOS & Don'ts is reprinted with permission from *LOADSTAR. The Complete DOS and Don'ts* is available on 1541 disk for the C64/C128 from Softdisk, P.O.Box 30008, Shreveport, LA, 71130 for $9.95, plus $4.50 shipping for 2nd day delivery.

Writing REL Files

Now we will leap right into WRITING and READING.

As with any other type of file, you write to a RELative file with a PRINT# statement. RELative files are unique in that you must tell DOS which record, and where in the record you want to write.

You pass that information to DOS via channel 15, the Command/Error channel. All DOS commands and error messages pass through channel 15. To write to a REL file, we have to use two commands -- a POSITION command followed by a PRINT# statement.

POSITION command tells DOS what record to write and where in the record to start writing. The syntax for the POSITION command is this:

```
PRINT#15,"P"CHR$(<channel number>)
      CHR$(<lo record byte>)
      CHR$(<hi record byte>)
      CHR$(<byte in record>)
```

Don't be intimidated by all that gibberish. It's not hard at all once you see a few examples.

File records start with record 1. In each record, the bytes start with number 1. So, to write our PHONEFILE's first record we do this:

```
1000 PRINT#15,"P"CHR$(4)CHR$(1)
     CHR$(0)CHR$(1)
2000 PRINT#3,"SCHLABOTNIK"
3000 PRINT#15,"P"CHR$(4)CHR$(1)
     CHR$(0)CHR$(13)
4000 PRINT#3,"8687247"
```

Now let's tear that apart until we understand it.

We PRINT#15 because POSITION is a DOS command, and must be sent through the Command/Error channel. The "P", of course, stands for POSITION.

CHR$(4) tells DOS we want to use disk channel 4.

CHR$(1)CHR$(0) is the record number, which must always be represented by two characters.

Here's how you can calculate the values you must use to access any record number.

```
10 INPUT"Record number";R
20 HB=INT(R/256)
30 LB=R-(HB*256)
```

Then use LB and HB as the characters for your record number:

```
40 PRINT#15,"P"CHR$(4)CHR$(LB)
     CHR$(HB)CHR$(1)
```

The last parameter of our POSITION command, CHR$(1) is used to point the I/O to the first character of the record. You can use values ranging from 1to your record length for this parameter. Your PRINT# will begin at whatever character in your record this BYTE pointer points to.

Don't omit this BYTE parameter. If it is left off you will access the 13th character in the record instead of the first. (That's because the carriage return after the POSITION command would be used as the BYTE parameter.)

Once you have POSITIONED, the PRINT# statement that follows writes into the record sequentially from the character pointed to by the BYTE parameter. You MUST POSITION every time you PRINT# into a relative file.

Still confused? Let's graph it out. Here's our file after we write two names into it.

```
   ┌ Byte 1      ┌ Byte 13
   │             │
   │             │
┌── SCHLABOTNIK/8687247/ <68 nulls>
│ ┌ WELLS/      6363088/ <68 nulls>
│ │
│ └─ Record 2
└── Record 1
```

Each record has two fields, the name and the phone number, separated by carriage returns and padded out to the next field with CHR$(0). The rest of the 89 characters in each record are CHR$(0). The first PRINT# in the first record started at character 1. "SCHLABOTNIK" is 11 letters long, plus one carriage return, for 12 letters. The second PRINT# in record 1 started where we told it to -- at character 13.

When we wrote the second record, the first PRINT# started at the first character and took 6 characters to finish. The second PRINT# started at character 13, so there are 6 null characters between the end of the first field and the start of the second. These nulls will have no effect when we read them back, so don't worry about them.

Doing a POSITION every time you use PRINT# gets old very quickly, and it consumes valuable computer time, and it uses extra memory space -- in other words, there's an easier way to write the fields into a RELative file's record.

