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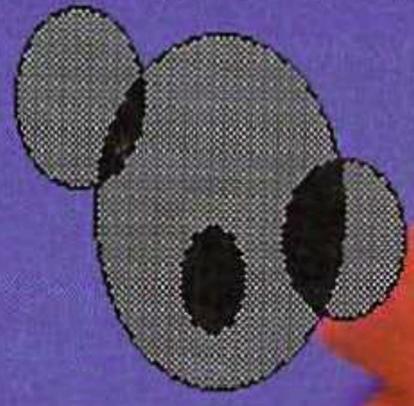
April 1994
Vol. 3 No. 3 Issue 19

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dieHard

the flyer for commodore 8biters

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ANY CD!!!

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dieHard

the Flyer for commodore 8biters

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underground!!!!

Each issue of *dieHard* comes packed with information to make your **commodore** work better for you and help keep you connected to other **commodore** dieHards. Here's what you'll get with your subscription to *dieHard*:

- ☛ Tips on all major **commodore** software and hardware like **GEOS**, Super Snapshot, Laser Printers, **Fleet System**, RAMLink and more!!!
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- ☛ Type-in programs and more type-in programs!!!
- ☛ Our annual public domain issue reviews the available software in the public domain and passes the best on to you.
- ☛ Our annual **Rarities** issue lists all sources of **commodore** equipment so you can find that program or piece of hardware that you've been looking for.
- ☛ And information on telecommunicating, music on your **commodore**, printing, memory management, AND MORE!!!



Each month there's a little known secret sent to many a dieHard -- it's the companion disk to the magazine --

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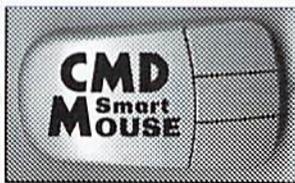
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View From The Underground

by

Brian L Crosthwaite

Well, this is our last 8bit issue of *dieHard*. We will be moving over to the 16 and 32 bit platforms of the Amiga -- APRIL FOOLS!

Ok, that was a little like the "Ask him how his father dances" routine. I do enjoy playing around with other computers, but nothing can waiver my love and obsession for the **commodore** 8 bit machines. Nothing.

Sitting where my C64 used to sit is an Atari 520 STFM, where my C128D was are my monochrome and RGB monitors for the Atari. I have my MPS1250 plugged in, sitting on my catalogue case on the floor -- this thing takes up more room than two complete **commodore** systems!

So, where are the C128D and the C64? They are in the metropolitan area known as Downtown Boise. The offices of LCII have moved to higher ground. So high, in fact, that I had to put on my safety harness and rappel down to the surface of the planet to write this. Actually, we have moved to the fifth floor of the old Carroll's Building. I now have a desk with no computer on it, nestled between two "L" shaped computer work stations crammed with **commodore** computers. My 8032, my VIC20 and C128D. I have a cubie next to my office that houses my C64, 64C, plus/4 and C16.

This move means a couple of things. 1. Things may be a little chaotic for awhile -- we tore the place apart yesterday looking for an Aprospand cartridge port expansion unit. 2. Things are a little more organized. We have more staff. Sandi, our new Office Manager, is the person you will be talking to when you call rather than whoever is nearest the

phone, or whoever happens to be in.

Writers' and Programmers' and Artists' compensation has also increased. *Flyer* and *Spinner* circulation have both increased -- the word is getting out. You may have noticed the jump in advertisers in *dH*. We all know what that means -- soon to follow -- more pages. I can't say when, but it should take place within the next few months. (Oh, I hope! I hope! I hope!)

Ok, what are all these graphics about? Rick Hedrick, known to some as the Cyberteens, quite possibly Auran or even another alias on Q-Link, has submitted clips ranging from the pure mathematics realm to alchemy (well, not quite). I think they are fairly self-explanatory.

Now is not the time to panic! CP/M and Telecommunications will be back next month! In the meantime, read, look, learn -- enjoy!

READY.



dieHard

the Flyer for commodore 8biters is written and compiled on **commodore** 8bit equipment. It is then typeset on a C128D computer using **geoPublish**. The system consists of a **commodore 128D** personal computer with an internal 1571 disk drive, external HD-85, FD-4000 and 1581 disk drives, a **commodore MPS 1270** inkjet printer with a CARD?+G parallel interface, a **commodore MPS 803** dot matrix printer, an HP LaserJet 4ML with CMD's **geoCable** compatible cable, a **commodore 1670** modem, a CMD RAMLink with 1 Meg RAM, an Aprospand 64 cartridge port expansion unit running out of the first slot on the RAMLink via a cartridge extension cable containing a **commodore 1764** RAM Expansion Unit expanded to 512k, a Final Cartridge III, and a HEARSAY 1000 voice cartridge, a **commodore Datassette**, M-3 mouse, TAC 2 joystick controller, AMIGA 1080 80/40 column RGBI/composite monitor and a **commodore model 1701** 40 column monitor. Our masters are printed in-house on the HP LaserJet 4ML with **GEOPUBLASER1.8**. And the magazine you hold now is printed by Northwest Printing, Inc. here in Boise, Idaho.

What? No May '94 Issue!?!?

You will notice a profound lack of *dieHard* during May of 1994. For many reasons, we found ourselves in need of an extra month; and rather than try to turn out two issues in two weeks each, we decided to cut an issue. The biggest reason we need this extra month is because we are going to be distributed at newsstands across the country, and we need the lead time to make it to the shelf.

This is a big step for us. As most of you know, *dieHard* started out as a "flyer" and moved into magazine status, but being distributed at newsstands is a whole new ballgame for us. Needless to say, we are very excited. Please share with us in the pride we are going to feel at seeing our *dieHard* on the newsstands.

This skipped issue will not affect your subscription. The issue numbers will continue in line. The only change will be that your expiration date will increase by one month.

If you have any questions, please feel free to call us at (208) 383-0300 or fax at (208) 383-0151. You can write us a letter at P.O. Box 392, Boise, ID 83701-0392.

READY.



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dieHard

the flyer for commodore 8bitters

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Something is happening! For
the C64

Dot.dot.dot 64
Not so annoying to some.

Temperature
Convert temperatures to and
from. For the C128, plus/4
and C16.

Manic
Madness of the Musical kind!
For the C128, plus/4 and C16.

Something.0
A screen saver, or a screen
burner -- you decide. For the
VIC20, but will run on
anything!

Trader's Corner 34

Fonts used in this issue:

GEOS:

LW_Roma

LW_Barrows

Cory

Commodore

Q-Link:

LW_Galey

LW_Cowell

☆*❁*❁❁▼▼◆*❁*



The graphics found in this month's issue were done by Rick Hedrick of Arlington, Virginia. We will be featuring some of his work over the next few months. Enjoy!!

dieHard, the Flyer for commodore 8bitters (USPS Pending) is published monthly except for bi-monthly issues in January/February and July/August for \$16.97 per year by LynnCarthy Industries, Inc., 816 W. Bannock, Suite 502, Boise, ID, 83702-5850. Application to Mail at Second-Class Postage Rates is Pending at Boise, Idaho. POSTMASTER: Send address changes to dieHard, P.O.Box 392, Boise, Idaho, 83701-0392.

***BIRTHDAYBUSTER**
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Editor-in-Chief: Brian L Crosthwaite
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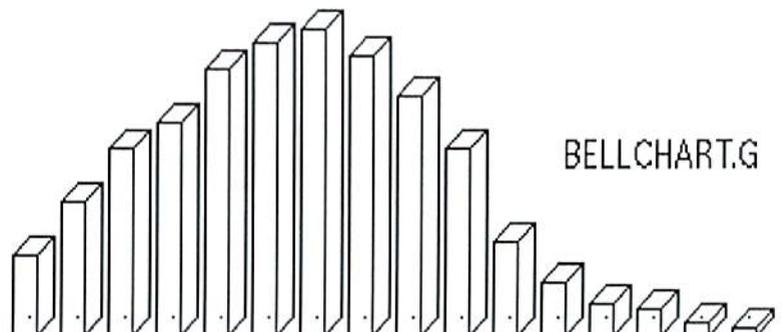
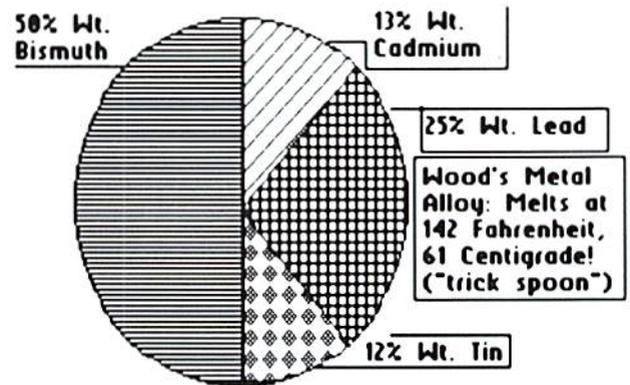
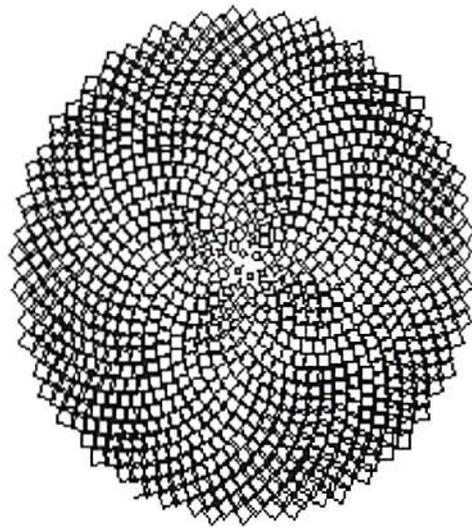
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INPUT;READER\$

Send us your INPUT! INPUT;READER\$, P.O.Box 392, Boise, Idaho, 83701-0392

Is R.J. Smulkowski stating that C64 and 128ers will be able to access the color 64 BBS at 9600bps? His "Gee, remember when it was common knowledge that 1200bps was the absolute limit for **commodore** telecommunications?" has me drooling. Please say it's so! (I'm currently using a 2400 baud modem but would have no

objection to moving up to 9600 or higher!)

A word about your advertisers: they are the most cooperative bunch I've ever met. They certainly deserve all readers' support to succeed.

It's amazing how few people seem to know about **Sky Travel**. It is even more amazing that a program with so much runs on a C64. I don't know who Roger Gouin is, but he certainly sounds knowledgeable. Of course, you could say I'm prejudiced since he supports so many of my views. Programs like **Sky Travel** and **The Write Stuff** (which I'm using to write this letter) certainly put to shame many of the high-priced, over-bloated MS-DOS programs on the market today. (Just goes to show how much clout Big Blue has even though it sells clunky products.) I get plenty of laughs when I browse the computer section of any bookstore today. Can you imagine paying \$20-\$50 for a book to explain how to use a program for which you just paid \$200-\$600? And for even more laughs, just read any of the "big time" computer magazines. They're loaded with anguished cries of help from people who can't get a program "installed"

properly or who have problems after they finally do get it installed.

All of which serves to remind me that I'd like to get the spelling checker module for **The Write Stuff**, if anyone out there has an original they're not using. Ed Harler of Levittown, Pennsylvania.



In an 8-bit world where positive elements are increasingly rare, *dieHard* stands out as a pleasant surprise. Your "Flyer" just

gets better with every issue. I was especially glad to see Michael Eglestone's exploration of the BBS world. I totally agree with his view of **Desterm**. It came with my recently purchased SwiftLink RS-232 interface from CMD and it's the best terminal program I've seen on my C128. With plenty of menus and sub-menus, **Desterm** supports a mouse and is easy to use even from the keyboard. I'm still finding out just how powerful it is. CMD also provides a couple of C64 programs and even one in CP/M, so a 128 user has a lot of options.

Matthew Desmond's address appears in the "About" window on **Desterm**'s first menu: Desmond Software Industries, 265 Beechlaw Drive, Waterloo, Ontario, Canada N2L 5W8. He also includes a number of on-line addresses in that window. His shareware fee is \$25.00, but he doesn't specify whether that's US or Canadian funds.

In spite of Commodore's best efforts, the C64 and C128 live on. Let's keep it that way. Jack Dodge of Fort Pierce, Florida.

Just a card, Brian, to let you know I've been neutral about **GEOS**; I don't love it or hate it. However, after reading your Jan/Feb *dieHard*, I'm going to be checking it out. It looks worthwhile. I'm amazed at the amount of propaganda (and noise) on MS-Windows, especially since **commodore** users have had Windows (aka **GEOS**) for years. Ed Harler of Levittown, Pennsylvania.

I must say your magazine has rekindled my interest in my C64. I am finding out there is actually still support for this amazing wonder of the 20th century. I've picked up a few C64s, several drives, and various parts lately. I figure I got around 250+ disks. You talked me into **GEOS/Perfect Print**, etc., etc. I bought my first C64 in 1984 and still hope to be peekin and a poking in the year 2050. I also found the Gamers Dream cartridge, the Super Snapshot V5 still in production (Software Support International 1-800-356-1197) and I ordered two. You should do a review on this one. It is the overall best of my 4 fastload/ETC cartridges. Great for games, too. I figure it will fastload about 95+% of my wares.

Well, guys, keep up the good work! Keep the printers rolling, and I will keep subscribing! ARF Programs 94. Mark Gishler, Lincoln Park, Michigan.

In a recent issue of *dieHard*, you gave a reply to someone looking for pens for the cute little **commodore** 1520 plotter. As you noted, they are available from Radio Shack. It is not too well known that Radio Shack also had a similar plotter - the reason they carry the pens. What is even odder is that Texas Instruments and Brother either had similar plotters or equipment which used those pens since both companies at one time supplied such pens. I even have packs of them.

The real reason for this letter, however, is to acquaint you and your readers with the information that Radio Shack also carries the paper rolls for these beautiful little plotters. When I ran short recently, I scurried to my most convenient R.S. to inquire. Obviously, lack of demands precludes the retail stores from stocking such an item; but after some prodding of the manager, we browsed their catalogs and finally found the item - at least I took a chance since the listing was not clear - and ordered one pack of three rolls. When they came, they were the proper ones for the plotter. Should anyone want such paper, any convenient R.S. should be able to order same. The stock number is 10274827 (which the store manager said would be used for future orders). The catalog and package state "Plotter Roll Paper for CGP-115 Printer". The package also lists a catalog number of 26-1428. The three-pack cost me about \$7.00 plus shipping charges. Dr. Walter Erbach of Lincoln, Nebraska.

Rarities

R. Scot Derrer

User Groups

More additions to our ever expanding list of active **commodore** user groups. Bo Fain 'Bodacious' sysop of the BODACIOUS BBS in the UBAN network wrote us about their local club, Commodore Club 2000. As we continue into 1994, this list keeps on

growing and indicates strong user support for **com-modore** computers. Among the abundant *diehards*, there are substantial

new members joining these clubs with new and used computers. Did I mention foreign countries yet? Australia, Germany, the UK, and other countries are filled with **commodore** enthusiasts. Here's to another decade of 8-bit computing.

