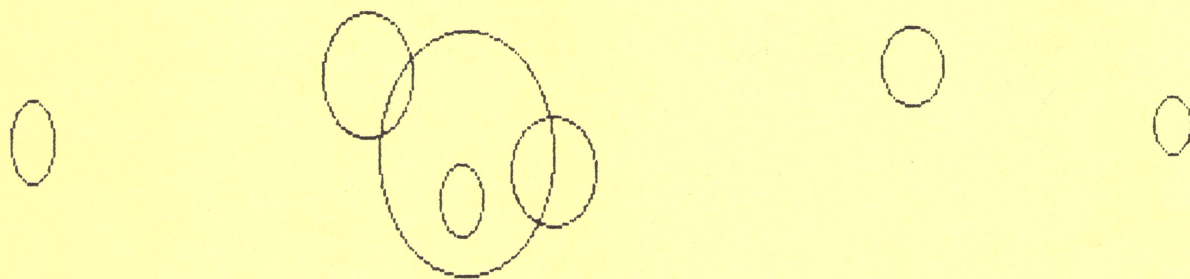


July 1992
Vol.1 No.3

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Die HARD

the Flyer for commodore 8biters



Tips & Trivia
Just So Stories
Reviews
Control Key Secrets
PAPSAW
Reader's Survey
PRG
Neptune
Etchmaster
Shoplister
and much more...



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*The feature Program was to be for the 64, however, due to technical problems we had to substitute it with the 128 version instead. Sorry guys and gals, but stuff like this is what makes us stong -- what ever the hell that means.

I'd like to thank Chuck, with out his help there would not have been a July issue.

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It's here!

*What is it? And where
is here?*

Subscriptions -- on earth! This month we decided to set a price on the issues and subscriptions. Issues are \$2.50 US funds, subscriptions are \$20.00 US funds for twelve issues. Hypothetically, this would be one year -- if things go as smooth as they have been. If we skip a month you will still get twelve issues.

This month's issue is packed to the walls. We've got our usual stock pile of information as well as some new stuff. And do we have stuff! I have to bump a few articles till next month! Among the annals this month are a review of the Final Cartridge III, Puter Mirth (humor from the chips), and trivia (nothing trivial here). This month's feature program from PRG is Shoplister, a data based data base (what?). Shoplister is a menu driven program that helps you formulate a shopping list telling you what items to buy, how many and at what price. The program tallies up your total, adds sales tax and dumps it all out to the printer. It's a long type-in and might just be worth the five bucks for the PRG disk. The version here is for the 128. C-16 and Plus4 versions are available so you should specify which computer when ordering the disk (note the C-16 and Plus4 versions are the same).

The regulars are here as well, we've got your pokes, your peeks, your tips, a couple of secrets, Archaic Computer, a list (our Rarities column), and Trader's Corner.

We've got some Dos and Do Nots. NOTE: no DOS pun here -- ok? And in this month's Last Page (located somewhere near the rear of the Flyer), we have a reader's survey so we can get a better handle on what our audience out there is like. This will probably turn into an annual kind of thing so we can adjust to your needs. Feel free to drop us a line anytime, no need to wait for another one of these to come along...

Wanted: writers!

We need input! IF 0% input => 100% output THEN talks too much! Well, we're not that bad, I personally research and program constantly -- even when I'm not writing. However, if you feel you have sometime to contribute -- disk us! Actually if you have a short article of a page or less you can just send us a hardcopy (that's what it's call when it's on paper). We like **Just So Stories**, stories that are about computer experiences or dreams -- basically your creative side. We like articles on computing, computer setups, computer music, computer programming, programs; ML and BASIC, near-computer experiences, and technical information.

A note on program submissions, programs must be on disk in 1541 format along with a sequential file containing documentation explaining what the program does, how it does it, and how you get it to do what it does. If the program is ML (machine language) there must be a way to list it.

All submissions of more than one page long must be on disk. GEOS format is preferred. ASCII and PETASQII sequential files are also ok. Any word processor file should work, if we find any incompatibility problems with our system, we'll let our readers know. Ideally we'd rise to the challenge and conquer the problem, but hey...

Also enclose a SASE (self addressed stamped envelope) for our reply. If you want your disk returned, write RETURN DISK along with your address on the disk label and enclose \$1.65 for postage and handling.

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ATTN submissions
P O Box 392
Boise ID 83701

By the way, the address for subscriptions is the same, just substitute ATTN subscriptions for ATTN submissions. Oh yes, if we decide you've got talent, we'll publish you, and you'll receive a FREE issue. No big bucks yet, but, if you get your foot in the door while we're small, you just might wind up on our payroll -- if and when we get one. Some people think this thing is going to become bigger than life, I sure hope so. Then I could afford to pay myself!

Disclaimer Time

Right now, issues come out monthly. If for some stupid reason we have to skip a month, don't panic! All this means is your subscription, if you subscribe, will move over a month.

We are trying to keep on a monthly time table. But, you know how that goes, between my wife and my one year old son...

This is a transition stage for Voyageur Studio "C", we've got some rearranging to do, with the addition of an entire Atari system, space is becoming sparce. Buy the way, any Atari users out there?

Another point, one of clarification -- only writers, who submit complete articles and programs that we publish, will receive free issues. If you have a tip, we'll be glad to pass it on, as well as print your name. Some day we hope to pay people for all articles, programs and tips that we publish, but right now we are barely covering printing costs.

Enjoy!

-BLE

READY.



WP TIPS BY BRIAN L CROSTHWAITE

Editing After spell-checking your document, print out your document double spaced to check for grammatical errors, sentence structure, etc.

Editor If you've got an important document, have someone else read it. Let them reiterate what it is they read to see if it was what you wanted to say. They can also point out grammatical errors you've missed. You'd be surprised at what you type, thinking it says one thing, only to find out later it says something entirely different.

Sequential reader Lots of programs in the PD (Public Domain) have SEQUENTIAL documentation that accompanies them telling the user about the program, who to contact for help, etc. Lots of users have SPRINT or similar programs for reading these docs. A word processor is usually used to create these documents. Many word processors read them as well (GEOS users can read them with the Text Grabber and the EasyScript form). If you have some docs, but don't have a Sequential reader, this will read a sequential file:

```
10 INPUT"ENTER NAME OF  
SEQ FILE";N$  
20 8,8,8,N$+"",S,R"  
30 GET#8,AS:PRINTAS;  
40 IFST=0THEN30  
50 CLOSE8:END
```

I recommend SPRINT, if you don't already have it. It's in the PD, check with your local user group, Q-Link, GENie, or CompuServe.

