July/August 1994
Vol. 3 No. 5 Issue 21

U.S.A. $2.95
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dieHard

the Flyer for commodore 8bitters

Rarities, Rarities, Rarities, and more Rarities!!!

8-Bit 4-Pass Color!!

A special tutorial by Jack Blewitt!

Commodore Support?

A Rarities list that just goes

MFM? CP/M? Yes!

Mike Gordillo takes us into the jungles of CP/M!

C128 Not Quite Working?

It should and will! Larry Pankey shows you how!

Help Master 64 Melee

REVIEW! looks at on-screen help and takes us back -- centuries back!

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Spotlight On LOADSTAR

Jeff didn't get me the information on either the July or August issues of *LOADSTAR*, mainly because of our schedule change (this is being written in May). So I thought I'd tell you about *LOADSTAR* from my world.

LOADSTAR is dubbed as the monthly software subscription. However, it is more than just that. It is, and has been since day one, a magazine on disk. Aside from the games, art work, music, productivity and such, *LOADSTAR* has articles and information on Programming, usage, reviews and user groups.

I grew up with *LOADSTAR*, it was one of the first things I got to feed my mind with upon getting my long awaited disk drive. Many of the basic philosophies they had about computing are instilled in me to this day -- sharing, write-protect-hating, the "we're all in this together kid," thing.

I can still remember seeing issue 27's HIRES screens as programs loaded. The sights and sounds coming from my glowing b&w screen and the television speaker created excitment and curiosity about what else I would find on this disk. That was seven years ago. Now, *LOADSTAR* comes on a 3.5 inch disk (or 2 1541 disks) and loads from my FD in a split second.

The anticipation and excitment are still there. I've seen *LOADSTAR* change over the years and yet, somehow, it has remained the same. They have been around since the hey day of the **commodore** and are still at it -- ten years later! And they just keep getting better and better!

Curious? Check our their advertisement in this issue for info.

Happy Tenth, *LOADSTAR!*

READY.
■

Spinner Only!

This month's feature program on the *Spinner* is **Bingo** by Ted J. Myers. This Bingo game will generate cards, keep track of who has what and let you know just as soon as someone has a Bingo! For C64 with 1 to 4 players.

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Rick Hedrick also whips up some BASIC mode graphics with Wire Frame. Make a *huge* four screen wire frame! These can be saved as **Print Shop** HIRES pics and ported over to the **Fun Graphics Machine**. Also included are several pre-made wire frames for your viewing pleasure.

Cheats finally make it to *dieHard*! L. L. Pankey brings us **Trivia Q & A Print**. This PRG will let you print the question and answers to Cymbal Software's **Trivia**. For educational purposes of course....

Eugene R. Heath brings **String Arithmetic** {Oct 93 *Spinner*} to life with **Sin Cos & PI 1.0** and **Fibonacci 1.2**. Calculate PI to 68 places! See what the 657th number in the Fibonacci sequence looks like.

And more!

READY.
■

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View From The Underground
By
Brian L Crosthwaite

It's two fifty -- pm. No one is around. No, it's not Saturday. Nor is it a holiday. It happens to be Tuesday. -- No, the fire alarm didn't go off! I am at home. I just configured a C128D with my GEORAM and an Action Replay VI, a 1581 and my trusty old FSD-1. I borrowed my ST's QuickShot for an input device. My Atari died last night anyway and won't need it for while. Oh, I almost forgot -- 1902 monitor. Oops, and my MPS 1250 printer.

It's in my living room. The old *Voyageur Studio C* is moving into the rooms that were to be my wife's sewing room *and* my son's room. Antony and (around December) our new addition shall inherit the old studio where my office once was.

Oh, I will still be at the office during the day. I just came home to set up this system to work at home. My wife goes to work at 6am and I stay home with our three year old son until 8am when I take him to his daycare. My wife leaves work at 4pm to pick our son up, and I work until 6pm.

I found I could not get enough work done in 9 hours. Now I can get up early and work until my son gets up, as well as work in the evening when everyone has gone to bed. Having this system at home gives me the power to do everything I need to do, not just the word processing my Epson laptop allows me to do. (It is an 8-bit CP/M machine.)

Well, I need to get back to the office...

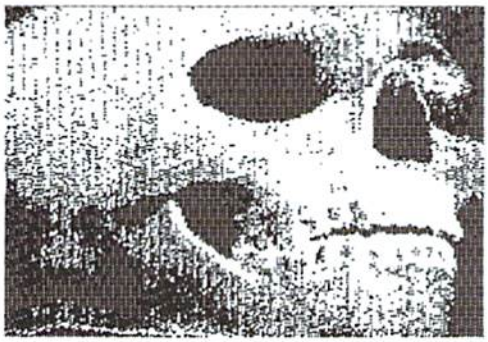
It's now a quarter to five in the am. This is great! I love working from the wee hours of the morning into the day!

OH NO! NO MORE TIME!! As many of you know, we are in the process of hiring an Associate Editor. This has unfortunately taken much longer than we expected, mainly because we've just been so busy. To all awaiting the outcome, I apologize and thank you for your patience. Hopefully by the time this goes to press, the hire will have been made.

Because we have been so busy, time has been almost nonexistent. In fact, when I was printing the graphics that tied up my computer, I looked in Grolier's Encyclopedia for *free-time*. The only reference it had was logrolling which came about as a *free-time* sport. And even it was for the job, since lumberjacks had to run out on floating logs to break up a log jam on the river.

Anyway, I had written somewhat of a shell of a review of the HD on my laptop. It got converted into GEOS and reworked severalfold until it was a rather thorough review that discussed the many features of the HD. Well, the polished file somehow got overwritten by the original and wasn't discovered until I was checking the layout to assure everything fit like it should. Of course, a major search soon ensued, but there was no file to be found. There was no time to re-enter the hard copy, and what you read last month was the result of that major disaster. Several of the key features did not get covered, so I've decided to place the missing info in REVIEW! this month!

Something Carl Sagan should have covered in Cosmos is *the no time/space continuum.* If you have not heard anything about that submission you sent awhile back, please be patient. Doug and I have set some of that time stuff aside to go through the enormous volumes of mail we get. Hopefully you will be getting a yeah or nay soon. However, some may need more time. If so, we'll send you a letter letting you know we have received it and that it is under consideration.



Skull captured with Video Byte III
Imported via Import Runner.

Speaking of that rarest of beasts -- time -- Commodore Business Machines' time is up. The stock has been frozen and their creditors are looking at reform for the company, or liquidation. This means little to us as 8-bit users, especially since parts have been manufactured by a third party for sometime now. Maybe with reform, the company can pull out. I am positive if they brought the C65 to the market, they could sell in the millions!

The d.H.P.D.L. -- what?!? The *dieHard Public Domain Library* is what. What is it? It is a PD library full of adventure games, word processors, DEMOs, arcade games, data bases, label programs, print drivers, geoUtilities, calendar makers, and recipe programs. Everything imaginable is there and we hope to have it open in time for our PD issue.

Who is it for? -- You! Many of our readers who do not have access to user groups have asked us about PD software. This will give our readers an inside line to these great programs. A catalog will be available. Stay tuned!

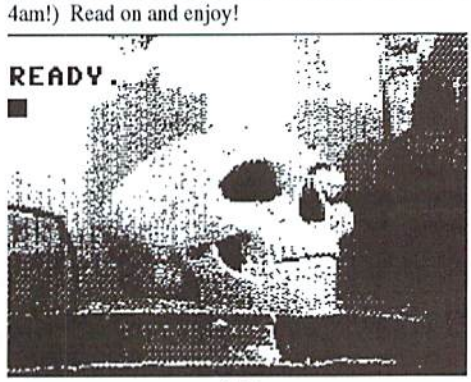
This is our first annual Rarities Issue. Doug has gone through all the back issues of *dieHard,* as well as bringing in some of his own sources, and compiled the results in a gigantic list! Scot's regular *Rarities* column is even in this issue. We've put on the mega spotlight! Did we miss anybody? Let us know, and we'll pass the info on to the rest of our readers!

User Groups! Send us your newsletters! If you got entered into our data base but didn't get listed in an issue, drop us a line at: *dieHard*, Rarities Missed, P.O.Box 392, Boise, Idaho, 83701-0392. We'll get you listed as soon as we can!

The graphics used in this issue are from *LOADSTAR*'s **geoPowerTools**. Check out *Rarity*, on page 25 for more information. This disk is packed with geoUtilities, fonts, artwork, and geoGames! Watch for a REVIEW! on this one.

If you just joined us via the newsstands -- welcome aboard! I hope you like what you see. Didn't think you would ever see **commodore** 8-bit support on the stands? Hey, these great machines are here to stay; and so are we. We're dieHards, just like you.

Well, enough rambling already. (What do you expect from somebody drinking espresso at 4am!) Read on and enjoy!



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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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10 INPUT;READER$

Send us your INPUT to INPUT;READER$, P.O.Box 392, Boise, Idaho, 83701-0392. While we can't answer you in person, do do read all our mail. Well, except those things that Ed McMahan keeps sending us.

I am having problems with 'TPUG'.

Per an ad contained in *dieHard*, I sent 'TPUG' a check for $3.00 to cover the cost of three catalogs on available software: C64, C128 and CP/M. I sent the check on 11/23/93 and, as of this date, haven't heard from them! (A few weeks ago I sent them a follow-up letter with a copy of my cancelled check.)

I have noticed 'TPUG' has quit running an ad in *dH*. Have you received other complaints? Dennis Ward of Cairo, Georgia.

TPUG had stated they had a re-organization. However, many readers have complained; and TPUG did not pay for their ad, so we pulled it.

I believe I qualify as a dieHard C64 user. I have it upgraded with *RAMLink*, *JiffyDOS*, 5 Megs in *RAMLink*, 1541-2, and FD4000 3.5 drive.

I am 76 years young and a licensed HAM radio operator (KA1AVI). I listen to a lot of operators cry the blues over their so-called big computers. I smile to myself and get back to my C64.

Also have been a very satisfied subscriber to *LOADSTAR* for around 3 years. Francis P. Sturges of Easthampton, Massachusetts.

I believe the **commodore** computers are the best 8-bit computers ever made. The VIC-20, C64, and C128 are by far the best computers to learn all about the field of computer technology, program writing, and system use. The very capability of sound, color, and **BASIC** cover the whole range of anything a computer can be used for.

Computers should be used as a tool with many uses, but **commodore** goes one step further, making it possible to play games, draw pictures, write music, work many business reports, accounts, and graphs in color and BW. Students in all schools would benefit greatly by starting with a good 8-bit computer (C64), progressing to the C128, then a system.

I would like to see more articles showing how students and schools would be better able to teach progressive materials with the use of a **commodore** system. John M. Brophy of Fort Wayne, Indiana.

Your front cover of 4/94 really got my 9-year-old son going when he read the cover "The C129 -- it's about time!!! over and over three times before he finally saw the "April Fools April Fools April Fools" beneath. The reason why this had such an impact on him was because he had drawn up, on his own, a keyboard layout of a dream machine, the **commodore** 129. Who said, "The only difference between men and boys is the price of their toys."? Noel Plank of Tracy, California.

In the April issue, I noticed your reply to the question of available 64 publications was a referral to *Random* magazine. I personally would not recommend this publication, or ANY transaction be made with this company/person. At the present time, this business has $102.00 of my money; and as of this date, I have not received one disk, a copy of their publication, the ordered item, nor a reply to the request for return of my money. A copy of the letter sent to them (enclosed) explains the situation. I wonder, at times, if some of the 64 providers/publishers may not be promoting intentional fraud rather than their failure being due to poor management or financial problems! Bob Estand of El Paso, Texas.

This is my first letter to *dieHard*. I was really sorry to see that *Run* and *Commodore* magazines folded. I was sure happy that *dieHard* stepped into their place.

My hat is off to Ed Harler, Levittown, PA, in April's issue of *dieHard*. He thinks like I do -- high prices, over-bloated MSDOS programs on the market today. We have had **GEOS** (windows) for years. What's MSDOS hollering about -- 6 years too late.

I bought a C64 in 1984 and a C128 in 1986. They are still going strong today, after ten years.

I got hoodwinked by all the b---- I read plus the fact that Commodore dropped the ball on the C64/C128 pushing their Amigas. I bought an IBM clone which cost me $1,600 (Tandy 2500 SX), which I really could not afford. The funny thing is my C64/C128 are still going strong whereas my Tandy lasted only ten months before it broke down. You want something to laugh about, I took my Tandy to Radio Shack for repair and they lost it! How about that?

The main reason I went the IBM direction was that there weren't any hard drives on the market then. And when they did come out, the C64 hard drives were way overpriced. It looked as if the C64/C128 were dead until CMD came along. They are still a little too pricey for me; it's bad enough to pay more for a printer than you did for your C64 computer.

I've come back to my C64/C128 **commodore**, not only because it is cheaper (software) but mainly because it is superior -- easier to run. I only need one boot code for my C64 (Load"*",8,1 R), where with the MSDOS system you need a different boot code for every piece of software -- really dumb. The **GEOS** (windows) is cheaper by far, and it's easier to work with than MSDOS.

If anybody out there is thinking of changing to an IBM machine -- DON'T; you'll be sorry.

Here's to fun, relaxing computing on your **commodore**. Take care. I wish there was a commodore user group here in the Oakland area. R.H. Belt of Oakland, California.

```
READY.
■
```

Rarities

by R. Scot Derrer

User Groups

More additions to our ever expanding list of active **commodore** user groups. To see your group listed, just send us a newsletter at: *dieHard, Rarities*, P.O.Box 392, Boise, Idaho, 83702-0392.

C64 Compendium
P.O.Box 70
Ringgold, VA 24586-0070

Colorado Commodore Computer Club
1192 South Nome Street
Aurora, CO 80012

Commodore Computer Club of Toledo
P.O.Box 13011
Toledo, OH 43613

Commodore Hawaii Users Group
46-329 Kumoo Loop
Kaneohe, HI 96744-3532

Commodore Home User Group of Wheeling / C= H.U.G.
81 Lynwood Ave.
Wheeling, WV 26003

Commodore Users Group of Kansas City, Inc. / CUGKC
P.O.Box 36034
Kansas City, MO 64111

Fresno Commodore Users Group / 64UM
P.O.Box 16098
Fresno, CA 93755

Mountain Computer Society
3898 Cheryl St.
Salt Lake City, UT 84119-4682

Peninsula Commodore Users Group
P.O.Box 11293
Newport News, VA 23601-9293

Western Slope Commodore Users Group
P.O.Box 81
Mack, CO 81525

Nationwide Commodore Repair

Capestany Computer Repair
P.O.Box 2802
Titusville, FL 32781
(407) 267-4222

Gordy Wilson's Keyboard Studio
304 North Maple Suite #203
Urbana, IL 61801
(217) 328-3975

R&K MicroTronics
Commodore and IBM Computer Sales and Service
34 Hillwyck Dr.
Toledo, OH 43615
(419) 536-1455

More News You Can Use

Nathan Fiedler of **geoCanvas** fame is coming out with a disk of **GEOS** Utilities. When Nathan finishes enhancing these programs to work in 80 column mode and we procure a copy, we'll review it for you.

We are pleased to announce we raised $150.00 towards Lois Myers' Michael Myers Tombstone Fund since January 1994. Thanks to all of you who ordered this disk of **GEOS** programs.

READY.
■

Rarities Rarities Rarities Rarities Rarities Rarities

Keep this list handy, it is the latest and most current listing printed. All names and addresses have been verified.

Did we miss you this issue? Never fear -- we will have an addendum list in our September issue. Call (208) 383-0300 or write RARITIES, P.O.Box 392, Boise, ID 83701-0392 to assure you're included.

Some companies are in more than one catagory and are coded H=Hardware; S=Software; R=Repairs & Service; Sp=Special Products or Services.