Start, as before, by POSITIONing to the start of the record:

```
100 PRINT#15,"P"CHR$(4)CHR$(1)
     CHR$(0)CHR$(1)
```

Then print all the fields at once, in a single PRINT# statement:

```
200 PRINT#3,"SCHLABOTNIK"
     CHR$(13)"8687247"
```

Of course, in most programs, all the fields would already be contained in strings, and the code would look more like this:

```
150 CR$ = CHR$(13)
200 PRINT#3,NA$ CR$ PH$
```

One drawback of this technique is that you never know just where in a record any of the fields (except the first) can be found. This is no problem if you intend always to read or write a whole record, but if you ever want to read just one field from the record, or update just part of a record, you will need to know exactly what byte to POSITION to.

One of the major advantages of REL files over SEQ files is that you *can* update a small piece of a REL file without having any effect on the rest of the file. But take care! Every time you PRINT# into a record of a RELative file, the entire contents of that record from that point on will be erased.

Here's an example: Your record has this in it:

```
WILLOW/PINE/  MAPLE/ BIRCH/
```

You want to replace PINE with OAK, so you :

```
PRINT#15,"P"CHR$(4)CHR$(LB)
     CHR$(HB)CHR$(8):PRINT#3,"OAK"
```

Now your record has:

WILLOW/OAK/

-- obviously not what you intended. The safest way to update a record is to read the entire record, change the values in the appropriate variables, and write the whole thing back onto the disk. (to be continued...)

READY.

■

PIE (C64)

by

Rick Hedrick

Here is a program that will draw pie charts on the HIRES screen. It can take up to 50 entries! It has a great little routine to save the HIRES screen to a **Print Shop** HIRES picture on disk. The option to save is availible when the program is first executed. You can run **PIE** after any other program that makes a HIRES screen to save the picture in memory to disk.