Low Cost DP Big Bucks Budget non-existent? There is a very good WP/DP (word processor/desktop publisher) at low cost; it's called the **Illiterator**. For the price of a song, this puppy's got 80 column preview and well embedded graphics. When I say well embedded, I mean the pictures you use can be anywhere on the page and have text all around it! There are basically

seven or so codes to control text and picture format and placing. There is a spell checker. You can use **RUN Paint** graphics (which means you can adapt just about any picture to work), and there is also a 128 version. The **Illiterator** is actually the latest version of **The Right Stuff** -- which many of you know is a typesetting program by my definition (means you have to embed all the control codes yourself, instead of the computer doing it for you). But, hey -- if you don't have \$100 to spend on **GEOS** and **GeoPublish**, and don't want to put up with that manual, all those major system failures, so on and so forth -- seven codes are easy to memorize! This is a nice little desktop publisher. Want a copy? Contact the **Treasure Valley/Boise User Group's Librarian** and **The Write Stuff Help Area** kinda guy -- Doug Parsons (208) 375-4672 for more info. For the cost you get a lot of power, and in these times it's nice to know that there is something you can get professional results with and still afford eat!

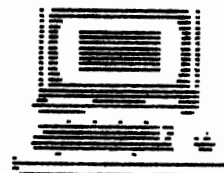
Writers! Editors hate full and right justify, in fact it annoys the hell out of them. If you plan to submit something for publication to a magazine or journal, they all want basically the same thing: Double spacing, left justify (everything including titles and authors names), and NLQ or LQ font (nothing fancy, something that looks like you typed it on a good quality typewriter, resident printer fonts are what we're talking about here). Don't forget to double space after those periods. Include a SASE (Self Addressed Stamped Envelope) for their response. Don't submit the same item to more than one publication at a time -- wait for that ever so wonderful rejection notice before sending it to someone else! If you want the manuscript back include a 9 x 12 SASE. Remember DON'T GIVE UP!

Take Note Many WP's have help screens either in memory or loadable from disk. These are enormously helpful and can save you much grief when you find yourself stuck. When in doubt, consult the manual. If you run into the same problem over and over and are constantly going "where did I find that?" write it down when you do find it, either in the cover of the manual or, if they're there, the little blank pages entitled NOTES. If it turns out the problem is printer set up, make note of it in the WP manual and maybe make reference to the printer's or interface's manual.

Take Notice If you're like me (whata ya mean grouchy and no fun to be around?!?!?), you are probably constantly changing the dip switches on your printer interface. When I was using my **MPS 1250** I was constantly going from **Commodore** mode to **Epson** mode, wasting a sheet or two of paper printing out pictures with white lines on them or printing the whole document on one line before I noticed it was in the wrong mode. I came up with a simple, but brilliant solution, never print! No, No that's not it! I made a sign about the size of the printer that said Epson on one side and Commodore on the other. I also placed a chart of various dip switch settings on each side for easy reference. Then, I leaned the sign up against the printer with the appropriate side facing forward. No more mess ups.

Damn Cursor When counting spaces, be aware of the type of cursor your WP has. Is it the kind that sits right on the character, or is it in between the characters. If it sits on top of the character then the number you count is the actual number of spaces, if it's the kind that sits between characters the number you count is one greater than the actual number of spaces, so just subtract one from your count.

READY.



dieHard



the Flyer for

commodore 8bitters

commodore Trivia
by
Brian L Crosthwaite

Along the road to the present, **commodore** previewed many a machine that never made it to the market. This is a list of the ones I've come across through the years.

The **264**, this became the **Plus4**, originally targeted as a business/home management machine that, you, the user, got to pick out what software you wanted built into it.

The **CU364**, a 264 with extra keys and built in speech. It had 250 words accessible through BASIC.

The **P128**, replaced by the closely related **B128**. The **B128** lived only a few months. Protecto (now Computer Direct) bought the remaining stock from **commodore**, and the computer became known as the "Protecto Special."

The **commodore C128**, [not the **commodore 128**], the **B128**'s direct market replacement never made it, although a few got out as demos as did a few **P128**'s.

The **Laptop**.

The **Amiga Loraine**.

Did you know the **SX-64**, the **Executive**, was offered with an optional second drive? It was known as the **DX-64**, with drive #0 and drive #1.

The **1542**, a **1541** disk drive that matched the color of the **C-16** and **Plus4**.

The rumor circuit **64** that was to be the **commodore 65**. A more expandable, more versatile machine than the **64**. How do these things get started anyway?

More on the rumor circuit -- **geoPublish128**. By the way **geoPublish** does run on the **128**, in 48 column mode.

READY.

Dops...

__Way back in May 1992, in the article entitled Save @ and Die Fascist Seum! On the bottom paragraph, after END in the line that begins 10000, the following was omitted: "then just type; GOTO 10000 or RUN 10000." Also missing is the closing parenthesis to my comments, which should fall after the period right after the word "guards."

__Last months issue had more typos than you could shake a stick at. The body that was full page wide had been finalized and ready to go. Before a backup file could be made, however the file became corrupt and did unpredictable things and there was just no time to correct the typos in the previous backup file. Although spell checked and saying what it was meant to say, there was still a lot of finalizing to do. The stories read ok and say what they mean to say, sometimes repeating words (typing stutters), and sometimes using the wrong word (hay, instead of hey, among others). We were two days behind our dead line, so we went to press knowing well that there were mistakes. (18 minutes of missing file). The final copy never read until after print in fact. I would have gone back and corrected everything, thus delaying another couple of days.

__Spring session was in 1984 not 1994.

__May 1992, under Word Processing Tip, item number 8, talks about backwards formatting. In **GEOS**, this doesn't always work. I had been using this technique for some time and just recently encountered a perplexing problem. It seems that sometimes when going to a smaller font the previous formatting will appear at the bottom of the page. Everything that comes from the page I just formatted changes back to the original margin settings when it appears on the present page. At first I thought it may have been due to a forced page (set page). However this is not the case. It could be that I need to set the new margins and change the font separately. I'll let you know if I ever figure this one out.

__Volume 2, No 2, Issue 2? What the heck happened to the other issues? Last months cover is supposed to read Volume 1, No2, Issue 2.

__May 92, the program in the back says in line 30, "SET UP FOR **EPSON FX85 MODE**," it should say "SET UP FOR **EPSON FX80 MODE**."

READY.

Sponcers needed

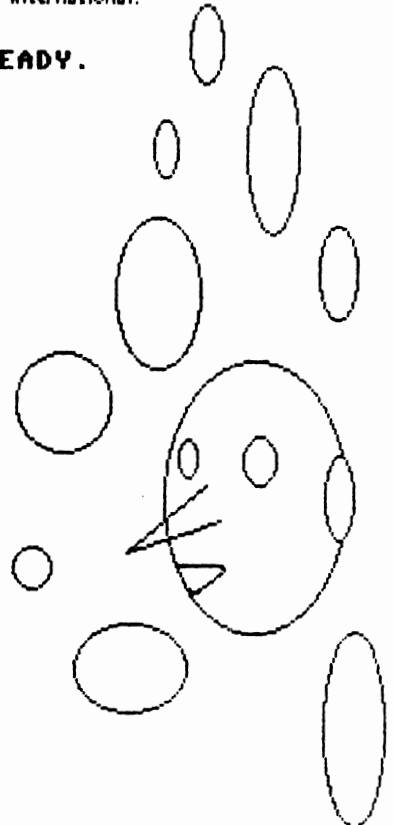
Need a place to place an ad? Like to help a struggling new bussiness? Like to get "underground exposure?" Well, the time is right to take out an add in **dieHard!** It's cheap and easy! \$5 for a quarter page. \$10 for a full page. Per month, that is. Get a years worth of adds for \$120 for a full page! Later on when everyone is paying more, you'll be getting exposer and not have to worry about cost. Where else can you get this cheap of an ad? We'll even typeset it for you at no cost!