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(404) 263-7852 FAX
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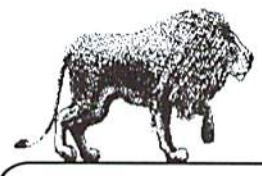

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Codes: S

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(803) 681-5510
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Andor House/Don Radler
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Cape Coral, FL 33904

Bare Bones Software
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Huntington, WV 25701
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(304) 529-0461 (customer service)
(304) 529-7050 (BBS)

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Lompoc,CA 93438
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Caloke Industries
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Raytown, MO 64133
(816) 478-6185

Jack Vander White
Publisher of *Cee 64 Alive!*
P.O.Box 232115
Sacramento, CA 95823
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Centsible Software
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(616) 429-7211 (BBS)

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Charlotte, MI 48813

Music Software Exchange
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Orlando, FL 32853-3334

Nathan Fiedler
5711 Mt. Pleasant Rd.
Bernville, PA 19506

Nick Rossi
427 Avenue J
Snohomish, WA 98290

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Suite C
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Computer Technologies
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Sioux Falls, SD 57103
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Continued on page 28.

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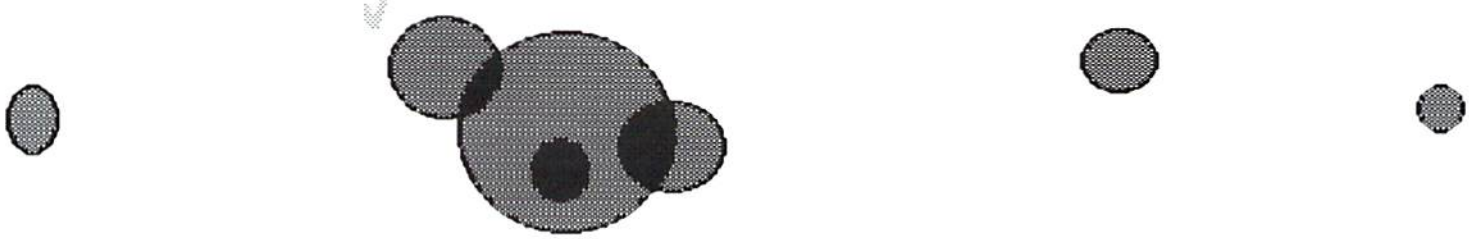

Mike Gordillo's C128 CP/M

Trail Blazer in a Jungle of Formats

The microcomputer world today is awash in an estimated 100 different major operating systems with over 2000 proprietary disk format types. In such a world, what is one to do in order to promote the liberal exchange of information? Well, one could wander the information highways with relatively slow modems and transfer information in that fashion... {Yawn}. Fortunately, the art of pushing bytes is not limited to the phone lines! A much simpler and faster approach lies in the malleability which certain systems possess when dealing with floppies. Your C128 is such a system and when running CP/M, it is at its best in its role as an inter-platform intermediary.

The original C128 CP/M BIOS directly supports six 5.25" CP/M MFM (Modified Frequency Modulation) and two 5.25" CBM GCR (Group Coded Recording) format types. They can be seen in this hndy dandy chart to the left.

MFM disks usually have the same number of sectors on each track while GCR disks have a variable number of sectors for different ranges of tracks. **commodore**-DOS-style GCR is the default format type for C128 CP/M because this allows "Joe User" to easily boot up CP/M from a 1571 or even a 1541 (slow!) drive. (Fortunately, when Commodore finalized the 28 May 87 version of C128 CP/M, they not only provided a format type for use with the 1581 but added a **FORMAT.COM** that could create a 1581 3.5" C128 CP/M bootable system disk.)

Epson QX10	(MFM)	CP/M Z80	DS/DD
Epson Euro	(MFM)	CP/M Z80	DS/DD
IBM-86	(MFM)	CP/M 8086	DS/DD
Kaypro II	(MFM)	CP/M Z80	SS/DD
Kaypro IV	(MFM)	CP/M Z80	DS/DD
Osborne	(MFM)	CP/M Z80	SS/DD
C128	(GCR)	C128 CP/M	DS/DD
	(The defult CP/M formate type)		
C64	(GCR)	C64 CP/M (Z80 Cartridge)	SS/DD

(SS = Single Sided, DS = Double Sided, DD = Double Density)

Note: The 1581 is officially supported in the 28 MAY 87 version of C128 CP/M 3.0+. The official 1581 format type is MFM DS/DD.

Yeah, so what do I do with these format types?

Taking advantage of what CP/M provides is as simple as inserting a diskette. For example, let's say I have some files on my Kaypro which I need to use on C128 CP/M. All I have to do is put the Kaypro disk in my trusty 1571 and, voila, I can use it and the files within as I please with no hassles. This is no small point of trivia. The message here is that you can use data on these alien format types as if the data were sitting on the default C128 CP/M disk.

Ok, so I can use them, but what about copying them over to C128 CP/M disks?

No problem! The transfer process is as easy as using an off-the-shelf file copier because as far as CP/M is concerned, the alien and default (native) format types are one and the same. This degree of transparency is due largely to the internal disk format table which exists within the computer's memory as part of the **CP/M BIOS** (Basic Input/Output System). This arrangement constitutes better support and flexibility over the rigid **commodore** DOS system when it comes to juggling different format types.

Yeah, but what happens if I run across a format type that is not directly supported by C128 CP/M?

Flexibility to the rescue! The built-in drive table is modifiable (both in memory or on the system disk). If you need to access other CP/M format types, the solution may be as easy as installing the parameters that match the disks in question. A good example of a utility that does this is the **UNIDRIVE** utility by Frank Prindle. It reconfigures the drive table, allowing up to 10 different 5.25 MFM format types at any one time from an overall selection of 24. Because of the drive table, **UNIDRIVE** is a simple, elegant program that can make these changes without sacrificing any TPA (Transient Program Area) memory. The undisputed king of format jugglers and nowhere near as simple is the **JUGGLER** utility by Miklos Garamszeghy. This program can read, write and format over 130 different format types, mostly 5.25" MFM (with 1571) but also 3.5" MFM (with 1581) based disks. This includes the popular space extending, speedy alternative formats for C128 CP/M, namely Maxi 1571/1581 and MG 1581. A demo version of the **JUGGLER** utility is publicly available. It does not have as many features as the full version. You can only access 22 format types; and modifying the built-in drive table is out of the question, a small inconvenience if the full version were easy to find. Its distribution was handled by the now defunct *Transactor* magazine. They folded back in 1989 and no "second source distribution" to my knowledge is available for this program. If you can purchase a copy from a friend, do so! There are few things like it in the CP/M world.

What about MSDOS MFM disks? Can't I play with them as well?

Yes you can! I know of at least three separate utilities that will allow communication between C128 CP/M and MSDOS diskettes. First on the list is the **RDMS 2.33** utility. This is an old program designed to read MSDOS diskettes, and that's all it does. It will read from MSDOS into CP/M but will not write back to MSDOS. Frank Prindle ported over this program (for the 1571 drive) and he would have probably added a "write MSDOS" option if someone else hadn't beaten him to the punchline. The **TRANSFER 128 v1.2c** utility (ported over by Gilly Cabral from David Koski's original **TRANSFER** util.) came soon

after Prindle's rendition of **RDMS 2.33**. In fact, the routines used to communicate with the 1571 are based on Prindle's work. **TRANSFER 128**, however, goes way beyond **RDMS 2.33**. Not only does it read and write to MSDOS disks, but it also provides a surprisingly high level of sophisticated access to the internal workings of MSDOS disks. For example, it can display the **MSDOS FAT** (File Allocation Table) and reconstruct it, if needed, using a backup FAT as a template. **TRANSFER 128** supports single and double sided 5.25" format types with eight or nine sectors per track. It places no limits on the size of the data it can transfer. The only limitation is the free space left on the destination diskette. This is a huge advantage over the first native mode MSDOS to CBM DOS programs which use internal memory buffering. For many years, **TRANSFER 128** was my only standby for large files. When better utilities came out for the native modes, I still found **TRANSFER 128** to be my choice. Why? Because of the excellent RAM Expansion support under the CP/M BIOS. CP/M thinks the RAM Expansion Unit (REU) is truly a real drive. **TRANSFER 128** (and other CP/M programs do not have to worry about steering clear of interface pages and silly stuff like that when dealing with the additional RAM. Eventually, people wrote transfer utilities that did work with CBM and RAMDOS, for example. Too late, my heart was set on **TRANSFER 128**. It's been a good companion; and since it comes bundled with its Turbo Pascal source, I can always modify it in case of trouble. In fact, I had to do just that when I set up several BIOS/BDOS/CCP enhancements on my system. (But that's another story.) The one tiny snag with **TRANSFER 128**, however, is that it will format the various MSDOS format types perfectly as far as MSDOS itself is concerned, but native mode transfer programs do not recognize the disks which **TRANSFER 128** has formatted. I am at a loss to explain this, so I won't, but it's safe to say I'll give **TRANSFER 128** the benefit of the doubt anytime!

What about 3.5" MSDOS format types using my 1581?

Ah, yes, I've neglected to mention what may be the best *transfer* utility available for the C128. It may be too sophisticated for young viewers, so this section of this article will be rated PG-13.

Well? Well?! Well !??!? Don't keep us in suspense!

Not to worry! The utility I'm harping about is called **MSDOSEM** (by Nichita Sandru). It doesn't just give you a temporary transfer window of opportunity, it makes CP/M think of MSDOS disks as native CP/M disks and provides (get this) *full* subdirectory support!!!

This is similar to the transparent juggling of CP/M format types, yes?

Yes, except CP/M disks carry the same directory structure no matter how their format type is arranged. In order to support the MSDOS directory structure, **MSDOSEM** creates a separate buffer area for internal conversions between CP/M and MSDOS logical constructs. The actual physical nature of the MSDOS format types, however, is handled once again with a modified CP/M drive table. **MSDOSEM** has no problem with 5.25" (1571) or 3.5" (1581) double density MSDOS format types. Again, as described earlier in this article, transparency means you can play with the alien disk as if it were a default one. Any copy utility you have sitting around can now access MSDOS diskettes with **MSDOSEM** as the go-between. This is the ultimate in MSDOS to C128 transferring because you essentially do not have to transfer anything anymore! The stuff on your MSDOS disks is no longer anathema to CP/M, even though it may be to you.

What about support for regular commodore DOS (GCR) disks?

In reality, the original default C128 CP/M format type is as **commodore** DOSian GCRish as anything Commodore has done for the native modes. I take advantage of this when backing up my CP/M disks, either with **FastHack'em** (or any GCR copier) in C128 mode or **IMAGE.COM** under CP/M itself. These programs allow us to manipulate **commodore** GCR on a gross level. For a more refined manipulation of files stuck in regular CBM GCR disks, I generally use the **RDCBM 2.1** utility by Rob Tillotson and Turbo Penguin Software. This program can read files from 1541 or 1571 native **commodore** GCR disks and spit them out as straight binaries (eg., no translation) or it can convert files from PETSCII to ASCII. Like **RDMS 2.33**, **RDCBM 2.1** does not write back to the disks it so aptly read and it does not read anything on the 1581. These quirks are highly irritating, considering it's a pretty good program otherwise -- good enough to provide limited support for files under the **GEOS** file structure. Fortunately, I surmise I have not run into a more recent version of **RDCBM** to evaluate. I say this because the source listing of this program contains "Hooks and Crannies" pointing to the author's efforts to implement a *write-back* option and 1581 support.

You mean I cannot transfer material from my CP/M disks to my regular 15xx disks???

No, I don't. There exist several native C64 and C128 utilities which will do this. The C128 native mode version of the **Big Blue Reader** program had this ability. Utilities like **Supersweep** and **Crosslink** can also port your files to CBM DOS 15xx disks, albeit these two programs set limitations on the size of the files in question.

That's nice, but I'm a C128 CP/M'er through and through!

Ok, you beat it out of me. There *is* a way to save files to a regular CBM DOS diskette from within C128 CP/M. You first use the **C128LOAD** utility by David Bratton to load a file into Bank 1 of the CP/M memory map. Next, you hit CTRL-ENTER (on the numeric keypad -- do not press RETURN), and this will put you in C128 native mode. Finally, you use the built-in C128 ML monitor to save to disk the memory block (Bank 1) where the program was loaded. Please note the following example:

```
A> C128LOAD DIEHARD.C64

Program loaded - from 2000 to 8192 <-- Last byte-address
```

--When the A> prompt reappears, press the <CONTROL> and <ENTER> keys simultaneously. (The <ENTER> key is on the NUMERIC KEYPAD.)

```
<The C128 will now boot Basic 7.0 -- C128 "Native" mode>

READY.
MONITOR (activate the C128 ML monitor & insert CBM DOS disk into drive 8)

S"DIEHARD.C64",8
,2000,8193 <-- Always add +1 to the last byte-address.
```

In effect, we have just moved the file **DIEHARD.C64** from C128 CP/M to a CBM DOS disk (remember to use the bank address of 1 when saving). While this method places an absolute restriction on the file size of what you can save, it means files can be saved to any drive supported by the C128.

Continued next month!

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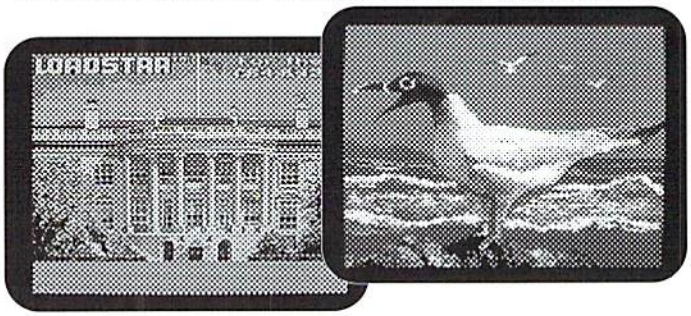

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ATTENTION

128 Users!

L. L. Pankey

Are you bugged by a power-up garbled start-up screen or a "sometimes it ain't working right" syndrome? If so, this may be your lucky day. I have three C128s and the problem happened to two of them. I got lucky and found the bug.

Actually, it was no bug at all, just a design flaw that is easily corrected. Follow these instructions and you may save a trip to your local repairman.

With the power supply disconnected from the wall outlet, unplug all cables from the computer. Find a work place -- kitchen table, desk, or your garage work bench -- and lay down a towel on the surface to avoid scratching the computer or the work place.

Turn the computer over and remove the six (6) Phillips head screws that hold the two halves together. Three screws are recessed, one of which is in the center of the computer. Now don't get nervous, 'cause this ain't no big unsoldering operation.

Turn the computer back over, keyboard up. Unsnap the top half of the case from the bottom by pressing in on the two sides and pulling up. Once loose, lift the top half up from the left and unplug the power light connector from the main circuit board (3 wire plug). No need to unplug the 25 pin keyboard connector or the ground strap on the right. Just fold the top half over to the right and lay it flat on the table.

You now see the sheet metal shield covering the computer circuit board. Look to the top right and locate the power input connector and the power on/off switch. The black plastic rocker on the power switch is the culprit. When the switch is in the 'ON' position, the metal body of the switch interferes with the top edge of the plastic rocker and the switch sometimes does not make good contact internally.

With a sharp utility knife, cut a small ellipse in the top inside edge of the rocker so that it does not touch the switch body. Once this is accomplished, you can temporarily re-assemble the computer, but don't install the six screws. Don't forget to re-connect the power light connector. Now, re-connect the computer with the connectors you removed earlier and turn it on. Try the power on/off switch several times to confirm the bug has disappeared. If so, re-assemble the screws in the bottom of the computer.

If the problem still exists, it may be that the internal contacts of the power switch have become slightly oxidized due to insufficient contact pressure. Now the repair gets a little hairy but nothing you can't handle, right? Disconnect all connectors again, flip the top keyboard cover over and unplug the power light, the keyboard 25 pin connector, and the ground strap on the right side of the circuit board. Turn the bottom half of the computer on its right edge so the power switch is on the towel. With a can of contact or tuner cleaner (purchased at Radio Shack or an electronics store),

generously spray the cleaner into the cracks and crevices of the switch. Try to get the cleaner fluid inside the switch. You may have to remove the sheet metal shield to accomplish getting to the back side of the switch. Operate the switch many times to help clean the internal contacts.

Let the computer sit on

edge for a couple of hours to drain the fluid out of the switch. Better yet, if you have access to air pressure, blow out the fluid as best you can. Try not to get fluid on the other parts of the computer electronics as it is kind of messy. Re-assemble the computer, being very careful to re-connect the keyboard connector properly. Now try powering up again. It may take several cleanings to solve the problem; but if this was the cause of your power-up problems, you have just saved yourself a lot of grief and an expensive trip to your local repairman. I have not had a re-occurrence of this failure in five yours. Happy Eight-bitting!