ABCUG
PO Box 179
Glen Burne, MD 21060-0179

Commodore Club 2000
1021 Scarpengo
Shreveport, LA 71107
BODACIOUS BBS (318)929-2414

Commodore Users of Wichita
c/o Dale Lutes
11102 W. 17th Street
Wichita, KS 67212

Commo-Hawk
PO Box 2724
Cedar Rapids, IA
52406-2724



geoNEWS, Journal of
geoCLUB
c/o Peter Hunt
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Doveton Vic. 3177
Australia

New Orleans Commodore
Klub - NOC=K
c-64/128 Group

PO Box 850306
New Orleans, LA 70185-0306

Tri-City Commodore Computer Club
(TC-Cubed)
PO Box 224



Richland, WA
99352-0024

C64
Communi-
cations

Support

Some time ago, Yardley Beers wrote us about his C64 program and article in the Spring 1993 issue of *Communications Quarterly*, should we be interested. Well, of course we were and we began researching. After three libraries and locating another publication called *Communication Quarterly*, the correct source was found. We called them and they graciously sent us a complimentary issue. These publications pursue the latest in communications technology and are quite interesting. If you are into HAM radio, CB radio, microwave antennas, satellite dishes, and various electronic devices and gadgets, then you'll love this stuff. Yardley Beer's article is called **ONETWORES**, a C64



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program for the analysis of single and double-resonant dipoles, and is about



antenna analysis. For more information write: *Communications Quarterly*, 76 N Broadway, Hicksville, NY, 11801.

Send us your group's news- letter! Do you or someone you know support the **commodore** 8-bit market? Send us your info today, and we'll spotlight them



right here in **Rarities**.

dieHard
ATTN: **Rarities**
P.O.Box 392

Boise, Idaho
83701-0392

And remember -- long live the Universe of **commodore!**

READY.

Just Tips

I's Have a Problem

by Ed Brenner

Many programmers are fond of using the letter "I" as a variable. It's a perfectly good variable, except with some sans-serif typefaces it's difficult to tell an "I" from a "1" or an "l". So if you are debugging a program you wrote and see a line in your printout such as:

```
100 ab=I1
```

you must look closely to see whether AB=eye-eye, or AB=eye-ell, or AB=eye-one, etc.

So, if the problem should happen to be in line 100, it's easy to miss as you skim through the listing -- particularly when you are expecting to see the "I" and you accidentally typed in

the letter "l" which looks so much the same. *Solution: Don't use "l" as a variable.*

READY.





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here (rather, there)! You can see it at your leisure.

BASICS:, **BYTES:**,

BITS: Various levels of programming for programmers and non-programmers alike. These are definitely learning

great little game altering modules that allow you to get past that level you've been stuck at the last few months! #117 also has yearly **TAXWARE** featuring **Tax Accountant!**

LOADSTAR is full of color and sound, truly a remarkable experience -- one I highly recommend. I give this one the rarely seen BLC 6 stars.

LOADSTAR is available from Softdisk Publishing, 606 Common Street, Shreveport,

Louisiana 71101, (318) 221-8718 OR

1-800-831-2694. 3

months is \$29.95 (US),

\$34.95 (Can/Mex),

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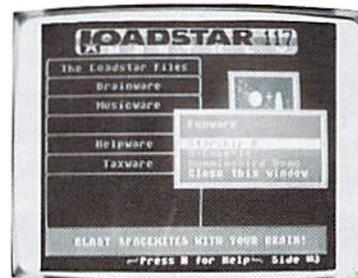
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months \$89.95 (US),

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\$129.95 (other foreign).

Or 24 months \$149.95 (US), \$189.95 (Can/Mex), \$229.95 (other foreign). Check it out today!



JiffyDOS and an FD4000 drive in ten seconds! (I feel like I'm in the 90's!)

Diskcovery (where Fender speaks from the Tower) and **Soapbox** (where Jeff, well soapboxes!) are editorials by the masters themselves -- Fender Tucker and Jeffery Jones. There is a table of contents, the usual kudos and caveats, and a *Loadstar* forum, **LOADSTAR Briefs** (where you can write *LOADSTAR*, subscribe, print out text from *LOADSTAR*), where readers' questions and concerns are addressed. . You will find a New Users area, a submission form, and a nifty table of contents printer that prints a tiny disk-sized table of contents for storing with your disk.

Did your Super Snapshot garble the *LOADSTAR* opening screen when you booted? Never fear! The **Title Screen Viewer** is

areas.

User Groups is an area that, until recently, included *dieHard*. (They moved our mention to the *Loadstar Letter*, that's the paper portion of the *LOADSTAR* reality.)

Other on-disk areas include:

Brainware - puzzles and other challenges await!

Musicware - famous music stars -- it's like buying a SID CD each month!

Funware - fun things like games, animations, all kinds of things!

Helpware - they're not all fun and games. *LOADSTAR #117* has a program called **Memories** that generates poetry and plays music. Then there are **Stratagem**s. These are

READY.



Cyber

R.J. Smulkowski
is

Cyberspace Cowboy

Well...there have been a few new additions to the Delphi Commodore Gopher list. Some of the more loaded systems accessible are ccosun.caltech.edu (CalTech archive, USA) and ftp.cs.dal.ca (Dalhousie Univ., Canada). The CalTech archive contains lots of general **commodore** stuff, and a **GEOS** area. Dalhousie Univ. has lots of C128 goodies and loads of GIFs and terminals. More general listings at nic.funet.fi (FUNET archive, Finland), and they have a directory for Mojo Mag (see Mojo Mag Review, page 3, April 1993 *dieHard*). ucsd.edu (Univ. of California at San Diego, USA) has listings for tons of SID and MIDI files. If it sounds like I'm trying to tell you that there is a wealth of **commodore** files down in those Gopher holes, that's because there really is. Anyone who joins Delphi to get Internet access, don't forget to attend a Friday night **commodore** conference. All the regulars will be there ED_P, DRPEPPER1, MOJOED, SLEEPY-LOIS, sometimes ELLEN, and if you're really lucky MUFFY (also known as she who must be obeyed) may drop in. The conferences start at 6:00 PM Eastern Time every Friday night, and a good time is had by all who attend.

We've been talking about setting up a BBS in recent installments of this column. This month, I'd like to address what I see to be a real problem facing the telecommunications hobbyist -- the sensationalists in the media and their campaign of misinformation against anything or anyone they don't

understand. When was the last time you heard anything positive said about a hacker in the media? Hacker wasn't always a derogatory term, quite the contrary! The badge was once worn with pride by those who had achieved a high degree of proficiency in computer related skills. But the media has turned hacker into a buzzword which conjures up images of sociopathic insomniacs trading stolen credit card numbers. How much mention did the media make of the scores of hobbyist owned and operated BBSs which, during the Persian Gulf

conflict, used their network connections to forward electronic mail to loved ones serving in that operation. And these BBSs offered this service free of charge, I might add. Several BBSs in my area have directories full of GIFs and descriptions of missing persons, mostly children. Another fine public service use of our skills and equipment.

The public must be educated. And, I will admit, we must be on our best behavior. To this end, along comes the American BBS Association (ABBSA). To become a member, you must operate a BBS which is available 24 hours daily and agree to the ABBSA Ethical Standards. The standards follow:

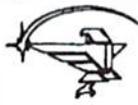
1. I will not use or allow my BBS to be used for illegal activity.
2. I will not allow my BBS to be used to distribute Pirated or Copyrighted software except where software Copyright and/or License agreements specifically allow electronic distribution; and if such

software is uploaded to my board without my knowledge, I will remove it when I am made aware of it.

3. I will restrict access to adult material by minors and I will make ALL REASONABLE EFFORTS to verify that a caller is 21 years of age before allowing that caller access to adult material.

4. If I run a Public BBS, I will not refuse access to any individual on the basis of age, sex, religion, race, or ethnic origin except restrictions to specific conferences that are necessary to provide Private Conferences for particular age, sex, religious, racial or ethnic groups.

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Sounds pretty easy to live with, doesn't it? For more information on the ABBSA, the Internet E-Mail address is ac038@dayton.wright.edu or US Mail is: *American BBS Association National Office, % Westlake Information Systems, 2603 N. Main Street, Dayton, Ohio, 45405.* Don't forget to include a stamped self-addressed envelope to help this organization with the costs.

[American BBS Association and ABBSA are Service Marks of the American BBS Association (1992)]

READY.



space!

REVIEW!

BobsTerm Pro

created by BOB LENTINI

reviewed by Noel Plank

"The Last Telecommunications Program You Will Ever Need!"

More and more home computer owners are using their PCs for on-line entertainment, and telecommunicating for fun is becoming a growing national pastime. It can also be an expensive and a frustrating experience if the terminal program you are using doesn't perform properly or is confusing and hard to use.

BobsTerm Pro is truly the best telecommunications software program for both new and experienced users alike. The software disk is not copy protected so you can easily make a back-up, but it does require you to insert a supplied Dongle-Key into Joystick Port 2 before the program will run. By allowing you to make a back-up of the system disk, you can place phone directories on your back-up or even permanently change the default settings to your own requirements without fear of destroying your master. This program features window overlay menu screens and comes with an excellent easy to follow 100 page professional spiral bound manual.

The manual itself is very thorough and even explains how to customize parameters so you can use it with virtually any modem, printer or Bulletin Board system you are ever likely to encounter.

The program itself supports one or two 1571's or a 1581 disk drive including its double sided CP/M capabilities. The 1750 RAM Expander is not supported, however. The **BobsTerm Pro** operates in the 80 column RGBI mode and emulates VT-100, VT-50 and 80 ADM 31 (CP/M type) terminal parameters and you can create your own custom terminal setups. There is even a remote mode to answer your phone and provide callers with your own greeting. It will also track the number of callers and allow them access to all DOS and transferable modes. Private pass words are also available to screen access in to your mini BBS

too.

Other features of **BobsTerm Pro** include file transfers in most common formats including CP/M. This entire file process allows viewing of all data being transferred through a unique on-screen window. Other data transfers include the "NEW" Punter, standard Xmodem (plus two additional choices of CRC are available), ASCII/PETASCII conversion for sequential files, Binary (program), sequential line with prompt wait, entire C64 to C64 disk transfer, XON/XOFF, and DC1/DC2 capture. **BobsTerm Pro** also allows control of the 60K buffer (234 blocks) for file transfers using protocols mentioned above or for full screen editing of the entire buffer area. Included in this buffer area are the ability to strip, add or replace character editor. This is very useful if you upload wordprocessor files with control character scrambling the document. Simply replace the undesired control character with a blank space and your document is cleaned up in a couple of key strokes.

BobsTerm Pro displays a status line at the top of the screen at all times providing important information such as carrier detect, Buffer ON/Off, Buffer Bytes Remaining and much, much more. It also supports the use of MSD Dual Drives or even the old 1 Meg **commodore** drives. A complete DOS on or off line support section is provided along with file conversions for Program/Sequential, ASCII Image/Program, Strip Source Code Comments and C128/CPM files. Automatic log-on sequences can also be accomplished without any user intervention by using your own custom created Macro Strings. Just imagine adjusting **BobsTerm Pro** to automatically time dial your favorite long distance BBS System at 2AM while you are sleeping. After setting up macro files that log your name and password, the macros direct the BBS computer to the E-Mail section, turn on your buffer to store the read messages, then log you off. You can then review your E-Mail at a reasonable hour and, best of all --- "Roger, you're pushing no buttons!"

If all this weren't enough, all RS-232 Parameters from baud trim control to baud rates up to 2400 may be adjusted for your particular set-up. **BobsTerm Pro** supports auto dialing

and redial for both pulse and tone where applicable for the following modems: CBM 1650, CBM 1660 old and new, CBM 1670, Westridge, The Lynker, Mighty-Mo, Hes 1 & 2 Total Telecommunications, Master Modem, Hayes Smartmodem 1200 and compatibles. It even supports adjusting these pre-set operating formats to allow use with most any modem now in production. Included in the appendix of the manual is a section on modifying the old CBM 1660 Modem/300 to the newer upgraded version with a carrier detect circuit.

BobsTerm Pro-128 has so many features I haven't even touched on. These many options set this program apart from other terminal programs because they allow you to customize most any parameter any way you want and yet still remain easy enough for a first time user.

```

=====
PRODUCT EVALUATION REPORT CARD
=====
OVERALL !XXXXXXXXXXXXXXXXXXXXX ! : !
PRICE !XXXXXXXXXXXXXXXXXXXXX ! : !
VALUE !XXXXXXXXXXXXXXXXXXXXX ! : !
-----+-----+-----+-----+-----+-----+-----+
EASE !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX !
OF USE !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX !
-----+-----+-----+-----+-----+-----+-----+
USER !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX : !
MANUAL !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX : !
-----+-----+-----+-----+-----+-----+-----+
SOFTWARE!XXXXXXXXXXXXXXXXXXXXXXXXXXXXX!
PERFORM-!XXXXXXXXXXXXXXXXXXXXXXXXXXXXX!
ANCE !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX!
-----+-----+-----+-----+-----+-----+-----+
CREATIVE!XXXXXXXXXXXXXXXXXXXXXXXXXXXXX : !
PROGRAM-!XXXXXXXXXXXXXXXXXXXXXXXXXXXXX : !
ING !XXXXXXXXXXXXXXXXXXXXXXXXXXXXX : !
-----+-----+-----+-----+-----+-----+-----+
!1 !2 !3 !4 !5 !6 !7 !8 !9 !
-----+-----+-----+-----+-----+-----+-----+
/ / /
POOR/AVERAGE /GOOD /SUPERIOR
/ / /

```

READY.
■

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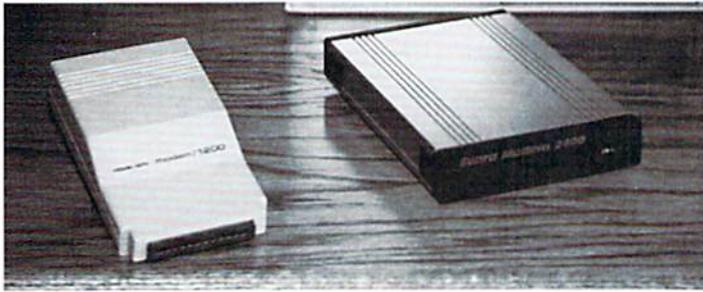
GEOPOWER TOOLS - 19 Geos utilities: Calendar Printer, Fast Format, Geo Fetch (grab any portion of a screen as a Photo Scrap), Phoenix (resurrect a trashcanned file), Programmer's Calculator are just a few of the handy tools. Side Two is filled with Clip Art (in Photo Album format) and fonts. **\$19.95 (C-64/128) Item #080525**

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Cyber review!



Supra Modem 2400 compared to Commodore 1670 modem.

REVIEW!