This Flyer is from Boise, Idaho. Where are you reading this? To get this incredible introductory offer drop us a line at:

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ATTN ads
P O Box 392
Boise ID 83701

We are deticated to letting people know about **commodore** software, periferals, and sevicees offered nation wide... soon to be international.

READY.



geoTips

by

Brian L Crosthwaite

COLUMNS

One of the easiest ways to format a page into columns to line up data is to use a square font.

Commodore 18 point comes with your GEOS system disks. There are **others** available as well, although they aren't advertised as such, so you'll have to look around. How are they different from regular fonts? They all line up, like the fonts found on typewriters (type-whats?), and letter quality print-outs:

1. **ONE** one
2. **TWO** two
3. **THREE** three

An alternative to these few and far between fonts is to line things up with decimals and decimal tabs. If you have a font that doesn't have periods you can line things up using the decimal tabs and <CONTROL>-I>, then highlight the periods and replace them with the invisible periods.

To make a decimal tab, place the mouse on the ruler and click. After the tab appears click on it again and then press <SPACE>, it will turn solid. Place the tab where you want it to go by moving the mouse to the desired position and clicking one last time. To line things up place the cursor on the first digit of the number or before the period and type <CONTROL>-I>. If it jumps to the wrong tab, add or remove spaces before the period.

BACKUP RECOVERY

As a presauation against screwing things up beyond recovery on your work disk, have a copy of your original, either on another disk or in the REU. This way if you reformat text and have a bad font file, you can just copy the backup to your work disk. Remember, it's always best to have your file on disk in case of a power outage.

ORIGINALS

If you plan on placing **geoWrite** docs into **geoPublish**, make duplicate copies of the original files in case you change your mind or want to use them as **geoWrite** docs as well. This way you don't have to fight with the **geoPublish** embeddings that are sometimes impossible to override. Besides, you know how

reliable that compacted code can be at times. It's always nice to have the originals -- just in case.

CENTERING 128

On the **geoPaint128** 80 column screen, the center of the screen, horizontally, is on the right side of the toolbox gadget (The wrench at the top of the screen). In preview mode, the vertical center of the previewing screen is the top of the text gadget, right on top of the box with the "T" in it.

INHIGHLIGHT!

If you have text highlighted in **geoWrite** from copying or changing fonts -- press the mouse button before you continue or else you may loose the highlighted material.

BYELIGHT!

Along similar lines, you can highlight something, then hit <RETURN> and presto, it's gone. You will, however, be on the next line, right after the previously highlighted area. Hitting the instead of <RETURN> makes the highlighted text vanish, only this time you're at the area right before where the highlighted text was. Neither one makes a text scrap and my system hasn't failed because of using this. I haven't found anything in the manuals about this, although that doesn't mean it's not there!

PETASCII SAVE

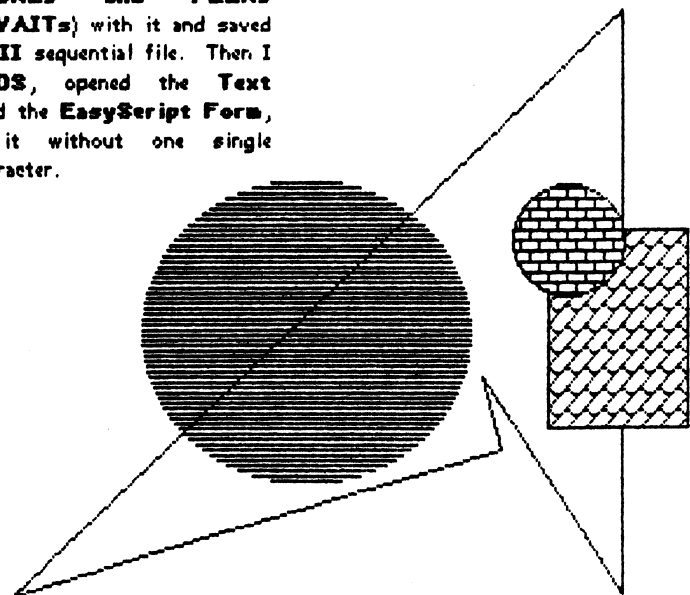
When converting from a non-GEOS word processor to **geoWrite**, things go well when using files saved as **PETASCII**. For instance, **Fleet System 3** can save files as **PETASCII** sequential files. I wrote this month's **PAPSAV** (**POKEs** and **PEEKs** **SYStems** and **VAITs**) with it and saved it as a **PETASCII** sequential file. Then I loaded up **GEOS**, opened the **Text Grabber**, selected the **EasyScript Form**, and converted it without one single unrecognizable character.

READY.

Submissions:

So, you've got a program that could change the world as we know it, or one you think is too cool not to share. You need to get it in the **Flyer!** How? Easy, just put it on a disk, along with any detailed documentation in the form of a sequential file, enclose a short hard copy discription of what it does, how to get it to do it, and a listing of the program. Machine language programs are welcome. If you've got an article, send it in the form of a sequential or **geoWrite** file on disk. All disks must be **1541** format. If, however, you can't seem to get it on to any other medium, we'll try to look at things on **1571**, **1561** or **datasette**. If your submission is a single page or less, double-spaced **LQ** or **MLQ** hardcopies will be accepted. Submitters published will receive a **FREE** issue. If you want your disk returned write **RETURN DISK** on top of the disk label and enclose \$1.65 for postage and handling. Send all submissions to: **dieHard**, **ATTN** submissions, **P. O. BOX 392**, **Boise ID 83701**. Be sure to include a **SASE** for our repsonce, and tell us a little about yourself.

READY.



DOS AND DO NOTS BY BRIAN L CROSTHWAITE

Oh, come on- you've seen this stuff before. Do I really have to write an intro to this? It's just a list of stuff you shouldn't do and a bunch of stuff either to do instead, or just to do.

DO NOT use a ball point pen to write on your disks! Oh yeah, it hasn't hurt them yet. YET is the key word here. **DO** use a felt tip pen if you have to write on your disk. (Think of it this way, let's say your best friend had to write a note on your forehead, which pen would you prefer?)

