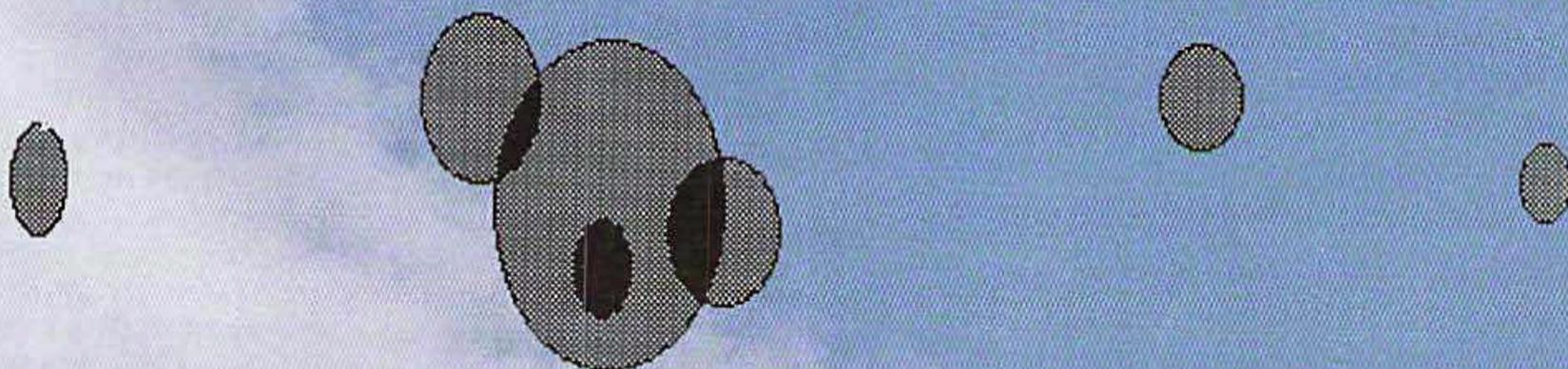


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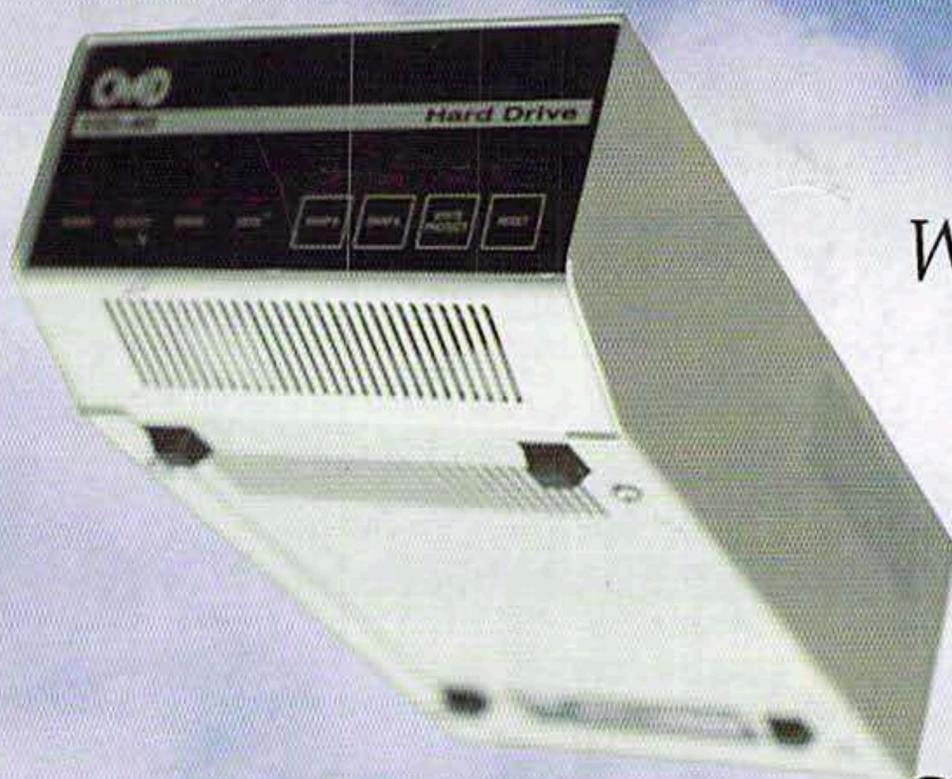
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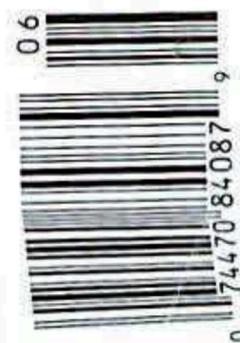
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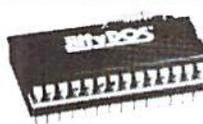
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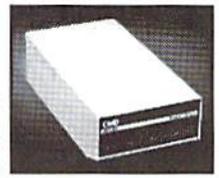
The fastest possible form of storage, RAMLink provides instant access to files and retains data while your computer is turned off. Easy to use and expandable up to 16 MB, RAMLink utilizes the same powerful operating system found in CMD Hard Drives. Unlike Commodore REU's which are compatible with less than 1% of commercial software, RAMLink supports more than 80% of the commercial titles. RAMLink also offers built-in JiffyDOS Kernel, SWAP feature, reset button, enable/disable switch, pass-thru port and RAM port for REU/GEORAM use. RAMLink offers maximum speed, expandability and compatibility with all types of software and hardware including GEOS.



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HD Series Hard Drives are available in capacities up to 1 GB, are fully partitionable, and can emulate 1541, 1571, & 1581 disks while Native partitions utilize MSDOS-style subdirectories. HD's connect easily to the serial bus or parallel via RAMLink. Includes built-in JiffyDOS, SWAP feature and RTC. HD's offer superior compatibility with most commercial software including BBS, Productivity and GEOS. And with new pricing, HD Series drives offer the lowest cost per megabyte of any C64/128 storage device.



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View From The Underground

by

Brian L Crosthwaite



I finally got my printer cable so I can put my HP 4ML on my printer stand. Hmmm. I know that it is an output device, but somehow I feel kind of alone with my printer not right next to me. I used to be able to grab the printout and check it out moments after it came out the top of the printer.

Not any more. I have to slide my chair over, then reach way over to the printer stand and -- just a minute -- well after I pick up my chair, which usually flips up over my head, I pull the printout off of the tray and -- hey, this thing's blank!

What is more fun than a barrel of monkeys? Able to leap buildings in a single bound? Is water resistant to 200 kilometers? And can strip copy protection off your disks? You got me. But, *dieHard* is moving onto the newsstands! At least some newsstands. You can get *dieHard* at many **commodore** shops, that is well known, but many national bookstore chains will be placing *dieHard* among the many fine magazines they presently carry. So tell everyone about it! Spread the news!

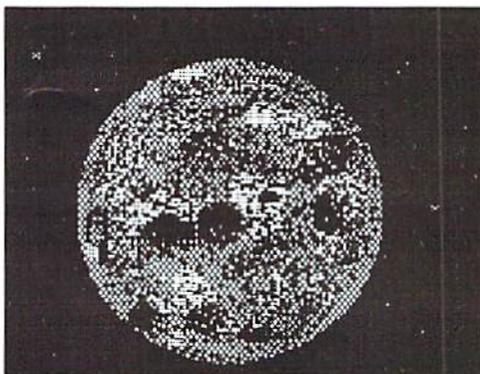
Well, back issues are not always easy to come by in the magazine world. But in today's high tech society, *dh* will remain available. We have the technology to reproduce back issues that look just like the originals! In fact, we are doing just that. The October 1993 issue is just a few issues away from extinct, but we will be repressing it soon, so don't fret if you have not received that issue for your *dh* collection!

We decided that rather than create hard-to-find collectibles, that scalpers would sell you for seven times their

worth, we would just re-release the issues that are dwindling.

Despite the age of the computers that bring you *dieHard*, we are actually state of the art. My partner as well as myself take pictures with a Nikon FM camera. The photos are placed on photo CD and printed to film along with our laser printed masters. Northwest Printing has some of the most sophisticated equipment in the world when it comes to printing.

And, yes, the masters *are* printed on a laser printer using a C128D, **commodore** 8-bit computer. And yes,



when **GEOS** updates the screen, it takes forever! Then how is sanity preserved with such a system? Well, **JiffyDOS** doesn't speed up **GEOS** any, but a couple of its cousins do -- a **RAMLink** and an **HD-85!** Find out the inside story on this within this month's **REVIEW!**

Speaking of the times -- **TipeRite** gets a total revamp! Grand master programmer James T. Jones brings us **dh Checksum** (created with the **BASIC** listing **TipeRite 2.0**). **dHC** is an **ML** program that allows you to enter programs as you would normally and reports back the checksum at the top left of the **C64's** screen.

Well, this marks our twentieth issue -- our two year anniversary issue.

Looks like we're making as big a deal about it as we did our one year anniversary issue.

We are indeed growing. Linda, our new receptionist, is who has been answering the phone lately. Doug Parsons, our new Assistant Editor, is now on *Spinner* and *PRG* patrol! Things are in the groove!

Ok, enough already -- this is *your* issue! Enjoy it!!!

READY.



Fessin' Up To Messin' Up

Boy did we mess up! We were going to draw for a free subscription from the Readers' Surveys postmarked before April 15. Well, we didn't place a spot on the form to put your name and address! So here is what we are going to do. Mail us a post card with your name and address on it to:

dieHard
Subscription Drawing
P.O.Box 392
Boise, ID 83702-0392

Be sure it gets to us by August 31, 1994. We will draw the lucky winner from those cards. Sorry about this folks!

READY.



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the flyer for commodore 8biters

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Correspondence: Please address correspondence to *dieHard*, Editors, P.O.Box 392, Boise, Idaho, 83701-0392. Letters or questions may be published unless specifically requested not to. Sorry, we cannot personally respond to questions or comments due to the large volume of mail received, although the questions or comments may be published in *dieHard*. However, we do read every single letter we receive.

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The Future Has Arrived!

The graphics found in this month's issue come from the Rick Hedrick collection of fine art. Many are his originals and others are downloads from Q-Link. Be sure to see the slide show on this month's *Spinner*!
Enjoy!!

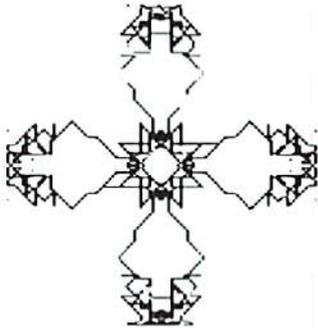
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INPUT; READERS

We love to hear from our readers! Drop us a line at: dieHard, P.O.Box 392, Boise, ID, 83701-0392!

Dear Ms. Knomers,

I was very sorry to read in your "Everything In Its Place" column that your staff had malfunctioned. In particular, that the Super Snapshot V5's BASIC commands "like RENUMber, AUTO, etc." just didn't work! Having just used these commands over two



dozen times in the past week, I am stunned! Does this mean I will have to re-do everything all over again?

NOTES: To activate these commands, it is necessary to initiate the features by sending a ">[british pound]". When the border turns blue and the message states that the commands are activated, you are free to use most of them. Actually, the "[british pound]OLD" command was reported to be invalid by the company.

[british pound]renum,1000,10 will work fine!

[british pound]autonumber works great also!

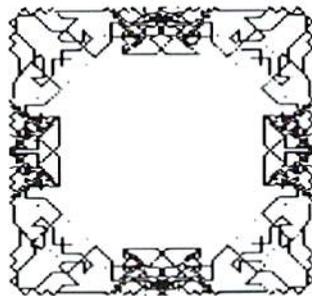
[british pound]merge has been a "GODSEND"!

[british pound]delete, [british pound]append round out the commands I use often!

Sincerely yours, Jack Blewitt of Rockford, Illinois.

Received my first issue of *dieHard* (Dec 93). Found it professionally done, the articles and columns interesting and informative. Enough so that I've ordered the 15 back issues. Look forward to them and to future issues.

I originally purchased my flat C128 in 5/86, along with an MPS-1000 printer, a Thompson 14" RGBI monitor, 1571 disk drive and a 1670 modem. I subsequently added a Xetec Super Graphic Gold printer interface to correct losing the right quarter of the screen when I printed out from **GeoWrite**. The MPS-1000 prints 60 cpi and **GeoWrite** requires 80 cpi. By placing the printer in IBM 5152+ emulation mode and using the interface, I forced it to print 80 cpi.

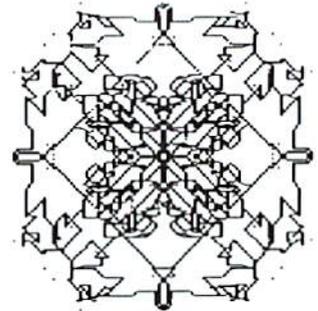


Over the years I have added 64K Video RAM, a second 1571 drive, a 1750 RAM expander (512K), *RAMLink* with 9mb of RAM and a CMD FD-4000 drive. The original RAM of 128K has burgeoned to 9.6+ mb!

Now to the primary purpose of my letter. Read your review of **SKYTRAVEL**. Very comprehensive! I couldn't agree more as to your overall rating. However, you stated as a drawback that the program could not be booted from a 1571 drive. Not so! I have owned the program for a few years; and I put my C128 in 64 mode and the 1571 in 1541 mode, and it always boots

perfectly.

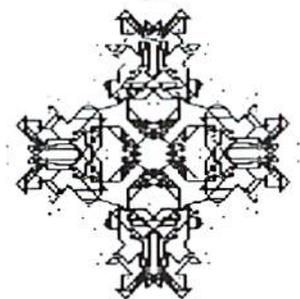
Perhaps your copy of the program has a defect, your computer/disk drive



has been modified/upgraded in some way that affects the program, the internal 1571 drive on your 128 is not compatible, or there is some kind of drive misalignment. I just booted and ran the program again, and it works flawlessly.

That stated, let me congratulate you and your staff on *dieHard* and wish you a long and successful life. Edward F. Lorentz of Brooklyn, New York.

The earlier version of SKYTRAVEL did work with the 1571 driver. Later, when Microillusions started distributing it a fast load routine was installed that was made for the 1541



only. Most new versions will not load on a 1571 drive with any ROM version. Unfortunately, we didn't know this at the time the review was written. Thanks for drawing it to our attention.

READY.

Rarities with R. Scot Derrer

User Groups

More additions to our ever expanding list of active **commodore** user groups.

Commodore Hawaii User Group
46-229 Kumoo Loop
Kaneohe, HI 96744-3532

Commodore Users Group of
Rochester / CUGOR
PO Box 23463
Rochester, NY 14692

The Commodore Users Group
of St. Louis
129 AOKAY Dr. Apt. K
St. Charles, MO 63301

Diablo Valley Commodore Users
Group / DVCUG
1896-D Lynwood Road
Concord, CA 94520

McDonnell Douglas Recreational
Computer Club
MDC/RCC Commodore SIG
PO Box 1171 Carr Station
Florissant, MO 63031

Mid-Ohio Valley Commodore
Club, Inc.
PO Box 2222
Parkersburg, WV 26102-2222
BBS (304) 295-6502

Renton Computer Group
26225 171st Place S.E.
Kent, WA 98042

Simi Valley Commodore
Users Group
1882 Stow St.
Simi Valley, CA 93063

Suncoast Bytes Computer Club
7034 Mayfield Dr.
Port Richey, FL 34668

International News

As the **dieHard** network spreads, we are discovering our friends outside of the United States. Michael Renz of Germany answered my letter and explained that there is a lot of activity there. As we explore these international avenues, we'll let you know more about it.

Read Any Good Books Lately?

For you history buffs, there is a new book out from the German publishers, Springer-Verlag. It is called The Computer -- My Life, by Konrad Zuse. It seems that Mr. Zuse had developed the first fully automated, program-controlled, and freely programmable computer using binary floating-point calculation in 1941. Well before anyone else. Although somewhat pricey (\$49.00), this little book offers a delightful glimpse into the scientific past of this marvel called the computer.

TWS Meets FGM

Like the Energizer Bunny, Busy Bee Software just keeps on going with enhancements to the ever-popular word processor, **The Write Stuff**. This time it's **The Illustrator II** which incorporates graphics from Fun Graphics Machine into **T.W. Stuff**. For more information write Busy Bee Software, PO Box 2959, Lompoc, CA 93438, (805) 736-8184.