SupraModem 2400

reviewed by Noel Plank

Imagine transferring a 382 Xmodem block file via modem at the lightning speed of 4 min. 40 sec. This is possible when using the high speed SupraModem 2400 hooked up to your computer with an appropriate RS-232C cable/interface and a software program supporting 2400 baud. The most common rates of data transmission are 300 and 1200 baud, the former transmitting approximately 30 keyboard characters per second, and the latter about 120. Now even faster 2400 baud modems such as the SupraModem 2400 are again twice as fast as 1200 baud and becoming more popular among local Bulletin Board Systems.

WHO YOU GONNA CALL?

I was not in the market for a new modem, but one day I found my **commodore** specific 1200 baud modem would no longer function because of a single custom made plug-in integrated circuit. After calling all over the country to companies advertising custom chips for sale on **commodore** computers, I discovered that this chip was not available. If I wanted my **commodore** 1670 modem repaired, I would have to send it in for an exchange since the manufacturer does not supply individual replacement parts for this item.

JUST THE FACTS PLEASE!

I liked my 1670 modem even though it only accepted a few of the HAYES commands, would auto-answer the telephone by itself anytime the computer was turned on, and the

carrier output was negative, making software designed for the HAYES standard not completely compatible. The 1670 is small in size and plugged directly into the user port, requiring no additional power supplies, and has a built-in speaker for

monitoring the connection process.

SO MUCH MORE.

The SupraModem 2400 is only about 1-1/2" wider than the 1670 modem and has a separate power supply, which means it doesn't draw any extra current from the power supply in the computer and has a convenient on/off power switch on the front of the modem so it can be turned on only when needed. It is fully compatible with the industry standard HAYES "AT" command set and transmits data at 300, 600, 1200 and 2400 bits per second. It offers auto-answer and automatic pulse or tone dial. It includes a programmable nonvolatile memory that stores a telephone number and custom configuration without DIP switches.

HOOKING IT UP MADE EASY:

The SupraModem 2400 does require a special RS232C interface to hook up to your C64 or C128 such as the Aprotec Com-Modem Adapter* plugged in between the user port and the modem cable. Even though this is an extra expense now, you will come out ahead if you later want to use it on another computer, because you won't have to buy a new modem. Hooking up the interface is easy. Place the interface switches to the modem position and connect it between the computer's user port and the SupraModem 2400 serial connector. Then plug in the phone line to the back of the modem.

SO MANY FEATURES.

SupraModem 2400 does send back a full array of "RESULT CODES" either in numbers or English words such as "CONNECT" or "RING" for example. It automatically switches to the correct baud rate and displays this rate to

the terminal screen. This has been very useful by indicating the baud rate coming from the host computer, thus allowing you to adjust your terminal parameters while on line in order to translate data correctly. This modem also features eight status indicator lights as shown below that report all modem functions as they occur. You can customize the way your modem works by changing the settings of the 28 eight-bit "S" registers that comprise the active configuration. This is useful for setting up a BBS for an unattended answer mode operation. You can even adjust the modem's speaker volume by typing in "ATL" for low, "ATL2" for medium (default) or "ATL3" for high volume, or turn it off with "ATM". The speaker's volume is much too loud even at its lowest setting which is really the only fault I can find with this modem. One of the unique features also not normally found on all Hayes-compatible modems is its ability to recognize "BUSY" signals when dialing. It hangs up the line before the software instructs a hang up and redial, which minimizes the annoying repetitive busy signal over the modem's speaker.

CURE WITHOUT A PROBLEM.

As when adding any component to your computer system, when you shop for a modem, figure out what your needs are beforehand so you end up with a unit that solves more problems than it creates and one that keeps as many doors open as possible.

This one gets a:

*** * * * * FANTASTIC!**
*** * * * GREAT**
*** * * GOOD**
*** * POOR**
*** REALLY BAD**
READY.

Available for \$74.95* CAT:D01567
(*Aprotec Com-Modem Adapter required for user port. \$15.95 CAT:C02386) From: Software Support International, 2700 N. E. Andresen Rd., #A-10, Vancouver, WA, 98661.

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Basic BASIC

by A. Scot Derrer

BasicBASIC is a series of columns on the rules and techniques of BASIC programming. So far we have looked at the BASIC commands, PRINT, GOTO, FOR-NEXT, INPUT, GET, GOSUB, POKE, storage fundamentals; string and numeric variables and arrays. String variables can be easily manipulated in BASIC programs by using a set of BASIC commands called string functions. This month we'll look at five commands seldom discussed. These functions are STR\$, RIGHT\$, LEFT\$, MID\$, and LEN.

Jogging Our Memories

Before presenting these string functions, let's briefly review the printing of string variables on the screen. String variables are used to manipulate and abbreviate string information. This information includes letters, words, punctuation marks, editing commands, numbers, colors, and graphics not used in calculations.

```
10 A$ = "DIEHARD " : B$ = "RULES!" : PRINT A$ + B$
RUN
DIEHARD RULES!
```

The above example demonstrates how to define two string variables, A\$ and B\$, and then display the contents of these two variables concatenated together on the screen. The contents of the string variables are enclosed by quotation marks. String variables always use the \$ as part of the variable name.

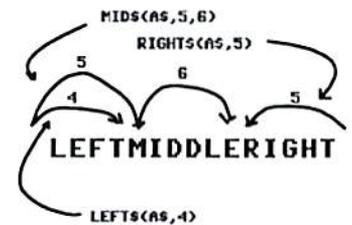
Manipulating String Data

String data can be accessed with a great deal of control by using the RIGHT\$, LEFT\$, and MID\$ string functions. These commands let you read and print all, or part of, string data. Since pictures are worth a thousand words, here is an example of how this concept works. Type and RUN this program.

```
10 A$ = "LEFTMIDDLERIGHT"
20 PRINT LEFT$(A$, 4)
30 PRINT MID$(A$, 5, 6)
40 PRINT RIGHT$(A$, 5)
RUN
LEFT
MIDDLE
RIGHT
```

Here's the way these three functions work. LEFT\$(string,x) points to the furthestmost left position in the string through the x position to the right. In this case, x is 4 so we start at the left and select the first four letters, grabbing the word "LEFT" from the string. RIGHT\$(string,y) points to the furthestmost right position in the string through the y position to the left. In this case, y is 5 as we want to grab the word "RIGHT" from the string. MID\$(string x,y) uses two coordinates. The x designates the starting position and the y designates the length. So we look in position 5 for a length

of 6 to grab the word "MIDDLE". Easy. If y is omitted, BASIC assumes a length to the end of the string.



Any of these three commands can be used to grab all or part of the contents of a string variable. The following example demonstrates how to grab all of the contents with each command.

```
10 A$ = "LEFTMIDDLERIGHT"
20 PRINT LEFT$(A$, 15)
30 PRINT MID$(A$, 1, 15)
40 PRINT RIGHT$(A$, 15)
RUN
LEFTMIDDLERIGHT
LEFTMIDDLERIGHT
LEFTMIDDLERIGHT
```

On the C128, MID\$ has a special concatenation ability. The C128 can insert strings into other strings! In the following example, the six spaces in A\$ are replaced with the B\$.

```
10 A$ = "LEFT[6 spaces]RIGHT" : B$ = "MIDDLE"
20 MID$(A$, 5, 6) = B$
30 PRINT A$
RUN
LEFTMIDDLERIGHT
```

Determining String Length

A useful command is LEN, which determines the length of a previously defined string variable. Using the string from the previous example, here is how the LEN command works.

```

10 A$="LEFTMIDDLERIGHT"
20 PRINT LEN(A$)
RUN
15

```

The string variable is defined and contains a predefined and known value, "LEFTMIDDLERIGHT". The LEN command can also assist in determining the length of an unknown string variable. This is useful in *Error Checking* the contents of a string variable for validity. Let's take a simple example, such as the entry of a 5 digit zip code in a pretend address program. Type the following program and RUN it.

```

10 PRINT ENTER 5 DIGIT ZIP CODE - PRESS
RETURN":INPUT ZC$
20 IF LEN(ZC$) > 5 THEN GOSUB 70:GOTO 10
30 IF LEN(ZC$) < 5 THEN GOSUB 80:GOTO 10
40 PRINT"THANK YOU"
50 END
60 REM ERROR SUBROUTINES
70 PRINT"ZIP CODE TOO LONG - RE-ENTER":FOR T=1 TO
500:NEXT:RETURN
80 PRINT"ZIP CODE TOO SHORT - RE-ENTER":FOR T=1
TO 500:NEXT:RETURN

```

To test the two error routines, enter 1234 and then 123456. Lines 20 and 30 check for a length of greater or less than 5, send the program to the appropriate error subroutine, and then re-execute the program with GOTO 10. The FOR-NEXT loops in the error subroutines are so the error messages stay on the screen long enough to see them before going to line 10 to re-execute the program. Entering 12345 will, of course, be considered correct. Since we haven't added any code to check for numeric-only entry, ABCDE is also considered correct.

STRinging In The Rain

The last of these five string functions is STR\$. This function converts a numeric value into a string variable. This is useful when you have numeric input that you need to check the LENgth of for data validity. Remember, the LEN command only returns a length for string variables, not numeric variables. Because of this, we need to convert numeric only data into string format to check the length. Type in the following program.

```

10 PRINT"ENTER YOUR AGE-PRESS RETURN":INPUT A
20 A$=STR$(A)
30 PRINT"YOUR AGE OF"A$" HAS" LEN(A$)-1 "DIGITS"

```

The reason we subtract 1 from the LEN in line 30 is because there is a blank automatically put in front of all positive numbers by BASIC. This is to display a minus sign in case the number is negative. This blank is carried over when converting from numeric variable to a string variable. My age

of 41 has two digits, but the computer thinks it has three until one is subtracted from the length. If you enter letters instead of numbers for your age, you get a ?REDO FROM START error message generated by BASIC.

I hope you have enjoyed attending this String Function. Practical applications for these five functions might be in games like word, number, and puzzle programs, analysis of data entered by the computer user, and the error checking of answers to questions.

READY.



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Archaic Computer

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introduced by Noel Plank

In June 1984, at the Chicago Consumer Electronics Show (CES), Commodore Business Machines began asking C64 users, dealers and manufacturers of hardware and software what they wanted in a new computer. Commodore's view was not to make another plus/4 computer with new chip designs so different that incompatibility with the C64 was unavoidable, even though they felt it

really didn't matter since the two machines were aimed at different markets anyway. Nine months later at the winter CES in Las Vegas, the C128 was born and Commodore promised to promote continuing support with a mouse and **Jane 2.0**, the icon-based, picture-driven software series of programs for this 100% C64 compatible machine.

In 1984, I bought my first modem, a 1650 **commodore** Auto-Dial, direct connect 300-baud modem at a price of \$129.95. I started subscribing in January to the first issue of a new magazine called *RUN* and began reading reviews about a new automotive program called **Injured Engine**, but somehow never purchased it until recently.

Injured Engine

Imagic 1984

reviewed by Noel Plank

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The program loads in approximately 2 minutes, with a short kind-of-dated arcade style music and a logo screen of a red sports car. A joystick must be plugged into port 1 to move the highlighted bar to select the desired option by pressing the fire button. You must first choose between:

NORMAL SIMULATION

or

TROUBLESHOOTER CHALLENGE

With **NORMAL SIMULATION** highlighted, pressing the fire-button on the joystick reveals the logo screen with another set of options:

EASY *MED* *HARD*
(1,000) (40,000) (80,000) MILES

With **EASY** highlighted, press the joystick and another screen shows a colorful cross-section profile of a 4 cylinder 8-valve water-cooled piston engine. Below the engine is a display, featuring tachometer, charge, temperature and oil gauges. You are also given a small silhouette of an automobile that indicates **POLLUTION LEVEL** by displaying smoke billowing out the exhaust pipe as engine parts wear out. Additional highlighted options and indicators include:

THROTTLE 27

REPAIR SHOP
OPTIONS
MILES 005480
\$/MILE 00.08
MPG 22

THROTTLE is highlighted. Press the fire-button while pushing forward on the joystick and you hear the cranking speed and revving of the engine depending how far forward you move the joystick. The pistons start going up and down, changing color, indicating the firing order along with the positioning of the cam shaft. A flex-fan even spins and becomes flattened out as the RPMs increase. The object here is to watch your gauges, pollution level, don't over rev the throttle to the redline, and move the highlighter bar to **REPAIR SHOP** every 3,000 miles to change the oil. If you don't follow these guidelines, your engine will soon start making squeaking



noises and come to an abrupt stop.

REPAIR SHOP highlighted provides you with another set of options:

- IDLE
- TIMING
- OIL FILTER
- AIR FILTER
- FUEL FILTER
- SPARK PLUGS
- OIL
- ALTERNATOR
- BATTERY
- VOLTAGE REGULATOR
- IGNITION COIL
- DISTRIBUTOR
- ELECTRONIC IGNITION
- STARTER
- RADIATOR COOLANT LEVEL
- WATER PUMP
- THERMOSTAT
- RADIATOR HOSES
- CARBURETOR
- FUEL PUMP
- OIL PUMP
- VALVES
- PISTON RINGS
- EXHAUST MANIFOLD
- EXHAUST PIPES
- CATALYTIC CONVERTER

You can move the highlighted bar to each item to either TEST/INSPECT or ADJUST/REPLACE; but remember, everything you replace makes your dollars per mile indicator go higher.

I found that the CATALYTIC CONVERTER keeps indicating "very worn", the ALTERNATOR was putting out "16 VOLTS", and even though the OIL was either "LOW" or "DIRTY" the OIL FILTER always indicated it was

"CLEAN" after about 5,000 miles.

While in the repair shop, you can also move around a check mark with the joystick to various points on the engine for in-depth pictorial tours of the mechanical and electrical systems. Included are recommended maintenance schedules along with descriptions of the individual components and functions within a gasoline engine.

TROUBLESHOOTER

CHALLENGE highlighted brings you to the logo screen with a time clock on the bottom section. Press the fire button and you're thrown back into the cross-section of the four cylinder engine, but don't even bother trying to start it. You must first find one major problem before the engine will begin to run, by flipping through the REPAIR SHOP menus and testing and replacing worn out parts one by one. In this section, the Alternator keeps indicating 16 VOLTS even though the charge gauge indicates slightly to the right of center scale. This is not the major problem you are looking for, because replacing the Alternator does not stop the clock on the bottom of the logo screen nor allow you to start the engine. After finding the one major problem in the engine, the finishing time is displayed. You are then asked to find two additional major problems, then three, etc.