DO NOT bend disks. They are floppys, they flop a little. They are not bendys. They shouldn't have to put up with this crud. **DO NOT** stick them to your filling cabinet with magnets! **DO** take care that they never get exposed to magnetic fields (MFs). What magnetic fields? Where are these magnetic fields? MFs are around the rear of your monitor, and sometimes the top -- although manufacturers try to insulate them as best as possible. MFs are present around the power supplies to your computer, disk drives, printers and any other electronic device. MFs are in speakers and tape recorders. **DO** set off an area that only your disks may occupy. (I don't mean to set paranoia in, but MFs are responsible for more corrupt disks than most people realize.) Now your going, "the power supply for my 1541 is INSIDE THE DRIVE-AHHH!" Don't panic, it's shielded. Although it's probably safe to place disks on top of the drive -- aside from melting them -- I wouldn't do it.

DO NOT cover up the holes on any of your equipment, especially the slots. These are for the heat dispersion that is vital to the survival of the species. Covering these is like putting lead paint on your entire body or wearing wool in the summer, your brain does some pretty weird things. That place between the keyboard and your monitor on your 128

is an inviting place to put stuff, you must fight the urge to do so. **DO** make sure your equipment gets plenty of ventilation to stay cool. I've found the general maximum temperature at which equipment will operate is around the 80F degree mark.

DO NOT set your drink on the disk drive, you might as well just pour it right on it. I've found the best place for food and beverage is any room that has no computer equipment in it. I have a place down below for my coffee. If it spills I just curse a lot ,but my computer is fine. Of course, there is that worst case scenario where I slip on a cat and kick my coffee into the air and it shatters my monitor, which, after implosion, sprays glass and hot coffee all over the rest of my equipment destroying every thing. But hey, I get killed when the monitor goes -- so I don't care!

DO clean your equipment regularly. Once a month is probably fine. Be sure your monitor is unplugged, not just turned off, but unplugged, before you clean it. I use ENDUST on a wash cloth for the dust that builds up on the outside of everything. Use a good disk cleaner with some solution for the disk drive. Stay away from the freon based cleaners. The alcohol based ones work just as well. Less brain cells die and it's much better for the environment. Dust covers are a must! **DO NOT** forget to cover your mouse and mouse pad!

DO NOT put your finger on the screen of your monitor. There is a big MF there and you can not only zap yourself, that floppy you're holding will get it as well.

DO get as much info on your computer as you possibly can. If you can afford to subscribe to any of the publications out there, do so. Get as much info as your brain and your computer can handle! **DO NOT** forget Q-Link, GEnie, or CompuServe!

DO get into GEOS, if you have not already.

DO NOT throw your computer out the window if you can possibly help it.

DO look into Public Domain software.

DO join a User Group -- it plugs you in directly to people with a common interest that is so diversified. Join one and find out what that means!

DO NOT miss next month's exciting issue!

READY.

Just So Stories Of Elephant Guns and 486's by Chuck VanDehoff

Some things just bring back old memories: the smell of bread baking, the feel of your favorite stuffed animal, the sound of your Atari booting up DOS. What? Let me explain.

My Atari 800XL and I were inseparable buddies for 4 years while I went to college. I would have never made it without him. It was reliable, did good work, and, what was most important to me at that time, it was cheap. College students are notoriously low budget.

You have probably been noticing that the costs of computers have been coming down, significantly. IBM clones abound, and for relatively low volumes of money. With this lowering of prices, and my increase in income, compared to my college days, I bit, and I bought an elephant gun of a computer. I went all the way and I purchased an EDGE 486SX. It's beautiful. The Windows package works wonderfully, and talk about fast, it puts the 286's, 386's and my poor little Atari to shame. But, did I really need all that power?

I still have my Atari, and it still works fine. I broke it out the other day, dusted it off, found the DOS disk, and booted her up. The dee-deet, dee-dee-de-deet brought back some old, pleasant memories: word processing my way into the wee hours, learning to program in Basic, my dates with Sharon (excuse me, wrong memories.) It also brought up the question of all that force sitting over on my desk. Could I justify the hole in my wallet where a thousand some dollars used to be? Would I blow away a jack rabbit with an elephant gun? Yeah, at least once. Seize the day, go for it.

The Atari's and Commodore's worked great. They were the workhorses which help lay the foundation for

continued on page 8, see **Elephant Guns**

The Final Cartridge III A Review

by

Brian L Crosthwaite

As far as utility cartridges go, the **Final Cartridge III (FC3)** is one of the best. It is loaded with basic programming tools that are accessible with your mouse, joystick or keyboard. Aside from a couple of misleading bits of information in the advertising, like "pull down menus in basic," "programmed f-keys" and "25 times faster disk access", the cartridge delivers what it says.

The **FC3** is a programmers cartridge -- BASIC as well as machine code. It is a gamer's cartridge, allowing what is often called game busting, the disabling of sprite collision detectors, auto-fire and joystick port swapping.

First let me touch on the misleading information. The pull down menus, as well as the function keys, are not definable, nor are they accessible while your program is running. They are utilities used in writing your program. The menus have all the added utility commands right there at the top of the screen. This is great because you don't have to remember the command or the syntax -- just call them up on the screen with mouse or joystick. The f-keys behave the normal way in run mode, however, in direct mode they allow easy access to some of the extension BASIC.

As for the 25 times the normal load time, most ads have caught up and just say "faster loading and saving." According to the notes that accompany the cartridge, the speed was to be 25 times faster initially, but some older disk drives don't like that speed, so 15 times faster was decided upon.

Along the line of drive access, the **FC3** was made to work with the 1541 and compatibles. The 1581 does not get along with it too well, things tend to freeze up now and then. I haven't had the opportunity to try it on a 1571. You'd think they'd have made it shut off during 1581 access, but it is a European

cartridge that supports the tape drive instead. There is a turbo to load specially saved tape programs. There is also a program compacter that allows you to backup software for your own personal use. These backups load even faster. Better than 15 times, as it incorporates the turbo on top of the faster loading compacted program.

The turbo blanks the screen momentarily, then unblanks it, then blanks it again and so on, until the program is loaded. It doesn't blink so it's not really annoying -- just so you know -- don't use it the first time you buy a game with one of those great animated openings.

128ers will appreciate the **DSAVE**, the **DLOAD**, and the **DVERIFY**. You don't need to type **DSAVE(a\$)**, instead **dSa\$** will do. These should be thought of as more of the BASIC 4.0 commands, rather than BASIC 7.0 commands, as far as their origin. That way it's less confusing on the proper syntax.

Other BASIC extensions are:

APPEND- joins subroutines and programs together from tape and/or disk.

ARRAY- lists arrays and their contents.

AUTO- for auto line numbering. For those who have never seen this, the computer will type the next line number for you so all you have to do is type the code.

DAPPEND- like **APPEND** but the unit number defaults to the disk drive.

DEL- deletes lines from your program in chunks.

DOS- eliminates the need for **OPENx,y,z...** **CLOSEx**, also has **DOS"\$** for reading the directory.