8-Bit The Low Cost Computing Alternative

by Chuck Welmer

Are 8 Bit computers the lowest cost computing systems available?

That depends on what you can ultimately live with. I started out modestly enough about 6 years ago with a **C64** computer, 5.25" disk drive and a Dot Matrix printer for a total expenditure of approximately $500. You still can't beat that price today for a startup computer system.

Since then, I have purchased a color monitor, 512k RAM Expansion Unit, 3.5" drive and 1200 baud modem. My total expenditure is a bit over $800, still less than any startup computer system today.

The real kicker to the lowest cost computer comes when you decide you must have a hard drive which costs about $500 for a 20Mb drive (a Mac or PC drive would only cost you $200).

Total cost is now up to $1300, or what you could probably purchase a 386sx PC with printer or a Mac Color Classic sans printer.

But do you really even need a hard drive? Probably not. I use **GEOS** almost exclusively and have **geoWrite**, **geoSpell**, **geoCalc**, **geoPaint**, **geoTerm** and **geoFile** plus fonts, desk accessories and my most used files on one 3.5" 800k disk (my mini hard drive). My largest application, **geoCalc**, takes up 47k of disk space. Compare that with **Excel** for the Mac at 1.7Mb for the program and 7.5Mb for support files. (No wonder there are so many compaction programs on the market).

And if you just can't live with an 800k drive, there's always CMD's 1.6Mb or 3.2Mb High Density drives. So the bottom line, folks, is money; 8-bit computing is still the most economical home computing available.

READY.
■

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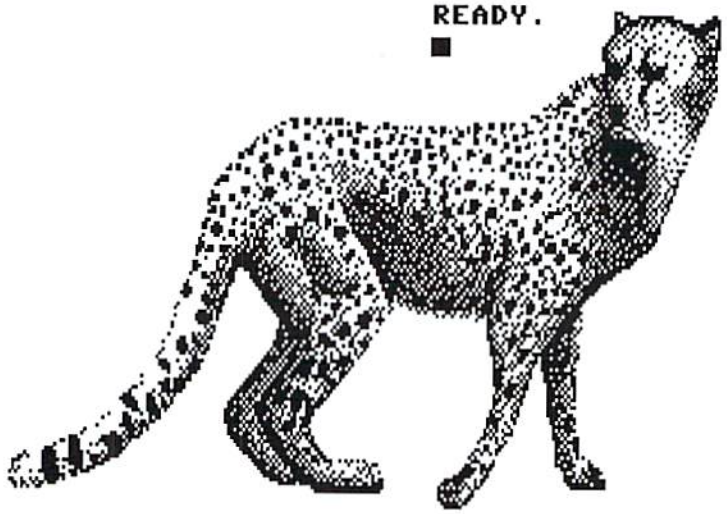
We will draw the lucky winner from those cards. Sorry about this folks!

READY.
■



REVIEW!

Help Master 64

by John E. Hieber & Stephen S. Leven
1985 Master Software

reviewed by Brian L Crosthwaite

So, you're cruisin' along, writing a program and you decide to use WAIT. Or is it spelled WATE? Hmmm, where do you find the information on that command? No problem, just type HELP, hit <RETURN>, and voila! The BASIC keywords appear magically on your screen! Welcome to **Help Master 64**.

WAIT. Ok, now that you know the keyword, type starting with a <SHIFT><2> or quote: "WAIT <RETURN>. The syntax is laid out on the screen. The shorthand abbreviation is given and a brief description of how the command is used. If you misspell the keyword, the HELP screen will automaticly pop up.

The description may not give you enough to get you through this command, especially if you have never used it. But **Help Master 64** is not done helping you yet. There are four sources cited. These are books you probably already have in your library, Commodore 64 User's Guide, both old and new, Commodore 64 Programmer's Reference Guide, and the Hand Book of BASIC for the Commodore 64. The page number is given, so if you still need help you know exactly where to look for this information.

Help Master 64 resides out of the way of BASIC and has no effect on BASIC. It is even out of the way of the **DOS Wedge** and will not interfere with it. It loads up fast and easy. If you have a program in memory that you don't want to reload for any reason, simple steps are given to load **Help Master 64** into memory *after* your program has been entered into memory.

Access is easy. To see information on a specific keyword, simply type a quote followed by the keyword, press <RETURN>, and the information will be displayed in a window at the top half of the screen. From the info window, you are given two or three options depending upon whether or not more information is available. You can press <f1> and restore the screen to how it was previously, press any key to simply exit back to BASIC, or press <f7> to call up additional information.

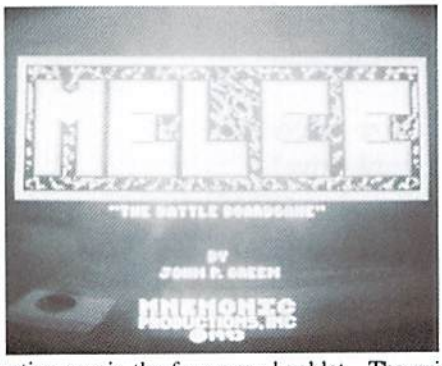
Let's say you looked up GOTO, pressing <f7> takes you to GOSUB, and pressing one last time takes you to RETURN.

If you need to see the BASIC keyword list, all you do is enter HELP.

Help Master 64 also works fine with JiffyDOS installed; but <f1> lists the directory after restoring the screen, and you might find this annoying after the first few times. Pressing @Q will not only turn off JiffyDOS but will also disable **Help Master 64**.

Some command and function descriptions may not be clear to the beginning programmer, but the reference to the manuals is there if you find you need more information.

The instructions are short and sweet and can be read by running **Help Master 64** as an



option or via the four-page booklet. The price is $19.95 plus $2.00 postage for US deliveries. This one gets:

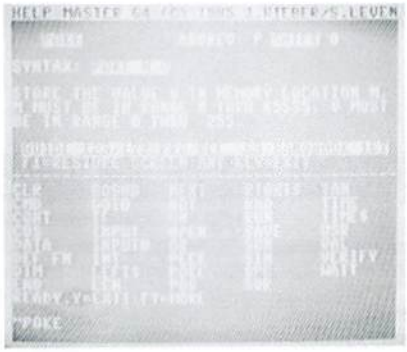
```
* * * * * FANTASTIC!
* * * * GREAT
* * * GOOD
* * POOR
* REALLY BAD
```

Melee
The Battle Board Game

by John P. Green
1993 Mnemonic Productions, Inc.
reviewed by Brian L Crosthwaite

This centuries-old game from the days of olde comes to the **commodore 64** alive with color and animation.

You have a board with 24 boxes (see photo). Each player gets to choose where their game pieces go. They take turns placing pieces on the board until all but two squares are filled. All the pieces are identical: little knights with lances, blue versus red. The basic premise is



easy to learn, while the actual game play takes considerable strategy and planning.

To play, you simply move your piece(s) to an empty square. To remove your opponent's piece from the board, you must move your piece into a position where it will be one of two that surrounds your opponent. To win, you either annihilate your foe or make the last possible move, meaning your opponent is blocked. Easy enough.

You don't capture pieces as you do in more civilized games like chess -- you pulverize them. When you surround your opponent, two game pieces appear to the left of the screen. The capturing color swings or smashes at the opponent, cutting him in two, decapitating him, or -- my favorite -- crushing him into a pool of blood! Actually the animation is rather cut and cartoon-like. However, if you find this barbaric or just don't want to spend the time waiting for the animation to run, you can toggle it off.

If one player captures the other's piece, then that player gets to go again, continuing to play consecutive turns until none of the

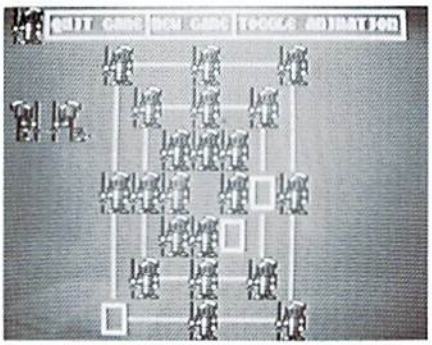
REVIEW!

opponent's pieces can be captured from the board.

If a stalemate is reached and the computer doesn't end the game by pronouncing a winner, you can end the game at any time.

One feature I really like is the game gives you the option to quit to BASIC. My biggest gripe about games is having to turn off my computer to reset.

The graphics are exceptional. While the board is 2 dimensional, John's artistic talent shines. Both the opening screen and the actual game screen are well thought out and executed.



The only thing I don't like is the lack of on-screen square to key ID. In order to place and move pieces onto the squares, you use the keys; but in order to know what key to press, you have to use a screen map given in the manual. This is only a minor detail and should not be a deterrent from getting the game. This is a fun game that is highly addictive. You can play against either a human or the computer.

This challenge of the intellect gets:

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

Due to a major mess-up last month with the *REVIEW!* of the CMD Hard Drive, a.k.a. the HD, some of the more important information was omitted. I feel the *REVIEW!* would not be complete without this information. Here is the addendum to that *REVIEW!*

HD

1994 Creative Micro Designs, Inc.
reviewed by Brian L Crosthwaite

The front panel of the HD allows full access to any one of 254 partitions via the write protect, swap9, and swap8 buttons. At first it may seem a little confusing. You enter the partition change mode by holding down the write protect button until the activity light begins to flash. Then you enter the binary number that represents the partition. Actually, it is quite easy. You start with the write protect button and start counting the ones digit column starting at zero, move to the swap9 for the tens digit column and finally the swap8 for the hundreds column. For instance, let's say you want to enter partition 142. Press the write protect three times, counting "0, 1, 2." Then move over to the swap9 and press it five times, counting "0, 1, 2, 3, 4." And finally, press the swap8 button twice, "0, 1." To exit this mode, hold down the write protect button until the flashing activity light has ceased, leaving the drive in partition 142.

The swap buttons allow you to instantly renumber your drives at the push of a button. If the HD is drive 10 but needs to be accessed as drive 9 for data storage from a data base, simply press swap9 and -- voila -- drive 9 is now drive 10 and the HD is now drive 9.

It's the same for drive 8. If you press swap8, you instantly have default access to the HD. This allows you to run programs that will only allow you to use drive 8, such as the Q-Link software.

Back to that write protect thing... The write protect does just that. And you can turn it on when in GEOS so you don't accidentally wipe out your work area when formatting a disk.

The HD-85 used for this *REVIEW!* has 85 Megs of storage. At only 254 partitions, you can only place 254 disks on the drive. Even though this is a lot, the drive is not limited by this. Within the native mode (not 1541, 71, or 81 mode), the drive can have vast amounts of space for storing loads of programs. The space can be broken up into subpartitions, and those subpartitions can be subpartitioned. Out of a thousand disks, maybe only less than 100 will *only* run from a 1541, 71, or 81 disk. These can be placed into emulating partitions while the remainder of your library can go directly into a native mode partition. The possibilities are unlimited!

This drive also sports a SCSI port. This means you can buy a SCSI drive, plug it into the back, and increase your data storage even more. It also means you can use this drive with a computer other than a **commodore.** One thing to keep in mind is if you plan to use this drive with a **commodore** other than a C64 or C128, the parallel option is nonexistent since it is accessed via the RAMLink.

This is a truly remarkable piece of hardware. I recommend the HD for every **commodore** computer user. The instant access, the mass storage, and the organization this drive will bring you makes it the premier hard drive of the 90s. For more information, see June 94 *REVIEW!*

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

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```

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R. J. Smulkowski
is

Cyberspace Cowboy

More interesting people are coming to Delphi all the time. People are hearing about us and dropping in to see what is going on. A lot of them are staying with us. Rumor has it that Jeff Jones (of ***LOADSTAR*** fame) is about to join us. By the time you read this, he should be a regular in the Commodore SIG on Delphi. Our Friday night conferences continue to be the place for fun and useful information. Recently, Jack VanderWhite (Mr. CEE64 Alive!) mentioned he had just purchased an MPS-1000 printer but was unclear as to the configuration of the DIP switches. I just happened to have my MPS-1000 manual close by; and within minutes, Jack knew more than he ever wanted to about this fine workhorse of a printer. Mine has been going strong for six or seven years with no attention except for a couple of cleanings and lubrications. Recently, it has been put into semi-retirement, serving only as a dedicated label printer. What a luxury it is, not having to mess with changing from labels to formfeed paper and back again.

There are some mighty fascinating texts out there on the Internet just waiting for you to come and get them. Maybe you'd like to know more about the Clinton administration's NIIA (National Information Infrastructure Agenda). Download and read it for yourself instead of relying on hearsay or someone else's interpretation. Concerned about the health care crisis? Download the mess Ross Perot was waving around and draw your own conclusions. NAFTA? It's there on the Internet. Are you interested in William (father of Cyberpunk) Gibson's writings? Have you heard of his Agrippa work? It is a five-page poem, originally released on disk in a limited edition with a price tag in the five hundred dollar neighborhood. The catch was, it was readable only once! Once read, the text would encrypt itself, never to be read again (unless perhaps you had a couple of Crays sitting around just waiting for their chance to decrypt something). Well, the text is out there just waiting for you on the net. Or maybe you would like to peruse the Big Dummy's Guide to the Internet. It is out there too, but at 648 kilobytes some **commodore** users may feel left out of the fun. Not to worry, I have just received permission from the Electronic Frontier Foundation's Online Activist to break this monster file down into a few smaller files which will be easier for a basic **commodore** setup to handle. This will be my very next computer-related project, so it will easily be available in the Commodore SIG on Delphi by the time you read this. But be forewarned: This will print out to well over 300 pages, so dig out a couple of rockin' tapes and shake the spiders out of the headphones before creating your very own hard copy of Big Dummy's Guide.

The Electronic Frontier Foundation was founded in July of 1990. Their mission is to ensure that the principles of the U.S. Constitution and the Bill of Rights are protected as new communications technologies arise. The focus of the EFF's work is on the establishment of Electronic Democracy. Pretty heady stuff, eh? See the sidebar with this article for information on how to contact the EFF.

commodore terminal software just keeps getting better and better. Nick Rossi is at it again. If you thought that **NovaTerm 9.4** would be a tough act to follow, his upcoming release promises to support ZModem protocol when downloading. When Jack Tramiel decided to make the leap from mechanical adding machines to electronic calculators with his fledgling Commodore Business Machines Company, how could he ever have imagined the degree of zeal with which enthusiasts would continue to advance a machine which is now twelve years old?

The more things change, the more they stay the same department:

What are some of the freshest online games for DOS BBSs? How about one called **Rebel Kingdom**... it looks and plays so much like **Empire** from **commodore** BBSs that you will be amazed. And the same is true of the online games **Nuclear War** (a **Nuke 'Em** look-alike) and **Future Runner** (a **Shadow Run** spinoff). I would say this is high compliment indeed to the programmers of the originals. And before I get a lot of letters of correction from observant readers, I know that **Empire** has been around in one form or another for nearly 30 years. The fathers of hackerdom used to play it in the Artificial Intelligence Lab at M.I.T. way back in the 60s. Just like our beloved **commodores**, the true classics endure the test of time.

Is cyberspace going mainstream, or what? *Time* magazine recently ran a feature article on the cyberpunk movement, Billy Idol is doing well with his rock album Cyberpunk, and even syndicated columnist Dave Barry is writing about the Internet. What I want to know is just who left the gate open so we could be followed out here? Do you suppose the early settlers and pioneers felt this way during the westward movement?

```
READY.
■
```

For more information about the Electronic Frontier Foundation...

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Voice: 1(202)347-5400
FAX: 1(202)393-5509

U.S. Mail:
The Electronic Frontier Foundation
1001 G Street NW
Suite 950 E
Washington DC, 20001

Archaic Computer

introduced by Brian L Crosthwaite

The dog-eat-dog world of electronic calculators leaves many injured and even more burning in the ashes. But it's not the end for this fighter. Commodore Business Machines has a loaded gun and it's ready to fire.