When using **TipeRite** to enter the listing be careful of spaces both inside and outside of quotation marks.

```
3029   10 REM:COPYRIGHT 1994
       LYNNCARTHY INDUSTRIES
       INCORPORATED ALL RIGHTS
       RESERVED
1709   20 DIMCX(51)
2231   30 PRINTCHR$(147):AZ$=""
       :PP=2* :PQ= /180
       :POKE53280,14
4505   40 PRINT"*** PIE CHART (%)
       2-50 DATA ***":PRINT:PRINT
       "> ???? NEED TO SAVE A"
2256   50 PRINT"> ?? PRIOR SCREEN IN
       MEMORY ?? < Y/N="
       :AZ$="":INPUTAZ$
1923   60 IF AZ$="Y"THEN RUN 940
2966   70 PRINT:PRINT"(TEST DATA
       :X-CNTR=150;Y-CNTR=100
       ;RADIUS=90;4>
       DATA 10 20 30 40)"
2671   80 PRINT:PRINT"INPUT YOUR
       DATA:":INPUT"? HOW MANY
       DATA 2-50 ?=";ND:SM(1)=0
2131   90 FORJJ=1TOND:PRINT"---";
       JJ;"---":INPUTCX(JJ):SM(1)
       =SM(1)+CX(JJ):NEXTJJ
2294   100 FORJK=1TOND:CX(JK)
       =CX(JK)/SM(1)*360:NEXTJK
2278   110 PRINT:INPUT"X-CENTER
       (0-319)=";XC(1):INPUT
       "Y-CENTER (0-199)=";YC(1)
2413   120 INPUT"RADIUS
       (0-199)=";RC(1)
3203   130 PRINT:PRINT"PRESS RETURN
       FOR PIE CHART:":AZ$=""
3021   140 PRINT:PRINT"(SCREEN
       REDDENS & WAITS WHEN
       DONE)":INPUTAZ$
3309   150 BA=2*4096:POKE53272
       ,PEEK(53272)OR8
1723   160 POKE53265,PEEK(53265)OR32
3168   170 FORI=BA TO BA+7999
       :POKEI,0:NEXT I
2005   180 FORI=1024TO2023
       :POKEI,15:NEXTI
1394   190 LP=1
2135   200 X1=XC(1):Y1=YC(1)
       :X2=XC(1)+RC(1)
       :Y2=YC(1):GOSUB540
2448   210 X1=XC(1):Y1=YC(1)
       :X2=RC(1)*COS(PQ*CX(LP))
       +X1:Y2=RC(1)
       *SIN(PQ*CX(LP))+Y1
1639   220 GOSUB400
2242   230 LP=LP+1:IFLP>ND
       THENGOTO260
2260   240 CX(LP)=CX(LP)+CX(LP-1)
1487   250 GOTO210
1442   260 POKE53280,2
1485   270 GOTO270
1623   280 END
1285   290 Y=200-Y
1868   300 IFX<=0THENX=0
1718   310 IFX>319THENX=319
1864   320 IFY<=0THENY=0
1710   330 IFY>199THENY=199
2651   340 CH=INT(X/8)
       :RO=INT(Y/8):LN=YAND7
2498   350 BY=BA+RO*320+8*CH+LN
2426   360 BI=7-(XAND7)
2637   370 POKEBY,PEEK(BY)OR(2^BI)
1636   380 RETURN
1623   390 END
1953   400 GU=X1-X2:IFGU=0THENGOTO480
1837   410 MR=(Y1-Y2)/GU:BR=Y1-X1*MR
1872   420 FOR XR=X1 TO X2
       STEP SGN(X2-X1)*.1
1562   430 YR=MR*XR+BR
1362   440 X=XR:Y=YR
1635   450 GOSUB290
1626   460 NEXT XR
1970   470 IFGU<>0THENGOTO520
1829   480 FOR YR=Y1TOY2 STEP
       SGN(Y2-Y1)*1
1331   490 X=X1:Y=YR
1637   500 GOSUB290
1626   510 NEXT YR
1637   520 RETURN
1624   530 END
3084   540 XA=X1:YA=Y1:RX=X2-X1
       :RY=Y2-Y1:RR=SQR(RX*RX+RY*RY)
1740   550 X=X1:Y=Y1:GOSUB290
1370   560 I3=0
3180   570 X1=RR*COS(I3)+XA
       :Y1=RR*SIN(I3)+YA
2028   580 X2=RR*COS(I3+.01)+XA
       :Y2=RR*SIN(I3+.03)+YA
       :GOSUB400:
1335   590 X1=X2:Y1=Y2:I3=I3+.01
2012   600 IF I3>(PP+.03)THEN GOTO620
3247   610 IF(I3>0)AND(I3<=PP+.01)
       THEN GOTO580
1637   620 RETURN
2400   630 PRINT"SAVE MEMORY
       8192-16192":PRINT
4869   640 PRINT"(SAVES AS A PRINTSHOP
       PANEL)":PRINT"(CAN ALSO USE
       IN FGM Q-LINK)"
1299   650 PRINT"--------------------"
3851   660 A=8192 :REM STARTING
       ADDRESS
3316   670 B=16192 :REM ENDING ADDRESS
3223   680 A1=INT(A/256):A2=A-256*A1
4184   690 PRINT"LESS THAN 16
       CHARACTER FILENAME
       :":E$="":INPUT E$
5456   700 PRINT"(SAVES WITH REPLACE
       OF ORIGINAL NAME)"
1498   710 OPEN15,8,15,"S0:"+E$
1622   720 OPEN1,8,1,"0:"+E$+",P,W"
2932   730 PRINT#1,CHR$(A2)CHR$(A1);
3104   740 FORJ=ATOB:PRINT#1
       ,CHR$(PEEK(J));
1591   750 NEXT
2234   760 CLOSE1:VERIFYE$,8,1
2741   770 INPUT#15,A$,B$:PRINTA$,B$
       :CLOSE15
1621   780 END
```

HIRES BASE (ALL)

by

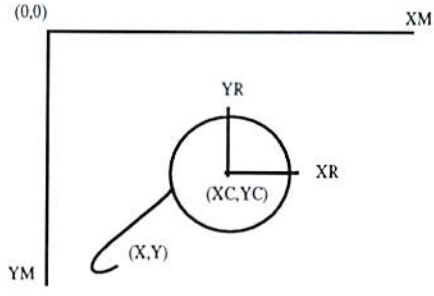
Brian L Crosthwaite

This month, **PRG** takes a look at HIRES (high resolution) graphics accessed from BASIC. The **HIRES BASE** is an empty skeleton to which you add code that will allow for the mathematical calculating of points on the screen.