READY.



Rarities

Basic BASIC

by R. Scot Derrer

More String Functions

This 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, STR\$, RIGHT\$, LEFT\$, MID\$, LEN, storage fundamentals, string and numeric variables and arrays. This month we'll look a little more at playing with strings.

So as not to jump into this subject cold, the following example illustrates some of the material in last month's Basic BASIC. Type in this program, type RUN, and press <RETURN>.

```
10 A$="DIEHARDTHEFLYER"  
20 PRINT MID$(A$,1,7)  
30 PRINT MID$(A$,8,3)  
40 PRINT MID$(A$,11,5)  
50 PRINT MID$(A$,1,15)  
60 FOR X=15 TO 1 STEP-1:PRINT MID$(A$,X,1);:NEXT  
RUN  
DIEHARD  
THE  
FLYER  
DIEHARDTHEFLYER  
REYLFHEHTDRAHEID
```

Lines 20 through 50 revisit the very versatile MID\$ function. Line 60, however, introduces the STEP command. As you can see, LINE 60 prints the contents of the string A\$, backwards. How does this work?

STEPPIN' OUT

Let's go to the land of FOR-NEXT loops. The STEP keyword is an option available in the FOR-NEXT statement and its function is to increment the end loop counter. Both FOR X=15 TO 1 and FOR X=15 TO 1 STEP 1 function the same way since the default for not using the STEP keyword is +1. The + sign is optional, too, as the operating system default is plus. This example uses a minus sign which means the FOR-NEXT loop is deincrementing by 1. To see how the plus STEP 1 works, edit LINE 60. Remove the minus sign, swap the 1 and 15 (remember to press <RETURN>), and reRUN the program. Note, if you do not swap the 1 and 15, all that would print is D.

```
60 FOR X=1 TO 15 STEP 1:PRINT MID$(A$,X,1);:NEXT  
RUN  
DIEHARD  
THE  
FLYER  
DIEHARDTHEFLYER  
DIEHARDTHEFLYER
```

Now, re-edit LINE 60, remove the STEP 1 (remember to press <RETURN>), and reRUN the program.

```
60 FOR X=1 TO 15:PRINT MID$(A$,X,1);:NEXT  
RUN  
DIEHARD  
THE  
FLYER  
DIEHARDTHEFLYER  
DIEHARDTHEFLYER
```

ARRAY for Hollywood or DIM The Lights

Same results, yes? Now close your eyes and remember -- ARRAYS. The function MID\$(string,position,length) or in this case: MID\$(A\$,X,1), is actually a one DIMensional array. The value of A\$ is DIEHARDTHEFLYER and 15 occurrences (characters) long. D is in position 1 and R is in position 15 of the array.

```
          1   1  
123456789012345  
DIEHARDTHEFLYER
```

When using STEP-1, the value X in the FOR-NEXT loop is set to 15 and deincremented by 1, 15 times, counting backwards until 1 is reached. Used in conjunction with the MID\$ command, X becomes a pointer or subscript. The 15 elements of the array A\$ can be looked at programmatically using this subscript X.

Dump The Array

In English with some programese thrown in, FOR X=15 TO 1 STEP-1:PRINT MID\$(A\$,X,1);:NEXT means to read the contents of the string array A\$ fifteen times positioning the pointer at the bottom and working upwards. Fun stuff and, if you ponder the concept, opens the door to many programming possibilities with string arrays. Other considerations would be to change the number following STEP to something other than 1 or -1. Try 2 which will print every other letter of DIEHARDTHEFLYER, or 3 which will print every third letter. Remember, when using a plus or minus increment value after STEP, the beginning and ending values of the FOR-NEXT loop must also be considered.

READY.



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PAPSAW

Browsing through the millions of newsletters we get, we came across these bits of PAPSAW. These are for the C64. Some are really cool. Some may be just the routine you've been looking for.

PEEK(63)+PEEK(64)*256
-Finds DATA line being read

SYS 42115
-Keeps READY from appearing

SYS 42638
-Run BASIC program in memory

SYS 46374
-Speed up garbage collection

SYS 46767
-Restore to default screen colors

SYS 58260
-Cold start

SYS 58726
-Performs HOME

SYS 59626
-Scroll screen one line

SYS 59749
-Insert a blank line on screen

SYS 62919
-Displays correct program name

SYS 64738
-Cold start

SYS 64770
-Check for autostart cartridge

SYS 65511
-This sys will close all files.

Joystick gone bad? Here are some joystick emulations that you can do right from the keyboard. We found various versions of this chart, but this one seemed to work with all versions of the C64 ROMs. Let us know if you have some that only work on your system. These are for the C64.

PORT 1
FIRE ==> SPACE BAR
UP ==> I KEY
DOWN ==> LEFT ARROW
LEFT ==> CONTROL KEY
RIGHT ==> 2 KEY

PORT 2
FIRE ==> SPACE+M KEY
UP ==> SPACE+F1
DOWN ==> SPACE+Z KEY
LEFT ==> SPACE+C KEY
RIGHT ==> SPACE+B KEY

Send us your PAPSAW. Got any POKEs, PEEKs, SYStems, or WAITs? Send them on in. We love PAPSAW for all **commodore** 8-bit computers -- PET, CBM, C64, C16, plus/4, VIC20 -- all makes, models and ROM versions. System calls to various peripherals, we love too!

dieHard
PAPSAW
P.O.Box 392
Boise, Idaho, 83702

News!

Creative Pixel's New Game For C64

Creative Pixels is pleased to announce the release of a new entertainment program for the **commodore 64**. The new program, entitled **A Day In The Life Of A Prehistoric Man** is scheduled for distribution on April 8, 1994.

Join your host, Salisbury Smythe, in a world premiere television documentary on Public Network Television. As the documentary continues, the player participates in the daily routines of a prehistoric man. These routines include bone collecting, saving your mate from cave apes, discovering fire, and dodging dinosaurs. The game is a mixture of arcade action, adventure, and comedy.

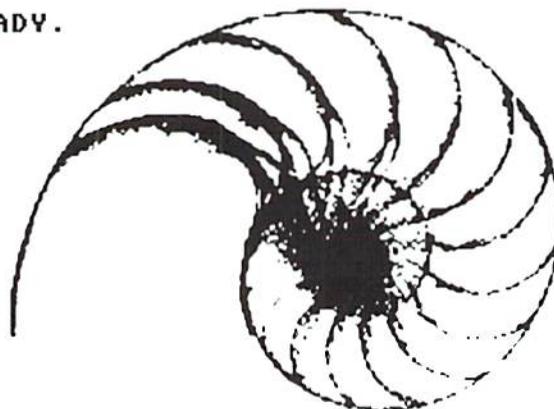
A Day In The Life Of A Prehistoric Man is the fourth game to be released by Creative Pixels for the C64. The others include **Escape Route**, **Island Of The Dragons**, and **The Wings Of Circe**.

commodore 64 users can obtain information on these programs by writing to:

CREATIVE PIXELS
P.O.Box 592
Library, PA 15129

With the release of this new game, Creative Pixels is continuing its commitment to support the C64 with new products.

READY.



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dieHard

the flyer for commodore 8biters



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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.
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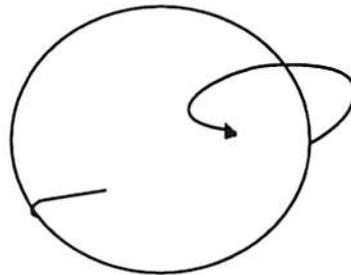
Cyberspace Cowboy!

Wire-walking with a commodore star...

You just never know who you are going to meet online. As I write this (early February), the memories of two recent online conversations are still quite fresh. These past two evenings I have had the distinct pleasure of having met Jack Vander White, publisher of *CEE-64 ALIVE!* For any who are not familiar with this disk-based publication, *CEE-64 ALIVE!* comes from Sacramento, CA and is released 6 times a year. It is a fine source of entertainment and information for the **commodore** enthusiast.

CEE-64 ALIVE! is now in its third year. Each issue is two disks and a newsletter. A change has been implemented in Jack's magazine -- the main menu is now in uncompiled BASIC and the read and other modules are machine language. The user can configure the BASIC to use any read colors, line width, print width, word wrap, or any other parameter desired by going into the menu and making his own custom setup. By the time you read this, Jack should have a new demo of the diskzine online at Delphi for the **commodore** public to download. The demo version may have the new menu system, but first Jack has to introduce it to his subscribers. *CEE-64 ALIVE!*'s demo disk will be available in the Delphi **commodore** area's Commodore Central database, which is where files that don't pertain to other subject headings are placed. Other items of interest in the Commodore Central database are *LOADSTAR*'s demos and Mojo Mag.

Jack is a newcomer to Delphi. I happened to be online Thursday and had



a very enjoyable conversation with him, welcoming him aboard on the occasion of his first visit. He told me a little about himself and his personal and professional experiences, then went into great detail describing the equipment which is used to put out his diskzine. We did a little name-dropping and thoroughly enjoyed ourselves. And tonight (Friday), he joined us for our regularly scheduled **commodore** conference. He discussed how the *CEE-64 ALIVE!* project got started and how it got its name. He mentioned CMD's new print magazine, due out in April. And he managed to slip in a plug for his FIDONET BBS, (916) 395-9733, with 2,000 **commodore** 64 and 128 files available for download or file request.

File request? Well, yes, it goes like this. Jack's board's Fido address is 1:203/999. You log on to a Fido board in your local dialing area and ask the SysOp to request Jack's file list for you. You look the list over and have your friendly local SysOp request any file(s) you want. Your local board sends the file request (FREQ) to Jack's mail tosser. Jack's mailer then sends the file back to the local BBS, where it will await your downloading pleasure. Most **commodore** files can be sent in under five minutes at a cost of maybe fifty cents to the calling party. Pretty cool, huh?

What does all that stuff in an Internet address mean?

An Internet mailing address breaks down like this:

A person's EMail address on a computer: user@somewhere.domain

A computer's name: somewhere.domain

The user portion generally is that person's account name on the system, but it doesn't have to be. **somewhere.domain** is a reference to the name of a system or location and what sort of organization it is. And the trailing domain is very often one of the following:

com Usually a company or commercial organization or institution, as in Delphi's case (**delphi.com**).

edu An educational institution, New York University for example (**nyu.edu**).

gov A government installation such as the National Aeronautics and Space Administration (**nasa.gov**).

mil This would denote a military site, for instance the Air Force (**af.mil**).

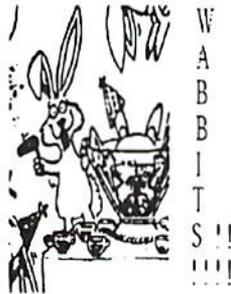
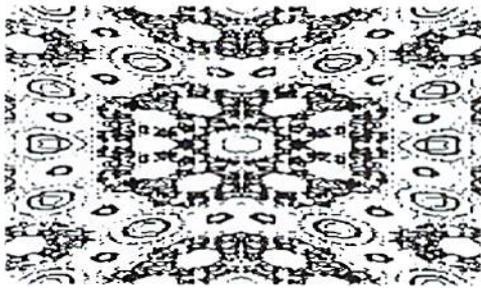
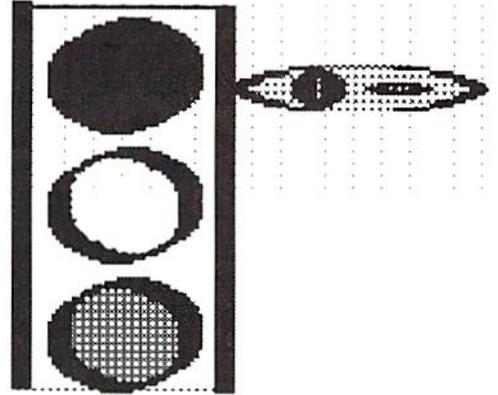
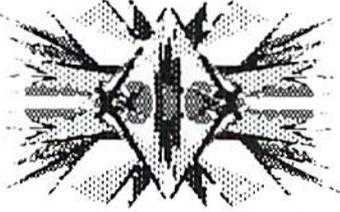
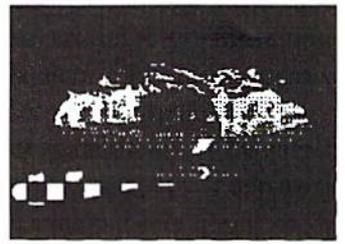
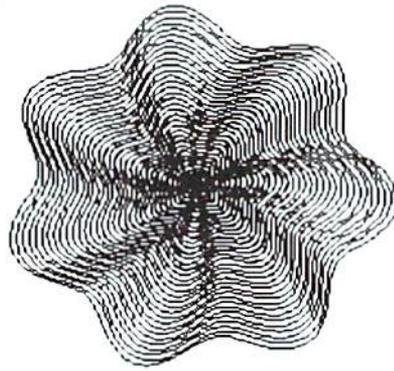
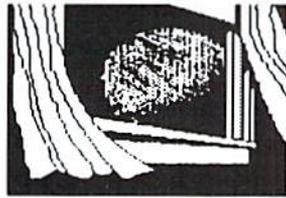
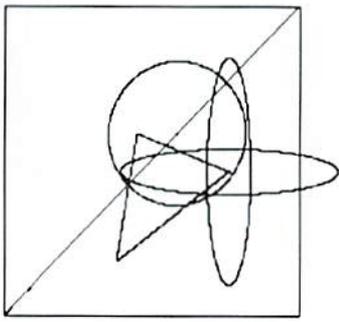
org A domain reserved for private organizations which might not fit neatly into other classifications. Let's say the Electronic Frontier Foundation (**eff.org**).

So, then ... my Internet address, **mojoed@delphi.com**, is my Delphi username (mojoed) at Delphi (a commercial operation).

Until the next time, I bid you peace.

CEE-64 ALIVE!, P.O. Box 232115, Sacramento CA 95823

READY.
■



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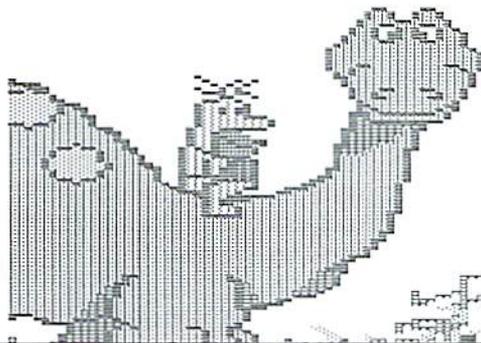
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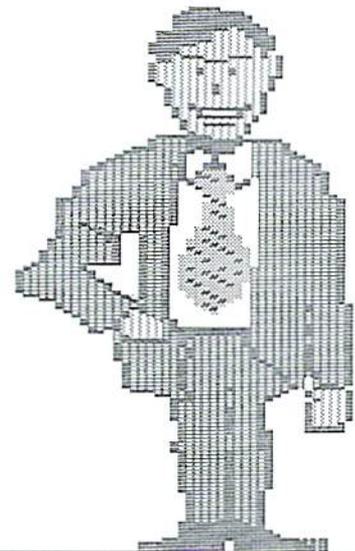
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R E V I

REVIEW!

Upon throwing the switch on my monitor stand there is a moment of pause. Then like a cat stretching after a

safe. When the power comes back, rebooting is still only a fifteen second ordeal, because the RAMLink is completely battery backed. This ensures everything is still in the REU -- just as before the power went off!



nap, the power lights turn on, the activity light goes on, then off, followed by the error, GEOS, swap8, swap9 and lastly the write protect. I press the leftmost button -- swap8 -- and type: ↑:✱ <RETURN>. In less than 15 seconds GEOS is up and running!

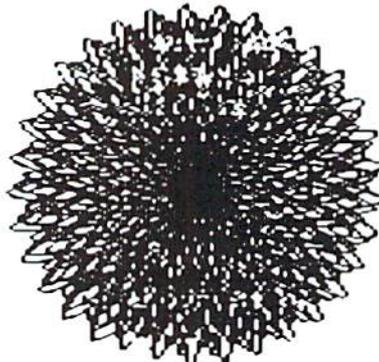
I can jump around 1581 emulating partitions with the CMD utility **QuickMove**. Access is really fast. First of all, the drive itself is fast, but this one is hooked via a parallel cable to a RAMLink. The data flies at 8 times serial speed! With 1 Meg in the REU I have a 1581 RAM and 1581 drive to do my bidding.