In a last ditch effort to save their microprocessor company, MOS Technologies cuts a deal with the wavering office machines company saving both parties. Irving Gould is persuaded by Jack Tramiel to buy the company outright. Great move. MOS Technologies, created by Chuck Peddle after having a falling out with Motorola over developing the 8-bit microprocessor in favor of developing a more expensive 32-bit microprocessor {Chuck wanted the 8-bit} gets a shot in the arm. {Who'd of thought the inevitable 32-bit would, over half a decade latter, go into machines made by the same company that bought MOS.}

The Personal Electronic Transactor is born. A new race was on. Commodore Business Machines pulled out front and fast. With the threat of the Japanese, the VIC20 was born, bringing the 6502 into homes -- with color. The C64 was soon to follow, developed in 9 months from chips planned for the worlds greatest game machine, is put into motion as a home/business computer.

The Golden age of computers saw many machines come and many machines go. The Timex Sinclair 1000, the TI99/4A, The Radio Shack Color Computer II, the Atari 800XL, the Adam, the Franklin ACE 1000, the IBM PC jr, the Apple II, and many others. But the C64 survived. It grew. While its creator didn't improve it passed fixing a few bugs and anomalies, it's operating system has many faces, **GEOS**, JiffyDOS, Final Cartridge and others. This is the legacy of the survivor.

The Computer Store Of The Past

Project F-19 Stealth Fighter

Microprose
review by NOEL PLANK

INTRODUCTION:

Microprose Software, Inc., when developing a new program, considered several ideas. One was to simulate the F-16 Electric Jet, but it was too similar to the famous F-15 Strike Eagle. Another idea was to develop the ATF (Advanced Tactical Fighter), but because the Air Force hadn't selected a design, they felt it would be better to wait a few years to have a real plane to simulate. So the Lockheed F-19 Stealth Fighter simulator was selected using state-of-the-art in 3-D graphics technology with sufficient speed for 8-bit **commodore 64** computer.

LEVEL OF CONFLICT:

Whether you fly in an everyday cold war situation or ask for a mission in Libya ruled by Col. Mu'ammar al-Qadhaffi and his declared "Line of Death" or Iran's Shi'ite radicalism in the Persian Gulf, you will have over 30 sophisticated controls at your disposal. These include dual tracking modes, jammers, laser guided bombs, cluster weapons, fuel-air explosives, cannons, or peaceful reconnaissance cameras and a fully functional INS (inertial navigation system).

PRE-FLIGHT BRIEFING:

To choose your own mission, you must correctly identify a variety of Russian-built and American F-4 Phantoms and F-5 Tigers flown by the Iran Air Force or you will be assigned to a training mission.

The training simulator assignment allows you to experiment with new tactics as enemy hits do not damage your aircraft.

OPPONENT QUALITY:

You can select how well your enemy opponent handles your reaction and tactical skills from three different levels.

FLIGHT PERFORMANCE:

Selections can be made for a no crashes option intended for beginners and easy landings or realistic landings depending on your aeronautical skills.

MISSION BRIEFINGS:

After selecting all your options as, you can either reject all choices and restart, or retain the current pilot and region but restart other section options.

You are instructed in the Intelligence Briefing on the enemies you will face, such as Hawk Sam Batteries which are Iran's longest ranged surface-to-air missiles supplied from shipments of spare parts and weapons by Colonel Oliver North, USMC.

ARMAMENTS:

A default armament for each weapon bay is suggested, but new weapons can be changed using the keyboard or a highlighted pointer and the joystick.

EQUIPMENT:

Project Stealth Fighter comes with a detailed 120-page technical operations manual, a two-sided disk (main program and mission assignments), a keyboard overlay (C64 only), four detailed maps including Libya, the Persian Gulf, Central Europe (Germany, Poland, Czechoslovakia) and the North Cape (Norway, Finland, U.S.S.R.). An additional technical supplement is included that provides loading instructions for the specific computer used as well as cockpit display layouts and control functions.

SHORTCOMINGS:

Even though this program states it operates on C64 and C128 computers, it will only run in the C64 mode after booting up. This means it does not take advantage of the extra memory or increased disk speed of the C128. Secondly, the keyboard overlay is really designed to fit a C64 keyboard and just lies loosely when placed upon a C128.

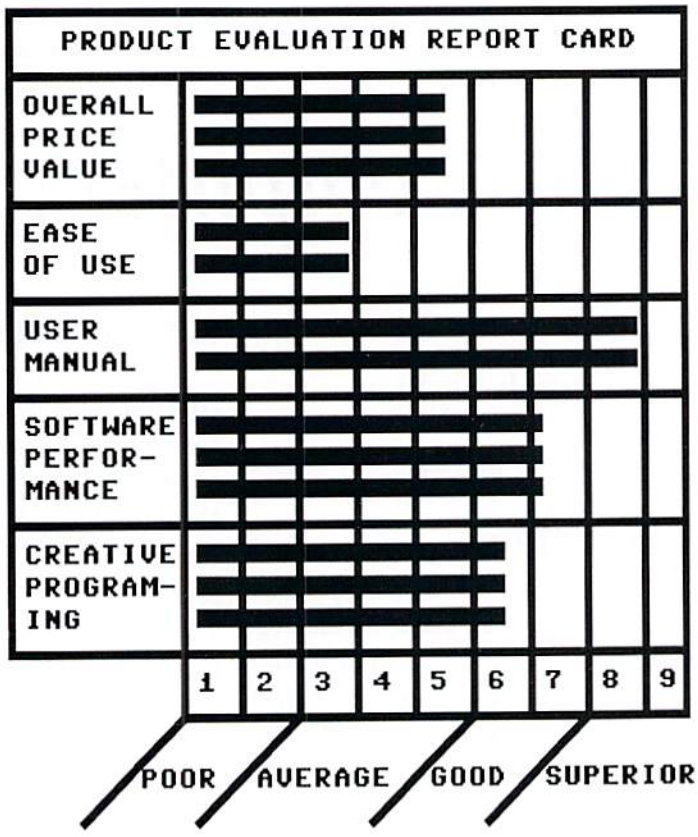
The operation manual states that you cannot have any fastload cartridge or RAM expansion installed because of all the programming space taken, but the program really seems to be more concerned with copy protection schemes. More detail in land and sea graphics out the cockpit window would have made the program more interesting and realistic.

CONCLUSION:

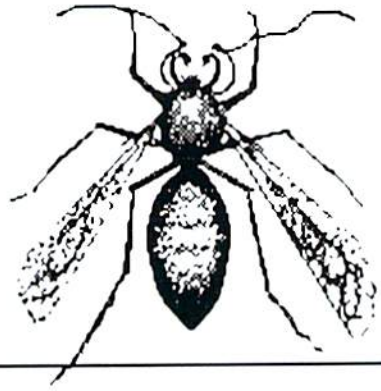
If you only remotely liked the simulation of F-15 Strike Eagle, then **Project Stealth Fighter** is a must for you. Be prepared to spend many hours behind the training simulator before attempting a landing on an aircraft carrier in the Straits of Hormuz or blowing up a SAM missile site in Tripoli.

AVAILABILITY:

For the Commodore 64/128:
Suggested Retail $44.95
Available from TENEX Computer Express
sale price $19.95 {plus shipping}
TENEX Computer Express
56800 Magnetic Drive
Mishawaka, IN 46545



READY.
■

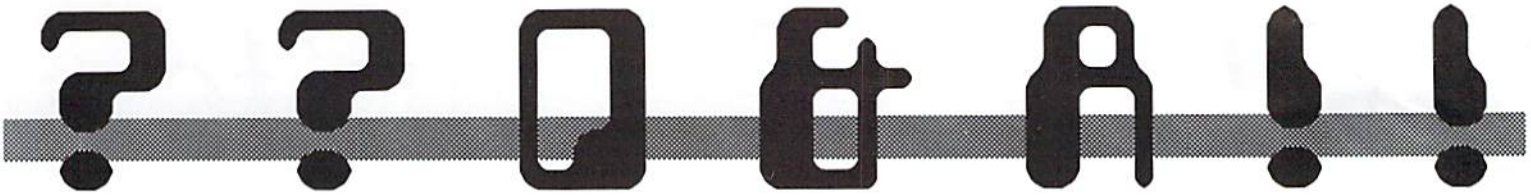


ATTENTION!
Commodore 128D Owners...

- ✔ 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:
L. L. Pankey
1712 Santa Margarita Drive
Fallbrook, CA 92028-1641

Enclose a stamped self-addressed envelope.



Q: Per appendix F of the **Fleet Systems 4** manual, I tried to operate the conversion program. When I commanded the machine to "run", I got a screen reading:

Break
PC SR AC XR YR SP
; 108 2A B1 FC 00 00 F6

Any guidance, recommendations, assistance, etc., you can provide will be appreciated. Rodman H. Williams of Albany, Georgia. (5/2/94)

A: This program can only be run from 64 mode.

Q: I am in need of Video Titling programs, especially those that will do graphics or better still, can import graphics from other programs.

I currently use **Home Video Producer** and **Video Title Shop**. I also have **Video Wizard** but don't like it.

My husband has a Public Access talk show that airs locally every week on public access TV. I do all the graphics and titling using my C64, even though I have use of my daughter's 386 IBM compatible.

Do you know of any additional programs -- either for the C64 or for the IBM (my daughter can't get the hang of the C64!).

I love my C64 enough that I've picked up two additional setups complete with drives and printers, just in case something goes wrong with the one I currently use. Laura M. Gagnon of Ansonia, Connecticut.

A: You've named the only ones we've ever heard of, but that doesn't mean there aren't any others around. Perhaps some of our dieHard readers know of some. Rio Computers carries a GENLOC for the C64. COMGEN allows video titling via the C64. However, we were unable to contact them before our deadline regarding importing graphics from other programs or producing graphics. Write to: 572 Tam O'Shanter, Las Vegas, NV, 89109, for more information.

Q: I recently received a **commodore** SFD 1001 disk drive (5.25") with no manual or cables. The connection on the back is not the standard 6-pin serial port on other Commodore disk drives, and there is only one connector, so I assume there can be no daisy chaining. Can I use it with my C64? Will the same BASIC 2.0 commands that I use with my 1541 and 1581 drives work with it? Where can I find cables and a manual? What else can you tell me about it? If I can't use it, who would be interested in this kind of a drive? George Gunn of Redding, California.

A: This drive can be accessed via the normal DOS commands you now use. This drive will store a whole Meg (megabyte) of information. The connection on the 1001 is a parallel IEEE-488. CMD happens to have IEEE Flash! 64 for the C64 for about $90.00. See *Miscellaneous Hardware* in their ad on page 3.

Q: I am now learning to use my C64, 1702 video-color monitor, MPS803 printer, and 1541 disk drive. What do you recommend for RAM expansion for my 64, fast load for my disk drive, letter quality for my printer, and a modem of at least 24 baud rate? I sometimes send a message to my 1541 disk drive with a disk in the drive (right or wrong, I am not sure), and the red light stays on, not blinking. How can I get the light to go off without turning off the equipment (a no-no)?

Can I obtain past issues of *dieHard* and the spinner disks, and at what cost? Harold Younger of Nora Springs, Iowa.

A: My recommendations are dependent upon your needs.

A Super Clone 512K REU from Software Support International, 2700 NE Andresen Rd., #A-10, Vancouver, WA, 98661, is fine for most general uses such as word processing, flipping graphics screens, etc. For a large database and/or **GEOS**, CMD's RAMLink (1 or 2 Megs) might be a better choice. This device is expandible to 16 Megs and can grow with your needs. See ad. page 3.

For fastload, I can only say one thing -- **JiffyDOS** (also available from CMD). This gives you many options like compatibility. You can always use utility cartridges with it and it doesn't tie up your cartridge port. And it's fast!

For letter quality printing I say, get what you can afford. There is no such a thing as a printer too good for your **commodore**. The Panosonic printers are excellent, quite and relatively inexpensive. Get a 9 pin if you want to use some of the older programs like **Print Shop**. Otherwise a 24 pin will give you the best results. If you can find a **commodore MPS 1250** -- get it. It Can emulate an IBM 5152 or Epson FX-80 in parallel mode or Epson FX-80 or MPS803 in serial mode. It is the best printer Commodore ever made. I get excellent results from the HP 500, however for just starting out you may not want to have to customize all your print drivers. This printer also can emulate an Epson, but the cartridge to do it is extra. Non-**commodore** printers will need an interface. Any of the Super Graphics (Gold, Sr., Jr.) will get you a good set up at reasonable cost.

For a modem, the Supra 2400 is a nice choice; see the April'94 *REVIEW!* for more information. CMD carries the BOCA 2400 baud and the BOCA 14.4k baud. They also have a piece of hardware called the SwiftLink that allows modems with speeds above 2400 bauds to be used. The SwiftLink also comes with various term software to give you access to the world of cyberspace.

These sources are by no means the only places to get equipment for your **commodore**. Browse through the advertisements in computer magazines like *Commodore World*, *dieHard* and *The LOADSTAR Letter*. The yellow pages is also a good place to look. One of the best places to buy printers is at your local Office Depot or other office superstore. Shop around. Ask specific question. Let the potential seller know what your needs are.

The Drives blinking light can be ceased in many ways. The easiest way, short of turning it off is to enter the following from direct mode on a blank line:

```
OPEN15,8,15,"I":CLOSE15
```

If you are curious as to what the error is enter the following as a program and RUN it:

```
10 OPEN15,8,15:INPUTA$,B$,C,D
   :PRINTA$,B$,C,D:CLOSE15
```

A$ is the error number, B$ is the error, and C & D are the track and sector where the error occurred. See your drives manual for a complete list of errors.

For back issue information, see page 26.

```
READY.
■
```

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.

Block Allocate

by Alan W. Gardner

To help clear up a few things about the Block-Allocate command, here is an example.

```
 10 OPEN15,8,15     :REM
ERROR/COMM
 20 OPEN2,8,2,"#"   :REM
    DATA BUFFER
 30 :
 40 FOR X = 1 to 10
    :REM  WRITE TO BUFF
 50 PRINT#2, "THIS IS
    DATA"
 60 NEXT X
 70 :
 80 TR=10 : SE=15
    :REM TRACK/SECTOR
 90 :
100 PRINT#15,"B-A:"0;TR;SE
110 INPUT#15,ER,ER$,NT,NS
120 :
130 IF ER=65 THEN
    TR=NT:SE=NS:GOTO 100
140 :
150 PRINT"We can put the
data at:"
160 PRINT"TRACK  # :";TR
170 PRINT"SECTOR # :";SE
180 :
190 CLOSE2:CLOSE15
200 END
```

First of all, this program does *not* write anything to the disk. All it does is put data into the buffer and *find* a place to put it. To actually write data to the disk, we use the USER - TWO command. The U2 command tells the disk drive to put all that stuff in the buffer onto the disk starting at TRACK xx, SECTOR yy.

If we modify our above program, we can get our data written to the disk.

```
 10 OPEN15,8,15
 20 OPEN2,8,2,"#"
 30 :
 40 FOR X = 1 TO 10
 50 PRINT#2,"THIS IS DATA"
 60 NEXT X
 70 :
 80 TR=10 : SE=15
 90 :
100 PRINT#15,"B-A:"0;TR;SE
110 INPUT#15,ER,ER$,NT,NS
120 :
130 IF ER=65 THEN
    TR=NT:SE=NS:GOTO100
140 :
150 PRINT"WE CAN PUT THE
    DATA AT:"
160 PRINT"TRACK   #";TR
170 PRINT"SECTOR  #";SE
180 :
190 REM   SO LET'S WRITE
    THE DATA
200 PRINT#15,"U2:"2;0
    ;TR;SE
210 :
220 REM THIS WRITES THE
    DATA IN BUFFER
230 REM NUMBER 2, ONTO
    DRIVE 0,
240 REM AT TRACK 'TR' AND
250 REM SECTOR 'SE'.
260 :
270 CLOSE2:CLOSE15
280 END
```

Well, now we know how to get data written to the disk by way of the U2 command. One thing you should note: Whatever buffer we put our data into (via PRINT#2 in line 50), that is the buffer we want to tell the U2 command to get the data from. Hence, there is a '2' in the line with the U2 command.

The USER-1 Command

Now you want to know how to get data off the disk. This is done with the U1 command. The process is almost exactly opposite of putting data onto the disk.

As usual, we have to OPEN two channels -- one to send commands and one to RECEIVE the data. We can use the same OPEN statements as before.

After we have our files open, all we have to do is decide where we are going to get our data from. Now, this can be any legal track and sector. Check the first table in this article for more information on tracks and sectors. Most people will develop their own schemes for saving data on the disk, and the READing process will be according to this layout.