PRODUCT EVALUATION REPORT CARD!							
OVERALL	█	█	█	█	█	█	█
PRICE	█	█	█	█	█	█	█
VALUE	█	█	█	█	█	█	█
EASE	█	█	█	█	█	█	█
OF USE	█	█	█	█	█	█	█
USER	█	█	█	█	█	█	█
MANUAL	█	█	█	█	█	█	█
SOFTWARE	█	█	█	█	█	█	█
PERFOR-	█	█	█	█	█	█	█
MANCE	█	█	█	█	█	█	█
CREATIVE	█	█	█	█	█	█	█
PROGRAM-	█	█	█	█	█	█	█
ING	█	█	█	█	█	█	█
	1	2	3	4	5	6	7 8
	/	/	/	/	/	/	/
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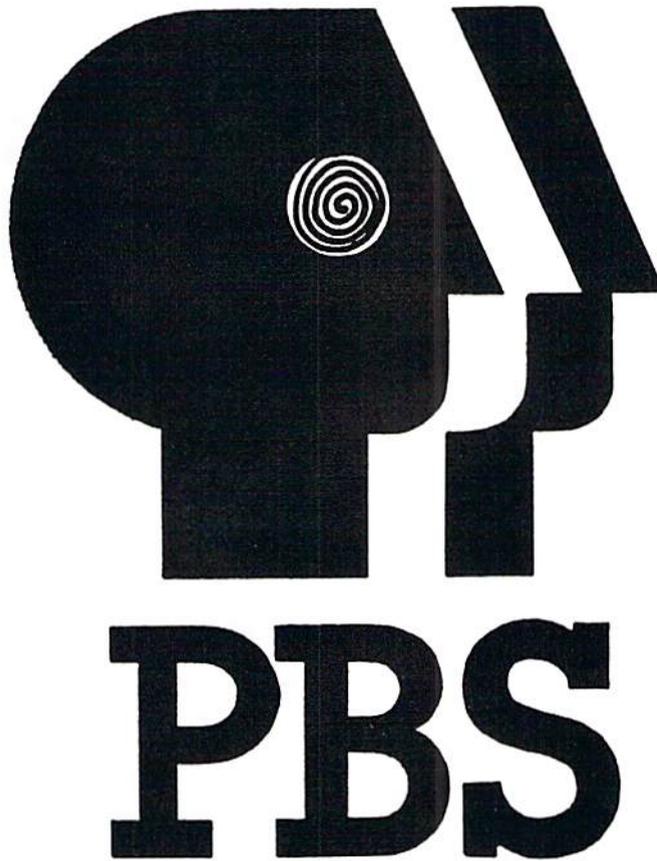
CONCLUSION:

Although the graphics display of the engine's moving valves, cam shafts, and pistons along with its pictorial diagrams and explanations are very educational, it would be more interesting if more interaction were involved. This program kind of reminds me of the CASTROL SYNTEC FSX oil commercial on television, where the engines are drained of oil and started until each one freezes up all except the one with CASTROL oil. Unlike that commercial, however, you cannot pull the oil plug; instead, you must either over-rev the engine or go without maintenance for a period of time to seize up the engine. What fun!

READY.



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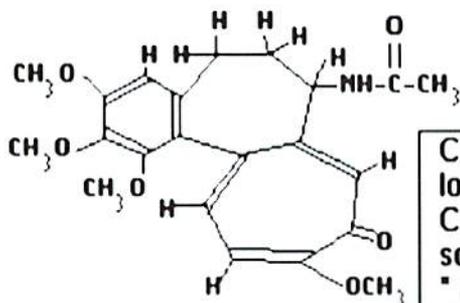
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INFO on 'Colchicine' and 'Colchicine'
(compound #s 2437 and 2438, pages
351 - 352 Merck Index, 10th edition).



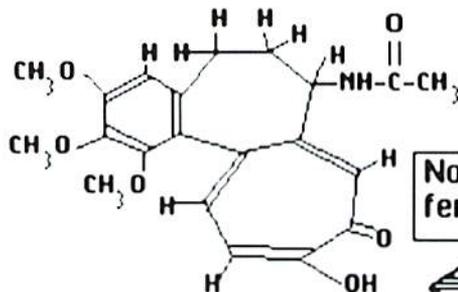
MW:
399.43
 $C_{22}H_{25}NO_6$

Colchicine: pale yellow powder; m.p. 150 C.; One gram dissolves in 22 cc water
* Doubles vegetable chromosomes (genetics); Veterinary:
* gout suppressant;
* anti-febrile (cat)
* ? possible anti-arthritis ?

Colchicine:

MW: 385.40
 $C_{21}H_{23}NO_6$

M.P. 179 C.
50% lethal dose
84 mg/Kg (mice)
(NOT Colchicine)



Note the difference here:

COLCHICEINE (compound # 2437, page 351, Merck Index, 10th edition): NOT the same (NOT) as Colchicine (described above). Toxicity described above.

ABOVE DIAGRAMS AND INFO
CAN BE FOUND IN MERCK
INDEX, 10TH EDITION.
* COLCHICINE HAS BEEN
USED IN AGRICULTURE TO

GROW VERY
LARGE SIZED
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(As far as known: not toxic to humans)

Q: Our son started a non-profit corporation to help the disabled. He is disabled himself but doesn't let that stop him. He delivers Motor Meals (Meals on Wheels), has all sorts of things to do for the local Kiwanis Club and now has a pin for 13 years perfect attendance. He helps the Red Cross and the Salvation Army. And he is a professional photographer! His non-profit corporation is "Furthering Independence for the Disabled". I found that all of the brochures have been used; and when I went to the Amiga disk that has the text, the printer, WordPerfect, and I came to a violent divorce. Thus this letter. FID, as we call it, finds things that will help the disabled. We have provided help to 12 people in the last year, all but 2 with computers. First we get them donated, then have them checked (at \$25.00 per unit!) and repaired, if needed. Then we locate a way to help whether the person is blind, physically disabled, or whatever.

At present, we are out of money except for our family's help. But we are not out of computers to help them. In the entryway of our house is a clone of the IBM-XT. It demands to have the room temperature over 70 to 75. (It needs help but we will wait to get it fixed until



donations come in again.) In the basement, there is an early Wang, a MAC without a disk drive, and a few assorted others. On the porch is part of an Apple needing parts.

Also in the front room are the three WORKING commodore PETs, from 8000 to 9000+. Only an accounting thing called OZZ came with these PETs. No word processors. These are the most vital things to help people, that and the voice we are used to on the C64, on the wonderful "SAY" of the Amiga.

We thought we had arranged for a (cheap) donation of word processors for these PETs. IT HAS NOT COME. Thus, we hope your magazine will find modestly priced ones. The PETs have printers, but after this many years are ribbons available?

Can *dieHard* or its readers help us. These are about NEW PETS! BUT what to do to help our clients? M. Robert Klinger of Ann Arbor, Michigan.

f: R. Snyder of 1192 S. Nome, Suite B, Aurora, CO, 80012, specializes in PET and CBM equipment.. He may be able to set you up. Are there readers out there who can lend a hand?

Q: I am using a KX-PII24i printer with a Super Graphix interface and a 1541-II disk drive. I have the interface set to Epson, Panasonic printer, the mode is set to 1525 Emulate and the font is set for normal. For a printer driver I use either the Epson JX-80 or the NX-1000 Rainbow. I would like to know if there is a better combination of Super Graphix setting or print driver that could be used with the KX-PII24i printer. Walter Asp of Florence,

Oregon.

f: Set the printer in Epson mode, use the Epson emulation on the interface, and use Epson FX80, FX85, or FX850 print driver.

Q: I have a C64, a 1541-II disk drive and a MPS 801 printer. I use programs that I can buy -- two databases, two word processors, and a spreadsheet. Do you have any suggestions to offer on programs which would run well on my setup? I am also interested in a philatelic program and a good copy program for copydisk and copyfile for a single disk drive. Robert Elliott of Swansboro, North Carolina.

f: **Printshop** as well as **Fun Graphics Machine** will support your setup well. Take a gander at last month's issue for tax programs (hopefully) you've already seen this since it is awfully late). I recommend **Maverik**. It supports just about everything you could want in a copy package. You can even copy many copy protected programs. It makes copying a breeze. **Maverik** and **Printshop** are available from Software Support International, 2700 N. E. Andresen Rd., #A-10, Vancouver, WA, 98661. If your local user group can't supply you with **FGM**, you can write to the source. FGM Connection, P.O.Box 2206, Roseburg, OR, 97470.

Q: In the Nov 93 issue, I read about other publications that are new to me. Can you give me mailing information about them? *Random* and *C64 Alive*? Jonel Eisenmann of Nederland, Texas.

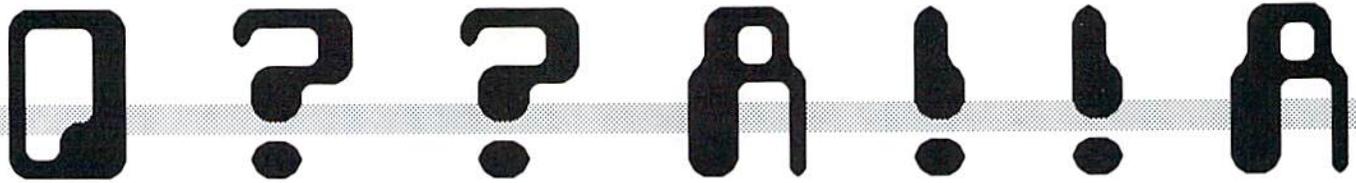
f: *Random Magazine*, 7161 N. Maine, Clovis, CA 93611-8200. *C64*

Alive, P.O.Box 232115, Sacramento, CA 95823.

Q: **Fleet System** allows me to modify the printer driver so I can get underlining, italics, bold and all other print enhancements when using my printer's resident fonts in NLQ mode. I would prefer to use **geoWrite**; it's faster and much easier to use than **Fleet System**. **geoWrite** lets me access one of my printer's resident fonts (Courier) in NLQ mode, but I can't access underline, italics or bold print. I can access these features using **GEOS** fonts in the high-quality print mode but the document looks shabby when compared to one which was printed using NLQ and the printer's resident fonts.

Is there any way for a non-hacker to modify the print drivers supplied with **GEOS**? If not, is there a printer driver available commercially that would do the trick? (didn't like **Perfect Print**) J.R. Crawford of Haughton, LA.

f: I know of no such driver, nor an easy way to alter **GEOS** print drivers. Unfortunately, when **geoWrite**'s NLQ was made, they didn't make an easy way for non-programmers to access the print codes for whatever print driver you select. There have been a number of NLQ-type drivers made, but they use the interpolation method found with the HQ drivers of **Perfect Print**. If you really wanted to go all out, you might consider a PostScript printer. The Laserjet 4ML sells for just under \$1,000, but this may seem a little drastic. An alternative might be to check into **The Write Stuff**. It has only 7 commands to learn for text functions and will support your printer's internal fonts as well as styles like



underline, bold, italics, etc. It is fast and easy to learn. For more info, write to Busy Bee Software, P.O.Box 2959, Lompoc, CA, 93438.

Q: Do you know of a company that will repair my Commodore Colt? "No Keyboard Scan-Code" is the error condition reported. George Frainey of Foresthill, CA.

A: If your local **commodore** shop doesn't service clones, you might try Sodak Electronics Inc. in South Dakota (1-800-201-3004), Tech Star Computer Center in Washington (206-251-9040), Global Upgrades Inc. in New York (1-800-426-8693), or scan the pages of *dH* for other possible service sources.

Q: I have been having problems with **Abacus Personal Portfolio Manager** for the C64. This program to maintain and report on stocks and securities by portfolio requires security data be loaded by stock symbols (e.g. IBM, MMM) and automatically enters those symbols in upper case. When I try to print a report on my Okimate 10, the symbols as well as all program provided headings appear as graphics characters.

The "print report" section provides a printer code option to change print type. I have entered code 17 for cursor down which should make the report readable -- but it doesn't work. I have used a Star Micronics Gemini 10x printer with similar results, except it prints foreign characters instead of graphics or the desired English capital letters. Both printers work fine on other software, including word processing programs. Any ideas on how I can get

a good report printout? Alan S. Brown of Morris Plains, NJ.

A: The code you need to send to the printer is *not* cursor down but rather lowercase or text mode. This is probably the correct code (17), but you may have to put your interface in text mode *and* possibly transparent mode as well. My MPS1270 in Epson parallel mode will not always respond to the

remembers how to use it. I want to get it running for my nephew and thought I could just start from the beginning as if I had just bought it, going by the manual. However, my husband says the software can only be installed once. Does having the computer turned off for several years erase the memory? Leslie Vakassian of West Hempstead, NY.

A: Leaving the computer off will

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correct codes (often printing messes like the one you described unless my interface is in transparent mode). On the other hand you *may* have to turn transparent mode *off*. Try both.

Q: I am having a problem getting my computer to start. I bought it (a C64-C and GEOS 2.0) for my husband in the mid-eighties. He no longer

not erase its memory. If it doesn't work when properly hooked up, it may be dusty and require cleaning. Make sure it looks clean inside and out before powering up.

GEOS should load up with LOAD"GEOS" 8,1. Try the back up system disk or other programs on it in case the **GEOS** disk is bad.



Q: I am wondering if a laser printer can be used with your **commodore** computer outside of **GEOS**? A friend and I are interested in eventually upgrading to laser but would like to work on programs other than **GEOS**. Would any special hookup be needed? Dan Koleski of Louisville, KY.

A: Most word processors allow you to write control code files or print drivers, for just about any printer. Keep in mind that some of the newer printers do not come with the codes you need to customize a print driver. Be sure to ask if they are available either with the printer or from the manufacturer. Just about any parallel printer interface should work with it. Be sure the one you get *is* a parallel printer.

Q: I have a problem with my C64 computer. It all started when my daughter was switching the joystick from port-1 to port-2 with power on and game loaded. Suddenly the screen went blank and the computer locked. Now upon start-up I have no flashing cursor, no cursor, a mixed screen, or nothing at all. I've tried to load a diagnostic program where the cursor does flash, but after a few key strokes the cursor disappears and I am unable to complete typing. What's wrong?

From my research, I suspect a bad VIC-II chip, bad Kernel ROM chip, or possibly a defective power supply. It's also possible the power supply cable moved when the joystick was changed to port-2 and a spike occurred. I have since acquired a used C128 but still wish to repair the C64. My own C128D has Jiffy DOS and a 1750 REU

expanded to 2 Megs, all of which I performed by myself. What I lack is the proper information and schematics to effect a reliable repair. David W. Grinnell of West Sand Lake, NY.

A: Since the joystick ports have no capacitive protection, the motherboard may have been zapped. If you're not sure what is wrong, you should seek a professional repair service. There are several that appear within the pages of *dieHard*.

Q: Operating a **commodore 128** through a Xetek Super Graphix interfaced to a Star Micronics NX-2420 printer, driving with 1571 drive, **Paperclip III**, I cannot eliminate double line feeds regardless of whether or not set for automatic linefeed. Does anybody have a similar hookup? What are proper settings of printer, interface, and the software (**Paperclip III**)? HELP!!! John Shaw of Austin, TX.

A: You might try either double line spacing inside the document itself or customizing a *copy* of your print driver to force the line feed. One way would be to place CHR\$(13) at the end of each line sent. You can also try sending OPEN4,4,128 to the printer before printing. Do any *dieHard* readers have any additional ideas on this one?

Q: I am an avid reader of your magazine. I read in one of them about the Delphi Network. I would appreciate information on how I could join the network. I presently use the Commodore Network and enjoy it very much but also like variety. Lennart C. Johnson of Woburn, MA.