The REU holds all my system files like **geoPublish**, **geoWrite**, **TEXTGRABBER**, fonts, etc. I work in a 1581 partition called "geoWorkSpace." I never have to trash **geoPub**, and load **geoPaint** into the REU, because they are always there!

If the power geos out, I'm OK. My document is on the hard drive --

When it comes time to layout my **geoPublish** documents, I have three special partitions called "dieHard I," "dieHard II," and "dieHard III." I place one doc in each partition.

What if I don't have any desire to use GEOS. Can I still use a HD or the RAMLink? Most definitely. If you find you need mass storage for any purpose, there is no job too big or too small for these two. Imagine loading a file in a fraction of its normal load time and never having to place a disk in the drive!



HD

1994 Creative Micro Designs, Inc.

reviewed by Brian L. Crosthwaite

The drive used for this REVIEW! was the HD-85 which is an HD-40 with 85 megabytes (Meg) of storage (rather than 40).

What is a hard drive?

A hard drive is quite simply a disk drive that you can't remove the disk from, sort of like an REU. The chief difference between an REU and a hard drive is that there are moving parts in a disk drive. The hard drive is also less restricted when it comes to amount of memory available. The **commodore** REUs *can* be expanded with a little know how. However, at points beyond the 2 Meg expansion, the REU becomes less reliable. When you turn your computer off the REU's contents vanish along with the DOS that controls the REU. These both have to be replaced upon the next power up. The hard drive's contents remain intact. The **commodore's** normal DOS can handle the drive, so nothing has to be loaded in when you turn your computer on to use the hard drive. So, the hard drive is a self contained mass storage facility.

The differences that lie herein are only the tip of the iceberg. The hard drive, as with all CMD devices, is compatible with JiffyDOS. So the **commodore** world's fastest operating system is readily available and, at least as far as the hard drive is concerned, no extra ROM chips need be purchased to use your present JiffyDOS.

E W ! !

The hard drive is a fast drive. When used with RAMLink, the hard drive becomes a superfast-superfast drive, via a parallel cable.

What do you do with a hard drive?

Well, this depends upon what you use your computer for. Since this drive can be hooked up via the normal **commodore** serial port and commands may be sent via CBM-DOS, you can easily use the HD with a VIC20, C16 or a plus/4.

Your entire software library can be placed on the HD for fast access, whether by direct access, or can be stored by file type; i.e., disk utilities, games, **GEOS**, Q-Link, *LOADSTAR*, etc.

The hard drive allows you to configure its memory in many ways. The drive is divided into several partitions when it comes from the factory. The first partition is a native mode partition. A native mode partition can be formatted to just about any size of storage you want. This particular partition is filled with CMD utilities for setting up partitions, moving programs and whole disks into them, formatting for use with CP/M, etc., leaving your options wide open and very versatile.

When is the drive not an HD?

Many of the partitions set at the factory are emulation partitions. The HD can emulate 1541, 1571 and 1581 disk drives by way of partitions. You can even format for CP/M 1581 if you

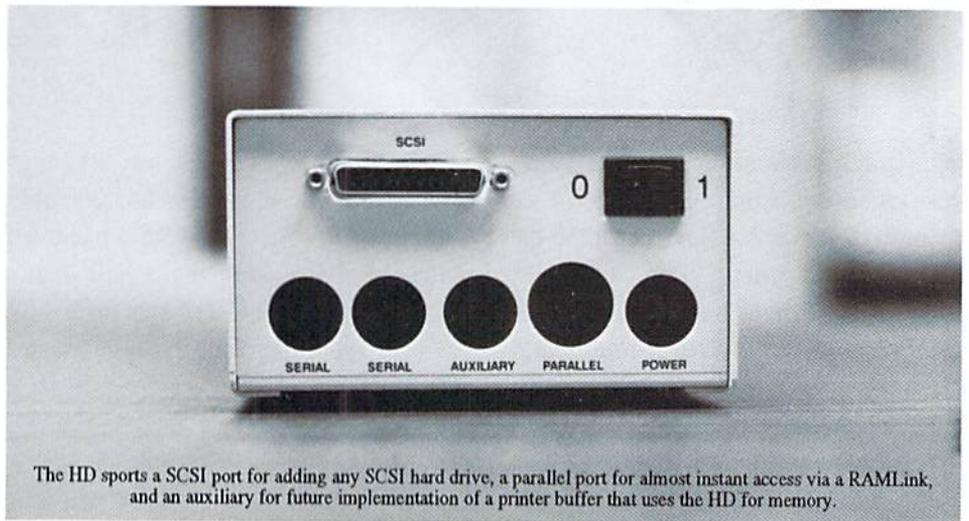
use CP/M and would like to store programs for this specific use.

Having the ability to emulate a **commodore** drive has many benefits. Programs that can only run from **commodore** drives are able to do so. For instance, **GEOS** can look at my FD as if it were a 1581 drive. I can jump around 1581 partitions with ease using the **QuickMove** program (one of the many support programs that comes with the HD).

When using programs that allow disk commands to be sent, you can easily change partitions. To change

More than just a hard drive.

The Q-Link program is on a partition that comes with the hard drive from the factory. One of the included utilities is a program that transfers your Q-Link data from your Q-Link program disk to the partition on the hard drive containing the Q-Link program for use with the hard drive. You can even update your system disk (recommended after every online session) in case you ever need to send your hard drive off for repair, your Q-Link program disk will be active and ready to use. (Q-Link writes



The HD sports a SCSI port for adding any SCSI hard drive, a parallel port for almost instant access via a RAMLink, and an auxiliary for future implementation of a printer buffer that uses the HD for memory.

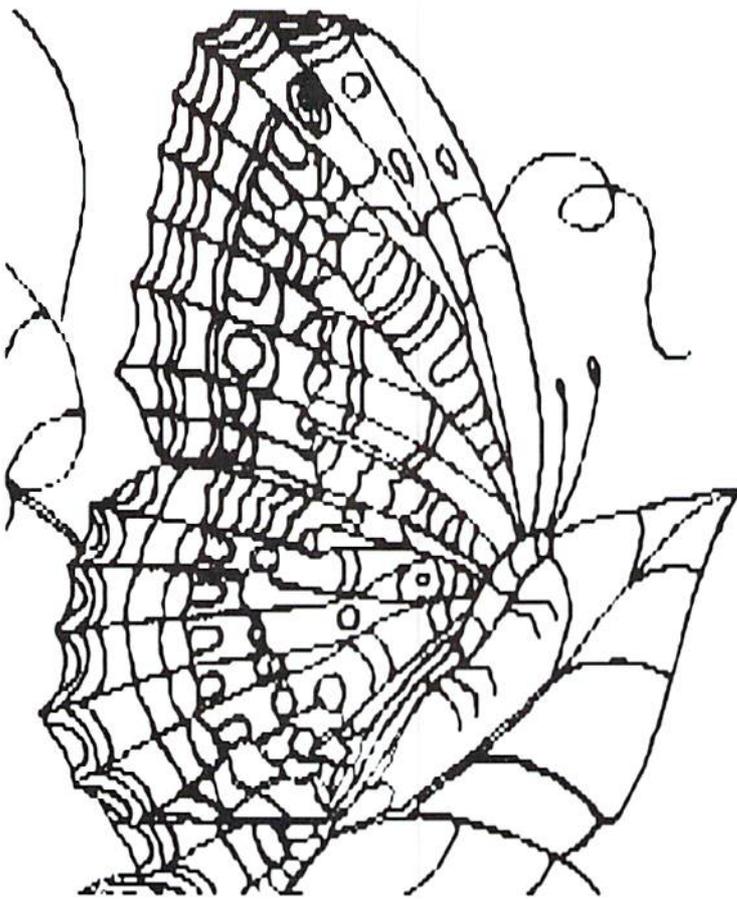
partitions with JiffyDOS, you simply type: @CP#. For instance, @CP4 takes you to partition 4. With normal BASIC, OPEN15,8,15,"CP4":CLOSE15 will do the job. But not all programs allow you to send disk commands. The front control panel to the rescue! With the buttons on the front of the hard drive, you can swap in any of 254 partitions. This allows you to swap in **Super Q** while on Q-Link or get to your data files from a data base that resides on a separate partition.

new information to your program disk every section you log on for.)

This drive also comes with a pre-formatted CP/M partition, a 1571 partition with a *LOADSTAR128* sampler, a 1581 partition with a *LOADSTAR64* sampler, and a couple of empty partitions so you can play right away.

The manual.

While the manual is informative and for the most part well written, I found



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K-GPak-B TraahnOutput		X-1541/71/81 UTL Combo	12+3
Starraider-Air Demon	9+1	Y-GEOS Programmer Man.	
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quite a bit of repetition in it. At times, this repetition went to the point of absurdity. It may not have bothered me as much had there been an index available. Without an index, I had to scan many pieces of text to find what I was looking for. Rereading the same things made me confused as to where I was (which was lost). I found one area where the text had obviously been scrapped from the previous section with only a word or two of variation. It was, at times, like crawling through mud.

Most of the time finding things in the manual was not that hard, thank goodness. It is well organized in the general scheme of things. There is a fair amount of low-end technical data that allows you to get up and running within less than an hour.

Options.

The HD-40, for instance, has 40 Megs of storage (special editions are available with 52 and 85 Megs). CMD has even made some with a Gig and a half (that's billion and a half bytes of space)!

The real time clock comes standard with all HDs.

Overall

This product performed very well. It is an integral part of the system used to do the layout of *dieHard*, as well as much of the programming with which we are involved. It rose to the challenge and held fast. I give this one

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



The HD comes in many forms. **CONT**

RAMLink

1994 Creative Micro Designs, Inc.

reviewed by Brian L. Crosthwaite

RAMLink is a RAM Expansion Device. RAMLink is an operating system. RAMLink is a cartridge port expansion board. RAMLink is a reset button. RAMLink is a clock. RAMLink is a non-volatile storage device. RAMLink is a parallel interface for a hard drive. RAMLink can be many things.

RAMLink is a funny looking box you plug into the back of your C64, C128, or C128D. There are several lights, a couple of switches and some square buttons on it. It has two slots for cartridges, a power-in, a battery-in, and a multi-pronged jack on the back.

This device will change the way you compute forever.

But what is it? Well, RAMLink can be configured in many ways. First, let's look at its base unit. This box will, when used in direct mode, allow access to the complete set of JiffyDOS commands. In fact, it will automatically install JiffyDOS every time you boot up -- unless you turn it off.

With an REU you can add RAM to your system. When you are done for the day, you can power down your computer and still have all your programs in the REU the next day, because RAMLink has its own power supply. Let's add a step. The added battery backup will give you the assurance that your programs and files *will* be there tomorrow, even if the power goes off tonight.

One option, called RAM card, is a board that allows you to add ordinary SIMMs (Single Inline Memory Modules) to add RAM to the RAMLink. Up to 16 Megs of RAM! Plus you can

use the RAM in your present REU in conjunction with the RAMLink's RAM. Or you can use them as separate RAMs!

RAMLink can emulate the **commodore** 1541, 1571 and 1581 or native mode drives in just about any combination by allowing the RAMLink to be partitioned. This gives greater versatility in running programs. Partitions are also known as subdirectories. The native mode partitions can have partitions within partitions (like PCs or Macs) for better file management.

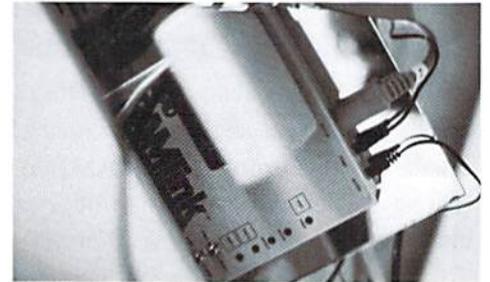
With the 1541 emulation, you can run programs that are designed to operate on a 1541 drive. When you load the disk into the REU via CMD's **Fcopy** program, all data on the disk is placed into the partition where it was on disk originally. This improves the chance of the software working properly from the RAMLink. Not all programs will run from the RAMLink because of copy protection. However, this can sometimes be fixed by way of a

snapshot or backup cartridge. These cartridges can make a quicker loading program from the original, which can then be copied into the RAMLink with ease. Super Snapshot, Final Cartridge, and Action Replay are just a few of these cartridges available on the market today.

RAMLink is defaulted as device number 16 but can be made to be any number you'd like between 8 and 29. If you use **GEOS**, about the only number you can't use

is 11, since **GEOS** reserves this number for drive swapping. Speaking of drive swapping, you can instantly make the RAMLink drive 8 or 9 by pressing either the SWAP8 or SWAP9 button. When you want to swap the drives back, simply press the button whose light is still on.

Another button allows you to reset



Tucked away behind the massive dieHard computer you'll find RAMLink. Shown here configured with the Final Cartridge and GEORAM's 512k giving a total REU capacity of 1.5Meg.

your computer -- without resetting the drives! This is great when you wish to return to **GEOS128** from **BASIC** or recover from a crash without having to re-program your drives.

Two toggle switches control the

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- ✓ Switch the built-in 1571 drive from device 8 to 9, or from 8 through 11 from front panel.
- ✓ Reset the drive from front panel.
- ✓ Reset the computer from front panel.
- ✓ Power-up computer from front panel.

For information write to:
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 Fallbrook, CA 92028-1641

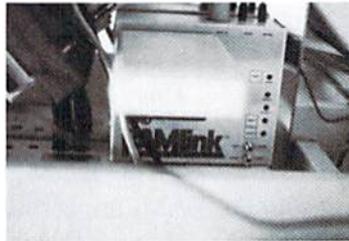
Enclose a stamped self-addressed envelope.

RAMLink and REU. Normal/Direct allows you to access the REU as a separate unit from the RAMLink (Direct). The REU can be part of your total RAM in the RAMLink (Normal). This allows you to choose how you want to configure your system. You could easily set up the RAMLink RAM for GEOS while the REU is reserved for your Fleet System 4 spellchecker.

GEOS and any program can be made to autoboot upon power up. There is an area in RAMLink that allows you to specify certain perimeters that let you autoboot a program from any drive. 128 owners can have one for 128 mode and one for 64 mode. It can be up and running from RAMLink almost instantly!

With the cartridge pass-thru port and a normal cartridge port, you may also find some of the rules of cartridge combinations have changed -- some good, some not so good. What I'm talking about here is when you use a cartridge port expansion unit (a thing that plugs into your cartridge port and allows you to plug in more than one cartridge), you find that certain cartridges will not work together and some have to be in a certain slot combination to work. I had my HEARSAY1000, Simons' BASIC, Super Expander, and an REU hooked up for the last year. I wanted to use the Final Cartridge III in conjunction with my system and thought I'd give up either the Simons' BASIC or Super

the FCIII with the extender on my C128, but it didn't work. Since the RAMLink has its own power source, I gave it a try. I wound up with a 1 Meg RAMLink with 512K GEORAM in the Pass-Thru.



Coming out the expansion slot is the extension cable that plugs into an Aprospan cartridge expansion card. The card has my HEARSAY1000, FCIII and REU. Unfortunately, I can't use the third slot since things got a little cramped; the monitor and disk drive cables need to go through the center of everything! But it works! The setup will not boot unless the FCIII is turned on, which is fine, except when I turn off JiffyDOS. The Q turns off the FCIII, except the fast load! KILL (a FCIII command) crashes the system, unless implemented from the desktop, in which case it works perfectly fine. I was amazed at how compatible the two are. Sometimes the system turns on in 128 mode and sometimes it turns on in 64 mode within the FCIII. When I want to use 128

Expander. Well, everything worked fine except I couldn't use the REU. At one time, I wanted to use my REU with an extension cable so it could lay flat on my workbench. That didn't work, either. I also hoped to use

mode and the latter occurs, I simply exit the FCIII with KILL, reset the computer, and I'm in 128 mode.

This device has many similarities to the HD device. MCOPY and FCOPY are used to copy files and disks to partitions. A snapshot cartridge is recommended for copy protected programs.

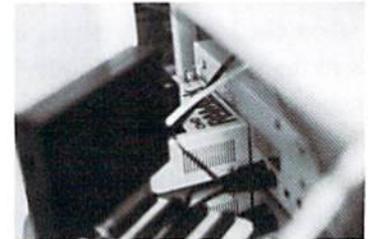
The RAMLink is also an alternate doorway to the HD. With the RAMLink, you have parallel access to the HD for breathtaking disk access.