The ability to plot any point on the computer's screen is one of the most powerful things a computer can do. It may seem like a simple thing, and it really is, but it has revolutionized mathematics.

The formulae are not in the BASE program. These you add later. Due to the sequential nature of the **TipeRite** program I have set up these programs so that the BASE will be the first part of the finished program. The finished program will be whatever you want to plot.

There are two sets of variables that the BASE program uses to plot and to setup each machine separate. The first are X, Y, and PT. X and Y are the coordinates on the screen where the dots are to be placed. PT is the Plot Type. If PT=0 then a dot is unplotted, if it is 1 then a dot is plotted. The second are XM (X's maximum plot or largest plottable value), YM (Y's maximum plot), XC (center of X scale), YC (center of y scale), DX (increment), DY (increment), XR (X's radius), and YR (Y's radius). The last four variables are not used by the modules in this issue, but are included for future use.



These BASE PRGs are set up in this manner so that any module can be run on any machine with the proper BASE. Since the VIC has different resolution than the C64 and other 40 column computers, these numbers are set from within the BASE program. The BASE for the

PET/CBM machines uses the text screen and plots a the <shift Q> dot character to the screen.

Writing MODs is relatively easy. GOSUB 60 will plot the coordinates X,Y using a PT of 0 or 1. To get a normal text screen GOTO 130 will do so. The latter is a one way trip. You get a normal text screen and the program ends. This can be changed to a subroutine by leaving off the END and replacing it with a RETURN. To conserve memory, the VIC20 does not have an exit routine.

The VIC20 version has 127 by 127 pixel resolution, so the picture's quality of detail is not compromised. On the HIRES screen of the VIC II (C64 & C128) and TED (plus/4 & C16) chip computers with 320 by 200 resolution the radius of the X coordinate needs to be altered to make the circle look round rather than oval. Try XM/YM, this works well. e.g. X=XC+XR*(XM/YM)* SIN(180/N*3.14). The VIC20's screen is square, so this is not necessary.

Following the listing of the BASEs are some MODs to give you an idea of how they work. Be sure to remove the REM before the statement that asks you to remove it. These statements may be left out of all versions except the VIC20.

Listing 1: 64 HIRES BASE

```
1973    10 REM ****[3 space]SETUP
         HIRES[3 space]****
1895    20 :POKE53265,PEEK(53265)
         OR32:XM=319:XC=XM/2:DX=1
         :XR=79:PT=1
1900    30 :POKE53272,PEEK(53272)OR8
         :YM=199:YC=YM/2:DY=1:YR=49
1825    40 :FORX=8192TO16191
         :POKEX,0:NEXT
2012    50 FORI=1024TO2023:POKEI,3
         :NEXT:GOTO1000
1663    60 REM ****[6 space]PLOT
         [7 space]****
2239    70 IFX>XMORX<0ORY>YM
         ORY<0THENRETURN
2533    80 CH=INT(X/8):RO=INT(Y/8)
         :LN=YAND7
3628    90 BY=8192+RO*320+8*CH+LN
         :BI=7-(XAND7)
3604   100 IFPT=1THENPOKEBY,PEEK
         (BY)OR(2^BI)
3665   110 IFPT=0ANDPEEK(BY)=(PEEK
         (BY)OR(2^BI))THENPOKEBY
         ,(PEEK(BY)-(2^BI))
1638   120 RETURN
2119   130 REM ****[2 space]TEXT
         [2 space]SCREEN
         [2 space]****
2425   140 GETE$:IFE$=""THEN140
2348   150 POKE53265,PEEK
         (53265)AND223
2347   160 POKE53272,
         PEEK(53272)AND247
2237   170 CLR:PRINT"[CLR]":END
2075   180 REM ****[3 space]MAIN
         [2 space]PRG[3 space]****
```