DUMP- dumps all normal variables and their values.

FIND- lists line numbers of a given string.

LIST- (this is nice) at first, it lists program as usual, then you can scroll the whole program onto the screen up or down using the cursor keys.

MREAD- reads the first 192 bytes of memory from a given address.

MWRITE- allows you to write 192 bytes read by **MREAD** into a given location -- great for moving stuff like character sets around!

ORDER- if you **APPEND** two routines together, the first one is followed by the second. If you use **ORDER** the line numbers will be put into order, sort of like sorting a shuffled deck of cards.

PDIR- prints directory to printer.

PLIST- prints programs listing to printer.

RENUM- renumbers program, if you

APPEND, you can keep the programs in the same order and eliminate any like numbers.

TRACE- traces a program and displays lines at the top of the screen as they are executed.

OLD- un**NEW**s a program.

There are commands to move around the cartridge, such as **BAR** (to turn the command menus on and off), and **DESKTOP** (to get to the desktop from **BASIC**). There is also a command to turn the cartridge off: **KILL**.

Something I found out purely by accident -- **OFF** disables everything, except the fast load. I was loading a **PD** (Public Domain) disk with a machine code/**BASIC** menu and the screen top was displaying the **BASIC** part of the program because it somehow enabled the **TRACE**. Out of habit from using **The Tool**, I stopped the program and typed **OFF**, then ran the program again. After remembering the proper command would have been **TRACE OFF**, I thought I had disabled the cartridge, but was surprised to see the fast load was still working. Later, after experimentation I found out that the **FC3** was disabled, but the fast load was still intact. I have found nothing about this in the manual, it may have been an unimplemented command.

The reset switch is a definite plus, especially if you don't have one. It is a very powerful reset. Unlike the standard reset that uses the kernal routine at 64738 (dec), it grabs your system by the chips and resets to **BASIC**, unless you are in the desktop, in which case it resets to the desktop. If you have a program that resides at 64738 it will reset, however the program is still in memory and you can still type **SY\$64738** and have it run. (I presume this is true of many other locations, but I wouldn't count on it -- reset with caution!)

The Freezer

There is another button on the cartridge, the **FREEZER** button. This takes you to the **FREEZER**, where you can disable sprite collisions, giving you the ability to survive even the most brutal of attacks by aliens and such when playing games.

You have the ability to swap joysticks electronically. This is a useful feature, as some of the older games use port 1, where my mouse is. I very rarely have it

in joystick mode, and I'm not into wearing out my ports to play one game that has the "old port syndrome." (This being games that use port 1). You can make the joystick button an auto-fire. This is, of course, great for blasting aliens.

Backups are also possible from the freezer. You can fast backup to tape or disk -- in which case you'll need the cartridge to reload. Normal backups can also be made that don't require the cartridge to load. Let's say you backup a game called **Meat Grinder**. First, you'd load and run the program. We'll say the game loads from five different files. You enter the **FREEZER** by pushing the button on the left and in a second or two you're there. Now you pick **F DISK** from the first pull down menu, the game screen appears and the drive starts spinning. (Hopefully you put in a backup disk.) After not more than 30 seconds your program is backed up. If you want to put back ups of other programs on the same disk, you'll need to rename the files you just made. The **FC3** names all it's back ups **FC** and **-FC**. Renaming is easy. After backing up you return to the **DESKTOP**. From there, just open the disk menu, call up a directory and rename the files.

The reason I bought this cart was that it would dump just about any game's screen to the printer. In most cases, this is true. (The **FREEZER** portion of the cartridge is the touch and go part; sometimes programs just don't react to the joystick, auto-fire and sprite disables.) It's had a good track record. I'd say 95% of the programs I tried to dump screens from dumped with no problems. Sometimes the programs would print garbage on the screen when going to the print options. This garbage gets printed out. You can't return to the program where you left off; after printing out you return to the **DESKTOP**. For color printers, as well as for the hell of it, you can change the color of the screen, although if you do it during game play the next time the screen changes the new colors will be lost. 24 pin and 8 pin printers are supported, both color and black & white. **Commodore**, **Centronics**, and **RS 232** interfaces are supported as well as **Commodore**, **Epson**, and **NEC P** series compatible printers. Print out can be sideways, inverted, **CRT**, single,

double, or triple strike. The image can be expanded up to 9 times, either horizontally, vertically or both.

The Monitor

There is a machine language monitor that has a built in character, and sprite editors that allow you to draw your character or sprite out in a grid within the listing. You can display code from any location and alter it to your own liking. A complete set of disk commands are also supported.

Note Pad and more...

The **FC3** also has a note pad. A rather nice one. It can display 140 or so "I"s on the screen. They call it a 70 column word processor with 80 column print out. It has very, very limited features, but is easy to use and I've written a few several page documents on it from time to time. It's never crashed or done anything weird. The only drawbacks are no spell checker or thesaurus, and it doesn't keep track of the name of your file, so you have to rename it every time you update. The name has to be different, otherwise your new stuff won't be saved. There is also **DLINK** and **TLINK** that are for future implementation, right now they don't do anything.

One major bummer is the clock. After setting the clock and alarm, if you do anything, the clock goes away, and the alarm does nothing. In turn, if you want to use it again, you have to call it up again. But don't count on the time to be correct, though most of the time it is. The alarm, however, will always have to be reset. This is a Leave-it-on and Leave-it-alone kind of a clock, for when you're not using your computer.

Another thing that attracted me to the **FC3** were the easy to use disk commands. They are easy -- yes, but complete -- no. You can load a directory, select a file to run, rename, or scratch. You can validate, initialize, rename and format a disk -- ALL from within the desktop. BUT, you can't unscratch or copy. You can, however, sort the directory and insert lines into the directory.

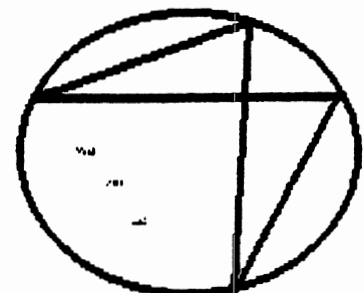
Tools under the desktop include a calculator (you can use your **128's** numeric pad if you are using the cartridge on a **128**). You can also use it in direct mode in **BASIC** for those long boring **DATA** statements. There is also clock and disk menus, **BASIC** preferences (where you can choose screen and character colors, choice of the use of the **128's** numeric pad, and keyboard clic), tape menu (**LOAD** and **TURBOLOAD**), preferences

(to choose desktop colors, mouse or joystick, port number, driver speed (the **FC3** will read the ports at boot up, and if a mouse is in a port it defaults to that; if not, then it looks for a joystick to default to, regardless of which port is used -- too cool!)), and notepad. The monitor, freezer, **BASIC** and **Final Kill** are also accessible from the desktop.