The bottom line is compatibility. JiffyDOS, C64/C128, the HD, RAMLink and all your normal equipment will simply sing with the speed these devices can give.

The RAMCard (for adding up to 16 Meg of internal RAM), Real Time Clock, and battery backup are optional -- I recommend them all.

This device is rated at:

- ***** FANTASTIC!
- **** GREAT
- *** GOOD
- ** POOR
- * REALLY BAD



Both the HD and RAMLink are available from Creative Micro Designs, Inc., P.O.Box 646, E. Longmeadow, MA, 01028. Phone: 1-800-638-3263

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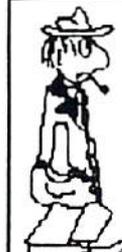


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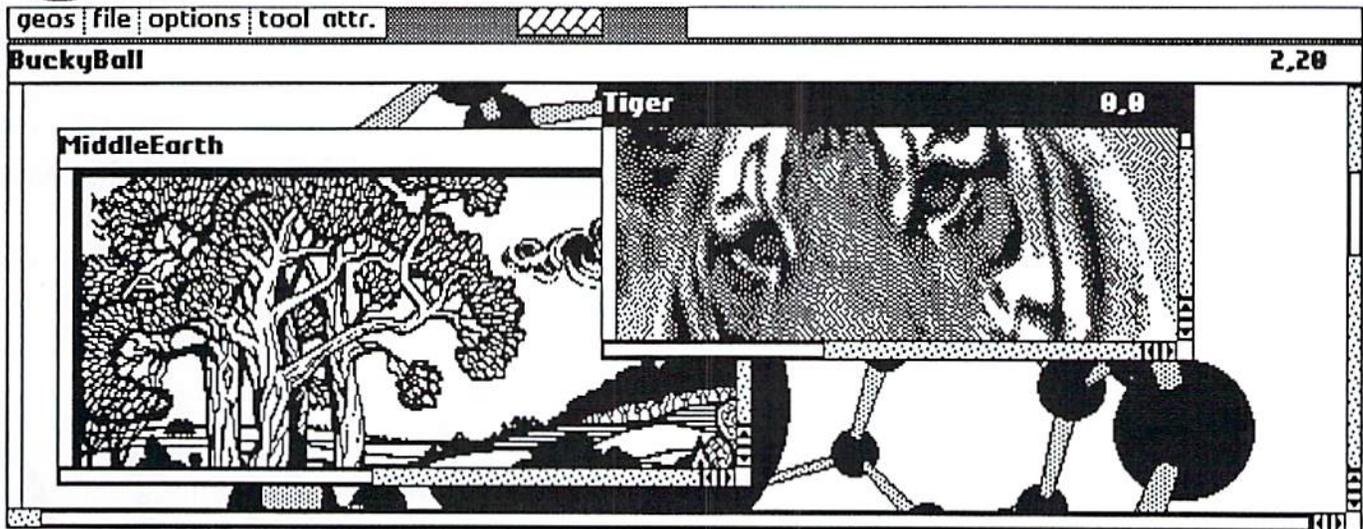
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geoCanvas 64 and 128 !!



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geoCanvas 128 3.0 supports color in 80 column mode on any Commodore 128 computer, whether it has 16K or 64K of video memory! GC128 lets you work in three different modes (takes advantage of available memory):

16K mono mode - 200 lines high, no color (Like geoPaint, good for 16K systems.)

16K color mode - 176 lines high, full color (Even better if you have 16K!)

64K color mode - 200 lines high, full color (The best yet! Requires a 64K video chip.)

geoCanvas 64 3.0 is also available, operating in 40 column mode on GEOS64 or GEOS128.

Both versions:

Dynamic tool modules - Add and delete tools at will. Add 30 tools at once! Any author can write a tool for GC64 or GC128. Programming notes disk available (order below). Open three documents at once. Windows movable/resizable. Keyboard shortcuts under each tool. Ruler has tracelines for lining up objects. Edit tool can select entire window and can change color of region. Paint brush can have air brush effect. Window reaches bottom corner of screen so window can be 80% of screen. Multiple copy print box. Previews document over 360% faster than previous versions. Gridlines have new features and maximum size. All settings are remembered from one session to the next. And much more than can be listed here!

T. Gosser - "GC128 is VERY impressive!"

K. Kristiansen - "...this is one of THE best programs I have ever seen for this computer."

G. Doyon - "I think you have a real winner here. I have never enjoyed GEOS 128 like this before!! This is absolutely the best thing ever for GEOS 128!"

GC64 works in 40 column mode and requires a REU and GEOS64 or GEOS 128.

GC128 works in 80 column mode and requires a REU and GEOS128 (has all same features as GC64).

<u>Product:</u>	<u>Price:</u>
geoCanvas 64:	\$28
geoCanvas 128:	\$28
Both together:	\$43
Demo, Tool notes:	\$3
GC64 Upgrade:	\$13 with old disk

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ATTENTION: Do not contact Creative Micro Designs, Inc. They will no longer be selling geoCanvas.

For those customers in other countries, please ask for information on your local distributors.

Thank you for your support.



In January of 1984 Jack Tramiel, the president and founder of Commodore Business Machines, left the company and purchased the Atari Corporation. Meanwhile, the new Commodore Business Machines, Inc. purchased

the Amiga Corporation, while Big Blue announced its all new faster IBM PC AT computer model, and a company called SubLOGIC introduced its second-generation flight simulator to the commodore 64 market called **Flight Simulator II**.

Archaic

The Computer Store

introduced b

Flight Simulator II

SubLOGIC Corporation
Suggested List Price \$49.95

reviewed by Noel Plank

Flight Simulator II comes with two highly documented manuals plus several sectional aeronautical charts of over 80 different airports including the Chicago, Los Angeles, New York and Boston areas. For added realism, wind, clouds and even the time of day or night can be chosen. These factors alone can make an aircraft much more difficult to fly, so two flight simulation modes are provided -- an easy mode which makes the plane very forgiving for new pilots and a reality mode which takes into account everything from full flight controls, engine control, navigation aids, winds and even the actual reliability factors of the aircraft.

The program also comes complete with a double sided quick reference card showing the various keyboard locations of flight controls, engine adjustments, transponder and radio navigation as well as controls for various views from the aircraft. I recommend purchasing Leroy's Cheatsheets Keyboard Overlay built just for the C64 using the **Flight Simulator II** program. These

plastic laminated overlays placed on the C64 keyboard take into account the many commands necessary to fly this complex program.

The 91-page Pilot's Operating Handbook and Airplane Flight Manual deals with the 47 important aircraft characteristics of a Piper PA-28-181 Archer II, single engine, 148 mph, non-retractable gear aircraft. An additional 92-page Flight Physics and Aircraft Control manual is included which is a crash course of basic aircraft physics, how to fly beginning lessons, and even a section on aerobatic maneuvers.

The main program loads in approximately 2 minutes 40 seconds, and you must keep the program disk in the drive at all times when running the **Flight Simulator II** program. This is necessary because the program keeps addressing the disk and is constantly updating the the multiple movements of graphics enhancements to the screen as you fly the aircraft. The simulator can be completely controlled from the keyboard or from the use of one or two joysticks. A single joystick offers a responsive aileron and elevator control while a second set can be used for the aircraft's throttle speed. Using joysticks will leave the keyboard for controlling such things as flaps, throttle, brakes, radar, radios and even 3-D views out different sides of the airplane.

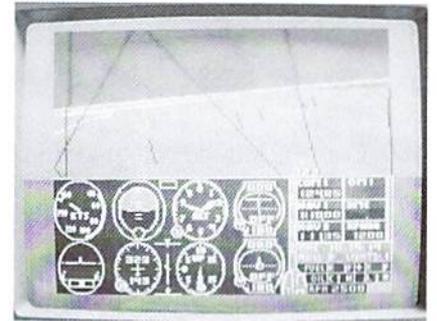
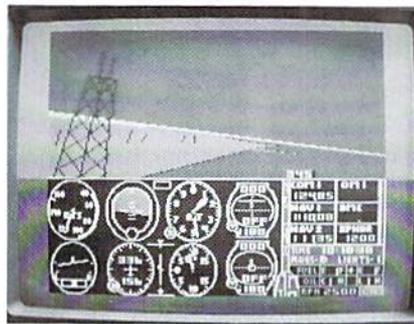
Flight Simulator II is not just

another shoot-em-up combat flying program, even though it does include a World War II flying ACE game complete with bombs, machine guns, a radar screen and even computer controlled flying enemy aircraft. This program primarily attempts to demonstrate the principles of actual flight with the standard controls found in light aircraft such as rudders, flaps and instrumentation which look and act very much like the real thing.

The most difficult thing the software has to accomplish, as with any flight simulator program, is maintaining the realism of an aircraft traveling through the air as it rotates from side to side or up and down, displaying visual 3-D graphic movements from its windows. That's where the **Flight Simulator II** program falls a bit short with its inferior sparse stick-like graphics. At times when you do find a well known landmark such as the Statue of Liberty, you end up smacking right into it trying to get a closer look at its detailed features. But that's what a flight simulator is all about. It removes the risk of danger by allowing you to fly between the New York World Trade buildings or even stalling out while sightseeing around the Statue of Liberty. You can always swim out of the New York harbor and fly again.

Additional SubLOGIC scenery disks may be purchased for locations such as Phoenix, Albuquerque, El Paso, Klamath Falls, Seattle, Great Falls, Lake Huron, Detroit, San Francisco,

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In this play by play sequence, we see our fearless pilot buzzing the tower.

Computer

of the Past

by Noel Plank

Los Angeles, Las Vegas, and even Japan, the United Kingdom, and France along with West Germany. I purchased Scenery Disk 3 which included San Francisco, Los Angeles and the Las Vegas areas. I was very disappointed after taking off from SF International and flying around the Bay Area looking for landmarks such as the Golden Gate Bridge or the Oakland Bay Bridge which collapsed during the Loma Preita earthquake of 1989. Even though I recognized the placement of green land masses, there were no bridges, no Coit Tower, and no Alcatraz Prison from which Clint Eastwood escaped in the movie. It looked as if an atomic bomb had leveled California.

Even with all the information packed into the **Flight Simulator II** program documentation, here are some tips that will make this program a little more enjoyable.

Landing is one of the most difficult simulations to accomplish successfully. To land at the beginning of a runway, first line up the threshold on the bottom center of your windshield. If it then appears to move up the windshield as you approach the landing strip, you are descending much too fast. Add power slightly until the threshold seems to stay in one place. The plane will now practically fly itself onto the runway. As you enter the last leg of your approach, keep an eye on the altimeter to make sure you have enough

altitude to avoid hitting the ground. Next, make sure you are aimed directly onto the runway. When you're approximately 30 feet above the runway, slowly begin pulling back on the joystick. When the plane slows down and its nose drops, pull back slightly again on the joystick and you will have a perfect landing every time.

In the Editor mode, even though the aircraft specifications say not to exceed 154 knots, if you type in 65535 for your throttle setting, you can cruise at 189 knots and climb at 1600 feet per minute. Also, if you select the right fuel tank prior to entering WWI Ace mode, your effective flying range will be doubled.

The **Flight Simulator II** omits these important landmark coordinates from its manual:

World Trade Center---- 17060 N, 20982 E
 Brooklyn Bridge----- 17054 N, 20991 E
 Empire State Building- 17073 N, 20991 E
 Statue of Liberty----- 17049 N, 20971 E

Remember when entering these coordinates from the Editor mode, do not start out on top of the landmark or you'll hit the ground like a meteorite.

Even with its constantly slow graphic updating displays, the **Flight Simulator II** must be considered for its overall technical accuracy. With this, it is very complicated,

requiring lots of practice on learning to fly using accurate instrumentation representation and realistic flight controls. Also notable is the occasional graphic detailed close-up of recognizable landmarks such as the Statue of Liberty looking very much like the beginning of the motion picture New Jack City.

READY.

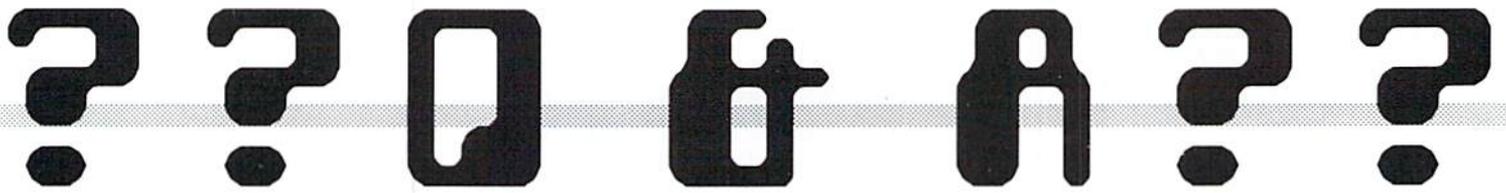
Flight Simulator II & Flight Simulator Scenery Disks

available from:

Software Support
 2700 NE Andresen Road
 STE A-10
 Vancouver, WA 98661
 Phone: (800) 356-1179

Leroy's Cheatsheets for **Flight Simulator II** available from:

TENEX Computer Express
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 Mishawaka, IN 46545
 Phone: (800) 776-6781



Q: Can you tell me where to find a program for a family tree type for a C128? George I. Larimore of Virginia Beach, Virginia.

A: You might try your local user group. I personally know TVBUG (P.O.Box 6853, Boise, ID, 83707), published one on a recent Disk-of-the-Month.

Q: I have a fairly old C64 and an early version of the **Final Cartridge III**. The **FCIII** works fine although my mouse must be used in joystick mode. A few years ago, I tried a new C64c and found that the "freezer" copies I had previously made, using the **FCIII** with the old C64, would not load on the new C64c. Further experimentation

showed if freezer copies were made on the C64c, that same C64c would not load them. Thinking I might have gotten a defective C64c, I exchanged for another, but the results were the same. As one last test, I tried an older C64c and the freezer copies loaded with no problem. Can you tell me why the **FCIII** backup copy utility works with a C64 and early C64c but will not work with newer versions of the C64c? As this happened a few years ago, I would also like to know if the problem still exists with even newer C64c machines, as my old C64 is no longer working and I would like to upgrade to a newer one. James Hill of Shelburne Falls, Massachusetts.

A: The C64c is a case where C=

◇ C=. Many of the chips have been consolidated, making fewer chips in the C64c. They may have created some bugs in the original process. Commodore may have fixed this. The best bet would be to go with **JiffyDOS** to assure a bug-free Commodore DOS (even if you have to turn it off). Using the **Super Snapshot** to make your snapshots will also assure a better compatibility with your new machine as they have made a new version since this machine was revamped. The older C64cs have the same chip set

as the C64.

Q: Is my C128 an 8 bit computer and what makes it so? Margarette Walk of Wexford, Pennsylvania.

A: Yes. The serial bus is only capable of handling eight (8) bits of information at a time.

Q: I want to get a **CMD** hard drive and know for sure that I can put all the programs I use on it. Those programs are **Printshop**, **Superscript 128** and **Superbase 128**. I already have been told that **GEOS** would go on without any problems; and since **DESTERM 128** is not write-protected, I would like to know if it would also. **CMD** has questions themselves about the **Superscript** and **Superbase** programs. Dan Koleski of Louisville, Kentucky.

A: **Superscript** and **Superbase** both should work fine. **Printshop**, on the other hand may have some problems.

Desterm, **The Write Stuff**, **Dave's Directory Designer**, **GEOS**, **Gary Labels**, and many others without copy protection have been installed with no problems. The **CMD** hard drives are the same as all hard drives in that some copy protected programs cannot run from them. I recommend a snapshot utility cartridge such as the **Super Snapshot** to make backups of programs that just cannot be copied. Keep in mind that the *entire* program has to load into the computer's memory in order for the backup to work. A snapshot program will copy as one or two files that can easily be placed onto the hard drive. See **REVIEW!** for more information.