Listing 2: Plus/4, 16, 128 HIRES BASE

```
10 REM BY BRIAN L CROSTHWAITE
20 REM COPYRIGHT 1994 LYNNCARTHY
        INDUSTRIES INC. ALL RIGHTS
        RESERVED
30 XM=319:YM=199:XC=XM/2:YC=YM/2
        :XR=79:YR=49:DX=1:DY=1:PT=1
40 REM  ****[2 space]SETUP
        HIRES[2 space]****
50 COLOR1,1,6:COLOR2,2,5:COLOR3,3,4
        :COLOR4,4,3
        :GRAPHIC1,1:GOTO1000
60 REM  ****[5 space]PLOT[6 space]****
70 DRAWPT,X,Y
80 RETURN
90 REM
100 REM
110 REM
120 REM ****  TEXT SCREEN  ****
130 GETKEYE$:GRAPHIC0:END
140 REM ****   MAIN BODY   ****
```

Listing 3: VIC HIRES BASE

```
2 REM BY BRIAN L CROSTHWAITE
4 REM COPYRIGHT 1994 LYNNCARTHY
        INDUSTRIES INC
6 REM ALL RIGHTS RESERVED
10 POKE52,20:POKE56,20:CLR
20 GOSUB160
30 XM=127:YM=127:XC=XM/2:YC=YM/2
        :XD=1:YD=1:XR=60:YR=60:PT=1
40 GOTO1000
50 REM PLOT
60 IFX>XMORY>YMORX<0ORY<0THENRETURN
70 CH=INT(X/8)*16+INT(Y/8)
80 REM PLOT
90 RO=(Y/8-INT(Y/8))*8
100 BY=5120+8*CH+RO
110 BI=7-(X-(INT(X/8)*8))
120 IFPT=1THENPOKEBY,PEEK(BY)OR(2^BI)
130 IFPT=0ANDPEEK(BY)=(PEEK(BY)OR
        (2^BI))THENPOKEBY,(PEEK
        (BY)-(2^BI))
140 RETURN
150 REM SETUP
160 POKE36869,253
170 FORI=5120TO7679:POKEI,0:NEXT
180 POKE36879,8:PRINTCHR$(147)
190 FORI=7680TO8185:POKEI,160:NEXT
200 FORL=0TO15:FORM=0TO15
210 POKE7749+M*22+L,L*16+M
220 NEXT:NEXT
230 RETURN
```

TEXT PLOT (All)

PET/CBM

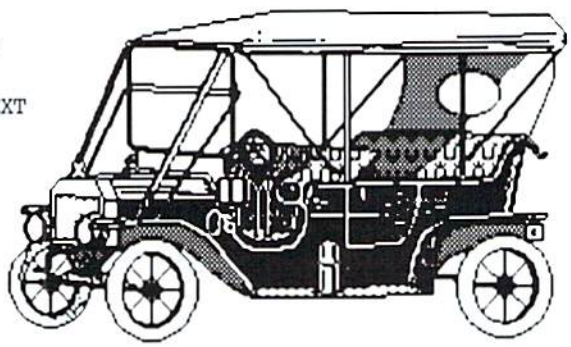
by

Brian L Crosthwaite

This is a mega-LORES (low resolution) BASE program that will plot points on a text screen. This BASE program will run on 22, 40, and 80 column screens. While it's here mainly for the PET and CBM machines, it is interesting to see the modules plotted out on LORES. The 22 column option can be used on any computer, although it was written for use with the VIC20.