A: By modem: 1-800-365-4636. After you get CONNECT, hit

<RETURN> twice. At the *username* prompt, enter: joindelphi. At *password*, enter: CPT311. Or you can call 1-800-695-4005 and talk to someone about joining.

Q: Recently, I was lucky enough to get an SX64. The manual mentions a DX64, a dual drive version. Were any ever actually produced? Joey Holman of Marion, VA.

A: Unfortunately, Commodore never released the DX. A few adventurously brave souls have added a second 1541 drive to their SX and have had them work. Sounds like a major project, but one that might be worth investigating further.

Q: In the Oct 93 issue, the Spinner column talks about a program called **One Dark Night**. The Dec 93 'View from the Underground' column makes reference to a C64 database program called **Santa's Helper**. I can't find either of these programs on my Spinner disks! What gives? Norris Elwood of Clearfield, UT.

A: Sorry about this folks. I did not get the time to add the sprites to **One Dark Night** to make it **One Dark Night II**. We were under an incredible time crunch. **Santa's Helper** was written by two people and one of them moved right when the other submitted the program. We still have not been able to contact the second author of **Santa's Helper**. We apologize and plan to run both this year.

READY.



D O S &

by Jimmy Weiler

DOS & Don'ts is reprinted with permission from LOADSTAR. The Complete DOS and Don'ts is available for 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.

=====
Now even *your* programs can read the directory.
=====

We haven't said much about the directory since Part 7.

I am just going to assume that you all know how to LOAD "\$",8 then LIST to look at what files are on your disk. This installment of DOS & Don'ts will show you how to make your PROGRAMS read and display a directory.

This time, I break with tradition and show you the simple way to do it first.

1. Install the DOS wedge.
2. Where you want your program to display the directory, enter this instruction: @"\$"

You can get fancy with the wedge:
To display only the SEQ files:

```
@ "$*=S"
```

To display only the PRG files:

```
@ "$*=P"
```

To display only the REL files:

```
@ "$*=R"
```

To display only the USR files:

```
@ "$*=U"
```

To display only files beginning with any pattern, use the wild card, "*". @"\$T.*" will show only files prefixed by "T."

You can mix these concepts, too: @"\$TEXT*=S" will show only those sequential files whose names start with "TEXT."

Okay, enough of the easy stuff. Now I'll show you the hard way to do the same thing.

The 1541 User's Manual says you can read the directory just like a SEQUENTIAL file. That's true. Unfortunately, the directory reading program listed in that manual doesn't work. Fortunately, The April *Spinner* now provides you with a version that DOES work on the 1541 drive. Look for it in the directory under the name:

```
Q&D DIR DISPLAY
```

Here's a blow-by-blow account of how Q&D DIR DISPLAY works:

```
1020 OPEN15,8,15,"IO"
```

We initialize the disk. It is possible that the disk we are about to read was just placed in the drive. This will help prevent DISK ID MISMATCHES in that case.

```
1030 Z$=CHR$(0):IL$=CHR$(128):  
      Q$=CHR$(34):SP$=CHR$(160)
```

We declare some variables: Z\$ is used later when we evaluate ASCii value of the result of a GET#. If you GET# a

ZERO character, the ASC function won't work. To prevent ILLEGAL QUANTITY ERRORS, we can concatenate Z\$ to the variable we GET before we evaluate the variable:

```
e.g. GET#8,K$:PRINT ASC(K$+Z$)
```

Q\$ is defined as the quote symbol. We use it later to bracket file names as we print them.

SP\$ is a shifted space. In the directory, every file name less than 16 characters long ends with shifted spaces.

```
1040 DIM F$(29)
```

We will use array F\$ to assemble file names. Each name uses 29 bytes of the directory.

```
1050 TY$(0)="DEL":TY$(1)="SEQ"  
      :TY$(2)="PRG":TY$(3)="USR"  
      :TY$(4)="REL"
```

Here we declare file types.

```
1060 OPEN8,8,8,"$"
```

We open the directory as a file.

```
1070 BU=0
```

BU is our "BLOCKS USED" counter. We set it to zero before we start reading the directory.

```
1080 FOR C1=1 TO 142:GET#8,K$:  
      NEXT
```

The first 142 characters of the directory are not interesting to us at this point so we skip over them. (The third through 142nd characters make up the

Don'ts

BLOCK AVAILABILITY MAP.)

```
1090 PRINT "NAME:<rvon>";:FOR
    C1=144 TO 160: GET#8,K$
    :PRINT K$;:NEXT
    :PRINT"<rvof> ";
```

The next eighteen characters of the directory are the disk name. We print that in reverse.

```
1100 GET#8,L$,M$,N$: PRINT"ID
    : "M$,N$
```

We read and print the disk ID.

```
1110 FOR C1=164 TO 255:GET#8,K$
    : NEXT
```

If we reach the end of the directory while we read the file name, STATUS will equal 66. In that case, we set our file counter to 150 and exit the for-next loop we are using to read the file names.

```
1140 F$(0)=F$(0)+Z$
1150 IF F$(0)<IL$ THEN 1220
```

The first character of any directory file entry describes the file type.

These are:

- DELETED: 0 or 128
- SEQUential: 129
- PRoGram: 130
- USer: 131
- RELative: 132

We print the file name in quotes. If we encounter a shifted space (SP\$) before the sixteenth character, it means we have reached the end of the file name.

```
1190 SZ=256*ASC(F$(29)+Z$)+
    ASC(F$(28))
```

The 28th and 29th characters of each file name entry contain the size in blocks of that particular file. This code calculates that size.

```
1200 PRINT TAB(23-(SZ<100)
    -(SZ<10))SZ "BLOCK";
    :IF SZ<>1 THEN PRINT "S";
```

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If the file name we are processing was scratched from the directory or improperly closed, this code will let us proceed to the next file.

To make the file size column of our printout line up nicely, we use some BOOLEAN magic. Any expression that evaluates as either true or false is said to be a Boolean expression. "E = F" is an example. If the value of E equals the value of F then the expression is true. Otherwise it is false.

When your commodore evaluates a Boolean expression as "true", it assigns a value of -1 to the result. "False" evaluates as 0.

We are not interested in the next 91 characters, so we throw them away.

```
1120 FOR FILE=1 TO 144
```

Here we start reading the file names out of the directory. There is room for 144 files in a normal 1541 directory.

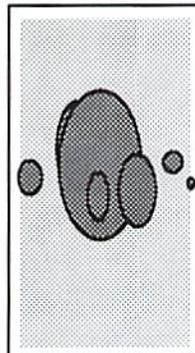
```
1130 FOR BYTE=0 TO 29:
    GET#8,F$(BYTE):NEXT: IF
    ST=66 THEN FILE=150:GOTO
    1240
```

Each file name in a directory is 29 characters long. We read those characters into our file name array, F\$.

```
1160 PRINT TY$(ASC(F$(0))-128
    );": ";
```

We subtract 128 from the file type character, use the resulting value to index into TY\$, and print the appropriate type.

```
1170 PRINT Q$;
    :FOR LTTR=3
    TO 18:IF
    F$(LTTR)<>
    SP$ THEN
    PRINT
    F$(LTTR);
1180 NEXT:
    PRINT Q$;
```



```
10 LET E=1: LET F=1
20 LET B = E = F
30 PRINT B
```

Line 30 of this example will print -1.

The Boolean calculations in line 1200 will add 1 to the TAB position if the size of the file is less than 100 and will add one more if the size is also less than 10.

1210 PRINT

We print a carriage return because we have finished with the file name we were working on.

```
1220 IF FILE/8<>INT(FILE/8)
      THEN GET#8,L$,M$,N$
```

Every directory block on the disk can hold eight file names. There are two unused characters between each of the names. We GET# those characters and throw them away. However, between the last file entry in one block and the first entry in the next there are NO unused characters. So, every eight file names, we DON'T GET# those extra characters.

```
1230 BU=BU+SZ: SZ=0
```

We add the size of the last file to the number of blocks used on the disk.

```
1240 NEXT FILE:PRINT BU"OF 664
      BLOCKS USED."
```

This is the end of the for-next loop that counts through the files in the directory. When we have printed the last file, we then print the number of blocks they have used.

```
1250 CLOSE 8: CLOSE 15
```

When we're done, we close all the disk I/O channels we used to read the directory.

Here's the complete listing:

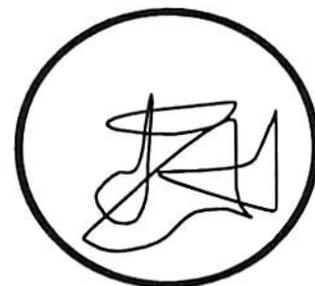
The Q&D DIR Display.

```
1020 OPEN15,8,15,"I0"
1030 Z$=CHR$(0):IL$=CHR$(128):
      Q$=CHR$(34):SP$=CHR$(160)
1040 DIM F$(29)
1050 TY$(0)="DEL":TY$(1)="SEQ"
      :TY$(2)="PRG":TY$(3)="USR"
      :TY$(4)="REL"
1060 OPEN8,8,8,"$"
```

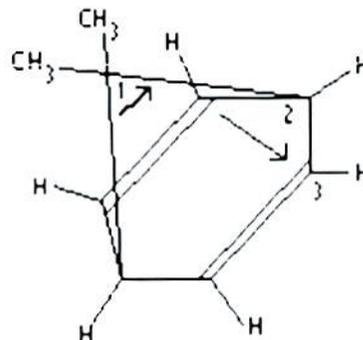
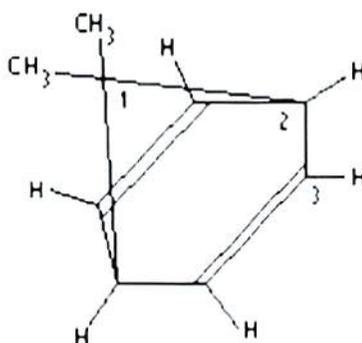
```
1070 BU=0
1080 FOR C1=1 TO 142:GET#8,K$:
      NEXT
1090 PRINT "NAME:<rvon>";:FOR
      C1=144 TO 160:GET#8,K$:
      :PRINT K$;:NEXT
      :PRINT"<rvof> ";
1100 GET#8,L$,M$,N$: PRINT"ID
      :M$,N$
1110 FOR C1=164 TO 255:GET#8,K$:
      :NEXT
1120 FOR FILE=1 TO 144
1130 FOR BYTE=0 TO 29:
      GET#8,F$(BYTE):NEXT: IF
      ST=66 THEN FILE=150:GOTO
      1240
1140 F$(0)=F$(0)+Z$
1150 IF F$(0)<IL$ THEN 1220
1160 PRINT TY$(ASC(F$(0))-128
      );": ";
1170 PRINT Q$;:FOR LTTR=3
      TO 18:IF F$(LTTR)<>
      SP$ THEN PRINT F$(LTTR);
1180 NEXT:PRINT Q$;
```

```
1190 SZ=256*ASC(F$(29)+Z$)+
      ASC(F$(28))
1200 PRINT TAB(23-(SZ<100)
      -(SZ<10))SZ "BLOCK";
      :IF SZ<>1 THEN PRINT "S";
1210 PRINT
1220 IF FILE/8<>INT(FILE/8)
      THEN GET#8,L$,M$,N$
1230 BU=BU+SZ: SZ=0
1240 NEXT FILE:PRINT BU"OF 664
      BLOCKS USED."
1250 CLOSE 8: CLOSE 15
```

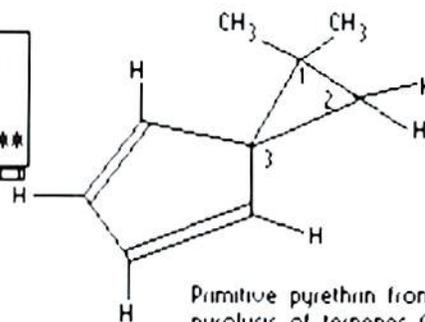
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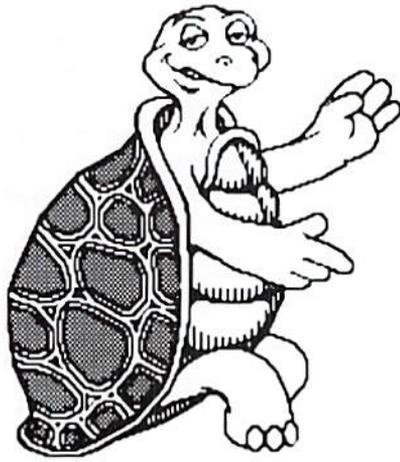
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to your town.
"A 'Paint from
PAINTDRIVERing a geoPubilsh
concoction."*

dieHard, the Flyer for commodore 8bitters





PRG

Welcome to PRG. What is PRG? PRG gets its name from the directory listing of the commodore computer world. PRG simply is the denotation of a PROgram file. So, you've written that all-world-changing program and want to share it with the *dieHard* Universe! No problem, submit it to PRG! We'd really love to see some for the more orphaned of the commodore machines, like the VIC20, plus/4, C16 or PET/CBM machines! We also love C64 and C128 programs. If you have something written in BASIC 2.0 that lacks POKEs, PEEKs, WAITs or SYSs, it should run on all commodores. Still not sure? -- write for Writer's Guidelines: *dieHard*, Writer's Guidelines, P.O.Box 392, Boise, Idaho, 83701-0392.

dieHard Flash 64 (C64)

by James T. Jones

In the October issue of *dieHard*, the program "Color Montage (C64)" randomly changed the color RAM for the entire screen. To create a flashing effect with which interesting title screens can be made, a machine language routine is necessary to achieve the necessary speed. Type the program of Listing 1 and save it to disk. When the program is RUN, the file, DIEHARD FLASH.O, will be created on the disk. Instead of LINE 80, you can substitute lines for a title screen, for example. Any characters of the first six screen lines will flash in different colors. Press the STOP key to exit the program.

As an example, type the program of Listing 2 and save it to disk. When the program is RUN, the fictitious title screen is best viewed on a color monitor.

dieHard FLASH.O Creator Listing 1

```

4019 10 REM THIS PROGRAM WILL
      CREATE DIEHARD FLASH.O
      ON DISK - BY JAMES T.
      JONES
3042 20 REM COPYRIGHT 1994
      LYNNCARTHY INDUSTRIES,
      INC.
2822 30 REM ALL RIGHTS RESERVED
3061 40 GOSUB 270:REM DISK DRIVE
      CHECK
2530 50 IF A=0 THEN A=1:GOSUB 130
3991 60 IF A=1 THEN A=679
      :LOAD"DIEHARD
      FLASH.O",DV,1
2084 70 POKE 53280,0:POKE
      53281,0:PRINT CHR$(147)
      CHR$(5)CHR$(8)
1794 80 FORJ=0TO6*40-1
      :POKE1024+J,102:NEXT
3281 90 POKE 214,12:PRINT:PRINT"
      PRESS A KEY TO EXIT."