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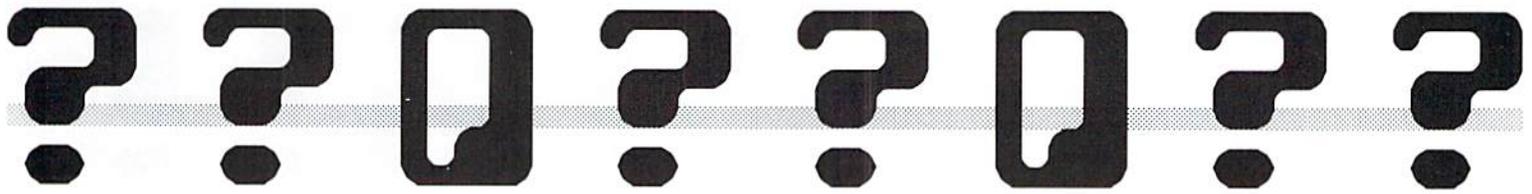
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PC, etc., programs are not copy protected now that everyone is installing them on hard drives.

Q: I'm in a quandary. I have a VIC20 and two C64 keyboards that won't come on line. The power supply is a Microline MW701 which I'm sure is okay. I also have the VIC-1525 printer and was given an Amiga 1000 that is also down somewhat in that I can't get the Amiga to boot up beyond the work bench hard disk program. The latter may be my fault because I haven't read the Amiga procedure manual yet but just followed the instruction on the screen.

What can you do for me in the way of getting the two C64s to work? I have several years of programs via subscriptions to *LOADSTAR* and other program clubs going to waste here. I am 70 years old and worked for a military technology company but have limited troubleshooting skills. If you can put me onto some information for troubleshooting or buying components to make the repairs, or a reliable service shop to get my C64s going, I would appreciate any help. Irving Friedman of Bronx, New York.

A: Check the pages of *dieHard* for repair and diagnostic shops. The Grapevine Group sells parts (see ad page 31). If you don't have a local repair place, it may be worthwhile to ship them to a repair center. Most offer one or two day turn-around and would let you know whether it was your keyboard or power supply.

Q: How much does Q-Link cost and how would you go about ordering it? Where can you get a modem, how

much do they cost, and what do the different kinds do?

Do you know if anyone still sells Accolade's **Test Drive II: The Duel** and its scenery disks? It had really good graphics and I think it's a great game, but I can't find it anywhere.

I really love the C64 and think it's one of the best and easiest to use computers ever made. I also really like your magazine. Tom Ralston of Westchester, Pennsylvania.

A: Q-Link is \$9.95 per month, \$4.80 an hour for plus time (downloading and special features). For more information, call 1-800-827-8444.

TENEX Computer Express (56800 Magnetic Drive, Mishawaka, IN 46545, telephone: 1-800-776-6781) currently has **comodore 1670** 1200-baud

modems for sale at an extremely low price (approx. \$14.95 + postage). Packaged inside each modem box are pamphlets and software for getting online on Q-Link.

The faster the baud rate, the faster you can send and receive files and messages. CMD (P.O.Box 646, E. Longmeadow, MA 01028, telephone 1-800-638-3263) and Software Support Int'l (2700 NE Andresen Rd., Vancouver, WA 98661, telephone: 1-800-356-1179) also have modems.

Software Support, gets lots of used software. You might call and ask if they have **Test Drive II** and scenery disks.

Q: Please elaborate on the large difference between the Dec 93 published Tiperite V1.0 checksum and Jan/Feb 94 spinner disk checksum. Walt Smith of St. Louis, Missouri.

A: Who cares -- don't use it, throw it away! Use **TipeRite 2.0**. It makes a machine language program that allows you to use the basic editor and enter programs like you normally would without a checksum. See PRG for more information.

Actually the first listing (Dec) was renumbered. It uses the Dynamic Keyboard Loading Technique to erase itself from memory after compiling and

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? ? ? ? ! ! ! !

will not work because it PRINTs a GOTO line to screen and hits a <RETURN>. It crashes because the line does not exist.

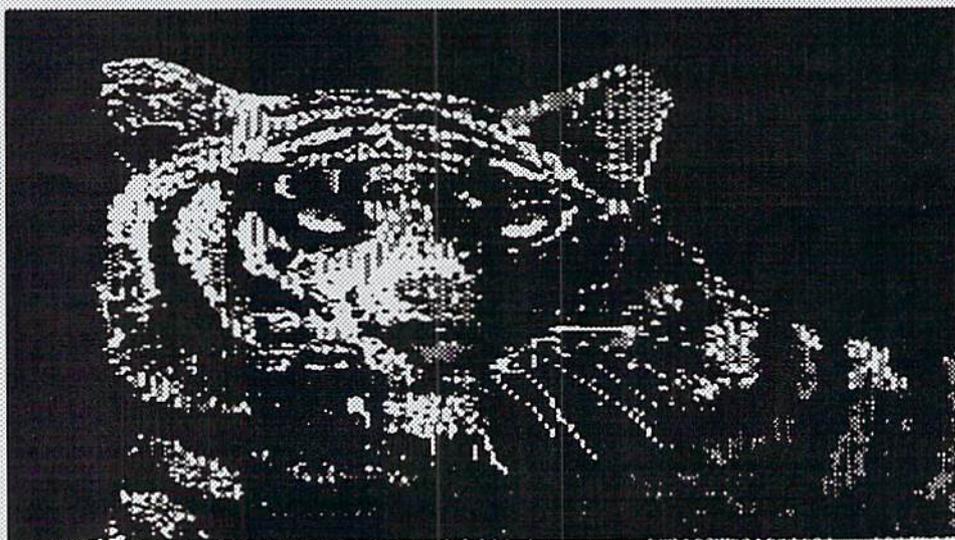
Q: If a member of a user group receives the magazine or spinner, can copies be made to add to user group library; or what needs to be done so they can? Rick Colbeck, BNCUG, of Bloomington, Illinois.

A: Copies cannot be made of either the *Spinner* or the *Flyer*. We have programs that are exclusive to the *Spinner*, meaning anyone who wants these programs must buy the disk as it is a separate entity from the type-in programs that appear in the magazine (as well as the *Spinner*). If a user group wants to subscribe to the magazine and disk, they can place them in their commercial library for members to check out and use. Copying the disk or the magazine is illegal.

READY.



Spinner Only!



- **Bar Graph** by Tate Scharf, for C64 and PET/CBM. Makes bar graphing simple! Create data files, load and save with ease!
- **dH Checksum** by James T. Jones, for C64. This is the ML program made by *TypeRite* 2.0. It make life with type-ins a breeze.
- **Grocery Coupon Record File** by L. L. Pankey, for the C64. Keep track of those coupons with this brilliant master piece data base.
- **Headerprint 128** by Ross Cherednik, for the C128. This is a utility for listing names and IDs to your printer.
- **1571geoMat128** by Ross Cherednik, for C128. This will allow you to format GEOS disk without having to boot up GEOS. Great for that afternoon when you plan to run your format utility to do your annual bulk formatting. Allows you to select the ID number, and you can avoid that annoying message that asks you if you want to make it a GEOS disk later.
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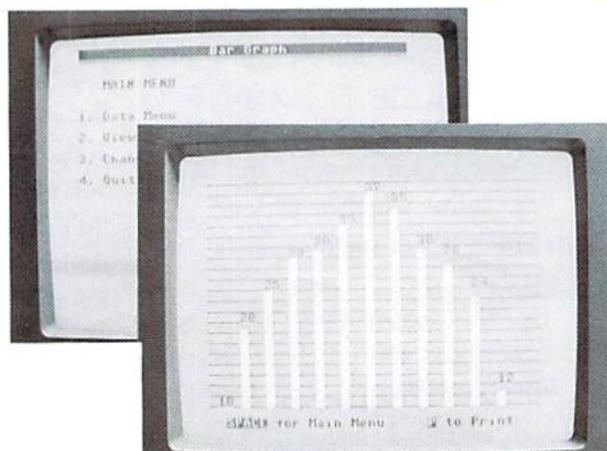
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DOS & Don'ts

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

The Directory (part 3)

by Jimmy Weiler

When the directory is read as a file, each block contains 254 accessible characters. Remember that zero is significant, so the characters are only numbered up to 253. These charts describe the layout of each block.

First block: BAM & Header
Char. Description

2-141	BAM
142-159	Disk Name
160-161	Disk ID

Subsequent blocks: Directory

Char.	Description
0-29	File entry 1
32-61	File entry 2
64-93	File entry 3
96-125	File entry 4
128-157	File entry 5
160-189	File entry 6
192-221	File entry 7
224-253	File entry 8

File entry structure:

Char. Description

0	File type.
1-2	Track & sector of first file data block.
3-18	File name.
19-20	Relative file -- first side sector track and sector.
21	Relative file record size.
28-29	Number of blocks in

the file.

For detailed information about 1541 directories, see pages 24 and 25 of the VIC-1541 SINGLE DRIVE FLOPPY DISK USER'S MANUAL, the booklet that comes in the box when you buy a 1541 drive.

Random Access

by Alan W. Gardner

We will attempt to 'leap' into the world of RANDOM DISK ACCESS.

First of all, we need to know some things about that little magnetic thing we all call a DISK. We have probably all heard the parallel of a disk to a musical record or LP. Both have concentric circles which contain DATA. On a disk, these 'circles' are divided into SECTORS or BLOCKS. From now on, we will refer to these as SECTORS. Sectors can be thought of as 'buckets' of information which ride along the disk on their respective TRACKS. Each track contains a certain number of 'buckets' or SECTORS of information. These numbers are as follows:

TRACK NUMBER	SECTOR RANGE	TOTAL # of SECTORS
1 to 17	0 to 20	21
18 to 24	0 to 18	19
25 to 30	0 to 17	18
31 to 35	0 to 16	17

We can see as the TRACK number goes up, there are fewer SECTORS or 'buckets' available for that TRACK. This is because the higher numbered tracks lie toward the center of the disk. Because of this, the physical size of the track is smaller. Therefore, the amount of data which can be stored is less. Thus, the number of SECTORS or 'buckets' is less.

Now where does that get us?? Well, to use RANDOM ACCESS, all of this is very important!

On a single disk, there are 664 SECTORS free to use for data and/or programs. By using RANDOM ACCESS, you can 'tap into' all of this storage.

Now on to the REAL STUFF!!

To use RANDOM ACCESS, you must have two files open -- the Command/Error channel and a channel to send the DATA through. To open a channel for DATA transfer, the pound sign '#' is used:

```
10 OPEN15,8,15 : rem command/error
20 OPEN2,8,2,"#": rem DATA buffer
```

Once you have both of these channels open, I'll bet you want to send DATA through them. Well, to do this you first have to 'fill up' your DATA buffer with the information you want to write to the disk. This is done with the PRINT# statement. For example:

```
10 OPEN15,8,15 : rem error/comm
20 OPEN2,8,2,"#": rem DATA buffer
30 :
40 FOR X = 1 to 10
50 PRINT#2,"THIS IS DATA"
60 NEXT X
```

This small program segment OPENS the two channels necessary, then PRINTs the string 'THIS IS DATA' to the DATA buffer ten times. None of what we have done yet has actually WRITTEN anything to the disk. Before we can do this, we must 'find' a place to 'put' it. This is done with the BLOCK-ALLOCATE command. The B-A command checks to see if you can put your data where you told your disk drive to put it. If after reading the error channel, you come up with an ERROR #65 - NO BLOCK, then you can't put your data there!! You have to find a different place to put it. This is where your C64 really helps you out. When you get that ERROR #65, your commodore is also telling you another place to put your data. When you read the Error channel, you usually INPUT four different variables. The last two tell you the next available TRACK and SECTOR. So, just by resetting your TRACK and SECTOR numbers to these two values, you can attempt to put your DATA in the next available place.

READY.

The Battle With Pocket Filer 2

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This is an excellent, comprehensive, sophisticated program. I have reason to believe it is the most comprehensive database program written for the C128. However, the Reference Guide which accompanies it drove me into a frenzy. If you are captain of a firehouse and the writers of this manual apply for jobs as fire fighters, throw them out immediately. When the fire bell rings, they would start to describe all fire fighting equipment since the days of the Ancient Egyptians.

The versatility of the program comes from its use of four different files to collect and format data and reports. Each of these files can be modified at will. Other database programs set the program in concrete and allow the user few decisions. The more decisions left to the user, the more versatility -- but the more the user has to learn.

On the program, if you ask for directory, you will see the following files already on the disk but not necessarily in the final form which you select:

address book/s seq 4

Format for storing data in Create Mode

address book seq 5
Storage file for data in Enter/Edit Mode

address book/p1 seq 1
Print format used in Report Module Mode

address book/p2 seq 7
Print format used in Report Module Mode

If you have an REU (RAM disk), it will automatically be filled with the above four modules when you load the program. Having the modules in the RAM allows almost instantaneous transfer from one module to another without changing disks. Without the REU (if you have only one disk drive), it is necessary to change from the work disk to the program disk every time you want to change from one module to another. With the Expander, only one change of disks is necessary.

If you have a 1581 drive, it can be supported by this program.

One fascinating feature of this program is the way the final print file

is created in the Report Module. Creating this file is similar to operating the mechanical jaws in the children's machines at the front of WalMart stores. In one file you fish around for a field, latch onto it with the jaws, lift it up and take it to another file, then drop it in the right space.

Functions of modules:

1. Create Module -- allows you to construct bins and pigeonholes for storing the raw data. You cannot store data while in this module.

2. Enter/Edit -- allows you to store data in the file made in the Create Module and entries in that file. There is also a function in this module for sorting records.

3. Report Module -- allows you to select portions of the file made in the Enter/Edit Module and put them into a format for the product which is to appear on paper. It allows you to add headers which will print and notes which will not. Mathematical functions may be performed in this module.

4. The Utilities Module -- used for general housekeeping functions such as copying files, restructuring a database,

merging a file with a file from another disk, and converting files which were made with some other company's program.

The first few times I tried to use this program, I was terribly frustrated when the command line would say "Drive Not Ready" or a similar message after I had typed in many, many addresses. I could not retrieve them from the data storage disk by using the directory and moving the cursor to the file. I decided since this program is based on the use of files, I was not closing the file properly before advancing to the next. I finally realized that pressing the <C=> key twice will close the file.

Later, I discovered a way to recover the file which had not been closed. I accessed it by typing in its name after the "Load:0" request appeared. After the file was retrieved, I closed it by tapping <C=> several times.

I find when encountering a new program, I want to get right to making a plain vanilla address file instead of reading 96 pages of text and trying to memorize these pages. Therefore, I

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Please allow 6 to 8 weeks delivery for back issues.
Payment must be enclosed in order to process your back issue order.

created a tutorial for **Pocket Filer 2** and show the essential steps necessary to create the simplest of address label makers.

If you want to create a plain vanilla address book mailing label system, here are the steps to take:

1. Create a storage file for data. This file must be created before any data can be entered. No data may be entered in this file.

Before you decide to reinvent the wheel and create your own address book storage file system, we suggest examining the one already offered. To access this file from the Create Module, access the directory by `<C=> <0>`, then `<RETURN>`. When you see "address book/s", bring the cursor to this line and press `<RETURN>`.

Later, after you have explored the capabilities of this format, you may grow bolder and modify the form by changing or deleting parts of the format. When you modify this format, remember the modification may alter the data stored in it.

To adopt the offered format, unaltered, remove the **Pocket Writer 2** program disk and insert the work disk (which is also a storage disk). You must save this offered format (unless you wish to reinvent the wheel).

Press `<C=>` and `<S>`.

2. Enter data on the storage disk by accessing the *Enter/Edit Module*. If you have a RAM expansion unit, this module will have been entered already. It is only necessary to take these steps:

- a. From the Create Module, hit the `<C=>` key and `<X>`. When the choice of four modules appears, move the cursor to Enter/Edit and hit `<RETURN>`. If you do not have the RAM expansion unit, it will be necessary to remove the work disk and re-insert the program disk.

- b. On the command line at the top of the page, `LOAD"0:ADDRESS BOOK"` will appear. Press `<RETURN>` to load it. The address book format will appear with the cursor on the first field which is called "first name." Type in "Bill." If you are very brave, you can type in the address, street number, city, state and phone number if you wish. Press `<f1>` to move from the first record to the second. At the second record, type in "Charles" and any more information you wish. After you have two or more records started, you may save them by hitting `<C=>` at least twice. `<C=>` updates and saves the file. Now it is safe to advance to the Report Module where you can print whatever you have entered.