Some of the modules do not take advantage of the X axis. They may appear tall and thin on the screen. To adjust this, replace the variable YC in the loop with 99 or another number. Don't change YC -- replace the variable with a number, otherwise the program may not work at all.

```
1746    10 PRINT" 1) 22 COLUMN"
1745    20 PRINT" 2) 40 COLUMN"
1751    30 INPUT" 3) 80 COLUMN";N$
1486    40 GOTO160
1579    50 REM
1663    60 REM  ****[5 space]PLOT
         [6 space]****
1959    70 PRINT"[shift CLR/HOME]";
         :FORI=0TOX:PRINT"
         [CRSR right]";:NEXT
1968    80 IFX>XMORX<0ORY>YMOR
         Y<0THEN180
1891    90 FORI=0TOY:PRINT"";:NEXT
2065   100 IFPT=1THENPRINT"[shift  ]";
2060   110 IFPT=0THENPRINT" ";
1638   120 RETURN
2073   130 REM ****[2 space]TEXT
         SCREEN[2 space]****
2425   140 GETE$:IFE$=""THEN140
1656   150 PRINT"[CLR]":END
2260   160 REM  ****[2 space]SETUP
         SCREEN[2 space]****
1762   170 IFN$="3"THENXM=79:YM=23
1763   180 IFN$="2"THENXM=39:YM=23
1766   190 IFN$="1"THENXM=21:YM=19
1810   200 XC=XM/2:YC=YM/2:XR=1/3*XM
         :YR=1/3*YM:DX=1:DY=1:PT=1
1434   210 PRINT"[CLR]";
4333   220 REM BY BRIAN L CROSTHWAITE
2788   230 REM COPYRIGHT 1994
         LYNNCARTHY INDUSTRIES INC.
         ALL RIGHTS RESERVED
2218   240 REM ****[5 space]MAIN BODY
         [3 space]****
```



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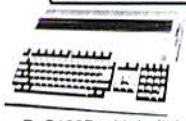

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The Mods (ALL)

by

Brian L Crosthwaite

These are some modules to go with the **HIRES BASE** PRGs to give you an idea of how they work. These MODs are for all computers, but the C64 checksum numbers have been included for use with **TipeRite** when entering them in on the C64.

There are several ways to join the MODs with the BASE program. Any BASIC merge program will do the trick. **Program Merger C64** from the May '93 **PRG** should do nicely.

The MODs are short enough to list on the screen. Load the BASE. Home the cursor and hit return down the list, entering the lines in and thus joining the two listings into one program.

Another possibility is to load the BASE and type in the listings.

I hope you get some ideas from these MODs and become inspired and write you own MODs -- send them in we'd love to share them with other readers!

Listing 1: MORE.MOD

```
1653   1000 C=0
2214   1010 FORV=YCTO1STEP-1
         :FORN=-VTO0
1734   1020 C=C+.05
2019   1030 X=INT(XC+V*SIN(N/(C/4)*
         [shift up arrow]))
2101   1040 Y=INT(YC-V*COS(N/(C/5)*
         [shift up arrow]))
1680   1050 GOSUB 60
1505   1060 NEXTN,V
2592   1070 GOTO130:REM DELETE
         FOR VIC20
```

Listing 2: CIR.MOD

```
1422   1000 F=-100
1913   1010 FORR=0TOXM*3:XR=R
         :YR=RSTEP1:F=F+1
         :IFF=0THENF=1
1557   1020 FORN=1TO360
2015   1030 Y=INT(YC+YR*SIN(N/F*
         [shift up arrow]))
2136   1040 X=INT(XC-XR*COS(N/F*
         [shift up arrow]))
2170   1050 GOSUB 60:REM GOTO PLOT
1714   1060 PT=PT+1:IFPT>1THENPT=0
1773   1070 NEXTN:NEXTR
1479   1080 GOTO130
```