The only fastload cartridge that works with **GEOS**, that I know of, is **Betterworking Turbo Load and Save**. The **FC3** sometimes will not allow **GEOS** to work properly, although most of the time it does. **SX64** owners beware, I use the cartridge on my **SX** and most of the time it does work, but sometimes it won't. I use it with **GEOS** on the **SX** all the time. It **TURBOs** the little boot program. It disables itself when the **GEOS** turbos kick in, so I don't get the speed of the **Turbo Load and Save** (the **TURBO L&S** never gets along with the **SX**). By the way, **GEORAM** will not function with the **FC3** on my **Aprospan**, even with the switch to the **FC3** shut off.

All in all, this is a great cartridge. At \$69.95 it may be out of your reach (I recommend getting hold of **The Tool** if you can find it -- it usually runs \$5 or so and is a good utility for the price, but back up often). What I see as major faults are, the lack of complete disk operations, lack of disk support (**1571**, **1581**), the fact you can't save hires screens, you can't continue a game after printing out a picture, and the clock thing. On the plus side, the turbo is fantastic; no more waiting forever while **LOADSTAR** loads, the built in **WP** is very convenient, and the printer control is tops. The programming utilities are really what this cartridge is all about. I give this one * * * *.

READY.



Rarities

by

Brian L. Crosthwaite

CONT

PC's, and definitely have a niche in our society. If it wasn't for the proliferation of IBM clones in the work force, they may still have cornered the market on home computing, but that's another story. I'll probably never let go of my Atari, the memories are imbedded too deeply, but I don't think I'll go back to it full time. It has its place, and my EDGE has it's own. Sure, I may have overpowered my desk, but it's nice to drive a Cadillac occasionally.

Both the large and small have their places in my heart and on my desk. I'll keep both near, and with the prices of used Atari equipment plummeting like anchors to the bottom of a lake, I'm sure that my hardware and software library for Atari is likely to grow much quicker than for my clone.

Chuck VanDerhoff, is a full time stay at home father of one, who bought his clone to do writing in his free time. (Yeah, right anyone with a baby has all the time in the world!) He originally wrote the article on his Atari (which, by the way he said is by sexual and that's why he refers to him then, later her). We tried to read the disk in one of the commodore's MFM modes to no avail, so he retyped it on his Elephant Gun.

READY. CONT

Clowns with clones

Just a quick note to you clones out there, if you submit something to us and you typed it up on your PC compatible, save the file as an ASCII Delimited Text (DOS) file. We have problems converting this format to CBMASCII (PETASCII).

if you've got a Just So Stories type of story, disk it in! Our address is; dieHard, ATTN Just So, P O Box 392, Boise ID 83701. Remember, if we publish your story you'll receive a FREE issue of dieHard!

READY.

Welcome to the '90s. The time of Amigas, Macs, and IBMs. Hell's domain, Niffleheim as far as the commodore 8bitter is concerned. Where do I find it? Who has what? How much? Well, this month we salute the dieHards of the Public Domain (PD). The basement writers and hackers that bring the world of commodore bright, new horizons, newly refreshed hope, and just damn good software! I'm one of those basement writers. I'm one of those weirdos who writes DEMOs. If you're familiar with the European side of the commodore reality, you know of what I speak. For those who aren't, here's what they are not. They're not games. They're not utilities. They're not even time savers. DEMOs are creative, imaginative, fantastic, amazing, and awe striking. Machine language sound and graphics that will make your mind explode, make IBMers envious, blow your socks off, and simply astound you.

"But, Brian, I, ah thought you didn't program in machine code..." OK, my DEMOs are of a different breed (I'm still a wierdo, though). These DEMOs are usually light speed graphics that push the machine (C-64 usually) beyond its limits, and are just simply impossible to do. Many are hypnotic. My DEMOs are usually on the slower side, as they are written in BASIC. However, they do some interesting things, you won't find them in the stores; they are, as the others, PD. (We'll see some DEMOs next month)!

But, PD is more than just these DEMOs. PD is a whole, new world of exciting software, and most of it is free. Most? Some are shareware, but even these cost next to nothing. Shareware means the author asks for a small donation, usually money that goes towards psychotherapy. Most of the time, you'll get updates, manuals, and info on other programs from the same author for registering your shareware.

I can remember going to the Boise Public Library looking for PD. I found it. Most of the programs were rather bland in both form and function. Well, things are different now (although not at the BPL). The PD is full of amazing utilities, DEMOs, full color full screen pictures, clipart, productivity, adventure games, arcade games; anything you could possibly think of (if you've thought of something not there, then put it there). While a lot are still dull and

boring, alot more are colorful, musical, entertaining, and even useful.

Where to go? Well, as I mentioned, libraries have PD. Q-Link has PD. GENie, CompuServe, User Group Libraries -- there are even places that sell it through the mail! I should clarify -- they don't sell it, they charge a modest fee for copy costs, disk costs, and postage -- postage is usually more than the first two combined.

It is the latter that will be our "LIST" this month. If you've got some sources not listed here, send them in and we'll pass them along. If you are a source, let us know. This is one of the purposes that dieHard wants to fulfill, linking the user to their needs. Remember, these are not ads, no one paid us to publish these...

Caloke Industries (Dept BK)
PO Box 18477
Raytown, MO 64133

8 Bit
PO Box 452
Lindenhurst, NY 11757-0542

Disks O' Plenty Inc
8362 Pines Blvd
Suite 270R
Pembroke Pines, FL 33024

64 Disk Connection
4291 Holland Rd
Suite 562
Virginia Beach, VA 23452

QuantumLink
(The following address is given if you want info on, or want to join Q-Link online service, you have to subscribe to download any PD)
8620 Westwood Center Dr
Vienna, VA 22180
1-800-827-8444

If you've got some program you'd like to share with the world, by all means share it. Upload to local BBSs, Q-Link, donate to your local library, as well as User Group Libraries.

READY.

Putec Death

by
Brian C. Crosthwaite

Dependability. Only *one* in every ten-thousand commodore computers ever fails- it just happens to be yours.

Some say the letters on the MPS printers are out of order.

Seems like for every 530 good files you get one bad one. On the other hand, that one bad file blows the disk. I've been trying to get my wife for blow mine for years.

When in doubt, your doing just fine.

For every good computer system, there's a damn printer.

Old programmers never die, they just run out of RAM.

What's the best way to erase a disk?
Put something important on it.

What is the device number of your brain?

According to my wife, if you look at the histories of psychopathic-pathic murders, there is a printer in it somewhere.

Do you sit in front of your computer screen wondering what went wrong? Do you sit there so long that when they finally drag you away kicking and screaming, they can read the screen off your head with a mirror?

MODEM- The most advanced device known to human-kind for reaching a wrong number.

Famous quotes...

printer- "?FILE OPEN ERROR -- READY."

cassette- "?LOAD ERROR -- READY."

GEOS- "please insert disk with **DESKTOP AM 1.2**
or higher" or "system error near
\$ZHJ\."