```

```

1336 100 SYS 679
2408 110 GET A$:IF A$="" THEN 100
1625 120 END
1520 130 S=0:FOR I=679 TO 757
2204 140 READ X:POKE I,X:S=S+X:NEXT
2512 150 DATA 62,1,202,134,252,
      138,133,253,169,216,133,
      254,164,252,169,3
2507 160 DATA 145,253,200,192,2,
      208,247,173,4,220,
      10,10,10,10,74,74
2501 170 DATA 74,74,197,252,240,
      241,145,253,24,169,3,
      101,253,133,253,208
2505 180 DATA 2,230,254,165,254,
      201,217,208,8,165,253,
      201,150,208,2,240
2519 190 DATA 3,24,144,200,96,
      2,0,109,8,20,0,2,32,96,0
3217 200 IF S<>10581 THEN PRINT"
      ERROR IN DATA!":END
5360 210 REM CREATE DIEHARD FLASH.O
      ON DISK
5436 220 SA=679:EA=757+1:REM ENDING
      ADDRESS PLUS 1
3256 230 H1=INT(SA/256):L1=SA-256
      *H1:H2=INT(EA/256)
      :L2=EA-256*H2
3078 240 SYS57812"DIEHARD FLASH.O",
      DV:POKE193,L1:POKE194,
      H1:POKE174,L2:POKE175,H2
2129 250 SYS62954:CLOSE15:OPEN15,
      DV,15,"I":CLOSE15
1637 260 RETURN
2405 270 DV=PEEK(186):IF DV<8 THEN
      DV=8
2612 280 PRINT CHR$(147)CHR$(142)
      :CLOSE 15:OPEN 15,DV,15
      :CLOSE 15
1731 290 IF ST=0 THEN 340
2537 300 PRINT"TURN YOUR DISK DRIVE
      ON AND PRESS"
1960 310 PRINT"A KEY."
2405 320 GET A$:IF A$="" THEN 320
1484 330 GOTO 280

```

```

2403 340 OPEN 15,DV,15,"I"
      :INPUT#15,ER:CLOSE 15
2125 350 IF ER=0 THEN RETURN
3350 360 PRINT"PUT A DISKETTE IN
      YOUR DRIVE AND"
2248 370 PRINT"PRESS A KEY."
2400 380 GET A$:IF A$="" THEN 380
1841 390 PRINT CHR$(147):GOTO 340
      ....end of line.

```

Flash DEMO Listing 2

```

3862 10 REM DEMO PROGRAM FOR
      DIEHARD FLASH.O -
      JAMES T. JONES
4019 20 REM ignore this line's
      check sum.
3042 30 REM COPYRIGHT 1994
      LYNNCARTHY INDUSTRIES,
      INC.
2821 40 REM ALL RIGHTS RESERVED
2571 50 DV=PEEK(186):IF DV<8
      THEN DV=8
6555 60 IFA=0THENA=679:LOAD"DIEHARD
      FLASH.O",DV,1
1920 70 POKE53280,1:POKE53281,1
      :POKE646,2:PRINT CHR$(
      147)CHR$(142)CHR$(8)
1738 80 FORX=1TO20:PRINT"[ctrl 9]
      [shift British pound]
      [C= *]";:NEXT
1736 90 FORY=1TO20:PRINT"[ctrl 0]
      [C= *]
      [shift British pound]"
      ;:NEXT
1354 100 PRINT"[ctrl 9]
      [shift British pound]
      [C= *][ctrl 0]"SPC(08)"
      [shift U][shift C][space]
      [C= R][space][C=R]
      [shift C][shift I][space]
      [C= R][space][C=R][space]
      [C= R][shift C][space]
      "SPC(09)"[ctrl 9]
      [shift British pound]

```

```

1311 110 PRINT"[C= *][ctrl 0]";
[shift British pound]
"SPC(08)"[shift-]
[2 space][shift-]
[space][C= Q][shift C]
[shift K][space][C=Q]
[shift C][C= W][space]
[C= Q][shift C][space]
[C= Q][shift C]
[shift K]"SPC(09)"
[C= *]
[shift British pound]";
1390 120 PRINT"[ctrl 9]
[shift British pound]
[C= *][ctrl 0]"SPC(08)"
[shift J][shift C]
[space][C= E][space]
[C= E][3 space][C= E]
[space][C= E][space]
[C= E][shift C][space]
[C= E][space][shift M]
"SPC(09)"[ctrl 9]
[shift British pound]
[C= *][ctrl 0]";
1507 130 PRINT"[C= *]
[shift British pound]
"SPC(36)"[C= *]
[shift British pound]";
1755 140 FORX=1TO20:PRINT"
[ctrl 9]
[shift British pound]
[C= *]";:NEXT
1750 150 FORY=1TO20:PRINT"
[ctrl 0][C= *]
[shift British pound]"
;:NEXT
3046 160 PRINT"[3 crsr down]
[9 space]A DIEHARD
PRESENTATION":PRINT
1291 170 PRINT"[19 space]
BY":PRINT
2408 180 PRINT"[11 space]BRIAN
CROSTHWAITE":PRINT
1209 190 PRINT"[16 space](C)
1993":PRINT
3507 200 PRINT"[3 space]PRESS A
KEY TO EXIT DEMONSTRATION"
3081 210 SYS679:REM FLASH COLORS
ON SCREEN
2290 220 GETA$:IF A$="" THEN210
1625 230 END
.....end of line.

```

Dot.dot.dot 64

by James T. Jones

If an operation such as sorting items or reading data or loading a long program requires a relatively large amount of time, it

is advisable to let the user know that *something* is happening. In the October 1993 issue of *dieHard*, this goal was accomplished by changing the color of the border. For those who find this flashing effect annoying, an alternative technique is presented. Type the Listing 1 program, save it, then run it. A machine language file, DOT.DOT.DOT.O, will be created on the disk that uses an interrupt-driven routine to print a row of periods beginning at row 17. If the file is loaded at the start of your program, SYS 828 will start and SYS 831 will stop the display. To use the routine while a long program is being loaded, follow the technique described in the article, *Computer Activity RX* in the October issue.

```

5786 10 REM PROGRAM TO CREATE ON
DISK A MACHINE LANGUAGE
PROGRAM FOR PRINTING PERIODS
3385 20 REM WHILE AN OPERATION
REQUIRING A LONG
TIME IS TAKING PLACE.
4019 30 REM THIS PROGRAM WILL
CREATE DIEHARD FLASH.O ON
DISK - BY JAMES T. JONES
3041 40 REM COPYRIGHT 1994 LYNN
CARTHY INDUSTRIES, INC.
2821 50 REM ALL RIGHTS RESERVED
3061 60 GOSUB 270:REM DISK DRIVE
CHECK
1518 70 FOR I=828 TO 900
3311 80 READ X:POKE I,X:S=S+X:NEXT
1851 90 DATA 76,76,3,120,169,49,
160,234,141,20,3,140,
21,3,88,96
2528 100 DATA120,169,99,160,3,141,20
,3,140,21,3,88,169,17,141,168
2515 110 DATA 2,169,0,141,169,2,96,
206,132,3,208,25,169,60,
141,132
2506 120 DATA 3,173,168,2,170,173,
169,2,168,24,32,240,255,
238,169,2
2514 130 DATA 169,46,32,210,255,
76,49,234,60
3009 140 IF S<>7635 THEN PRINT"
ERROR IN DATA!":END
3631 150 REM CREATE DOT.DOT.DOT.O
ON DISK
5442 160 SA=828:EA=900+1:REM ENDING
ADDRESS PLUS 1
3255 170 H1=INT(SA/256):L1
=SA-256*H1:H2=INT(EA/256)
:L2=EA-256*H2
2153 180 SYS57812"DOT.DOT.DOT.O",
DV:POKE193,L1:POKE194,H1
:POKE174,L2:POKE175,H2
2128 190 SYS62954:CLOSE15
:OPEN15,DV,15,"I":CLOSE15
2812 200 PRINTCHR$(147)"THIS IS A
DEMONSTRATION OF THE
PROGRAM.":PRINT
3466 210 PRINT"SYS828 STARTS AND
SYS831 STOPS PRINTING":PRINT
3123 220 PRINT"OF PERIODS AFTER

```

```

ABOUT 20 SECONDS.":SYS828
1648 230 FOR T=1 TO 20000:NEXT
2556 240 SYS831:PRINT:PRINT:PRINT
"SEE THE ASSOCIATED TEXT
FOR AN EXPLANA-"
2444 250 PRINT"TION OF HOW TO USE
THE ML PROGRAM"
3751 260 PRINT"WHILE LOADING A LONG
PROGRAM.":END
2405 270 DV=PEEK(186):IF DV<8
THEN DV=8
2576 280 CLOSE15:OPEN15,DV,15
:CLOSE15
1731 290 IF ST=0 THEN 340
2363 300 PRINTCHR$(147)"TURN YOUR
DISK DRIVE ON AND PRESS"
1960 310 PRINT"A KEY."
2405 320 GET A$:IF A$="" THEN 320
1484 330 GOTO 280
2528 340 OPEN15,DV,15,"I"
:INPUT#15,ER:CLOSE 15
2125 350 IF ER=0 THEN RETURN
3755 360 PRINT:PRINT"PLACE A
DISKETTE IN THE DRIVE"
2578 370 PRINT"AND PRESS A KEY."
2400 380 GET A$:IF A$="" THEN 380
1484 390 GOTO 340

```

.....end of line.

Temperature (C128, plus/4 and C16)

by Ross Cherednik

Temperature converts between the four major temperature scales: Fahrenheit, Celcius (I hate that - Centigrade is the name), Kelvin, and Rankine. It's okay to go below absolute zero, if you like. I think it limits work because we're stupid enough to believe in them.

Temperature C128

```

0 REMEMBER:[2 space]YE FATTE OLDE
FARTE[22 space]JOHN ROSS
CHEREDNIK
1 REM COPYRIGHT 1994 LYNNCARTHY
INDUSTRIES, INC.
ALL RIGHTS RESERVED
10 FAST:CLR:COLOR6,1:GRAPHIC5,1
:PRINTTAB(29)"
[2 crsr down][ctrl 4]
TEMPERATURE CONVERSION"
:PRINT"[4 crsr down]
[crsr right][C= 8]CONVERT
FROM [ctrl 2]C[C= 8]
ELSIUS, [ctrl 2]F[C= 8]
AHRENHEIT, [ctrl 2]K[C= 8]
ELVIN, [ctrl 2]R[C= 8]
ANKINE, OR [ctrl 2]E[C= 8]
ND: [C= 4]";
11 GETKEYA$:PRINTA$:IFA$="C"THEN12
:ELSE:IFA$="F"THEN14
:ELSE:IFA$="K"THEN16
:ELSE:IFA$="R"THEN18

```

```

ELSE:IFA$="E"THENPRINT
"[CLR]":END:ELSE:PRINT"
[crsr down][crsr right]
[C= 8]INPUT ERROR":GOTO20
12 PRINT"[crsr down][crsr right]
[C= 8]ENTER DESIRED CELSIUS
DEGREES: [C= 4]";:OPEN1,0
:INPUT#1,C:CLOSE1:PRINT
:F=(C*9)/5+32:K=C+273.2
:R=F+459.7:PRINTTAB(20)"
[2 crsr down][C= 6]"C"
[C= 8]CELSIUS DEGREES ="
13 PRINTTAB(25)"[crsr down][ctrl 5]
"F"[C= 8]FAHRENHEIT DEGREES"
:PRINTTAB(25)"[crsr down]
[C= 3]"K"[C= 8]KELVIN
DEGREES":PRINTTAB(25)"
[crsr down][ctrl 8]"R"
[C= 8]RANKINE DEGREES"
:GOTO20
14 PRINT"[crsr down][crsr right]
[C= 8]ENTER DESIRED
FAHRENHEIT DEGREES:
[C= 4]";:OPEN1,0
:INPUT#1,F:CLOSE1
:PRINT:C=(F-32)*5/9
:K=C+273.2:R=F+459.7
:PRINTTAB(20)"
[2 crsr down][ctrl 5]
"F"[C= 8]FAHRENHEIT
DEGREES ="
15 PRINTTAB(25)"[crsr down][C= 6]
"C"[C= 8]CELSIUS
DEGREES":PRINTTAB(25)"
[crsr down][ctrl 3]
"K"[C= 8]KELVIN
DEGREES":PRINTTAB
(25)"[crsr down]
[ctrl 8]"R"[C=8]
RANKINE DEGREES":GOTO20
16 PRINT"[crsr down][crsr right]
[C= 8]ENTER DESIRED
KELVIN DEGREES:
[C= 4]";:OPEN1,0
:INPUT#1,K:CLOSE1:PRINT
:C=K-273.2:F=(C*9)/5+32
:R=F+459.7:PRINTTAB
(20)"[2 crsr down]
[C= 3]"K"[C= 8]KELVIN
DEGREES ="
17 PRINTTAB(25)"[crsr down][C= 6]
"C"[C=8]CELSIUS
DEGREES":PRINTTAB(25)"
[crsr down][C= 5]"F"
[C= 8]FAHRENHEIT
DEGREES":PRINTTAB(25)"
[crsr down][ctrl 8]"R"
[C= 8]RANKINE DEGREES"
:GOTO20
18 PRINT"[crsr down][crsr right]
[C= 8]ENTER DESIRED
RANKINE DEGREES:
[C= 4]";:OPEN1,0
:INPUT#1,R:CLOSE1:PRINT
:F=R-459.7:C=(F-32)*5/9
:K=C+273.2:PRINTTAB(20)"
[2 crsr down][C= 6]"C"
[C= 8]CELSIUS DEGREES ="
19 PRINTTAB(25)"[crsr down][C= 6]
"C"[C= 8]CELSIUS
DEGREES":PRINTTAB(25)"
[crsr down][C= 5]"F"
[C= 8]FAHRENHEIT
DEGREES":PRINTTAB(25)"
[crsr down][C= 8]
"K"KELVIN DEGREES"
20 PRINTCHR$(7)"[4 crsr down]
[crsr right]ANOTHER
((ctrl 1)Y[C= 8]/[ctrl]
N[C= 8])?[C= 4]"
:GETKEYA$:IFA$="Y"
THENRUN:ELSE:SCNCLR
:GRAPHICCLR:SLOW:END
.....end of line.
Temperature plus/4 & C16
0 REMEMBER:[2 space]YE FATTE OLDE
FARTE[21 space]JOHN ROSS
CHEREDNIK
1 REM COPYRIGHT 1994 LYNNCARTHY
INDUSTRIES, INC.
2 REM ALL RIGHTS RESERVED
10 REM A$="TEMP 4/16": SCRATCH (A$):
SAVE A$,8: VERIFY A$,8
20 CLR:COLOR0,1:GRAPHIC0,1:PRINTTAB
(8)"[2crsr down][ctrl 4]
TEMPERATURE CONVERSION"
30 PRINT"[4 crsr down][crsr right]
[C= 8]CONVERT FROM
[ctrl 2]C[C= 8]ELSIUS,
[ctrl 1]F[C= 8]AHRENHEIT,
[ctrl 2]K[C= 8]ELVIN,
[ctrl 2]R[C= 8]ANKINE, OR
[ctrl 2]E[C= 8]ND:
[C= 4]";
40 GETKEYA$:PRINTA$:IFA$="C"THEN60
:ELSE:IFA$="F"THEN100:ELSE
:IFA$="K"THEN140:ELSE
50 IFA$="R"THEN180:ELSE:IFA$
="E"THENPRINT"[CLR]":END
:ELSE:PRINT"[crsr down]
[crsr right][C= 8]
INPUT ERROR":GOTO220
60 PRINT"[crsr down][crsr right][C= 8]
ENTER DESIRED CELSIUS
DEGREES: [C= 4]";:OPEN1,0
:INPUT#1,C:CLOSE1:PRINT
:F=(C*9)/5+32:K=C+273.2:R=F+459.7
:PRINTTAB(5)"[2 crsr down]
[C= 6]"C"[C= 8]CELSIUS
DEGREES ="
80 PRINTTAB(8)"[crsr down][C=5]"F"
[C= 8]FAHRENHEIT DEGREES"
:PRINTTAB(8)"[crsr down]
[C= 3]"K"[C= 8]KELVIN DEGREES"
90 PRINTTAB(8)"[crsr down][ctrl 8]
"R"[C= 8]RANKINE DEGREES":GOTO220
100 PRINT"[crsr down][crsr right]
[C= 8]ENTER DESIRED
FAHRENHEIT DEGREES:
[C= 4]";:OPEN1,0:INPUT#1,
F:CLOSE1:PRINT
C=(F-32)*5/9:K=C+273.2:R=F+459.7
:PRINTTAB(5)"[2 crsr down]
[ctrl 5]"F"[C= 8]
FAHRENHEIT DEGREES ="
120 PRINTTAB(8)"[crsr down][C= 6]"C"
[C= 8]CELSIUS DEGREES"
:PRINTTAB(8)"[crsr down]
[C= 3]"K"[C= 8]KELVIN
DEGREES"
130 PRINTTAB(8)"[crsr down][ctrl 8]
"R"[C= 8]RANKINE DEGREES":GOTO220
140 PRINT"[crsr down][crsr right]
[C= 8] ENTER DESIRED KELVIN
DEGREES: [C= 4]";:OPEN1,
0:INPUT#1,K:CLOSE1:PRINT
150 C=K-273.2:F=(C*9)/5+32:R=F+459.7
:PRINTTAB(5)"[2 crsr down]
[C= 3]"K"[C= 8]KELVIN
DEGREES ="
160 PRINTTAB(8)"[crsr down][C= 6]"C"
[C= 8]CELSIUS DEGREES"
:PRINTTAB(8)"[crsr down]
[ctrl 5]"F"[C= 8]FAHRENHEIT
DEGREES"
170 PRINTTAB(8)"[crsr down][ctrl 8]"R"
[C= 8]RANKINE DEGREES"
:GOTO220
180 PRINT"[crsr down][crsr right][C= 8]
ENTER DESIRED RANKINE
DEGREES: [C= 4]";:OPEN1,
0:INPUT#1,R:CLOSE1:PRINT
190 F=R-459.7:C=(F-32)*5/9:K=C+273.2
:PRINTTAB(5)"[2 crsr down]
[ctrl 8]"R"[C= 8]RANKINE
DEGREES ="
200 PRINTTAB(8)"[crsr down][C= 6]"C"
[C= 8] CELSIUS DEGREES"
:PRINTTAB(8)"[crsr down]
[C= 5]"F"[C= 8]FAHRENHEIT
DEGREES"
210 PRINTTAB(8)"[crsr down][C= 3]"K"
[C= 8]KELVIN DEGREES"
220 PRINTCHR$(7)"[4 crsr down]
[crsr right]ANOTHER
((ctrl 1)Y[C= 8]/[ctrl 2]N
[C= 8])?[C= 4]":GETKEYA$
:IFA$="Y"THENRUN:ELSE
230 SCNCLR:GRAPHICCLR:END
.....end of line.