Listing 3: SNAIL.MOD

```
1653   1000 C=0
1928   1010 FORV=1TOYC:FORN=0TOV
1734   1020 C=C+.05
2020   1030 X=INT(XC+V*SIN(N/(C/2)*
         [shift up arrow]))
2102   1040 Y=INT(YC-V*COS(N/(C/2)*
         [shift up arrow]))
1680   1050 GOSUB 60
1505   1060 NEXTN,V
3012   1070 GOTO130 :REM DELETE THIS
       LINE FOR VIC20
```

Listing 4: CRYSTLCRKR.MOD

```
1510   1000 PT=1:FORN=0TO9999
1820   1010 X=INT(XC+XR*SIN(N/(
       999/120)*[shift up arrow]))
1929   1020 Y=INT(YC-YR*COS(N/(
       999/121)*[shift up arrow]))
1952   1030 GOSUB60:REM PLOT
1465   1040 NEXT
2119   1050 GETC$:IFC$=""THEN1050
2415   1060 GOTO130 REMOVE FOR VIC
```

Listing 5: CRKR2.MOD

```
1557   1000 FORN=0TO9999:
       R=R+.01:XR=R:YR=R
1820   1010 X=INT(XC+XR*SIN(N/(
       999/120)*[shift up arrow]))
1929   1020 Y=INT(YC-YR*COS(N/(
       999/121)*[shift up arrow]))
4714   1030 IFX<=XMANDX>=0ANDY<=
       YMANDY>=0THENGOSUB60
1465   1040 NEXT
2114   1050 GETE$:IFE$=""THEN1050
2398   1060 GOTO130:REMOVE FOR VIC
```

3D-Graph (plus/4, C16, C128)

by

Brian L Crosthwaite

This program draws a three dimensional, ah, well... This is one you'll have to run to see.

The first listing is the C128 version. The second listing is the plus/4 & C16 version. -- Enjoy!

Listing 1: 3D GRAPH 128

```
10 GRAPHIC3,1
20 REM 3D-GRAPH BY BRIAN L CROSTHWAITE
30 REM COPYRIGHT 1994 LYNNCARTHY
     INDUSTRIES INC ALL RIGHTS RESERVED
40 XC=139:YH=99
50 FORX=10TO139
60 F=INT(RND(0)*(2-(-1))+(-1))
     :A=A+F:Y2=199-(A+YH)
70 X1=X:Y1=YH:X2=X
80 DRAW3,X1,Y1TOX2,Y2
90 X3=X2+10:Y3=Y2-10
     :DRAW1,X3,Y3TOX2,Y2
100 X4=X1+10:Y4=Y1-10
     :DRAW2,X4,Y4TOX1,Y1
110 IFX=10THENDRAW3,X3,Y3+1TOX4,Y4-1
120 NEXT
130 GETKEYE$:GRAPHIC.:PRINT"[CLR]
     ARE YOU"
140 POKE208,8:POKE842,145
150 POKE843,29:POKE844,29:POKE845,29
     :POKE846,29:POKE847,29
     :POKE848,63:POKE849,141
160 END
```

Listing 2: 3D-GRAPH Plus/4 & 16

```
10 GRAPHIC3,1
20 REM 3D-GRAPH BY BRIAN L CROSTHWAITE
30 REM COPYRIGHT 1994 LYNNCARTHY
     INDUSTRIES INC ALL RIGHTS RESERVED
40 XC=139:YH=99
50 FORX=10TO139
60 F=INT(RND(0)*(2-(-1))+(-1)):A=A+F
     :Y2=199-(A+YH)
70 X1=X:Y1=YH:X2=X
80 DRAW3,X1,Y1TOX2,Y2
90 X3=X2+10:Y3=Y2-10:DRAW1,X3,Y3TOX2,Y2
100 X4=X1+10:Y4=Y1-10
     :DRAW2,X4,Y4TOX1,Y1
110 IFX=10THENDRAW3,X3,Y3+1TOX4,Y4-1
120 NEXT
130 GETKEYE$:GRAPHIC.:PRINT"[CLR]
     ARE YOU"
140 POKE239,8:POKE1319,145
150 POKE1320,29:POKE1321,29:POKE1322,29
     :POKE1323,29:POKE1324,29
160 POKE1325,63:POKE1326,141
170 END
```

```
READY.
■
```


On The Spinner!