3. After you have created the address book file on the storage disk, you will probably want to decide what to do with all the names and addresses you have stored in that file. You may want to sort the files alphabetically by last name, or you may wish to sort by zip code. Since the Reference Guide is fairly straightforward about sorting, let's assume you have already entered the records in alphabetical or whatever order you wanted. Let's assume that all you want to do now is to print three-line or four-line address labels.

4. Advance to the Report Module by using `<C=>` and `<X>` and moving the cursor to `<f5>`. After you press `<RETURN>`, the command line will say `LOAD"0:ADDRESS BOOK"`. Press `<RETURN>` to load it. The Record Layout will appear, but remember you have not accepted this until you save it. You may wish to wait a few steps before you save it.

When the Record Layout appears, move the cursor down to one line below **Body**. At this moment, you have provided only one line for the final printout. To add two or three more lines, hit `<CTRL> <SHIFT>` and `<INST>` all at the same time. Repeat this step until you have the space you want for the address on the label. If you leave a blank line after the address, it

may be easier to print labels.

Now we're ready to put the name and address in the form you wish to see on the printed label. If you want the first name first, you need to pick it up from the screen layout form and paste it on the Record Layout. To do this, press `<f5>`. This toggles between the Screen Layout and the Record Layout. When in the Screen Layout, put the cursor on the **first name** field. Press `<f1>` to pick up the field, then press `<f5>` to return to Record Layout. If you press `<f1>` at this point, the field will appear on the Record Layout wherever you want it.

Go back and forth between the Screen Layout and the Record Layout, carrying one field at a time and pasting it on the Record Layout. If you do not want to have large gaps between the first and last names, move the cursor to the first name and press `<CTRL><S>`. At this point, save what you have by pressing `<C=><S>`.

You are now ready for a trial run. Assuming you have your printer and paper ready, press `<C=>` and `<P>`, and stand back! The address labels will print out.

READY.



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.

When you enter a program, be sure to be aware of text within brackets, [and]. These denote a key, key combination or a series of key presses. [HOME] means to press the <HOME> key. [Cyn] means to press <Control> + <4>, although it will sometimes be written [ctrl 4]. [3 space] means to press <space> three times. You can be sure if it is inside quotes that it is one of these little ditties.

{The new checksum PRG can be used to enter C128 PRG in 64 mode, just be sure to save the PRG and go to 128 mode before running them.}

dH Checksum & TipeRite 2.0 (C64)

by James T. Jones

The author would like to express his appreciation to Fender Tucker, Managing Editor of *LOADSTAR*, for helpful suggestions concerning this program.

A checksum program allows the user to type a BASIC program and check the entry of each line by displaying a checksum value for that line which can be compared to the value listed with the published program. For example, the line might be:

```
10 DV=PEEK(186)
   :IFDV<8THENDV=8:REM 115
```

The user types the line, *WITHOUT* the colon (:) and following REM statement, and if upon pressing <RETURN> a checksum value of 115 is displayed, in reverse video in the upper left-hand corner of the screen, she can be reasonably certain that the line was entered correctly.

For those who subscribe to *The Spinner*, a number of text files explaining in detail various aspects of the program are given; however, these instructions and the associated listing are more than sufficient to use the program.

Type Listing 1 and save it to disk as DH ML CHKSUM PRG. When the program of Listing 1 is RUN, a machine language (ML) file, OBJ.DH CHECKSUM, is written to disk that can be used to generate checksum values for different lines of a BASIC program.

For those subscribers interested in ML programming, the ML file, OBJ.DH CHECKSUM, was written with the aid of *Rock's Assembler* on *LOADSTAR* Issue #87. The source file, ASM.DH CHECKSUM, which may be found on the corresponding issue of *The Spinner*, contains a number of comments to help the reader understand the flow of the program. *Rock's Assembler* is a full-featured assembler and it alone, in my opinion, is worth the price of Issue 87, which can be back ordered by calling 1-800-831-2694 or writing to Softdisk Publishing, P. O. Box 30008, Shreveport, LA 71130-0008. Be sure to specify that you want *LOADSTAR* Issue #87.

Use of OBJ.DH CHECKSUM is easy. On a blank screen line, type:

```
LOAD"OBJ.DH CHECKSUM",DV,1
```

where DV is the device number of your disk drive, and press <RETURN>. Then on another blank screen line, type NEW and press <RETURN>. On yet another blank screen line, type SYS 828 and press <RETURN>. The checksum program will then be active. After you type each line of a published BASIC program *WITHOUT* the colon (:) and following REM statement, press <RETURN>. In the upper left-hand corner of the screen, a value in reverse video will displayed which can be compared to the published value. If the two values are the same, then you can be reasonably certain that the line has been entered correctly. If they are not the same, check the typed line against the published line, make any necessary changes and again press <RETURN>. Repeat this process until the correct checksum value is obtained.

You can SAVE a portion of a program that you have typed, then LOAD it when you are ready to resume the "type-in". Just deactivate the ML checksum program first by typing, on a blank screen line in Immediate or Direct Mode, SYS 828 and pressing <RETURN>.

If you want to compare the checksums of the lines of a BASIC program on disk to the corresponding checksums of a published listing of the program, deactivate OBJ.DH CHECKSUM as above, then LOAD the BASIC program. Activate OBJ.DH CHECKSUM again by typing, on a blank screen line, SYS 828 and pressing <RETURN>. Then list the program in groups of five lines, say, and press <RETURN> for each line and compare the displayed checksum with the published value.

A few words are in order regarding the C64 CHRGET ML routine residing at addresses from 115 to 138 (\$0073-\$008a) in RAM. When a BASIC "cold start" is executed (for example, when the power to the C64 is turned on), the Operating System copies a corresponding routine, residing at addresses from 58274 to 58297 (\$e3a2-\$e3b9), from the

Kernal ROM to the above RAM addresses. The CHRGET routine ignores most spaces that are not inside quotation marks, except those spaces associated with BASIC keywords or their arguments. ASM.DH CHECKSUM was written to yield an object file that is consistent with this part of the Operating System. Hence, 10 PRINT"DIEHARD" will yield the same checksum value as 10PRINT"DIEHARD" or 10?"DIEHARD". A BASIC line with abbreviations for keywords will yield the same checksum value as the corresponding line without abbreviations.

Listing 1 has the advantage that it can be printed in each issue of *dieHard* without using too much space, so that new subscribers can type it and have it available for use with other "type-in" programs in that issue.

```
1 REM COPYRIGHT 1994 LYNNCARTHY
  INDUSTRIES, INC. ALL RIGHTS
  RESERVED:REM 172
5 REM TIPERITE 2.0 MAKES DH ML
  CHKSUM PRG BY JAMES T. JONES
  2/10/1994:REM xxx
10 REM DIEHARD BASIC PROGRAM FOR
  CREATING MACHINE LANGUAGE
  CHECKSUM PROGRAM:REM 53
20 PRINT CHR$(147)CHR$(5)CHR$(142)
  CHR$(8):REM 136
30 DV=PEEK(186):IF DV<8 THEN
  DV=8:REM132
40 FOR I=828 TO 998:REM 70
50 READ X:POKE I,X:S=S+X
  :NEXT:REM 210
60 DATA120,162, 84,160, 3,173, 4
  , 3:REM 194
70 DATA201, 84,208, 4,162,124,160
  ,165:REM 164
80 DATA142, 4, 3,140, 5, 3, 88
  , 96:REM 65
90 DATA 32,124,165,152, 72,169, 0
  ,133:REM 252
100 DATA251,133,252,166, 20,164, 21
  ,134:REM159
110 DATA253,132,254,170,189, 0, 2
  ,240:REM 29
```

```

120 DATA 58,201, 48,144, 7,201, 58
,176:REM 71
130 DATA 3,232,208,240,189, 0, 2
,240:REM 0
140 DATA 42,201, 32,208, 4,164,252
,240:REM 28
150 DATA 31,201, 34,208, 6,165,252
,73:REM 196
160 DATA 1,133,252,230,251,164,251
,165:REM 5
170 DATA253, 56,253, 0, 2,133,253
,165:REM 177
180 DATA254,105, 0,133,254,136,208
,239:REM 113
190 DATA232,208,209,240, 42, 32,210
,255:REM 49
200 DATA165,253, 69,254,170,169, 0
,32:REM 172
210 DATA205,189,169, 32, 32,210,255
,32:REM 159
220 DATA210,255,169,146, 32,210,255
,169:REM 85
230 DATA 13, 32,210,255,104,168,104
,170:REM 84
240 DATA 24, 32,240,255,104,168, 96
,56:REM 170
250 DATA 32,240,255,138, 72,152, 72
,24:REM 83
260 DATA162, 0,160, 0, 32,240,255
,169:REM 163
270 DATA 18,208,194:REM 149
280 IF S<>23101 THEN PRINT
:PRINT"ERROR IN DATA!":END:REM200
290 REM CREATE "OBJ.DH CHECKSUM"
ON DISK:REM 80
300 SA=828:EA=998+1:REM ENDING
ADDRESS PLUS 1:REM 185
310 H1=INT(SA/256):L1=SA-(256*H1)
:H2=INT(EA/256):L2=EA-
(256*H2):REM 172
320 SYS57812"OBJ.DH CHECKSUM",DV
:POKE193,L1:POKE194,H1
:POKE174,L2:POKE175,H2:REM 29
330 SYS62954:CLOSE15:OPEN15,DV,15
:INPUT#15,ER,ER$:REM 19
335 IF ER<>0 THEN PRINT:PRINT
ER,ER$:PRINT#15,"I":CLOSE 15
:END:REM 218
340 PRINT#15,"I":CLOSE15:PRINT
:PRINT"THE CHECKSUM PROGRAM IS
NOW ACTIVE.":REM 9
350 PRINT"SYS 828 TOGGLES PROGRAM
OFF OR ON.":PRINT:REM 212
360 PRINT"A FILE HAS BEEN CREATED ON
DISK. IN":REM 120
370 PRINT"FUTURE PROGRAMMING
SESSIONS, TYPE":PRINT:REM 61
380 PRINT"LOAD"CHR$(34)"OBJ.DH
CHECKSUM"CHR$(34)",DV,1"
:PRINT:REM 215
390 PRINT"AND PRESS <<RETURN>>,
WHERE DV IS THE":REM 53
400 PRINT"DEVICE NUMBER OF YOUR DISK
DRIVE.":REM 155
410 PRINT"THEN ON A BLANK LINE, TYPE

```

```

"CHR$(34)"NEW"CHR$(34):REM 63
420 PRINT"AND PRESS <<RETURN>>.
SYS 828 WILL":REM 28
430 PRINT"TOGGLE THE PROGRAM ON OR
OFF.":PRINT:REM 252
440 PRINT"IT IS RECOMMENDED THAT YOU
TOGGLE":REM 232
450 PRINT"PROGRAM OFF BEFORE SAVING A
PROGRAM.":REM 201
460 SYS828:NEW:REM 85
..... end of line.

```

Read/Write DOS Shell Autoboot Sector (C128)

by L. L. Pankey

If you like using **DOS SHELL 128** that came on your **1571 TEST/DEMO** disk and have wanted it on a separate disk but have had trouble autobooting it, then this short program is for you.

Type in this program, name it **DOS SHELL BOOT**, and save it to a work disk. Format a disk by placing a new diskette in your 1571 and close the lever. Then in direct mode, type **HEADER"DOS SHELL 128",IDS** and press **<RETURN>**. The disk will be formatted in about a minute or less.

Using any file copier or **DOS SHELL** file copier, copy **DOS SHELL** from your **TEST/DEMO** disk to the newly formatted disk. Remove the disk once the file is copied, and load the program listed below that you saved as **DOS SHELL BOOT**. Run the program and follow the prompts on the screen. The program copies track 1, sector 0 from the **TEST/DEMO** disk to your new disk which contains **DOS SHELL** only.

Reset your computer with the disk in your 1571 and **DOS SHELL** should boot. Just a hint: If you are using 80 columns, before you hit **<f1>**, type **FAST** and hit **<RETURN>**. This puts your computer in 2 megahertz mode and things run faster. Be sure you run this program on a newly formatted disk because it destroys anything on track 1, sector 0. Happy Shelling!

NOTE: The checksums have been added for entering the program in 64 mode. Keep in mind that, 1. you can't run this program from 64 mode and 2. the basic tokens may get messed up if you use any sort of programming utility, like a cartridge or other programming aid.

```

10 REM COPYRIGHT 1994 LYNNCARTHY
INDUSTRIES, INC. ALL RIGHTS
RESERVED:REM 165
20 REM[3 minus]READ/WRITE DOS SHELL
AUTOBOOT SECTOR BY LARRY PANKEY
1994:REM 115
30 MB=9000:T=1:S=0:REM 234
40 PRINT"[CLR]TURN ON YOUR 1571 DISK
DRIVE!":REM 189
50 PRINT"PLACE YOUR 1571 TEST/DEMO

```

```

DISK IN THE":REM 18
60 PRINT"1571 DRIVE AND CLOSE THE
LEVER!":REM 76
70 PRINT"[crsr down]PRESS THE SPACE BAR
WHEN YOU ARE READY."
:POKE208,0:REM 31
80 GETKEYK$:IFK$<>CHR$(32)THEN80:REM 0
90 PRINT"[CLR]LOADING DOS SHELL BOOT
SECTOR . . . .":REM 57
100 CLOSE15:OPEN15,8,15:REM 51
110 CLOSE5:OPEN5,8,5,"#":REM 145
120 PRINT#15,"UI";5;0;T;S:REM 41
130 FORI=MBTOMB+255:REM 19
140 GET#5,A$:IFA$=" THENA$=
CHR$(0):REM 23
150 POKEI,ASC(A$):REM 36
160 NEXT:REM 31
170 CLOSE5:CLOSE15:FORI=MBTOMB+255
:PRINTPEEK(I);:NEXT:PRINT:REM 128
180 PRINT"[crsr down]REMOVE TEST/DEMO
DISK AND INSERT THE":REM 219
190 PRINT"DISK ON WHICH YOU SAVED DOS
SHELL.":REM 245
200 PRINT"[crsr down]DON'T FORGET TO
CLOSE THE DRIVE LEVER.":REM 34
210 PRINT"[crsr down]PRESS SPACE BAR
WHEN YOU ARE READY!":POKE208,0:REM 7
220 GETKEYK$:IFK$<>CHR$(32)
THEN220:REM 91
230 CLOSE5:CLOSE15:REM 116
240 OPEN15,8,15:REM 156
250 OPEN4,8,4,"#":REM 134
260 PRINT#15,"B-P";4;0:REM 146
270 FORI=MBTOMB+255:REM 135
280 PRINT#4,CHR$(PEEK(I));:NEXT:REM 225
290 PRINT#15,"B-A";0;T;S:REM 237
300 PRINT#15,"U2";4;0;T;S:REM 197
310 CLOSE8:CLOSE15:REM 202
320 PRINT"[crsr down]DONE![2 space]
RESET YOUR COMPUTER AND":REM 167
330 PRINT"DOS SHELL SHOULD
AUTOBOOT!":REM 46

```

.....end of line.