Data bases- "redo from start"

Word processors- "string not found"

Spreadsheets- "illegal data entry"

Text adventures- "I don't know how to **BLAH BLAH**"

Arcade games- "GAME OVER"

READY.

bc92

Archaic Computer

The Computer Store Of The
Past

by
Brian L Crosthwaite

Well, the Computer Store of the Past has a question for it's readers -- does **comodore** still make the **Datasette**? In Europe, the cassette is the preferred data storage and retrieval system, in fact just this last year the **1541** disk drive just made it's way into the hearts of the masses over there. **comodore Format**, a magazine I get regularly out of Great Britain has all it's programs on cassette. They have just in the last two months introduced a disk magazine called **Light Disk 64**. You'd think it was still being manufactured, at least abroad, the **Datasette** that is. Back to the question. Does **comodore** still produce the **Datasette**?

Back to reality.... This month we take a look at **Turtle Graphics II...**

Turtle Graphics II
from **Human Engineered Software**
1983

by David Malmberg
reviewed by reviewer extraordinaire

Brian L Crosthwaite

First of all, let me explain my reasoning behind the five star. This graphics package is one of those that resides entirely on cartridge; graphics can only be redrawn, the cartridge must be plugged in, supports only one drive -- one **1541** or cassette -- you're gonna love it!

When you first turn the computer on, you'll see a blue screen and nothing else, just long enough for you to think you've got the cartridge in crooked. Don't panic just wait a bit... Then you see a credits screen that flashes by so fast you'll hardly even see it. This is followed by a white screen that is the **Turtle Graphics II Menu**. The list of options is as follows, with the first letter of each highlighted (the letter you press to select option):

ADD LINES.....
add lines to program
or start adding lines

INSERT LINES.....
just that
DELETE LINES.....
delete lines
REPLACE A LINE.....
this one's easy
LIST PROGRAM.....
you got it
Print PROGRAM.....
prints out listing or
portion
SAve ON TAPE OR
DISK...Note: tape first
in options
GET FROM TAPE OR
DISK..loads program into
memory
MERGE A PROGRAM.....
this is nice, merge two
programs into one
EXECUTE A PROGRAM.....
runs the program in
memory
TRACE A PROGRAM.....
displays the line before
it is executed
COMPOSE SPRITES.....
full featured sprite
editor

-Just a quick note, there are no multi color hires or extended color in this program. But, other than that, he's perfectly normal.

Pretty straight forward really. **ADD LINES** is the option you select to write a program. Once you've typed lines in, if you want to add more lines, you've got to select **INSERT LINES** and if you want to delete any lines you need to select **DELETE LINES**. To replace an existing line with different code you gotta use **REPLACE A LINE**. So much for that ahead-of-the-times-down-to-earth-screen editor **comodore** worked their but's off engineering!

Let's press <A>. The screen clears and

ENTER LINE 1
? *

appears. The line numbering is all taken care of, so you might want to know what you are doing at this point, especially since the next line number is 2. Let's type **CLEAR SCREEN** <RETURN>. The computer seems to be thinking about it, and in a moment the words

ENTER LINE 2
? *

appears. The period of time that lapses after hitting <RETURN> and the appearance on the next input prompt is around 2 or 3 seconds. When you consider that the commands are things like **CALCULATE X=2*INDEX**, the fact that only one command can be used per line, and all the spaces have got to be there, this is an eternity. When you first learn that the **BASIC** equivalent to **LET** is **CALCULATE**, you'll want to throw the cartridge out the window of a 747 at 30 thousand feet. However, don't despair, all you actually have to type is **CE** then your equation. In fact, all the commands have two letter shorthand and a complete list is found in the back of the manual in alphabetical order of the full spelling. (Just a note here: Why the hell couldn't **comodore** have done this with their manuals -- especially the **128** manual that now has everything in order at least once? I hate looking up stuff and have sit there for five minutes trying to recall if what I'm looking for is a command, statement or what ever!)

Aside from slow data entry, the cartridge and you can produce some pretty spectacular graphics, both in **LORES** and **HIRES** (**LOW RESolution** & **HI RESolution**). It's just like what you do when you draw on paper, only you tell the computer what to do. As far as the correlation between **PILOT** and **LOGO**, I can't tell you. They say, who ever they are, that **LOGO** is the way to teach kids programming. It commands are simplified such that programing is more natural, or am I thinking of **DELTA GRAPHICS**? Anyway, **TGII** is a very refined language and I see no similarity between this and and other high level languages I've studied or used. In fact, I'd say this is a very high level language, in that it is closer to English than is **BASIC**. You might as well have a kid watch **Star Trek** to learn to program. But there are **OTHER** educational values to **TGII**.

It's a fast language to pickup, even if you've never programmed before. Because of this, the student can focus on the project at hand rather than learning the language. Doing drawings is as easy as telling the computer **PEN DOWN, RIGHT 10, DOWN 5, LEFT 10, UP 5**. This would make a box.

IF TRUE, IF FALSE, and JUMP, give the BASIC equivalent of decision making. LOOPS are possible, sprites are supported; PUT SPRITE AT, joystick control on sprites; USE JOYSTICK, music; BEEP. The computer is used, at least in a limited way, but everything is touched on.

The sound is just one voice and only an approximate note is possible from the numbers given in the book. You may be able to fine-tune with other values. The numbers in the chart given are 17 (e) to 145 (e8, 3 octaves higher). The value can be from 0 to 255.

There are example programs in the back of the manual that exploit well the program package, with exception of the sound, which is very limited anyway. With these features, games, as well as charts and graphs, are a breeze. The manual is 135 pages long. It is well written as both a tutorial and as a reference manual. The index is superb; it really is a benefit. (I find so often indexes are so poorly written that they can often be a complete waste of time). With the ease of use and the good reference this one gets five stars.

If you'd like a copy of **Turtle Graphics II** write to **Software Support International**, 2700 NE Andresen Rd, Suite A-10, Vancouver, WA, for more information.

READY.

Archaic Computer

Q & A

by

Amian L Emasthwaite

Q: How do you save to ASCII? Chuck VanDerhoff asks me over the phone? He's got a 486 with **Word Perfect**.

A: Well, I'm not a **Word Perfect** expert, but here we go any way... Using a mouse in the **Amiga** version, choose CONTROL from the print menu, click CHANGE PRINT OPTIONS, click DESTINATION, then DEVICE OR FILE. What this will do, is let you select print to disk, all the control codes are removed except carriage returns and line feeds, of course the ASCII (the stuff

words on computers are made of) remains intact. To do this via the keyboard, press PRINT (Shift-F2), select printer control (3). In the PRINTER CONTROL menu, select CHANGE PRINT OPTIONS (1), then select DESTINATION (2). Select DEVICE OR FILE (2) from the DESTINATION MENU. When the requester "PRINT TO (DEVICE OR FILE)" appears, enter the name of the input file. I don't have any MS-DOS information, although my wife says you do a DOS save pressing F2. good luck.