After we have decided where to get the data from, we must tell the computer to go to the disk drive and get it. This is done with the U1 command. The syntax of the U1 command is the same as that of the U2 command. We must tell the U1 command what channel to PUT the data into, what drive to access, and what track and sector to get the data from.

After the U1 command is executed, data from that particular block and sector will be contained in the buffer specified. All you have to do then is GET the data from that buffer. This is accomplished with the GET# command.

A short example of this is shown below. It is assumed the data we want is on track 10 and sector 15 since this is where we tried to put our data in the above examples.

```
 10 OPEN15,8,15
 20 OPEN2,8,2,"#"
 30 :
 40 TR=10 : SE=15
 50 :
 60 PRINT#15,"U1:"2;0
    ;TR;SE
 70 :
 80 FOR X = 1 TO 255
 90 GET#2,A$
100 PRINT A$;
110 NEXT X
120 :
130 CLOSE2:CLOSE15
140 END
```

This example reads in the data on track 10, sector 15, then prints the data to the screen. You could, of course, save the data in an array or however you would like to store it.

As added examples, there are two programs included on this month's *Spinner* disk. One program allows you to print up to 80 characters to track 10, sector 15. Please do not run this program on a ***Spinner*** disk unless you are willing to lose its contents. This program may write over other data on the disk that is needed. Try the program on a new, formatted disk.

The second program reads track 10, sector 15, and asks you for a password. The program then compares the user types with what appears on track 10, sector 15. Using this technique, you can put in some protection for any of your programs.

The program to write on the disk is named **WRITE** and the program to check the password is called **READ**.

Go out and have fun.

```
READY.
```

R. Scott Deeter

Basic BASIC

This is a series of columns on the syntax and techniques of BASIC programming.

This month we'll look the TI$ or TIME$ command. If it isn't already, turn your computer on and type the following command: PRINT TI$.

Press <RETURN> when finished, and you should see a similar display but probably with a different number displayed.

```
PRINT TI$
000020
READY.
```

A Matter Of TIME$ing

Your **commodore** has an internal clock that is activated every time you turn it on. To reference this variable from a BASIC program, use the BASIC keyword TI$ which is an abbreviation for TIME$. When the computer is turned on, this 6-digit variable is automatically set to "000000". The TI$ 6-digit display, 000000, is actually HHMMSS or hours, minutes, and seconds. This field begins to increment itself every second and the range of this 6-digit field is from "000000" to '235959' before it rolls over and begins at "000000" again. This range represents a 24 hour period and is displayed in a 24 hour time standard instead of the usual 12 hour am/pm format. Move your cursor up to the PRINT command and press <RETURN> again to see what TI$ is displaying now.

The TIME$s, they are a changin'

In BASIC programs, the TI$ field does not have to be defined, but it may be initialized or set to whatever value you want within the defined range. This internal clock can be used for many purposes -- as a stopwatch, timing within games, time display, etc. Some computer functions, such as accessing a peripheral (disk drive or printer), will interrupt and slow down this internal clock, which affects the clock's accuracy. So, be aware.

It is easy to initialize the TI$ variable from within a BASIC program. Simply use the following syntax attached to a BASIC line number.

```
TI$ = "000000"
```

Remember that a variable name with a $ is considered a *string variable* and has to be enclosed within quotes when defined. Any value from "000000" to "235959" may be used to initialize the variable.

Watching Time Pass By

So we can see TI$ in action, type in the following program. When finished, RUN it. Pressing the RUN/STOP key will stop the program.

```
10 PRINT"[shiftCLR/HOME]"
20 TI$="000000"
30 PRINT"[HOME]"TI$
   :GOTO 30
```

As the program executes, you can watch the TI$ value being incremented, very similar to a stopwatch where you begin at 0 and observe elapsed time. For fun, retype a portion of Line 30, replacing HOME with shiftCLR/HOME and reRUN the program. You'll notice the display now flutters.

```
30 PRINT"[shiftCLR/HOME]
   "TI$:GOTO 30
```

Now let's create a stopwatch that can stop and start with a keystroke. Type in the following program and RUN it. Pressing RUN/STOP will stop the program.

```
10 TI$="000000":PRINT
   "[shiftCLR/HOME]"
20 PRINT"[HOME][CTRL9]
   [5 crsr down]
   [5 crsr right]
   DIEHARD'S COMPUTER
   STOPWATCH":
30 PRINT"[1 down]
   [14 crsr right]
   TIME:"TI$
40 GET K$:IF K$=""THEN
   GOTO 20
50 PRINT"[2 down]TIME
   STOPPED AT:"VAL(TI$)"
60 PRINT"[1 down]WHICH IS
   ACTUALLY:"TI" JIFFIES"
70 PRINT"[1 down]DIVIDED
   BY 60 IS:"TI/60"
   SECONDS"
80 PRINT"[4 down]
   [5 crsr right]* PRESS
   ANY KEY TO CONTINUE *"
90 GET K$:IF K$=""THEN
   GOTO 90
100 GOTO 10
```

Now for the program analysis. Line 10 initializes the variable TI$ and clears the screen. Line 20 displays two literals and the contents of TI$ as it increments itself. Line 30 waits for a keystroke and loops back to Line 20 until it gets one. Line 40 and beyond executes only when Line 30 gets a keystoke, K$ is no longer equal to "" (null), and the IF becomes false because the null condition is not true. Lines 40-60 print literals and display the contents of TI$ and TI until there is another keystroke. Line 70 displays a literal. Line 80 is the same as Line 30. At this point, when there is a keystroke, Line 90 executes and the program begins again.

TI Revealed!

In the previous program, Line 40 presents a problem, or a 'bug'. Any VALue of TI$ that is greater than "000059" and in the format of seconds needs to be converted. When TI$ is "000100", that is one minute or 60 seconds. Therefore, the VALue of TI$ "000100" displays as 100 seconds. Yes, 100 can be read as one minute, but how do we see actual seconds? TI, like TI$, is also defined in the operating system. TI is a numeric variable that gets its value from the internal *jiffy clock*. The jiffy clock measures time in sixtieths of a second, so a jiffy is 1/60 of a second. For one minute, the value of TI is 3619 jiffies. Divide TI by 60, the number of jiffies in one second, to get the number of seconds.

If you are interested, try to figure out how to code the TI$ display as a 12 hour am/pm clock in "HH:MM:SS" or "00:00:00" format. Remember the RIGHT$, LEFT$ and MID$ commands? The HH portion must be converted, too. Be bold and explore. Until next time, "Be seeing you."

```
READY.
■
```

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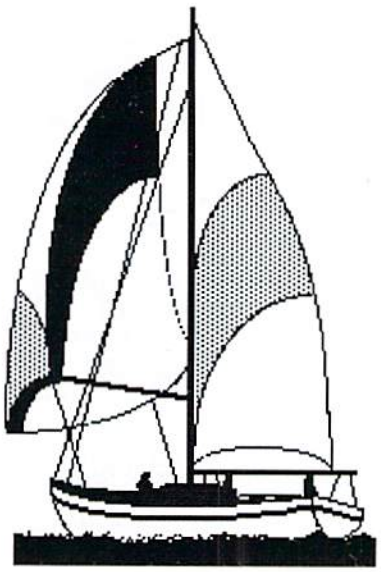
Rarity

The graphics in this month's issue, with exception of those found in *View From The Underground*, are from *LOADSTAR*'s *GeoPowerTools*. This disk is packed with **GEOS** productivity, games, clip art, and fonts. Stay tuned for an up and coming *REVIEW!* of this powerful set of tools. *GeoPowerTools* is available from Softdisk, P.O.Box 30008, Shreveport, LA, 71130 for $19.95, plus $4.50 for 2nd day delivery.

```
READY.
```



PRG

dieHard Label Printer

by James T. Jones

This program will allow you to print two of the most common sizes of adhesive labels: (1) 24x88 mm or (2) 37x102 mm. Five or eight lines can be printed on each label, respectively. Each line can have a maximum of 27 or 33 characters, respectively.

The program may be modified to print labels accomodating a larger number of characters per line by changing the parameter LE in the program. The parameter NU determines whether the numbers 0 through 9 (or their SHIFTed equivalents) can (NU=1) or cannot (NU=0) be entered. The parameter AL determines whether the lower/upper case letters of the alphabet or other characters can (AL=1) or cannot (AL=0) be entered.

The maximum number of lines per label can be adjusted by decreasing or increasing the number of branches to the subroutines.

```
1 REM COPYRIGHT 1994  LYNNCARTHY
   INDUSTRIES,INC.  ALL RIGHTS
   RESERVED:REM 172
8 REM PROGRAM TO PRINT 24X88 MM
   (5 LINES):REM 2
9 REM OR 37X102 MM (8 LINES)
   LABELS[14 space]BY JAMES T.
   JONES:REM 160
10 CS$=CHR$(147):POKE 53280,6
   :POKE 53281,6:DV=PEEK(186):IF
   DV<8 THEN DV=8:REM 95
20 SP$=CHR$(32):CD$=CHR$(17)
   :CR$=CHR$(13):REM 183
30 PRINT CS$CHR$(5)CHR$(14)CHR$(8)
   :GOSUB340 :GOSUB400:REM 249
40 REM PRINTER (DEVICE 4) AND DISK
   DRIVE CHECK:REM 103
50 PRINT CS$CD$"[shift T]HIS PROGRAM
   IS FOR:"CD$:REM 31
55 PRINT SP$SP$"1. 24X88 MM
   (5 LINES)"CD$:REM 39
60 PRINT SP$SP$"2. 37X102 MM
   (8 LINES)"CD$:REM 41
65 PRINT"LABELS.[2 space] [shift C]
   HOOSE 1 OR 2."CD$:REM 104
70 GET A$:IF A$="" THEN 70:REM 112
80 IF A$="1" THEN L$="1"
   :GOTO 110:REM 191
90 IF A$="2" THEN L$="2"
   :GOTO 110:REM 166
100 GOTO 70:REM 217
110 OPEN1,4,7:PRINT CD$"[shift B]E
   SURE TOP EDGE OF LABEL IS
   ALIGNED":REM 221
120 PRINT "UNDER PRINT HEAD, THEN
   PRESS <[shift S][shift P]
   [shift A][shift C]
   [shift E]>."CD$:REM 141
130 GET A$:IF A$<>CHR$(32)
   THEN130:REM 200
140 ON VAL(L$) GOTO 150,180:REM 34
150 NC=27:GOSUB 260:LE=NC:AL=1
   :NU=1:LN=1:REM 145
155 GOSUB 320:LN=2:GOSUB 320
   :LN=3:GOSUB320:REM 43
160 LN=4:GOSUB 320:LN=5
   :GOSUB 320:REM 117
170 GOTO 200:REM 101
180 NC=33:GOSUB 260:LE=NC:AL=1
   :NU=1:LN=1:REM 78
185 GOSUB 320:LN=2:GOSUB 320
   :LN=3:GOSUB320:REM 196
190 LN=4:GOSUB 320:LN=5
   :GOSUB 320:LN=6:REM 69
195 GOSUB 320:LN=7:GOSUB 320
   :LN=8:GOSUB 320:REM 71
200 PRINT CD$"[shift P]RESS <
   [shift R][shift E][shift T]
   [shift U][shift R][shift N]> TO
   PRINT ANOTHER LABEL OR":REM 143
210 PRINT "<[shift S][shift P]
   [shift A][shift C][shift E]> TO
   EXIT TO [shift B][shift A][shift S]
   [shift I][shift C].":REM 185
220 GET A$:IF A$="" THEN 220:REM 44
230 IF A$=CR$ THEN PRINT#1:CLOSE 1
   :GOTO 50:REM 160
240 IF A$=SP$ THEN PRINT#1
   :CLOSE 1:END:REM 223
250 GOTO 220:REM 191
```

Listing continues on page 29.

BACK ISSUES!!!!

dieHard

the Flyer for commodore 8bitters

#1* May '92 *Hardcore* **$3.50**
This is *dieHard*'s premier issue printed out of Brian L Crosthwaite's basement on an MPS 1270 inkjet printer! Highlights: SAVE@ bug, Lots of Pokes and Peeks, Program, and the editorial concept behind *dieHard*.

#2* Jun '92 *Writers, Programmers, Countrymen* **$3.50**
Highlights: word processing tips, GEOS tips, review of **Visible Solar System**, Programs, and **Pokes and Peeks**.

#3* Jul/Aug '92 *Oops!* **$4.50**
Highlights: review of The Final Cartridge III, review of **Turtle Graphics II**, **Puter Mirth**, **PAPSAW**, and Programs.

#4* Oct '92 *Pumpkin* **$3.50**
Highlights: review of *LOADSTAR*, **PAPSAW**, review of **Pole Position**, **Q&As**, and Programs.

#5* Nov/Dec '92 *geoIssue* **$3.50**
Highlights: **Commodore Trivia**, **geoTips**, **geoTutorials**, review of **GateWay**, review of **DESKTOP 1.5**, **Q&A**, and the DOS wedge.

#6* Jan '93 *History in 3001* **$2.95**
Highlights: datassette backup, Programs, User Groups, **PAPSAW**, review of Hearsay 1000, **Q&A**, and **Commodore Trivia**.

#7* Feb '93 *Computer Cipher* **$2.95**
Highlights: **geoTips**, review of **The Duel: Test Drive II**, review of **Super Expander 64**, **Q&A**, Programs, and **PAPSAW**.

#8* Mar '93 *Script* **$2.95**
Highlights: review of IconTroller, **geoTips**, **PAPSAW**, review of **Top 20 Solid Gold**, **Q&A**, and Programs.

#9* Apr '93 *The Last Flyer* **$2.95**
Highlights: review of ***Mojo Mag***, **geoTips**, **PAPSAW**, review of **Kickman**, **Q&A**, and Programs.

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

#10 May '93 *The Adventures of Laser Mag* **$2.95**
This is the first laser printed issue printed on magazine paper. Highlights: **geoTips**, review of *Commodore FORMAT*, **Basic BASIC**, **PAPSAW**, review of the Commodore 1581 disk drive, **Q&A**.

#11Jun/Jul '93 *The Connection!* **$2.95**
Highlights: review of **The Simpsons Arcade Game**, **geoTips**, **Basic BASIC**, **PAPSAW**, review of **Clowns**, and **Q&A**.

#12 Aug '93 *Special PD Issue* **$2.95**
Highlights: **Tips**, review of **Gary Label Maker V4**, review of **Shoot 'Em Up Construction Kit**, **Q&A**, and Programs.

#13 Sep '93 *Plug In!* **$2.95**
Highlights: Qlink news, **Basic BASIC**, hooking up modems, review of **JiffyDOS**, **geoTips**, **Cyberspace Cowboy**, review of **Partner 64**, **Q&A**, and Programs.

#14 Oct '93 *The Horror Issue* **$2.95**
Highlights: **MIDI**, review of **KeyDOS**, review of **Wings of Circe**, **Basic BASIC**, **Cyberspace Cowboy**, review of **Partner 128**, **Q&A**, and Programs.

#15 Nov '93 *Gobble, Gobble!* **$2.95**
Highlights: **CAD for the C64**, **Basic BASIC**, **MIDI**, **Cyberspace Cowboy**, and news.

#16 Dec '93 *Merry Christmas!!* **$2.95**
Highlights: **A Computerist's Christmas**, **REVIEW!**, A Christmas Card in **PRG**, **Telecommunications -- Your Commodore And You**, **of pink novels, software turntables and forgotten logitheques**.

#17 Jan/Feb '94 *Killer GEOS Issue!* **$3.95**
Highlights: **INPUT;READER$**, **Rarities**, **geoTips**, **GEOS Meets Laser**, **Putting the Impossible on Paper**, **Trader's, Corner**, **Archaic Computer**.

#18 Mar '94 *Control Program for Microprocessors!* **$3.95**
Highlights: **INPUT;READER$**, **Rarities**, **CP/M**, **Cyberspace Cowboy**, **Ms. Knombers**, **Trader's Corner**, **Archaic Computer**, **PRG**.

#19 Apr '94 *Special Amigaless Issue!!!* **$3.95**
Highlights: **Have You Seen LOADSTAR Lately?!?**, **Rarities**, **Basic BASIC**, **Cyberspace Cowboy**, **Q&A**, **Trader's Corner**, **Archaic Computer**, **PRG**.