```

Manic (C128, plus/4 and C16)

by Ross Cherednik

Manic is one in a long sequence of random noise (music?) generators I've written. This one has a nice bebop feel to the sound.

Manic C128

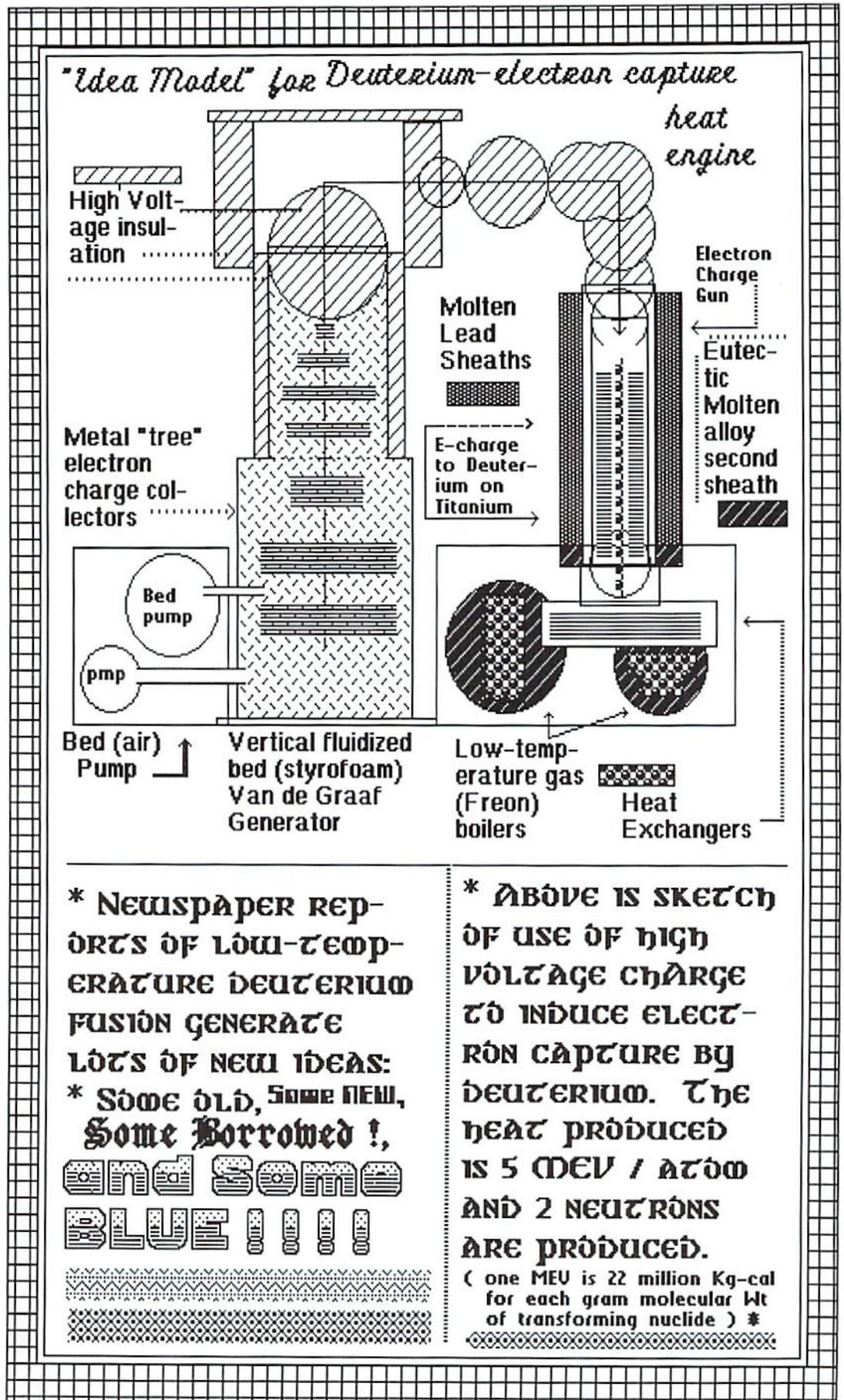
```
0 REMEMBER[3 space]YE FATTE OLDE
  FARTE[21 space]JOHN ROSS
  CHEREDNIK
1 REM COPYRIGHT 1994 LYNNCARTHY
  INDUSTRIES, INC.
  ALL RIGHTS RESERVED
10 FORA=OTO6:COLORA,1:NEXT
  :GRAPHIC5,1:PRINTTAB(10)"GO
  TO FORTY COLUMNS"
11 GRAPHIC0,1:PRINTTAB(15)"
  [23 crsr down][ctrl 5]M
  [ctrl 8]A[C= 7]N[C= 6]I[C= 3]
  C[ctrl 4]M[C=1]O[ctrl 6]
  O[ctrl 3]D[HOME][ctrl 4]":A=0
12 POKE1024+A,160:POKE55296+A
  ,INT(RND(TI)*15+1):A=A+1
  :IFA=1000THENA=0
13 B=INT(RND(TI)*4+2):C=2*INT
  (RND(TI)*4):D=INT(RND(TI)
  *7+1):A$=CHR$(65+D)
14 PLAY"V10"+STR$(B)+"T"+STR$(C)
  +"U8XOI"+A$+"SSB":GETA$
  :IFA$=""THEN12
15 SCNCLR:PRINTTAB(14)"
  [crsr down]LITHUIM TIME
  ":PRINT"[8 crsr down]
  [C= 7]GET";:END
```

....end of line.

Manic plus/4 & C16

```
0 REMEMBER[3 space]YE FATTE OLDE
  FARTE[21 space]JOHN ROSS
  CHEREDNIK
1 REM COPYRIGHT 1994 LYNNCARTHY
  INDUSTRIES, INC.
2 REM ALL RIGHTS RESERVED
10 FORA=OTO4:COLORA,1
20 GRAPHIC0,1:PRINTTAB(15)"
  [23 crsr down][ctrl 5]M
  [ctrl 8]A[C= 7]N[C= 6]I[C= 3]
  C [ctrl 4]M[C= 1]O[ctrl 6]
  O[ctrl 3]D[HOME][ctrl 4]":A=0
30 POKE3072+A,160:POKE2048+A,INT
  (RND(TI)*15+1):A=A+1
  :IFA=1000THENA=0
40 B=INT(RND(TI)*4+2):C=2*INT(
  RND(TI)*4):D=INT(RND(TI)
  *7+1):A$=CHR$(65+D)
50 VOLS:SOUND1,INT(RND(TI)*
  (950))+1,20:GETA$
  :IFA$=""THEN30
60 SCNCLR:PRINTTAB(14)"
  [crsr down]LITHUIM TIME
  ":PRINT"[8 crsr down]
  [C= 7]GET";:END
```

....end of line.



*** Newspaper reports of low-temperature deuterium fusion generate lots of new ideas:
* Some old, some new, some borrowed!, and some BLUE!!!**

*** ABOVE IS SKETCH OF USE OF HIGH VOLTAGE CHARGE TO INDUCE ELECTRON CAPTURE BY DEUTERIUM. THE HEAT PRODUCED IS 5 MEV / ATOM AND 2 NEUTRONS ARE PRODUCED.**

(one MEV is 22 million Kg-cal for each gram molecular Wt of transforming nuclide) *

More of Rick's work!

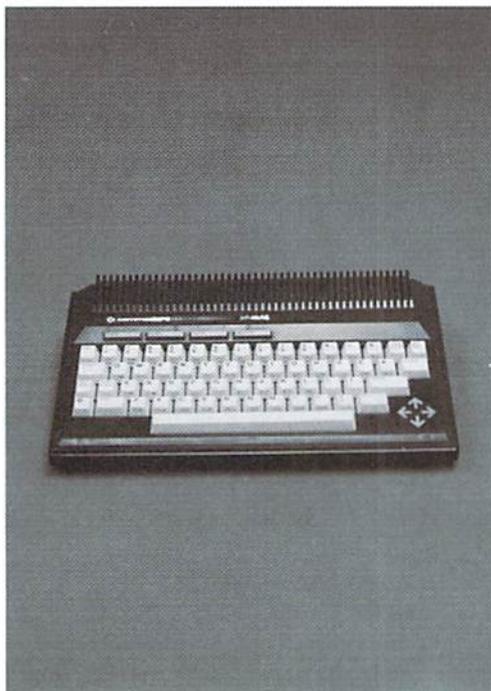
Something (VIC20)

by Brian L Crosthwaite

Well, this may be a first. A sort of screen saver for the VIC20. Usually my Screen Savers are Screen Burners, but I would leave this thing running on my computer long enough to find out. It displays the Eye of Horus and the name of the new VIC20 here at the *dieHard* offices, Vicious Lucricious. I'm not quite sure of the nature of this computer, he/she/it is replacing Victor who was having some trouble remembering what a disk drive was. Oh, he could scratch and verify, but when it came to saving he went "Huh?" And yes, all our computers have names -- don't yours?

Something VIC20

```
1  REMA$="SOMETHING.0":SAVEA$,8
   :VERIFYA$,8
10  REM COPYRIGHT 1994 LYNNCARTHY
    INDUSTRIES, INC.
20  REM ALL RIGHTS RESERVED
1000 PRINT"[CLR]";:FORI=0TO9
     :PRINT"[HOME]";
1010 PRINTMID$(" [ctrl 1][ctrl 3]
 [ctrl 4][ctrl 5][ctrl 6]
 [ctrl 7][ctrl 8]",INT(RND(1)
 *7)+1,1)
1020 FOR I=0TO5:PRINT:NEXT
1080 PRINT"[10 space][ctrl 9]
 [shift British pound][C= *]
1090 PRINT"[9 space][ctrl 9]
 [shift British pound]
 [2 space][C= *]
1100 PRINT"[8 space][ctrl 9]
 [shift British pound]
 [4 space][C= *]
1110 PRINT"[7 space][ctrl 9]
 [shift British pound][shift R]
 [shift F][shift *][shift *]
 [shift F][shift R][C= *]
1120 PRINT"[6 space][ctrl 9]
 [shift British pound]
 [space][shift R][shift F]
 [shift *][shift *][shift F]
 [shift R][space][C= *]
1130 PRINT"[5 space][ctrl 9]
 [shift British pound][2 space]
 [shift E][shift D][C= R]
 [shift C][shift D][shift E]
 [2 space][C= *]
1140 PRINT"[4 space][ctrl 9]
 [shift British pound]
 [5 space][C= Q][shift F]
 [shift R][shift K][3 space]
 [C= *]
1150 PRINT"[3 space][ctrl 9]
 [shift British pound][6 space]
 [C= *][7 space][C= *]
1160 PRINT"[2 space][ctrl 9]
 [shift British pound]
 [16 space][C= *]
1170 PRINT"[2 space][18 C= T]
1180 PRINT"[2 space]VICIOUS LUCRICIOUS
1190 PRINT
1200 PRINT
1210 PRINT"[HOME]";
1220 FOR I=0 TO 6:PRINT:NEXT
1290 PRINT"[10 space][ctrl 9]
 [shift N][shift M]
1300 PRINT"[9 space][ctrl 9][shift N]
 [2 space][shift M]
1310 PRINT"[8 space][ctrl 9][shift N]
 [4 space][shift M]
1320 PRINT"[7 space][ctrl 9][shift N]
 [shift R][shift F][shift *]
 [shift *][shift F]
 [shift R][shift M]
1330 PRINT"[6 space][ctrl 9][shift N]
 [space][shift R][shift F]
 [shift *][shift *][shift F]
 [shift R][space][shift M]
1340 PRINT"[5 space][ctrl 9][shift N]
 [2 space][shift E][shift D]
 [C= R][shift C][shift D]
 [shift E][2 space][shift M]
1350 PRINT"[4 space][ctrl 9][shift N]
 [5 space][C= Q][shift F]
 [shift R][shift K]
 [3 space][shift M]
1360 PRINT"[3 space][ctrl 9][shift N]
 [6 space][C= *]
 [7 space][shift M]
1370 PRINT"[2 space][ctrl 9][shift N]
 [16 space][shift M]
1380 PRINT"[2 space][18 C= T]
1390 PRINT"[2 space]VICIOUS LUCRICIOUS
1400 PRINT:PRINT"
1420 NEXT
1430 PRINT"[23 down][5 crsr right]
 HELLO THERE[23 crsr down]"
1440 GOTO1000
.....end of line.
```



Found Only On The Spinner!