The Spinner contains all the programs found here in **PRG** plus **The Extras**. **The Extras** are programs too long or complex to appear in the magazine. Here are this month's **Extras**:

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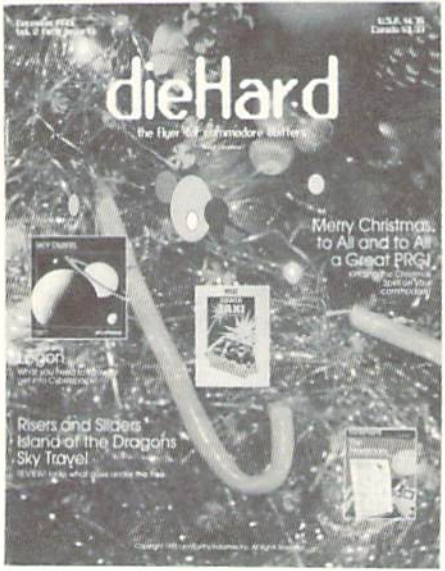

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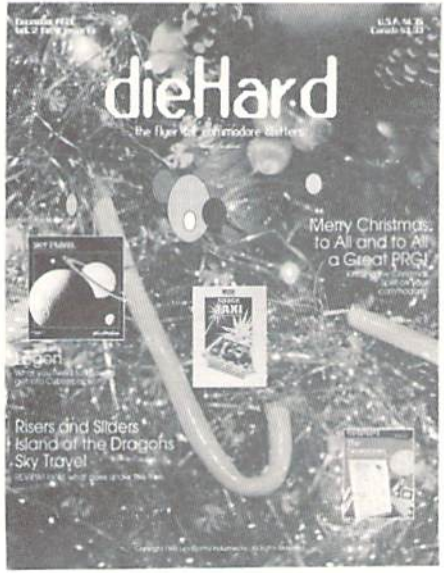

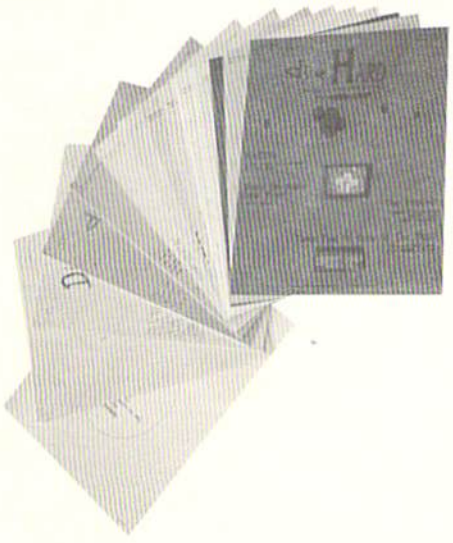

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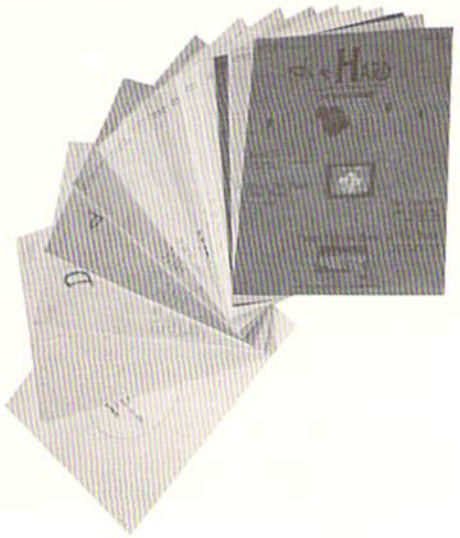

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* These issues were printed with a **commodore** MPS1270 inkjet and printed by Kodak copy machines, the original **Flyer**.

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