#20 Jun '94 *Hey! This Is Our Two Year Anniversary Issue!!!!* **$3.95**
Highlights: **INPUT;READER$**, **Rarities**, *LOADSTAR* Turns Ten!, **Cyberspace Cowboy**, Jack Blewitt sets Ms. Knombers back on track!, **Trader's Corner**, **Archaic Computer**.

Please add $0.50 to all orders to Canada and Mexico and add $3.00 to all orders to other foreign countries. Make check or money order payable to *dieHard*.

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Trader's Corner

Got something to trade? Need something? Try here. Maybe one of our readers has just what you're looking for. Or perhaps they want what you have. Trader's Corner is free to subscribers looking to trade or buy only. TCs will be listed for two issues. Classified ads are available for $0.25 per word. Addresses of TC participants are provided for your convenience in responding directly to them. All disks must be originals. Any backup copies may be traded, provided the original accompanies them.

Wanted: Transactor Magazines, Commander Magazines. Cartridges for Plus/4, C16, VIC20. CBM 4040. SuperPET system disks. #000000, BLC, 816 W. Bannock Street, Suite 502, Boise, ID, 83702-5850.

Wanted: Cookbook database with print capabilities. #C002686, William Evans, RR1 Box 524, Gower, MO, 64454.

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. #C003095, Harold Lawson, 30 Walter Dr., Woodbridge, NJ, 07095.

Wanted: Also looking for good genealogy program for C64 (see WEvans request 3/94 issue). Prefer one that will do both ancestry and descendents w/o having to re-enter the same data. #C005522, Mrs. RH Brown Sr, 27399 Tag-A-Long Rd., Lacombe, LA, 70445.

Wanted: MiMi II: Mimi Goes To Town, by Logidisque of Canada. #C006836, Bill Alexander, 1211 Allison Dr., Rockville, MD, 20851-2104.

Wanted: Commodore software for children, especially educational, for use with home schooling. Also Commodore compatible printer. #C006365, Genia Bathe, 7506 Ball Camp Pike, Knoxville, TN, 37931.

Wanted: Compute's Music System for the C64 & C128 by Craig Chamberlain (book & disk combination). #C006551, James D. Manssen, RR1 Box 87, Danforth, IL, 60930.

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, Commodore Microcomputer magazine with article about constructing lighpen for use with game port. This was a hardware construction article w/required software program to read x,y position, probably published about 1987. #C006833, Raymond D. Musick, 8213 NW 6th St., Oklahoma City, OK, 73127-4801.

Wanted: "Font Monster" by Joe Buckley. #C006417, Irv Cobb, 909 Main St., Union Grove, WI, 53182.

Wanted: A working 32K Datel Smart Cart (docs not required), or the address of someone who can repair mine. Also, Side 2 of Cinemaware's "3 Stooges." #C001540, Charles Brown, 3018 Monroe, Bellwood, IL, 60104-2240.

To Trade: Brown Bag integrated word processor and database for CPM. #C000106, Donald H. Graham, 417 Phirne Rd., Glen Burnie, MD, 21061-4648.

Wanted: Commodore 1702 monitor service/repair manual, Commodore DPS 1101 daisy wheel printer user's manual for same for JUKI 6100. #C006658 C.C. Adams, 15 Arcade Circle, Las Vegas, NV, 89110.

Wanted: Documentation for Super Graphix Sr by Xetec, Mach 128 by Access, and Word Write 128 by Timeworks. #C004389, Leo Scannell, 3346 Elderwood, Holland, MI, 49424-1121.

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)? #C001110, Fred Dooley, 1179 Lindenborough Ct., Miamisburg, OH, 45342-3449.

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. #C005997, Arnold Walter, 56 E. Main St. #28, Gowanda, NY, 14070-1244.

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. #C005997, Arnold Walter, 56 E. Main St. #28, Gowanda, NY, 14070-1244.

Wanted: CPM systems disk and manual for 1581 disk drive. #C008559, William Espenschied, 753 Highland St., Longwood, FL, 32750.

Wanted: Instructions/documentation for Final Cartridge III. #C000106, Donald H. Graham, 417 Phirne Rd., Glen Burnie, MD, 21061-4648.

Wanted: User manual for Timeworks Word Writer 128. #C009268, Jeff Tippett, 20300 Harvard Way, Riverside, CA, 92507.

Wanted: Program originally sold by Commodore to work with their Easy Script word processor program. The program was called Easy Spell and is a spell-checker which links to Easy Script. Documentation and disk would be appreciated. SX-64 system. #C009061, Walter Blount, Rt 2 Box 131A, Deming, NM, 88030-9695.

Wanted: Information on how to get a replacement for my 1541 Backup program or any other good backup program. #C008832, Keith L. Naegle, 11410 Stallion Lane, Holly, MI, 48442.

Wanted: Utilities Unlimited Supercard+ that will work with a 1541 II or 1571 drive. #C006656, Rodger D. Jarvis, 907 Airview Dr., Jefferson City, MO, 65109-0603.

Wanted: A Bowling Secretary program for C64 to record all info. #C007275, Robert W. DeJonge, 241 W Central Ave., Zeeland, MI, 49464.

To Trade: I have a VIC-20 in good condition with a working power supply which I will trade for back issues of LOADSTAR for the C64 only. #C006529, Don R. Craig, 1494 Texas Dr., Xenia, OH, 45385.

Wanted: Paperclip III program, including manual and documentation. Am willing to pay reasonable price for sound, workable program. #C006853, M.E. Knowles, 707 Windsor Ave., Lawrenceville, VA, 33868.

To Trade: VIC-20, 16K expander, cassette unit, 1541 drive, modem, joystick, and game cartridges for a letter-quality printer. #C007283, Fred Norris, 5525 Laureldale Rd., Dayton, OH, 43429-2023.

Wanted: The Write Stuff program and manual plus Tax Return 1993 program, if any, featuring print forms. #C006936, Salvador Ramos, 2128 SW 138th Ct., Miami, FL, 33175-7535.

Wanted: Plus/4 software, VIC-20 cartridges, commercial CP/M software, old Commodore and Transactor magazines. #C004081, Gary Stagliano, 176-J Homestead St., Manchester, CT, 06040.

Wanted: Any books on interfacing with C64. #C004768, Karl H. Gerlt, P.O.Box 221, West Farmington, OH, 44491.

Wanted: Instructions for Quickpro+II for C64, or information on how/where to acquire same. #C001733, Robert F. Perry, 129 Bay Ave., Patchogue, NY, 11772.

Wanted: A user guide/owner manual for C128D. #C004854, Edward Nordmark, 4 Crocus Ln., Commack, NY, 11725-3609.

Wanted: Troubleshooting and Repairing Your Commodore 64, by Masgolis. #C009259, Samuel Chiang, 959 12th Ave, Honolulu, HI, 96816-2250.

To Trade: 1541 disk drive internally set for drive #10 for a Super Snapshot Cartridge. #C007325, Art Johnson, 1005 S. Main, Fremont, NE, 68025.

Wanted: Appraisal software program for 128 to complete a URAR appraisal form. #C008331, Gene Sills, Rt 4, Kosciusko, MS, 39090.

Wanted: Book "1001 Things To Do with Your Commodore 128" by Sawusch/Prochnow. Out of print by McGraw-Hill. #C005889, Ned T. Norris, Box R 38 Garmisch, Unit 24514, APO AE, 09053.

Wanted: Guitar Wizard by Baudville, MIDI interface (C64 or C128), Dr. T's (C64 or C128), Easy guitar by DJ Software, GEOS Inside & Out by Abacus, Anatomy of a 1541 by Abacus. Will buy, or have VIC-20 games, RAM cart, etc., to trade. #C009232, Patti Stinton, 1040 Dahlia Terrace, Eagle Point, OR, 97524.

Wanted: SIDders to correspond and trade SIDs with. #C008539, Oren Adams, 213 Crestview Lane, Glenburn, ND, 58740.

Wanted: Looking for a schematic for Commodore Monitor Model 1802. #C009082, Chet Kruczek, 29 Brookhaven Drive, East Longmeadow, MA, 01028-1406.

Wanted: Data Manager 128 (Timeworks), CADPAK128 (Abacus), Basic Compiler 128 (Abacus), CAD 128 Book (Abacus), and Spectrum 128 (Free Spirit). #C000381, Noel Plank, 1095 Honeysuckle Court, Tracy, CA, 95376-9788.

To Trade: Simon's Basic (cart), Ernie's Magic Shapes (cart), Big Bird Special Delivery (cart), Visible Solar System (cart), Getting Ready to Read & Add, World Geography by Bobco, Ghost Writer 128 (*unopened), Fontmaster 64, Master 64, and Trackmimic (hdwr/software copy prog. 1541). #C000381, Noel Plank, 1095 Honeysuckle Court, Tracy, CA, 95376-9788.

Classifieds

SOLD OUT: Accumulation of Commodore hardware (disk drives, REUs, etc.), software (all original), and books at very reasonable prices. J.R. Crawford, Haughton, LA, 71037.

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, P.O.Box 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.). Huge selection of new and used Commodore 64 and 128 hardware, software, and accessories. Many hard to find items. Some Amiga, CDTV, IBM, Apple, and Macintosh also. Excellent prices. $1 for BIG list: Computer Bargain Store, 3366 South 2300 East, Salt Lake City, UT, 84109. Voice (801) 466-8084 -- 4-7PM Mountain Time Zone. FAX (801) 486-9128 -- 24 hours.

For Sale: C64, 1541 drive, MPS 801 printer. Incl. 2-Geogram 512 memory expanders, Volks 480 modem, 2-5.25" disk holders, Suncom program joystick, GEOS 2.0, Timeworks SwiftCalc and DataManager 2, etc. $200 BO. Dan Manning, PO Box 10, Ridgely, MD, 21660, (410) 634-2658.

For Sale: (2) Commodore SFD1001 one meg floppy drives, Skyles IEEE Flash interface, cables and manuals -- $150.00. Gerry Foster, 570 Burlington Ave., Bristol, CT, 06010, (203) 583-4529 leave a message.

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Golden Valley, MN 55422
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(800) 634-3478

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(800) 552-8080

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Greenwich, CT 06830
(800) CRIS-TINA

L.L. Pankey
1712 Santa Margarita Dr.
Fallbrook, CA 92028-1641

The Phoenix Network
P.O.Box 30757
Flagstaff, AZ 86003-0757
(800) 869-1155
(800) 869-1168 (fax)

Parsec Inc. publishers of *TwinCities 128/64*
P.O.Box 111
Salem, MA 01970-0111
Code: S

Quantum Link (Q-Link)
America Online
8619 Westwood Center Dr.
Vienna, VA 22182
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(800) 822-8158

READY.
■

This listing is continued from page 25.

```
260 PRINT CS$CD$"[shift F]OR A GIVEN
   LINE, IF THERE IS NO ENTRY,"
   :REM 190
270 PRINT "SIMPLY PRESS <[shift R]
   [shift E][shift T][shift U]
   [shift R][shift N]>.  [shift E]
   ACH LINE":REM 121
280 PRINT "SHOULD CONSIST OF NO MORE
   THAN"+STR$(NC):REM 75
290 PRINT "CHARACTERS."CD$:REM 13
300 PRINT "[shift A]T THE SPECIAL
   CURSOR ENTER EACH LINE":REM 234
305 PRINT"AND PRESS <[shift R]
   [shift E][shift T][shift U]
   [shift R][shift N]>:"CD$:REM 21
310 RETURN:REM 169
320 PRINT CD$"[shift E]NTER
   [shift L]INE"+STR$(LN):GOSUB 530
   :PRINT#1,Z$:REM 71
330 RETURN:REM 189
340 CLOSE 15:OPEN 15,4,15:CLOSE 15
   :REM 214
350 IF ST=0 THEN RETURN:REM 162
360 PRINT CS$"[shift T]URN YOUR
   PRINTER [shift O][shift N] (AS
   DEVICE":REM 42
370 PRINT"NUMBER 4), THEN PRESS <
  [shift R][shift E][shift T]
  [shift U][shift R][shift N]
  >.":REM 104
380 GET A$:IF A$<>CR$THEN380:REM 198
390 GOTO 340:REM 50
400 CLOSE 15:OPEN 15,DV,15
   :CLOSE 15:REM 64
410 IF ST=0 THEN 470:REM 232
420 PRINT CS$"[shift T]URN [shift O]
   [shift N] YOUR DISK DRIVE AND
   PRESS":REM 21
430 PRINT"<[shift R][shift E]
   [shift T][shift U][shift R]
   [shift N]>.":REM 77
440 GET A$:IF A$<>CR$THEN 440:REM 89
450 DV=PEEK(186):IF DV<8 THEN
   DV=8:REM 41
460 GOTO 400:REM 130
470 CLOSE 15:OPEN 15,DV,15,"I"
   :INPUT#15,ER:CLOSE 15:REM 234
480 IF ER=0 THEN RETURN:REM 65
490 PRINT CS$"[shift P]UT A DISKETTE
   IN YOUR DISK DRIVE":REM 212
500 PRINT "AND PRESS <[shift R]
   [shift E][shift T][shift U]
   [shift R][shift N]>.":REM 247
510 GET A$:IF A$<>CR$THEN 510:REM 52
520 GOTO 470:REM 187
530 Z$="":POKE198,0:WH$=CHR$(5)
   :DL$=CHR$(20):CL$=CHR$(157)
   :SP$=CHR$(32):REM 45
540 YW$=CHR$(158):RV$=CHR$(18)
   :RO$=CHR$(146):UL$=CHR$(228)
   :REM 178
550 CC$=YW$+RV$+UL$+RO$+WH$:PRINT
   CC$;:REM 148
560 FOR A=1 TO LE+1:REM 118
570 GET A$:IF A$="" THEN 570:REM 44
580 IF A$=CHR$(13) THEN PRINT
   CL$SP$:RETURN:REM 97
590 IF A$=DL$ AND A>1 THEN
   PRINTCL$CL$CC$SP$CL$;:REM 56
595 A=A-1:Z$=LEFT$(Z$,A-1)
   :GOTO570:REM 209
600 IF (A=LE+1) THEN 570:REM 40
610 IF (NU) AND ((A$>="0") AND
   (A$<="9")) THEN 650:REM 138
620 IF (AL) AND ((A$>=SP$ AND A$<="/")
   OR (A$>=":" AND A$<="Z"))
   THEN 650:REM 230
630 IF (AL) THEN IF (A$>="[shift A]
   "AND A$<="[shift Z]")THEN650:REM 13
640 GOTO 570:REM 34
650 PRINT CL$A$;:POKE 212,0:PRINT
   YW$RV$UL$RO$WH$;:Z$=Z$+A$
   :NEXT:REM 72
```

.....end of line.

dieHard Rules (C64 & C128)

by Sean Pappalardo

This seems to be a reoccuring theme, but what the hey. This routine will give your statement sparkle! Definately some thing for programmers and would be programmers alike to play with. Add this to your programs and send them in, who knows what this will lead to.

```
1 REM COPYRIGHT 1994  LYNNCARTHY
   INDUSTRIES, INC.  ALL RIGHTS
   RESERVED:REM 172
5 PRINT "[shift P]LEASE
   WAIT...":FORA=5120TO5167
   :READB:POKEA,B:REM 183
10 NEXT:POKE53280,0:PRINT"[ctrl 1]
   [CLR]":REM 134
20 FORA=1024TO2023:POKEA,160:REM 142
25 NEXT:PRINT"[HOME][4 crsr down]
   [ctrl 1][ctrl 9][12 space]DIE
   [shift H]ARD RULES![ctrl N]
   [ctrl H]":SYS5120:REM 125
30 DATA162,0,189,27,20,201,255,240
   ,247,141:REM 218
35 DATA33,208,234,234,234
   ,234,234:REM 139

40 DATA 234,234,234
  ,234,234,234
  ,232,76:REM 17
45 DATA 2,20,0,9,0
  ,9,8,9,8,7,8
  ,7,1,7,1
  ,7,8:REM 1
50 DATA 7,8,9,8
  ,9,0:REM 243
```

.....end of line.