All of the programs found here in PRG can also be found on the **Spinner**. Plus *The Extras!*

The Extras are programs that didn't fit into the *Flyer* whether there was not enough space or the programs are just too long to be typeins.

Here is a list of those PRG *not* found within the pages of *dieHard*.

Archiver128

by Ross Cherednik

Archiver128 must be the world's slowest copier. In about three hours, you can copy one side of a 1541/71 disk to or from a partition of a 1581 disk! I'm brain damaged so I can use it and not have to make excuses about it. It has been useful in the way that its name indicates. (Kind of one of those April Fools extras!)

Copyboot128

by Ross Cherednik

Copyboot128 copies the boot sector of a disk to another. It does not allocate the boot sector in the BAM of the target disk, due to a bug in early 1571's. I think this bug was fixed with the new ROMs. I do my allocations with a disk editor.

Bootcheck128

by Ross Cherednik

Bootcheck128 checks to see if a disk is autoboot or not. It is nice enough to tell you the result.

Tiperite V1.0

by John Green

Tiperite V1.0 is the *dieHard* PRG entry program that allows you to enter the programs in PRG and check the accuracy of your typing.

READY.

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 Magazines, Commander Magazines. Cartridges for Plus/4, C16, VIC20. CBM 4040. SuperPET system disks. BLC #000000.

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 compiles for the C64/128 that wasn't made by Abacus. Job Cacka #C000278.

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 SEG ASCII files. Dennis Olivares #C000734.

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

Wanted: I am looking for C and Pascal compilers for the C64 or C128 other than those made by Abacus. If anybody has a datasette that they want to sell, I will pay \$25 including s&h for it. Job Cacka #C000278.

Wanted: Copy of V.G. Data Shack Parallel Copier Superfast File Backup And Utilities V1.0. James R. Cottrill #C006174.

Wanted: The Home Computer Wars by Michael Tornczyk (Computer Publications, out of print). Jim McFarland #C003352.

To Trade: Want C64 programs Sim City and/or Pipe Dreams for club library. Must include complete docs. Will exchange for new copy of The Write Stuff w/manual or Spellchecker upgrade w/manual or \$10 cash. UPCHUG.

Wanted: Pictionary (64 version) by Broderbunk, Planetfall by Infocom, and Street Rod by California Dreams. Norris Elwood #C000110.

Wanted: A program for recoding and tracking stocks in a portfolio that is user friendly. Robert H. Hollis #C004191.

Wanted: A copy of Little Computer People. Joan B. Nickol #C004686.

Wanted: Aprospand Cartridge Expander to use with my C128. Marty Boyajian #C004357.

Wanted: Instructions for the 1750 Super Clone 512 K RAM by Software Support and Commodore 1750 RAM Expansion Module, 512K for the C128. L.M. Rembowski #C000210.

Wanted: Copy of book "Machine Language Programming for Beginners". It may have originally come from *Compute*. Bob Cameron #C007908

Wanted: Complete Commodore Inner Space Anthology by Hildon/Vic & C64 Tool Kit:Basic:Kernal by Heeb/Commander mag. Ed Duffy #C005882

Wanted: Any Geoworld disk from #10 - ? Jim Chance #C005853

Wanted: GEORAM or any REU Ram expansion for my 128, new or used. Randy McWilson #C003958

Wanted: RAM drive, RAM link, GEOS 128. Need info on how to use a Panasonic KX-P2123 so it will not advance the extra line. I'm using Super Graphix with my 128. William Walcott Jr. #C000552

Wanted: Teknika Monitor MJ-22. RCG/COMPOSITE. Also, BobsTerm Pro 128 with manual, Chessmaster 2100 with manual. Larry Pankey #C000527

Wanted: 1520 plotter; have manual and can get paper and pins as well as cartridges for VIC-20. Warren Irwin #C005712

Wanted: V.G. Data Shack Parallel Copier Superfast File Backup and Utilities Version 1.0 from V.G. Data Shack in Brossard, Quebec, Canada. Jim Cottrill #C006174

Wanted: CPM software for C128, 5.25" disks, commercial programs, used or new with manuals. Alan S. Brown #C003277

Wanted: Program disk for Fleet System 4 to use as a backup for my good, working copy. Artemas Richardson #C003063

Wanted: A copy of manual or instructions for "Road Search C64". I have the disk but need the manual and would be willing to pay for a copy (even a copied version) as well as postage. Gilbert Wozniak #C002151

Wanted: Checkbook program for the C128, as I have similar programs that run on the C64 and now have a C128. Edward P. Herpel, Jr. #C005267

Wanted: Information or plans to build a plotter for the C64. Brad Howard, #C001266

Wanted: Info on a copy or backup program "The Solution" put out by V.G. Data Shack? William J. Hall, #C005360

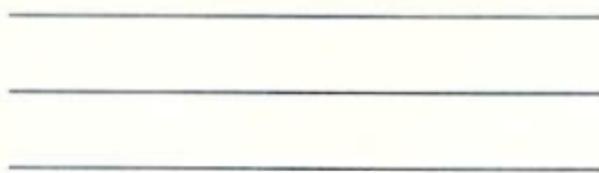
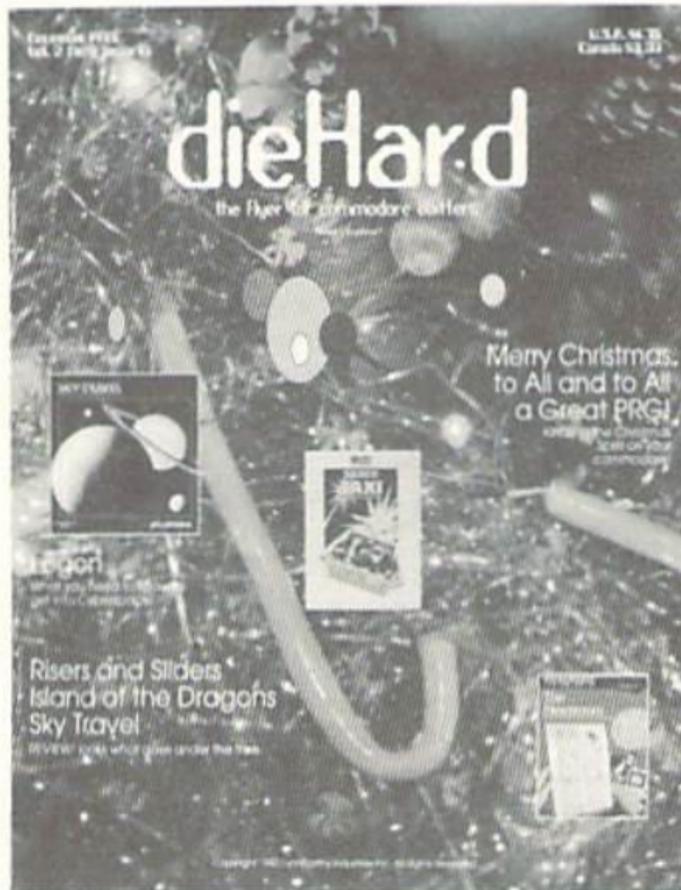
Wanted: Interested in two old programs - "Demon Dialer" and the "Last One". Are these two programs still available? If so, where can I get one or both of them? James Lee, #C002832

Classifieds

For Sale: COMIC BOOK COLLECTION PROGRAM: Catalogs, evaluates, stores, and prints out your collection. Written by a comic fan and Commodore user since 1985. Disk -- \$7.50. Randy McWilson, PO Box 116, Jackson, MO, 63755.

For Sale: Like-new C128D computers with built-in 1571 disk drive and detachable keyboard. No manuals. 30-day guarantee. \$159 + \$10 shipping (continental U.S.). Some Amiga, IBM, Apple, and Macintosh also. Excellent prices. \$1 for BIG list: Computer Bargain Store, 3366 South 2300 East, Salt Lake City, Utah 84109. Voice (801) 466-8084 -- 4-7PM Mountain Time Zone. FAX (801) 486-9128 -- 24 hours.

For Sale: C64, 1541 drive, 1525 printer, C2N cassette. Package VIC20, cassette package. Call (605) 886-8532 or write Hugo Larson, 212 5th Ave NW, Watertown, South Dakota 57201-2338.



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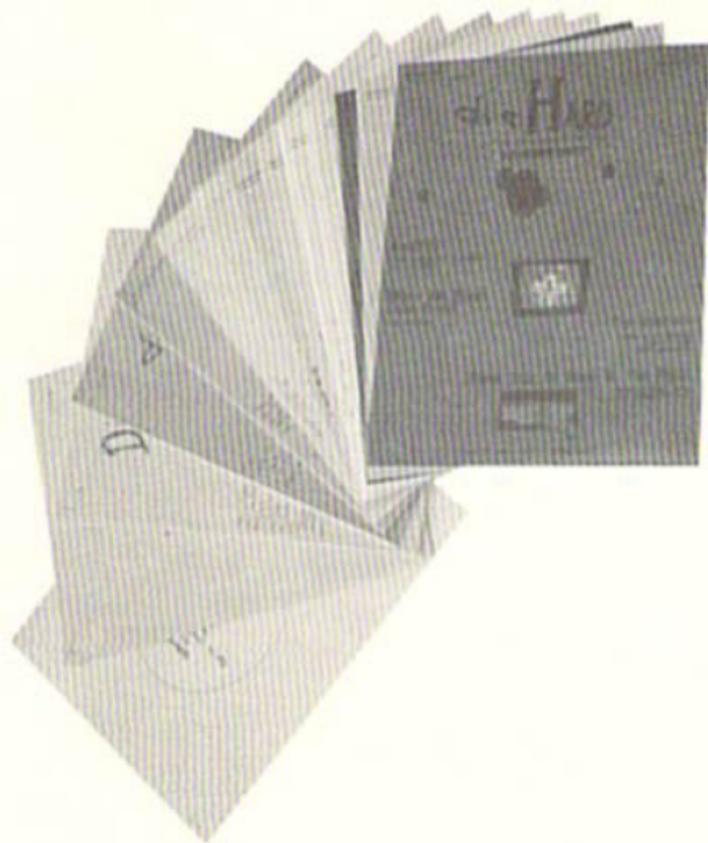


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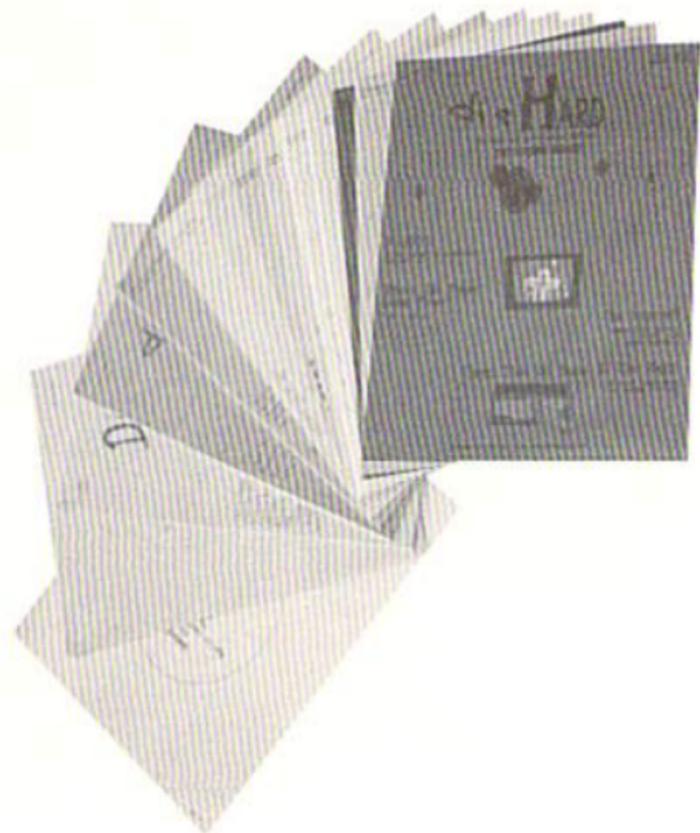
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#2* Jun '92 Writers, Programmer, Countrymen \$3.50

Highlights: word processing tips, GEOS tips, review of Visible Solar System, Programs, and Pokes and Peeks.

#3* Jul/Aug '92 Oops! \$4.50

Highlights: review of The Final Cartridge III, review of Turtle Graphics II, Puter Mirth, PAPSAW, and Programs.

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#5* Nov/Dec '92 geoIssue \$3.50

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#6* Jan '93 History in 3001 \$2.95

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#7* Feb '93 Computer Cipher \$2.95

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#8* Mar '93 Script \$2.95

Highlights: review of IconTroller, geoTips, PAPSAW, review of Top 20 Solid Gold, Q&A, and Programs.

#9* Apr '93 The Last Flyer \$2.95

Highlights: review of Mojo Mag, geoTips, PAPSAW, review of Kickman, Q&A, and Programs.

**These issues were printed with a commodore MPS 1270 inkjet and printed by photo copy machines, the original Flyer.*

#10 May '93 The Adventures of Laser Mag \$2.95

This is the first laser printed issue printed on magazine paper. Highlights: geoTips, review of Commodore FORMAT, Basic BASIC, PAPSAW, review of the Commodore 1581 disk drive, Q&A.

#11 Jun/Jul '93 The Connection! \$2.95

Highlights: review of The Simpsons Arcade Game, geoTips, Basic BASIC, PAPSAW, review of Clowns, and Q&A.

#12 Aug '93 Special PD Issue \$2.95

Highlights: Tips, review of Gary Label Maker V4, review of Shoot 'Em Up Construction Kit, Q&A, and Programs.

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Highlights: CAD for the C64, Basic BASIC, MIDI, Cyberspace Cowboy, and news.

#16 Dec '93 Merry Christmas!! \$2.95

Highlights: A Computerest's Christmas, REVIEW!, A Christmas Card in PRG, Telecommunications -- Your Commodore And You, of pink novels, software turntables and forgotten logitheques.

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