Linear Y (PET/CBM, VIC20, plus/4, C16, C64 & C128)

by Rick Hedrick

Here's a tasty li'l program that finds a linear $y'+S1y'+S2y=$ to a quadratic equation using a power-9 polynomial to solve it. The program provides a test of the solution by computing resubstitution residuals. These are usually zero around the initial constraint that requires a y value at $X[0]=0$.

```

1 REM COPYRIGHT 1994 LYNNCARTHY
INDUSTRIES, INC. ALL RIGHTS
RESERVED:REM 172
100 REM [3 minus]:REM 72
110 PRINTCHR$(14):PRINT"[CLR]
[C= 4]* [shift S]OLVE

```



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```

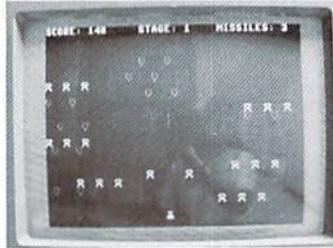
[shift L]INEAR Y DIFF":REM 238
120 PRINT"Y'+[shift S]1*Y'+
[shift S]2*Y=[shift S]3*X
[up arrow]2+[shift S]4*X+
[shift S]5":AT$="[21 minus]"
:PRINTAT$:REM 39
130 PRINT"(CONSTRAINT: SUPPLY Y AT
X=0)":PRINT:REM 88
140 INPUT"[shift S]1= ";S1
:INPUT"[shift S]2= ";S2
:INPUT"[shift S]3= ";S3: 183
150 INPUT"[shift S]4= ";S4
:INPUT"[shift S]5= ";S5
:PRINTAT$:REM 116
160 REM [3 minus]:REM 116
170 INPUT"[ctrl 3]Y AT X=0 = ";J
:PRINT"[C= 4]":REM 109
180 PRINTAT$:REM 5
190 G=(J*SI*S2*S4-S1*S5)/6
:I=((S4-S5*S1)-6*G+S1*S2*J)/
(S2-(S1*S1)):REM 20
200 H=(S5-J*S2-I*S1)/2:F=(S3-3*G*
S1-H*S2)/12:REM 206
210 E=(-4*F*S1-G*S2)/20:D=(-5*E*S1
-F*S2)/30:C=(-6*D*S1-E*
S2)/42:REM 23
220 B=(-7*C*S1-D*S2)/56:A=(C*S2-B*
(S2-8*S1))/(9*S1-72):REM 115
230 REM [3 minus]:REM 202
240 PRINT"[ctrl 3]* COEFFICIENTS
:[C= 4]":PRINT:REM 221
250 PRINT"A= ";A;" *X
[up arrow]9":REM 232
260 PRINT"B= ";B;" *X
[up arrow]8":REM 250
270 PRINT"C= ";C;" *X
[up arrow]7":REM 244
280 PRINT"D= ";D;" *X
[up arrow]6":REM 198
290 PRINT"E= ";E;" *X
[up arrow]5":REM 208
300 PRINT"F= ";F;" *X
[up arrow]4":REM 162
310 PRINT"G= ";G;" *X
[up arrow]3":REM 188
320 PRINT"H= ";H;" *X
[up arrow]2":REM 142
330 PRINT"I= ";I;" *X
[up arrow]1":REM 152
340 PRINT"J= ";J;" CONSTANT":REM 210
350 REM [3 minus]:REM 51
360 PRINTAT$:PRINT"[ctrl 3]
* [shift B]EGIN Y PREDICTION
: ":PRINT"[C= 4]":REM 247
365 REM [3 minus]:REM 64
370 INPUT"X = ";X:REM 118
380 JA=A*X[up arrow]9+B*X
[up arrow]8+C*X[up arrow]
7+D*X[up arrow]6+E*X
[up arrow]5+F*X[up arrow]
4+G*X[up arrow]3+H*X*X+I*
X*J:REM 137
385 PRINT"[ctrl 7]Y= ";JA:PRINT"
[C= 4]":REM 51
390 PRINT"[3 minus][space][minus]

```

```

":J1=9*A*X[up arrow]8+8*B*X
[up arrow]7+7*C*X[up arrow]
6+6*D*X[up arrow]5+5*E*X
[up arrow]4+4*F*X[up arrow]
3+3*G*X[up arrow]2:REM 152
400 J1=J1+2*H*X+I:REM 118
410 J2=72*A*X[up arrow]7+56*B*X
[up arrow]6+42*C*X[up arrow]
5+30*D*X[up arrow]4+20*E*X
[up arrow]3+12*F*X*X+6*G*X+
2*H:REM 85
420 PRINT"[C= 5]Y'= ";J1:PRINT
"Y''= ";J2:J3=S3*X*X+S4*X+S5

```



Space Port, our feature PRG. See page 33 for listing.

```

:PRINT"F(X) = ";J3:REM 10
430 PRINT"[ctrl 3]* RE-SUBSTITUTION
RESIDUALS = ";(J2+S1*J1+S2
*JA)-J3:PRINT"[C= 4]":REM 234
440 PRINTAT$:REM 24
450 GOTO 365:REM 84

```

.....end of line.

Random Number Gen. (C64)

by Rick Hedrick

This is Rick's routine to generate random numbers for his Challenger game makers. This routine uses the SID chip to generate those numbers. You can use this in your own programs to generate random numbers outside the random sequences that the C64 normally produces with the RND function. Maybe we'll see a revised **dH Lotto** soon...

```

1 REM COPYRIGHT 1994: LYNNCARTHY
INDUSTRIES, INC. ALL RIGHTS
RESERVED:REM 172
5 REM:REM 118
10 REM A$="RANDOM NUM GEN":OPEN15,8,15
,"S0:"+A$:CLOSE15:SAVEA$
,8:VERIFYA$,8:REM 156
15 PRINTCHR$(147):POKE53280,5
:POKE53281,15:POKE646,11:REM 176
20 PRINT"DEMONSTRATION OF MACHINE
-LANGUAGE":PRINT"RANDOM NUMBER
GENERATOR":REM 228
25 PRINT"USING SID CHIP RANDOMS."
:PRINT:PRINT"THESE PRODUCE 1-9
RANDOMS FOR":REM 106
30 PRINT"* CHALLENGER-TYPE PUZZLES
*":REM 111

```

```

35 PRINT:REM 138
40 AZ$="":INPUT"(PRESS RETURN)"
;AZ$:REM 185
45 PRINT:REM 148
50 REM:REM 163
60 PRINT"READ REMARKS IN LIST...WRITING
SID CHIP":PRINT
"ACTIVATOR...":REM 148
65 PRINT:REM 168
100 FOR I=0TO15:REM 188
110 READ A:REM 103
120 POKE(39500+I),A:REM 10
125 NEXTI:REM 107
130 DATA 169,255,141,15,212,169,128,141
,18,212,169,128,141,24
,212,96:REM 129
140 REM:REM 253
145 PRINT:PRINT"SID CHIP ACTIVATOR
STARTS AT 39500":PRINT"& ENDS AT
39515 RTS":REM 60
148 PRINT"...NOW LOADING BUFFER
39516-39772 WITH":PRINT"NUMBERS
1-9...":PRINT:REM 101
150 J=1:REM 81
160 FOR I=0TO255:REM 37
170 POKE(39516+I),J:REM 255
180 J=J+1:REM 130
190 IF J>9THENJ=1:REM 86
200 NEXTI:REM 182
205 PRINT"*** THE 1-9 BUFFER IS FILLED,
NOW...":PRINT"WRITING
THE 'GETTER' AND ":REM 96
207 PRINT"THE 'STORAGE' BOX. 'GETTER
STARTS AT":PRINT"MEM 39774-39783
(RTS)":REM 27
209 PRINT"RND # STORAGE IS IN
39785":REM 229
210 REM:REM 66
220 FOR I=0TO13:REM 39
230 READ A:REM 223
240 POKE(39773+I),A:REM 101
250 NEXT I:REM 228
260 DATA 0,174,27,212,189,92,154,141
,105,155,96,0,0,0:REM 159
270 PRINT:PRINT"*** NOW TO DEMONSTRATE
THE RANDOMS":PRINT:REM 110
275 AZ$="":INPUT"(PRESS
RETURN)";AZ$:REM 173
280 PRINT"(1) FIRST USE SYS 39500 ONLY
ONCE":PRINT"TO ACTIVATE THE SID
CHIP.":REM 93
285 PRINT"(2) TO GET A RANDOM # USE SYS
39774":PRINT"AND FIND THE NUMBER
IN":REM 30
290 PRINT"THE 'BOX' BY PEEK-ING
39785":REM 192
295 PRINT:AZ$="":INPUT"(PRESS RETURN
FOR # STREAM...");AZ$:REM 16
296 REM:REM 152
300 REM:REM 156
305 SYS 39500:REM 143
306 REM --- ABOVE ACTIVATES SID CHIP
ONCE ONLY FOR THE PROGRAM:REM 134

```

```

307 REM --- BELOW PUTS SID CHIP
      RANDOM NUM 0-255 IN MEM
      LOCATION 54299 AND ...:REM 100
310 REM --- ABSOLUTE X-INDEXES IT
      FROM THE 39516-39772 #-LIST
      BUFFER, THEN...:REM 160
312 REM --- STORES THE 'GOT' NUMBER
      IN THE 'BOX' AT 39785.:REM 224
314 SYS 39774:REM 117
315 REM --- ABOVE PRINT STATEMENTS
      PRINTS THE NUMBERS AFTER
      'PEEK-ING' IN 'BOX':REM 159
320 PRINT PEEK(39785);:REM 162
330 REM:REM 186
340 GOTO 307:REM 241

```

.....end of line.

Space Port (C64)

by Tate Scharf

Your mission in **Space Port** is to safely guide your spacecraft to the space port. Unfortunately, countless obstacles lie in your path which you must maneuver around successfully. Hitting any object on the screen means instant death.

The game is split into three stages. In the first stage you must navigate through waves of enemy craft. The second stage requires dodging asteroid fields, mines, energy fences, and killer drones appearing from nowhere. During the final stage you must guide your craft down a narrow runway, avoiding any ships in your path. Fortunately, you begin the game with five missiles which will clear a path in front of your ship. But don't use them up too fast! Each stage is harder than the previous one. A joystick in port 2 is required to play **Space Port**.

```

10 REM COPYRIGHT 1994 LYNNCARTHY
      INDUSTRIES, INC. ALL RIGHTS
      RESERVED:REM 165
20 REM SPACE PORT BY TATE SCHARF
      1994:REM 33
30 GOTO490:REM 197
40 SC=SC+1:PRINT"[HOME][ctrl 2]
      SCORE:"SC;TAB(15)"STAGE:"LV
      ;TAB(27)"MISSILES:"SH:REM 237
50 PRINT"[HOME][crsr down]
      [crsr left][INST]"
      :POKE218,156:IFPEEK(V+31)
      AND1=1THEN350:REM 221
60 JY=PEEK(56320):IFJY=123AND
      SX>40THENSX=SX-8:REM 169
70 IFJY=119ANDSX<320THEN
      SX=SX+8:REM 224
80 IFJY=111THEN410:REM 200
90 IFSX<256THENPOKEV,SX
      :POKEV+16,0:GOTO110:REM 130
100 POKEV,SX-256:POKEV+16,1:REM 13
110 IFSC>400THENLV=2:REM 206
120 IFSC>700THENLV=3:REM 221

```

```

130 ONLYGOTO140,180,260:REM 161
140 IFRND(1)<.3+.08*DTHENPRINTSPC
      (INT(RND(1)*34))"[ctrl 4]
      [shift B][2 space][shift B]
      [2 space][shift B]":REM 112
150 IFRND(1)<.3+.08*DANDSC>100THEN
      PRINTSPC(INT(RND(1)*36))"
      [ctrl 3][shift C][3 space]
      [shift C]":REM 21
160 IFRND(1)<.25+.06*DANDSC>200THEN
      PRINTSPC(INT(RND(1)*33>>"[C= 5]
      [shift D][shift D][2 space]
      [shift D][shift D]":REM 153
170 GOTO40:REM 44
180 PRINTSPC(INT(RND(1)*40));"[ctrl 3]
      [shift J]":REM 149
190 Y=INT(RND(1)*10)+8:X=INT(
      RND(1)*40):REM 52
200 POKE781,Y:POKE782,X:POKE783,0
      :SYS65520:PRINT"[C= 5]
      [shift E]":REM 115
210 PRINT"[HOME][2 crsr down]
      "SPC(INT(RND(1)*38));"[C= 1]
      "AS$(INT(RND(1)*4)):IFFL=1THEN
      FL=0:GOTO230:REM 142
220 IFRND(1)<.25+.25*DTHENFL=1
      :GOTO210:REM 250
230 IFSC<550THEN40:REM 187
240 IFRND(1)<.2+.05*DTHENPRINT"[HOME]
      [2 crsr down]"SPC(INT(RND(1)
      *35))"[ctrl 7][shift Q]
      [4 shift I][shift Q]":REM 54
250 GOTO40:REM 124
260 IFF=0THENPRINTG1$:PRINTG$
      :F=1:GOTO40:REM 2
270 R=INT(RND(1)*3):IFR=0ANDSP>1
      THENSP=SP-1:REM 214
280 IFR=2ANDSP<32THENSX=SP+1:REM 212
290 IFSC>975ANDSC<1000THEN40:REM 29
300 IFSC=1000THENFORDE=1TO1500
      :NEXT:GOTO400:REM 93
310 IFSC>850ANDRND(1)<.12+.03*D
      THENPRINTSPC(SP)"[ctrl 7]
      [shift W][ctrl 3][shift Q]
      [3 space][shift Q][ctrl 7]
      [shift W]":GOTO40:REM 227
320 PRINTSPC(SP)" [ctrl 5][shift W]
      [5 space][shift W]":REM 93
330 IFSC>750ANDRND(1)<.12+.04
      *DTHENPRINT"[4 crsr left][ctrl 6]
      [shift A]":REM 105
340 PRINT:GOTO40:REM 231
350 POKEV+21,0:POKES+1,17
      :POKES+24,15:PRINT"[CLR]":REM 230
360 FORL=1TO60:POKE53281,2:POKE
      53280,2:FORDE=1TO29:NEXT:REM 4
370 POKE53281,0:POKE53280,0:NEXT
      :POKES+4,128:REM 182
380 PRINT"[CLR][2 crsr down][C= 7] YOUR
      MISSION WAS A FAILURE!":REM 24
390 PRINT"[crsr down]FINAL SCORE:"SC
      :GOTO480:REM 34
400 POKEV+21,0:POKES+4,128:PRINT"
      [CLR][2 crsr down][C= 7] MISSION
      ACCOMPLISHED!":GOTO480:REM 240

```