Text To Screen (All)

by Ernest Barkman

Text To Screen prints SEQ or PRG text files to the screen using a simulated word-wrap which is accomplished with the little used BASIC command POS. Be sure that if you try to read a PRG file it is in fact a *text* file, for a regular program has BASIC tokens which will no doubt foul up the screen. It shouldn't hurt anything though.

```
1 REM COPYRIGHT 1994  LYNNCARTHY
  INDUSTRIES,INC.  ALL RIGHTS
  RESERVED:REM 172
10 REM TEXT TO SCREEN BY ERNEST
  BARKMAN:REM 90
15 REM 10/27/89 FOR TRISTA BY HER
  PAW-PAW.:REM 180
20 REM PRINTS TEXT FILES FROM DISK
  TO:REM 71
25 REM SCREEN, EITHER SEQ. OR
  PRG. TEXT:REM 48
30 REM FILES WITH A SIMULATED
  WORD-WRAP.:REM 107
35 IF A$=CHR$(34) THEN A$="
  [shift 7]":REM 41
40 GOTO60:REM 167
50 OPEN15,8,15,"S0:TEXT TO
  SCREEN":CLOSE15:SAVE"TEXT TO
  SCREEN",8:END:REM 94
60 INPUT"[crsr down]TEXT
  FILENAME";SF$:REM 186
70 PRINTCHR$(14):REM 230
80 OPEN2,8,2,CHR$(34)+"0:"+SF$+",M
  ,R"+CHR$(34):OPEN3,3:REM 6
90 GET#2,A$:IFST=64THEN140:REM 197
100 IFEB>423THENGOSUB150:REM 167
110 EB=EB+1:PRINT#3,A$;:REM 241
120 IFPOS(0)>29ANDA$="[space]"THEN
  PRINT:REM 229
130 GOTO90:REM 243
140 CLOSE2:PRINT#3:CLOSE3:END:REM 57
150 IFEB>423THENPRINT"[ctrl 9]
  [shift H][shift I][shift T][space]
  [shift A][shift N][shift Y][space]
  [shift K][shift E][shift Y][ctrl 0]
  ";:REM 148
160 IFEB>423THENGETQ$:IFQ$=""
  THEN160:REM91
170 IFEB>423THENPRINT"[11 crsr left]
  [11 space][11 crsr left]";:REM 189
180 IFEB>423THENEB=0:RETURN:REM 233
```

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```
190 RETURN:REM 49
```

.....end of line.

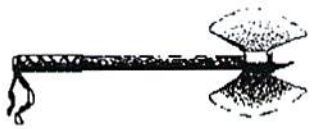
Text To Printer (All)

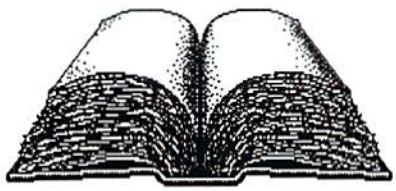
by Ernest Barkman

Text To Printer (Listing 2) prints to a **commodore** printer or a printer with an interface that emulates **commodore.** I use it successfully with an Okidata-180 printer in Epson mode and a Canon Bubble Jet 200 with a Xetec Super Graphix Interface with DIP switch 3 in the *up* position. This program has two options. You may either have a regular printout or opt for the paper saver. Both options use the same word-wrap feature that is in **Text To Screen** and you can view the file on the screen as it is sent to the printer. The paper saver option eliminates a lot of carriage returns and saves quite a bit of paper. It changes the carriage return to an underline character that gives you an idea of where the carriage returns were originally. I hate printing DOCs that have a lot of dead spaces, wasting paper. Maybe I'm just old fashioned, just some kind of a dieHard!

```
1 REM COPYRIGHT 1994  LYNNCARTHY
  INDUSTRIES,INC.  ALL RIGHTS
  RESERVED:REM 172
10 REM TEXT TO PRINTER BY ERNEST
  BARKMAN:REM152
15 REM 10/27/89 FOR TRISTA BY HER
  PAW-PAW.:REM 180
20 REM PRINTS TEXT FILES FROM DISK
  TO:REM 71
25 REM PRINTER, EITHER SEQ. OR
  PRG.:REM 206
30 REM WITH A SIMULATED WORD-WRAP
  AND:REM232
35 REM ELIMINATES A LOT OF CARRIAGE
  RETURNS.:REM 52
40 GOSUB160:GOTO60:REM 159
50 OPEN15,8,15,"S0:TEXT TO
  PRINTER":CLOSE15:SAVE"TEXT TO
  PRINTER",8:END:REM 218
60 INPUT"[crsr down]TEXT
  FILENAME";SF$:PRINT"[CLR]"
   CHR$(14):REM 0
70 OPEN2,8,2,CHR$(34)+"0:"+SF$+
   ",M,R"+CHR$(34):OPEN4,4,7:REM 116
80 GET#2,A$:REM 23
90 IFST=64THEN150:REM 111
100 IFEBTHENIFA$=CHR$(13)THENA$=
   "[space][C= @][space]":REM 114
110 PRINT#4,A$;:REM 192
120 PRINTA$;:REM 13
130 IFPOS(0)>65
   THENIFA$="
   [space]"THEN
   PRINT#4,CHR$
   (141):PRINTCHR$
   (141)"[crsr up]"
   :REM 213
140 GOTO 80:REM 6
150 CLOSE2:PRINT#4
   :CLOSE4:END
   :REM 62
160 PRINT"[CLR]"
   CHR$(14):REM 102
170 PRINT"
   [crsr down]
   [15 space]
   DIE[shift H]ARD'S":REM 253
180 PRINT"[crsr down][8 space]
   [shift T][shift E][shift X]
   [shift T][space][shift F][shift I]
   [shift L][shift E][shift S]
   [space][shift T][shift O][space]
   [shift P][shift R][shift I]
   [shift N][shift T][shift E]
   [shift R][22 space][crsr down]BY
   [shift E]RNIE [shift B]ARKMAN":REM 43
190 PRINT"
   [crsr down][space]
   [shift B]OTH
   METHODS USE A
   SIMULATED
   WORD-WRAP":REM 159
200 PRINT"
   [2 crsr down] 1 -
   [space][shift P]
   APER SAVER CHANGES
   CARRIAGE":REM 235
210 PRINT"[5 space]
   RETURNS TO "CHR$
   (34)"[space]
   [C= @][space]"
   CHR$(34):REM 114
220 PRINT"
   [crsr down] 2 -
   [space][shift R]
   EGULAR
   PRINTOUT":REM 1
230 PRINT"
   [2 crsr down]
   [5 space][shift S]
   ELECT AN
   OPTION...":REM 113
240 GETQ$ :IFQ$=""
   THEN240:REM 171
250 IFQ$="1"THENEB=1:GOTO280:REM 200
260 IFQ$="2"THENEB=0:GOTO280:REM 216
270 GOTO240:REM 205
280 RETURN:REM 139
```

.....end of line.





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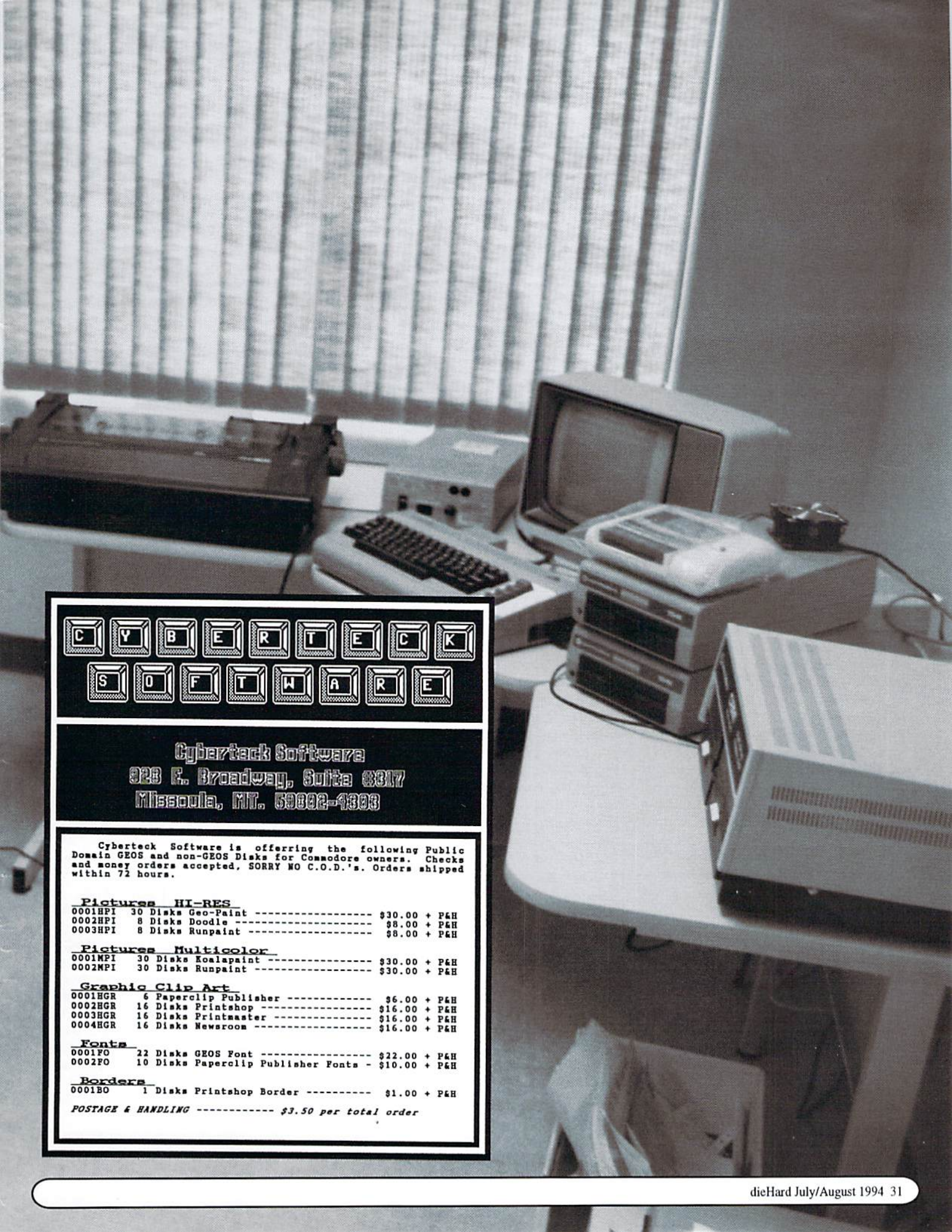

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Telecommunications: Your commodore & You

by Mike Eglestone

Let's start with an assumption. We shall assume you have selected a term program, plugged in your modem of choice, loaded up your program and muddled your way through the "Set Up" procedure. Good work my friend! Now you are ready to call someone - or are you?

Term programs have a couple of calling features we need to cover prior to use. They are very important for a proper connection. Take it from a person who has managed to "screw it up" more times than he cares to count; you need to know the information in the next few paragraphs.

First, we should talk about the Phone Book. No, not your local directory, but the built-in phone number storage system in the term program you have chosen. It's one of the greatest conveniences in the program, a real time saver. It's also a thorn in the butt of progress if you set it up wrong.

Let's keep this part as generic as possible. There are numerous formats that a term Phone Book can take, but certain features are common to all of them. The most important features are Emulation and Baud Rate Default by number entry. This means your program will automatically adjust to each line entry. You will actually perform a mini-setup while entering numbers in your phone book.

A simple phone book, like the one found in **CCGMS**, will allow you to enter the name of the system being called, the number of that system, the baud rate and the type of emulation that system uses. With **CCGMS**, the only emulation choices are ASCII and CG (Color Graphics). However, programs like **Nova Term** and **Desterm** also let you choose ANSI (the IBM/MSDOS system we talked about in another part of the article).

Regardless of what your program allows, you must enter the proper emulation and baud rate for the system being called. If you don't know the emulation or the baud rate, pick 1200 baud and use ASCII. You can adjust the phone book after you make your first contact. A BBS (Bulletin Board System) will tell you what formats are offered when you sign on. They all support the ASCII emulation system.

The phone book normally allows you to enter many numbers. Some even have extra pages that can be called up when you have filled the first screen. Each entry requires you to fill in the appropriate information. One thing to keep firmly in mind: If you have "Call Waiting" or any of the additional features offered by your local phone company, you MUST kill that feature prior to using your modem on line. If you don't, any incoming call will destroy your connection with the other modem and cause all sorts of problems for both of you.

Modems just hate outside interruptions. Even static on the phone line can confuse them. It's a simple matter to add the proper kill code to the phone number you're calling. The instructions can be found in your local directory listing.

Phone books have two nice features. First, they allow you to pick an entry and call it with a single keystroke; and second, they allow you to use multi-dial. The program will call every number you select. If the first number is busy, it jumps to the next choice and will continue doing this until it finds a number that answers. If you have everything set up correctly, it switches baud rate and emulation modes according to the number being called. It's quite a time saver. Some term programs have built-in music programs. These programs allow you to walk away from the computer during the dialing process; the program only plays the music when it finds a connection for you. Be sure to turn up the volume on the monitor.

Regardless of how simple or complicated your phone book happens to be, you must satisfy each entry completely and accurately if you want a usable on-line connection. If you're not sure about certain entries, read the help files. If still in doubt, an educated guess is always authorized. If you're wrong, it will become painfully apparent when you connect up for the first time.

BBS operators are used to strange calls. The Systems Operators (SysOps) know from experience that mistakes are going to be made from time to time. You may have to call a few times just to test your setup. Not a problem; do it! As you gain experience, you will begin to see a pattern develop. **commodore** systems require this setting, IBM systems require that setting. It will eventually start to make sense. Don't panic, just keep on trying until you get it correct.

Ok, your numbers are entered in the phone book and are ready to call. Nope, not quite. Save the file first! If you forget to save the file, and something causes your program to crash during a call, you will lose all that hard work you just went through. Your phone book is a separate file that will be written to your disk. You may modify it as many times as you like, but you must remember to save it after each change and before you attempt to use it.

The second dialing feature is seldom used but always available while in terminal mode. It's called direct entry dialing.

Direct entry dialing is accomplished by using the Hayes commands which are built into your modem. Yup, your modem has a ROM chip and a pinch of RAM. It does understand quite a few things. It responds to your commands when ever you type the letters AT. The command AT means attention modem, and the commands which follow the AT are routed directly to the modem memory.

An example of a direct dialing sequence: ATDT1170,1,305,2585039

This would call my BBS from outside my area code. It breaks down like this: AT (Attention Modem) - DT (Dial Touch Tone) - 1170 (kill call waiting) and the rest is the number. The commas between the numbers are slight pauses which allow proper timing between different numerical inputs. You might get away with not using the comma, but it's safer if you do.

Two things to keep in mind when using the direct entry method: First:, mistakes are not authorized on the command line. Once you type in AT, the rest of the stuff must be correct. Backspace and delete will not alter the sequence sent to the modem. If you make a mistake, press return twice. The first return will send the bad command, but the second return will hang up the modem. If the modem fails to hang up, just type in ATH0; and it will terminate the call. Second, baud rate and emulation must be correctly set prior to using the direct entry method. Consult your help files and documentation before you attempt this form of dialing. If you aren't sure, there should be a "setup line" displayed on your screen at all times. This will tell you (in code) the current setup of the term program. Become familiar with those codes as they are very useful information items.

Again, I see someone in the back of the room with his hand up. A question!

"Where do I find BBS numbers and system numbers to call?"

Good question, and a fairly simple answer. The best place to start, assuming that you have absolutely no idea what systems are available, is your local computer store. I have used computer stores many times as a source of information for local BBS numbers. If there are any in your area, the stores will know about them. Simply pick up the yellow pages and locate a store that's completely dedicated to computer sales and service. They will have BBS numbers available, and they will be more than happy to assist you. It doesn't make any difference what type of computer they sell or what type of BBS numbers they have. It's a starting point! You might want to pick their brain a bit while you're talking. Ask about emulation, system setup and baud rate. It will save you a bunch of setup time. I don't know of any city that doesn't have at least one BBS up and running if there is an active computer store in the local area.

We'll continue from here next month.

READY.

8-BIT 4-PASS COLOR TUTORIAL

BY: JACK BLEWITT

There is nothing new about 4-pass color printing. Magazines use it all the time, it is used for t-shirts and posters, and your Sunday comics have been printed in this manner since the nineteen-twenties! Why bring it up now?

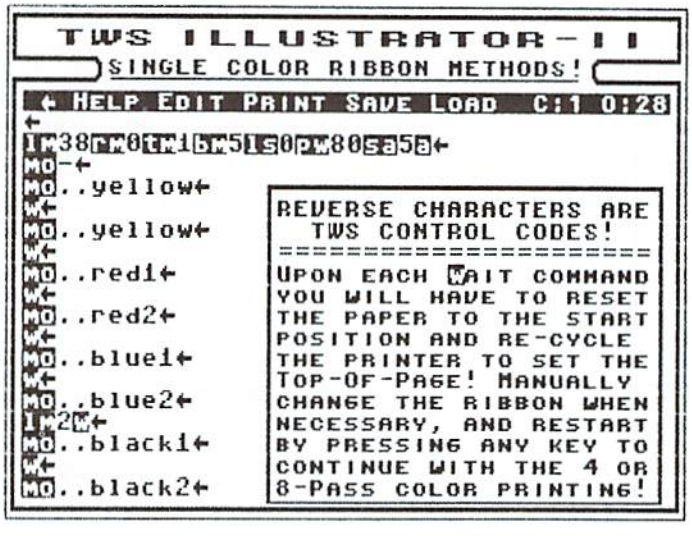
Simple! With the advent of home computers, more people are doing their own printing at home than ever before. Even those who purchased color printers seldom have any idea how to print in color. They are limited to using the print drivers included in some graphic programs or attempting to use specialized drivers found in some cartridges such as the **SuperSnapshot V5** or **Explode-III**. These work fine as long as you are satisfied with the formats and size options provided.

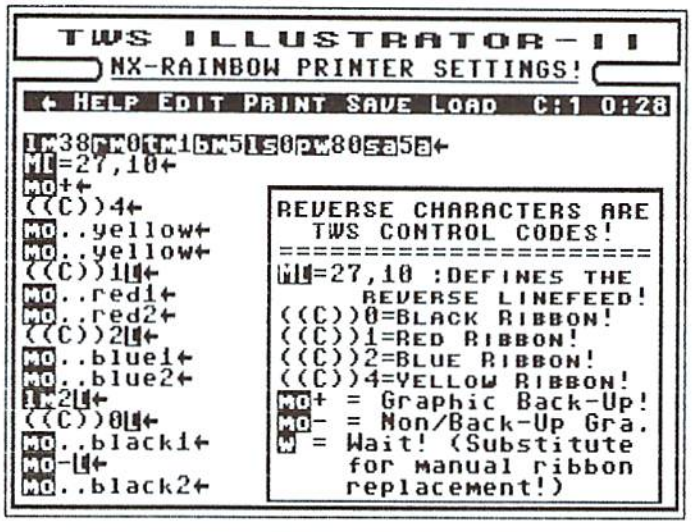
Multi-Color formats (**Koala**, etc.) and Hi-Res formats (**Doodle**!, etc.) are very limited. Hi-Res pictures have excellent resolution but limit you to one background and one foreground color for each block of 8x8 pixels. Multi-color allows two additional colors per block, but the resolution of each picture is cut in half. The solution? Four-pass color printing.

With 4-pass color, you have to make up four screens that will overprint each other. The first screen, <Yellow>, has the pixels turned on for each dot that will be colored yellow, orange, green or brown. The <Red> screen displays pixels that are red, orange, purple or brown. The <Blue> screen depicts those pixels colored blue, green, purple and brown. Finally, the last screen displays only those pixels that should be printed with <Black> ink. When printed in the above order, the display will come out in seven colors, black, and any shades of gray that are produced by alternate black/white pixel placements. After each pass, if you change to a different color ribbon cartridge, you can get excellent color reproductions even from a standard printer.

Yes! It is a bit more work, but think of the results! Up to 64 colors and shades can be mixed in a single 8x8 block. Besides that, it is much easier on the printhead. If you ever watched a printhead on a Rainbow printer go wild trying to reproduce a colored **Koala** pic, you know what I mean.

There are several ways to make up the four necessary plates. First, let's convert a colored **Koala** picture into four bit-mapped screens. Load the Public Domain program, **k-verter**, a **Koala** converter, into your computer and bring up any **Koala** screen you wish to convert. The program will evaluate your screen and assign a color to each of the 64,000 dots of your display. Start by making the black plate. Press <A> to select the black pixels. Your screen will turn to blank gray. Select your pattern -- in this case, the solid square <A>. You will see the screen dither and display all pixels that were originally black. When satisfied, press <f1> and go back to the original picture. In turn, select each of the gray1, 2, and 3 options; and dither any partial pattern onto the work screen. If it doesn't look right, just select a different pixel pattern to dither. When all the





black and gray areas appear acceptable, SAVE your "black" screen to disk! Re-load your original into **k-verter** and make similar screens for the yellow, magenta and cyan plates. Use the solid pattern for true colors and partial patterns for the shade colors, like pink. You should have four distinct files saved to disk when you are finished.

To print in color, you can use any print driver you own which will print the type of files you have saved to disk. Set the printer where you wish it to print, cycle the printer's ON-OFF switch to set the top of the page, and make a pencil mark along the border to insure correct placement for the next pass. Lock in the yellow ribbon and print the yellow plate. Return to the start position and repeat the steps above using the magenta, cyan, then black ribbons. Use this color rotation to avoid contaminating the ribbon colors.

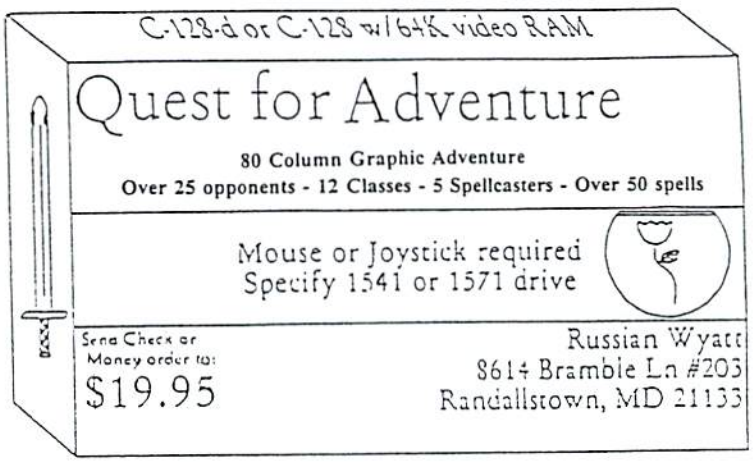
HINT: If your printer has a self-positioning feature, use that for a more precise paper alignment.

Personally, what I like to do is read the screens into the pay version of the **FunGraphics Machine (FGM)** and re-save them as either normal bit-mapped screens or as Clipart screens. The precise printing of **FGM** lets you print them out in any aspect ratio that your printer supports. If saved as Clipart icons, they may also be printed directly within **The Write Stuff**'s **Illustrator-II** program. An upcoming version of **Illustrator-IIA** will even change the density so you may double or triple print each screen. This provides rich colors even with weak color ribbons.

Converting Hi-Res pictures into color plates can be made easy also. I use the three work screen capability of **FGM** to create the desired plates. First, I load the picture into place and <SH>ift-<R>everse the screen. This leaves you with a white outline on a black background. Simply erase all the pixels except those you wish to show on the yellow plate. <SH><R>everse the screen once more and save it for your yellow plate. Repeat twice more for the red and blue screens. The precise placement of **FGM Print Module** will allow you to print the screens in a multitude of sizes and position them anywhere.

HINT: If using any Star Rainbow printer, select the NX-1000 (color) print driver from **FGM**. This will allow you to lock-in the ribbon colors directly from the print setup screen for each pass: (4)-yellow, (1)-red, (2)-blue and (0)-black. This eliminates the need to adjust any of the printer's switches!

Using **Illustrator-II** and Clipart plates with a Rainbow printer is a snap. A single print command will make the 4-pass color printing automatic (see fig. b). You must remember to define and add a reverse linefeed command each time you add a non-printing line, such as for ribbon color changes. If using a standard black and white printer with single color ribbons, replace each ribbon color change command with a <W>ait signal. This will let you manually change ribbon cartridges before printing the next color (see fig. a). Should your printer not support the reverse linefeed option or you are using single sheet paper, you will also have to reposition the paper during this delay.

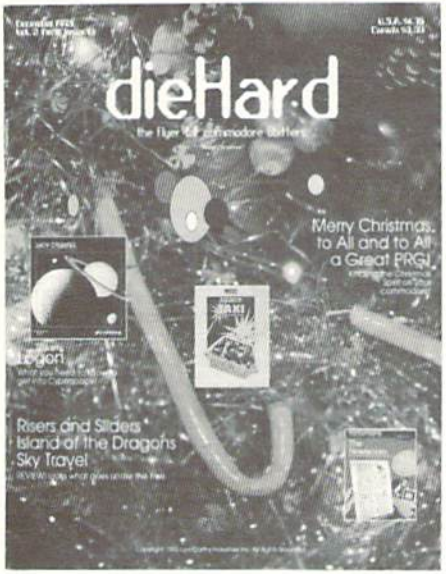


Colored ribbons can be purchased for most machines. Yellow may be difficult to find, but you can purchase un-inked ribbons and yellow ink. It is difficult to hand ink cartridges, but it can be done! V-Tech, Inc. also sells 4-color heat transfer ribbons for most color printers. If you <SH><F>lip the screens in **FGM**, this will permit you to transfer your graphics to a t-shirt. How about that club logo in full color?

FINAL HINTS: To produce additional shades and deeper colors, try 6 or 8-printing. By running each color twice, the first pass will be considerably lighter than areas that are double printed with the same color. Each plate being just slightly different allows you to produce distinguished shading and color differences such as pink vs. red, etc.

As mentioned in the first paragraph, 4-pass color is nothing new! To support this, as this article neared completion, I received a letter from Hugh McMenamin, author of **Illustrator-II**. It stated a similar article appeared in *RUN* magazine in July 1988. Actually, the biggest similarity between the two articles was that we used the same Public Domain **Koala** picture for demonstration purposes. If you are interested in learning more about the 4-pass color processing, a back issue July/August 1988 *Re-RUN* disk with Ted Davis' program is still available through Creative Micro Designs, Inc. (CMD-$10 -- refer to CMD ad in this issue).

If you are weak in the use of the **commodore** machine, you might find Ted's article a bit easier to use. His program automatically produced the color separation plates and shading of unusual colors by optimizing color mixes. On the down side, it takes



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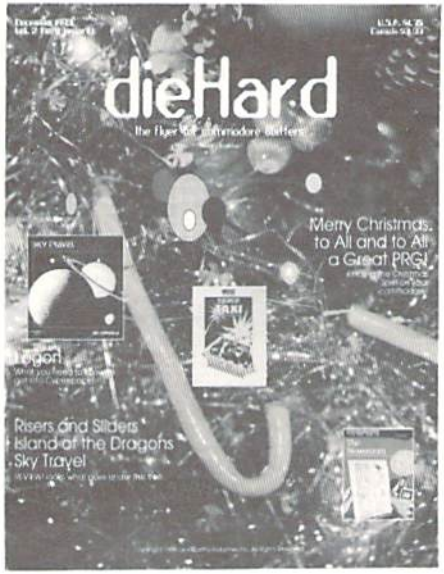

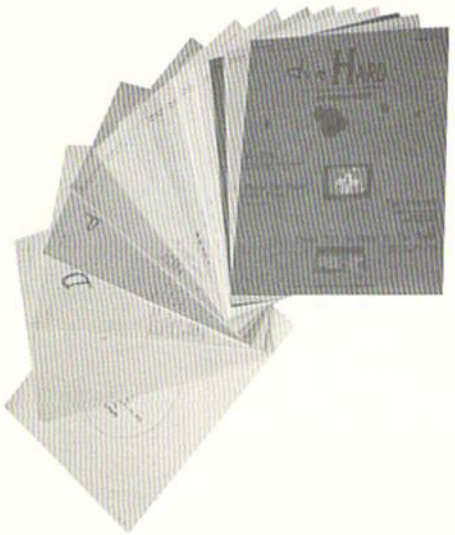

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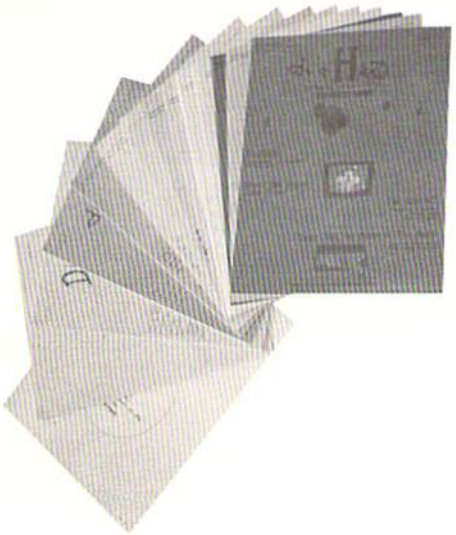

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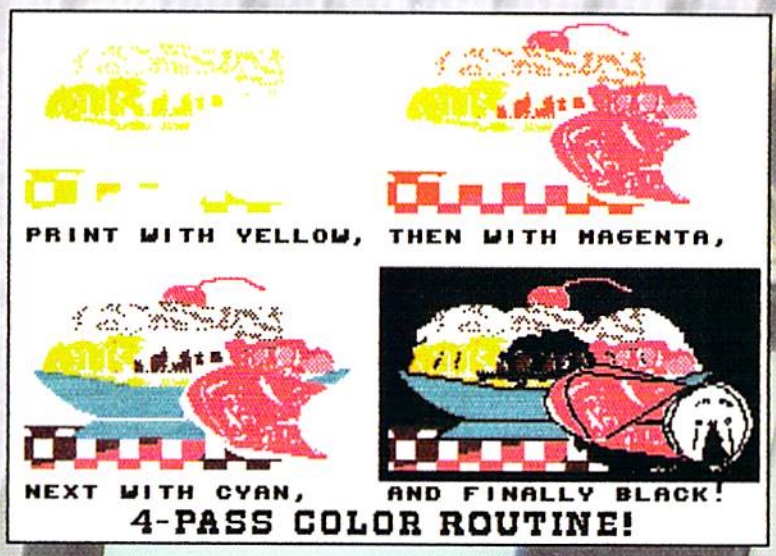
almost two hours to print a single **Koala** conversion; you have no control over the size or placement of the large picture. And only the **Koala** format is supported! I prefer to use the **Illustrator-II** and select my own sizes, density and positioning!

All in all, adding color to your cards, reports and special prints can be a lot of fun. Some of the first results will surprise you and encourage you to use your **commodore** computer more often. As you become proficient, you can astound your friends with what the lowly 8-bit computer and 9-pin printer are capable of producing. Let your neighbors know the **commodore** 8-bits are still great and functional machines!

READY.
■



8-BIT 4-PASS COLOR

BY: JACK BLEWITT

Can you imagine printing a full color picture, with twice the color resolution of the sample to the right, on ANY printer? It can be done, and quite easily with the latest software for the Commodore 8-bit computers. Check the tutorial inside for more details. It will take you through the important steps of getting started and give you a new outlook on the possibilities of your computer! WARNING: It can become quite addictive!

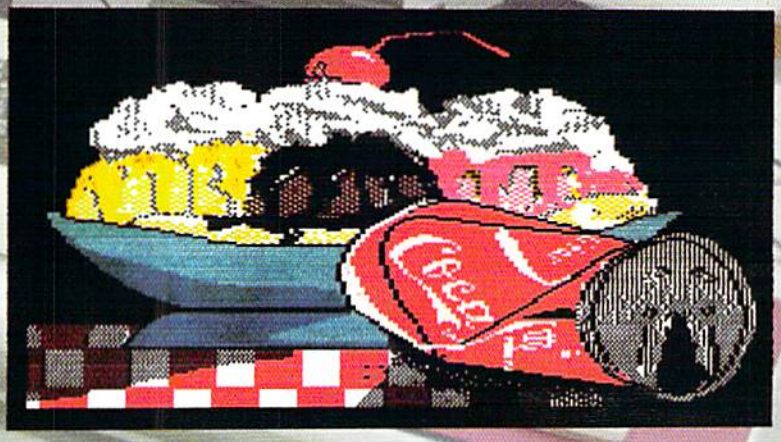


FIG.A COMPOSITE PRINT W/NX-1000 PRINTER!

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