```

410 IFSH=0THEN110:REM 64
420 SH=SH-1:A=1944+SX/8-3:POKES+1,5
      :POKES+4,33:POKES+24,3:REM 176
430 FORL=1TO22:PL=A-L*40:REM 57
440 IFPEEK(PL)=87ORPEEK(PL)=45THEN
      POKEPL+40,32:L=22:GOTO470:REM 10
450 POKEPL+S,2:POKEPL,33:REM 75
460 POKEPL+40,32:IFL=22THENPL=PL-40
      :L=23:GOTO460:REM 31
470 NEXT:POKES+24,3:POKES+4,129
      :POKES+1,5:GOTO110:REM 194
480 INPUT"[2 crsr down]PLAY AGAIN
      (Y/N)";Q$:IFQ$="N"THENEND:REM 95
490 POKE52,56:POKE56,56:CLR:S=54272
      :FORL=STOS+24:POKEL,0:NEXT:REM 168
500 G1$="[16 space][ctrl 5][shift W]
      [5 space][shift W]"A1$="GH":REM 250
510 G$="[ctrl 2][17 space][ctrl 3]
      [shift Q][3 space][shift Q]
      [ctrl 2][18 space]":REM 221
520 AS$(0)="[shift F][space][shift H]
      ":AS$(1)="[shift F][shift H]
      [crsr down][crsr left][shift H]
      [shift G]:AS$(2)="[shift G]
      [space][shift F][shift H]
      [crsr down][2 crsr left]
      [shift G]":AS$(3)="[space]
      [shift F][shift G]":REM 12
530 DL$(0)="EASY[5 space]":DL$(1)=
      "INTERMEDIATE":DL$(2)="ADVANCED
      [4 space]":REM 169
540 V=53248:SH=5:SX=176:LV=1:SP=16
      :N=25:C=14336:D=0:POKE53280,6
      :POKE53281,0:REM 217
550 PRINT"[CLR][ctrl 3][15 space]
      [RVS ON]SPACE PORT[RVS OFF]"
      :PRINT"[C= 7][13 space]BY TATE
      SCHARF":REM 240
560 PRINT"[3 crsr down][ctrl 4]MANEUVER
      AROUND ALL OBJECTS TO LAND
      [5 space]SAFELY[crsr right]IN THE
      SPACE ";:REM 168
570 PRINT"PORT.":PRINT"PLUG JOYSTICK IN
      PORT #2.[2 space]MOVE
      JOYSTICK";:REM 96
580 PRINT"TO SELECT SKILL LEVEL. PRESS
      FIRE[7 space]BUTTON TO START
      GAME.[2 crsr down]":REM 79
590 PRINT"[ctrl 8][7 space]SKILL
      LEVEL:[space]";DL$(D):FORL=1TO200
      :NEXT:JY=PEEK(56320):REM 92
600 IFJY=111THENPRINT"[3 crsr down]
      [C= 7] GET READY!":GOTO630:REM 109
610 IFJY<>127ANDJY<>111THEND=D+1
      :IFD=3THEND=0:REM 114
620 PRINT"[crsr up]":GOTO590:REM 163
630 FORL=828TO859:READTE
      :POKEL,TE:NEXT:REM 203
640 POKE56333,127:POKE1,51:SYS828
      :POKE1,55:POKE56333,129:REM 63
650 FORL=520TO599:READTE
      :POKEL+C,TE:NEXT:REM 115
660 POKE53272,(PEEK(53272)AND240)
      OR14:PRINT"[CLR]":REM 26
670 FORL=704TO727:READTE:POKEL,TE

```

Trader's Corner

Trader's Corner is free for reader's looking to trade or buy only. TCs will be listed for two months. Starting with the Jul/Aug issue addresses will be published to better expedite trading. Classified ads are available for \$0.50 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. SuperPET system disks. BLC #000000

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

Wanted: Commodore Inner Space Anthology by Hildon/Vic and 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: RAMDrive, RAMLink, 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 pens 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

Wanted: Cookbook database with print capabilities. William Evans, #C002686

To Trade: Amiga A500 w/exp. unit and a few accessories (value \$500+, in original box, mint condition, orig. instruction manuals, plus exp. unit brings memory to one meg). Will trade for a C64 REU unit so I can run my GEOS 2.0 on my C64. Harold Lawson, #C003095

Wanted: Also looking for good genealogy program for C64 (see WEvans request 3/94 issue). Prefer one that will do both ancestry and descendants w/o having to re-enter the same data. Mrs. RH Brown Sr, #C005522

Wanted: MiMi II: Mimi Goes To Town, by Logidisque of Canada. Bill Alexander, #C006836

Wanted: Commodore software for children, especially educational, for use with home schooling. Also Commodore compatible printer. Genia

Bathe, #C006365

Wanted: Compute's Music System for the C64 & C128 by Craig Chamberlain (book & disk combination). James D. Manssen, #C006551

To Trade: Used GEORAM cartridge, new Xetec Super Graphics cartridge, new Xetec Super Graphics Jr cartridge. Want the following: Cardco/Supra cartridge, C= user port-to-RS232C interface, copy of article from Commodore Microcomputer magazine about constructing light pen for use with game port. This was a hardware construction article w/required software program to read x,y position, probably published about 1987. Raymond D. Murick, #C006833

Wanted: "Font Monster" by Joe Buckley. This program allows creation of GEOS fonts directly from geoPaint documents. Irv Cobb, #C006417

Wanted: A working 32K Datel Smart Cart (docs not required), or the address of someone who can repair mine. Also, a copy of Side 2 of Cinemaware's "3 Stooges." Charles Brown, #C001540

To Trade: Brown Bag integrated word processor and database for CPM software. Donald H. Graham, #C000106

Wanted: Commodore 1702 monitor service/repair manual (not available from SAM's or Commodore) plus Commodore DPS 1101 daisy wheel printer user's manual for same for JUKI 6100. C.C. Adams, #C006658

Wanted: Documentation (orig. or copy) for Super Graphix Sr by Xetec, Mach 128 by Access, and Word Write 128 by Timeworks. (I purchased software at computerfest but no docs available.) Leo Scannell, #C004389

Wanted: Assistance w/transferring data from GEOS to Amiga, Amiga to GEOS, same routines for C64 to IBM and back, geoWrite, geoPaint, etc., final copy, MS-DOS. Also -- Does anyone know of a company that does good work and low cost printing books (paperback and hardcover)? Fred Dooley, #C001110

Wanted: Compute & Compute's Gazette magazines, 1986-89, good condition; Speech-64 cartridge and manual; top case half, RF modulator, keyboard assembly for 64C; 1541 main board, C64 motherboard, non-working 1541-II, LOADSTAR disks. Arnold Walter, #C005997

To Trade: C64 Power Pak (P/N 251052-02 Model P.S.25) for light pen or mouse; also, user manual for Timex/Sinclair 1000 for "Anatomy of the 1541" or similar book. Arnold Walter, #C005997

Classifieds

For Sale: C128 and C64 computers, drives, printer, monitor and more. Lots of original software and books. "DON'T LET THESE BE THROWN OUT." Vic Sunshine, (516) 277-0062.

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

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.

```

: NEXT: FORL=728TO766
: POKEL,0:NEXT:REM 17
680 POKE2040,11:POKE V+39,14
:POKE V,SX:POKE V+1,234
:POKE V+21,1:REM 156
690 POKES+24,3:POKES+5,128:POKES+6
,108:POKES+1,5:POKES+4,129
:POKEV+31,0:GOTO40:REM 10
700 DATA169,0,133,251,133,253,168
,169,56,133,252,169,208,133
,254,162,7,177,253:REM 27
710 DATA145,251,136,208,249,230,252
,230,254,202,16,242,96:REM 69
720 DATA255,153,153,255,129,195
,195,195,126,165,129,126,60
,102,195,129:REM 160
730 DATA219,255,255,195,195,36
,24,24,129,165,165,126,24
,255,24,60:REM 100
740 DATA255,165,129,255,171,129
,171,255,0,36,96,2,24
,24,64,2:REM 112
750 DATA0,140,44,0,4,96,98,8,24
,128,49,52,0,12,65,16:REM 171
760 DATA0,0,136,85,34,0,0,0,137
,74,60,255,60,82,145,0:REM 220
770 DATA90,0,0,126,0,0,24,0,0,60
,0,0,255,0,0,189,0,0,189
,0,0,255,0,0:REM 144

```

.....end of line.

Oops! a.k.a. #&\$!%?&\$

☛ March 94: This is the correct procedure for using the PIP utility as it should have appeared in *CP/M A Quick Overview*:

```

A> FORMAT (FORMAT utility, via menu
selection, formats drive B)
A> PIP B:=A:CPM+.SYS (Copies the CP/M
System file from drive A to drive B)
A> PIP B:=A:CCP.COM (Copies the
CCP.COM file from drive A to B)

```

Mike's time has been at premium, but he assures me he will soon be able to continue the CP/M column.

☛ March 94: *Spinner*: Some of the March 94 *Spinners* have a file called *Chaldea*. This file is an extraneous file and should be ignored or scratched.

☛ March 94: In *Everything In Its Place*, Ms. Knombers states that the Super Snapshot does not have BASIC extension commands. I told her she was wrong. She never listens to me. She made me clean my monitor. See *INPUT:READERS* for more information.

☛ Jan/Feb 94: *PRG's PIE* (C64) line 60 should read:

```
60 IF AZ$="Y" THEN 630
```

☛ December 93: A Q&A response (page 18, 3rd column) states that to validate a disk in 128 mode, use CATALOG. This, of course, will show the contents of the directory. It should say COLLECT.

☛ December 93: In Q&A (page 19, 2nd column), the statement beginning OPEN... in the first paragraph should read:

```
OPEN4,4:PRINT#4,CHR$(27)
+CHR$(color code).
```

☛ April 93: *PAPSAW* was riddled with typos. The first instance of line 10000 (right after the second paragraph on page 5) should read:

```
10000 PRINT"[CLR][3 crsr down]LOAD"
+CHR$(34)+"filename"+CHR$(34)
+",8":PRINT"[4 crsr down]
RUN[HOME]"
```

Line 1010 at the bottom of that same page should read:

```
1010 PRINT"[HOME][3 crsr down][ctrl 2]
LOAD"+CHR$(34)+"MENU"+CHR$(34)
+",8":PRINT"[4 crsr down]
RUN[HOME]"
```

☛ January 93: *Device No. 3001* has disk drives 12 through 15 as *assigned*. It should say *selected*.

☛ April 94: The number listed for the *BODACIOUS BBS* in *Rarities* was wrong! Please don't call that number -- call *this* number: 1-318-929-4020

By the way, between five and six dozen BBSs are a part of three C64 networks -- UBAN, NISA and POWERNET. Bodacious BBS is one of these BBSs. Bo Fain, SysOp, will be sending us an annotated map that will show you how to get onto the various sub-boards. There! Aren't you glad you read *Oops!*

☛ *TypeRite 1.0* is royal pain! (Sorry, John) Throw it away and use our new *DH Checksum*. This new program is all machine code and is created with the utility *TypeRite 2.0!* (See *PRG.*)

READY.



"Software Piracy is a Giga-No-No!!!"

LOADSTAR Celebrates 10th Anniversary!

LOADSTAR will celebrate its 10th anniversary on May 2 when issue #120 ships to subscribers.

The key to *LOADSTAR's* long-time success is that it provides C64 owners with terrific, new software every month at an affordable price.

"It really is incredible that a disk magazine devoted to an 8-bit computer designed over 13 years ago is still going strong," said *LOADSTAR* Editor Fender Tucker.

"For our 10th anniversary, I have planned the best issue ever, asking our best submitters to send me their masterpieces," said Tucker. "They did, and there's not enough room on issue #120 for all of them, so it looks like *LOADSTAR* #121 will also be a blockbuster issue."

Here are just some of what you'll find on the 10th anniversary issue:

HELPPWARE

* **THE PER-FORM-ER**: a form-making tool that can be configured for various printers.

BRAINWARE

* **TRIGON**: a trigonometric triangle solver that's not just for students.

* **PUZZLE PAGE #120**: a monthly feature that celebrates its 5th anniversary with this issue.

FUNWARE

* **MAHJONG**: a C64 version of the classic Chinese tile game.

* **POLYGONS**: an arcade-style game where the object is to clear the screen of randomly appearing "corner" and "side" pieces by connecting them into "polygons."

UTILITYWARE

* **SFX GENERATOR**: a sound effect program that lets users create up to 256 wild sound effects for BASIC or ML programs.

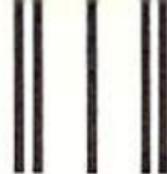
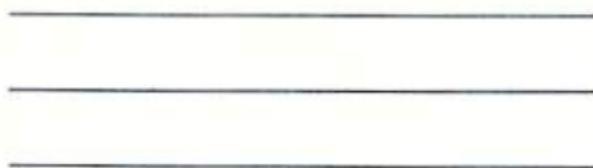
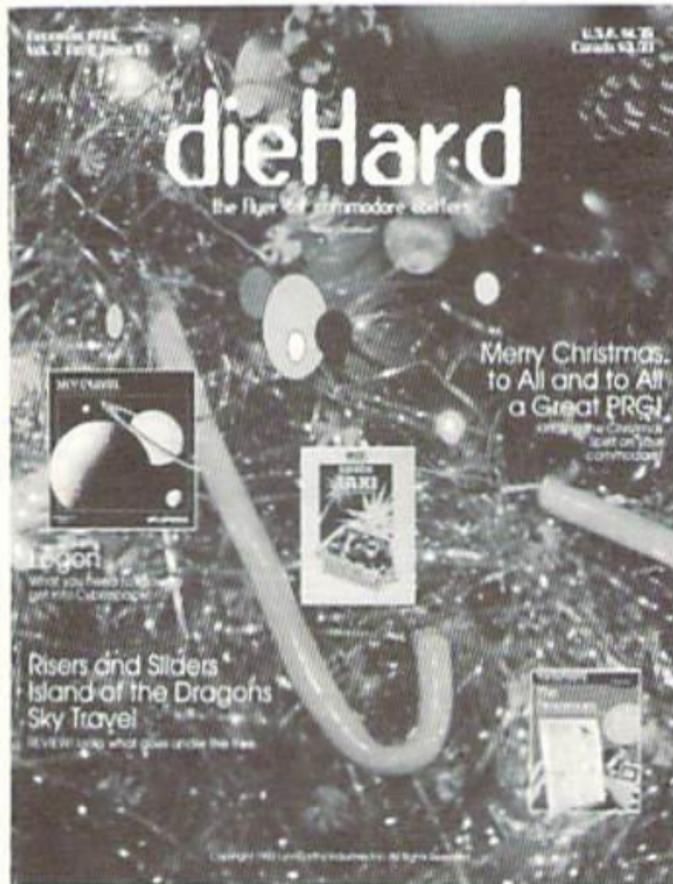
* **SFX DEMO**: a tutorial program for "SFX Generator."

MULTIMEDIAWARE

* **DANCE OF THE TOWERS**: a music-filled slide show that explains how the 120-story *LOADSTAR* Tower was once a twin of another famous tower and how it was brought to Shreveport and rebuilt, brick by brick, by Fender Tuckerilli.

In addition to *LOADSTAR*, Softdisk Publishing also produces: *LOADSTAR QUARTERLY 128* for C128. See their ad on page 2 for pricing info on *LOADSTAR 64 & 128!*

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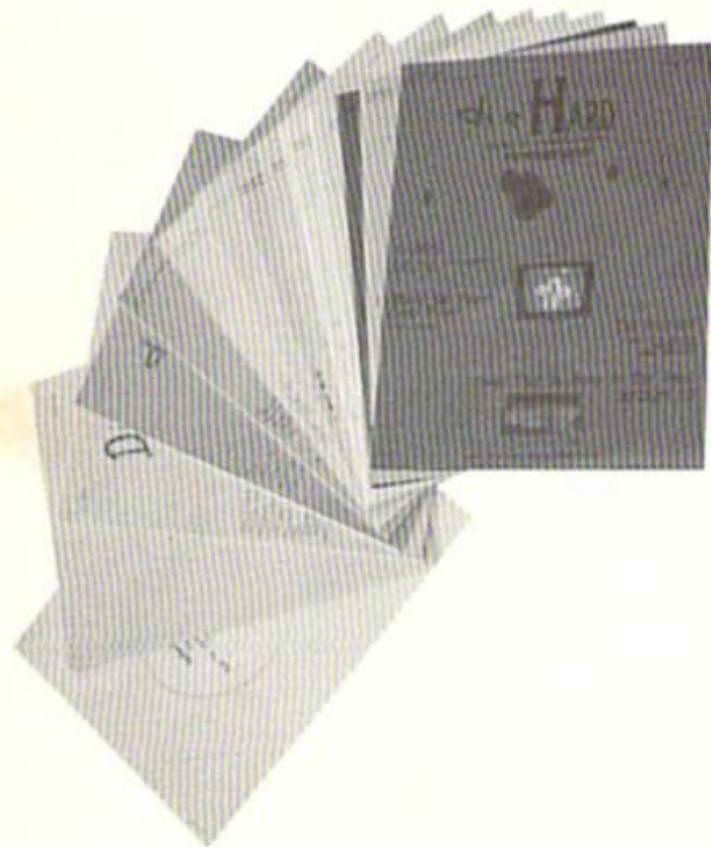


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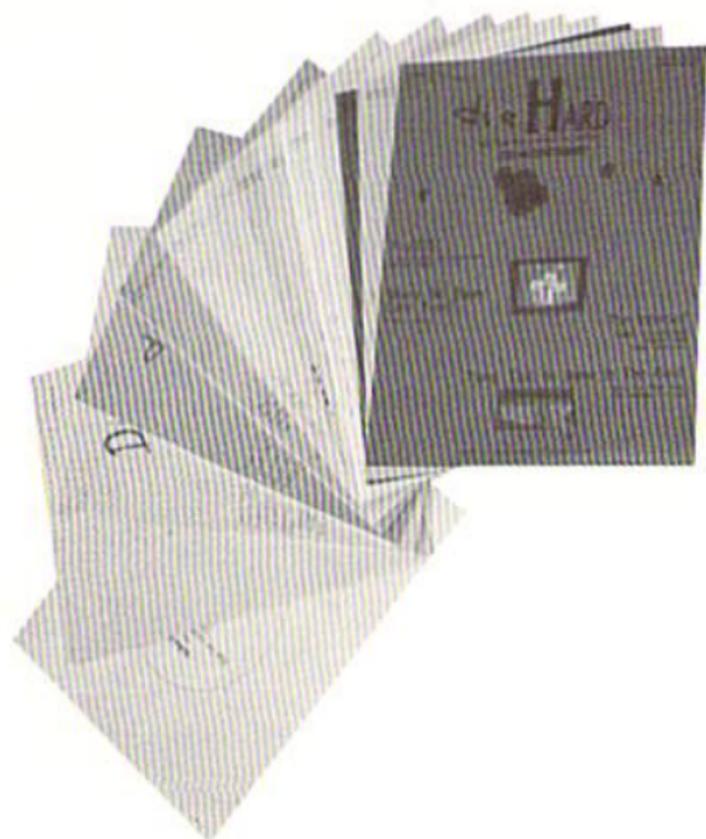
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