Q: How do you format a disk with an Atari system?

A: The best way is to put a disk containing one of the many versions Atari DOS into the drive, from BASIC type DOS and hit <RETURN>. In a couple of seconds, the DOS menu will appear. Remove the disk from the drive and place the disk you want to format into the drive. Select **FORMAT A DISK** from the menu and enter a name at the prompt. After a short while, the disk will be formatted and the drive busy light will go out. Now select **WRITE DOS FILES TO DISK**. If you place DOS on all your disks you'll never have to dig through all your disks to find a copy. DOS on the Atari is easy if you have DOS on all your disks.

Q: How do you format a disk on a VIC-20 with a 1541 disk drive?

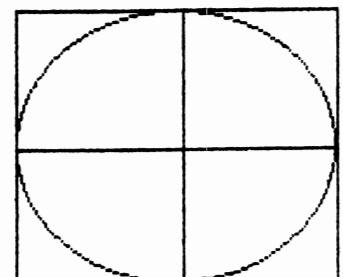
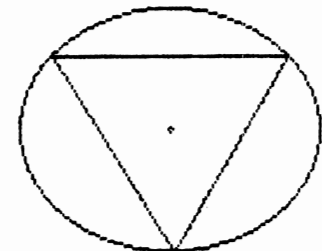
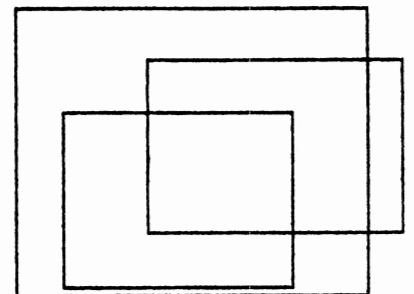
A: With that intelligent drive from **commodore**, the DOS is built into the drive as well as BASIC. BASIC has the tokens and the drive knows what they mean. Enough -- place a blank disk in drive then type from direct mode, OPEN15,8,15,"NO:diskname,ido":CLOSE15. After a moment the disk will be formatted.

Q: Where can I write to to get information on my old computer that holds my door open when the wind blows? The wind never blows any more and I keep tripping over it. I put it on my desk to get it out of the way and I made the mistake of powering it up. I need info -- I don't even know what kind of computer it is! -- Jane Buek, Axe NY.

A: Write to **dieHard**, they think they know everything there is that could possibly be known when it comes to the old machines. Even though they'll lie to you, what they say may just work! Actually, if anyone has a question on any machine, we'll try to get

the answer, whether it can be extracted from the brain of our resident expert, ask a park bum, or we get up off our lazy asses and actually do some research and experimentation -- we'll give it that old college try. Drop us a line or disk us at **dieHard**, ATTN Q & A, P O Box 392, Boise ID 83701. Our Computer Historian is always on the lookout for new, old or unusual facts, information, pictures, books, movies, indian burial grounds, anything that has to do with computers of the past present or future. We'd like to hear from you.

READY.



symbols by ELC 1992

Trader's Corner

Got something? Need something? Get together at the Trader's Corner. These are not classifieds, so you can't sell anything here, but if you got something to trade just send us a postcard. dieHard, ATTN Trader's Corner, P O Box 392, Boise, ID, 83701

Wanted: Atari disk drive. call Brian at (208) 383-4834

Wanted: Atari 400 call Brian at (208) 383-4834

Wanted: SuperPET call Brian at (208) 383-4834

Wanted: CBM 4040 dual disk drive call Brian at (208) 383-4834

Have will trade: Texas Instruments 99/4A works, no power suply and one key broken off that still works. For: Atari 400, Atari Drive, SuperPET or CBM 4040 drive call Brian at (208) 383-4834

EXTRA
(A.K.A. WHAT?!?!?)

by
Brian L Crosthwaite

In recent issues the credit to the author said "compiled by", this was sort of a joke, almost a pun. Computers compile stuff, so it was kinda cutesy woosy. When lists are compiled by groups of people, that's editing. Also compiling. For future mystification we'll use "by" instead of "compiled by," unless it's just a compilation. It'll still be editing when groups do lists. What?

As you all know, we live in an acronymistic society. That means scuba, NASA, and what hell are you talking about? Well, we use acronyms here in ditHard. Here is a list of some of the shorts, abbreviations, acronyms, and substitutions and what they mean.

20 or VIC or VIC20

64 or C64

128 or C128 or 128D or C128D

16/+4

16 or C16

+4 or Plus4

1541

1571

1581

REU

GEOS

PD

WP

commodore VIC 20

commodore 64

commodore 128 and/or commodore 128D

commodore 16 and commodore Plus 4

commodore 16

commodore Plus 4

commodore 1541 disk drive

commodore 1571 disk drive

commodore 1581 disk drive

RAM expansion unit

Graphic Environment Operating System

Public Domain software

word processor

In PRG Listings

(ctr11)	<CONTROL><1>	black
(ctr12)	<CONTROL><2>	white
(ctr13)	<CONTROL><3>	red
(ctr14)	<CONTROL><4>	cyan
(ctr15)	<CONTROL><5>	purple
(ctr16)	<CONTROL><6>	green
(ctr17)	<CONTROL><7>	blue
(ctr18)	<CONTROL><8>	yellow

[= is the commodore key at the botton left of the keyboard

(C=1)	<C=><1>	orange
(C=2)	<C=><2>	brown
(C=3)	<C=><3>	light red
(C=4)	<C=><4>	dark grey
(C=5)	<C=><5>	medium grey
(C=6)	<C=><6>	light grey
(C=7)	<C=><7>	light blue
(C=8)	<C=><8>	light grey
(rus on)	<CONTROL><9>	reverse on
(rus off)	<CONTROL><0>	reverse off
(10 space)	press <SPACE> 10 times	spaces
(shift q)	<SHIFT><Q> or what ever letter	for graphic
(C= q)	<C=><Q> also graphics	
(_)	<C=><@>	graphic
(C= @)	<C=><@>	graphic

Cursor movement

(crsr down)	(3 crsr down) or any number just means type that many cursor	
(crsr up)	movements or keystokes	
(crsr right)		
(crsr left)		
(clr)	<SHIFT><CLR/HOME>	clear screen
(home)	<HOME>	home cursor

READY.

Shhhh it's a secret...

by Brian L Crosthwaite

How did I get the number 908 into a program line right after the line number? (May 92 last page). Simple, before I typed 908, I typed <SHIFT><SPACE>. When I listed the program the space vanished and the 908 moved over, without becoming part of the line number! The program won't crash because execution never reaches that line.

There are several ways to enter a <RETURN> without pressing the <RETURN> key. On a 128 you can press <ENTER>, at least in BASIC and direct mode. On all machines you can load and run a program with the following keystrokes:

<L> <SHIFT><O> <SHIFT><2> (PROGRAMNAME) <SHIFT><2> <, > <8> <: >
<SHIFT><RUN/STOP>

10"programname",8:LOAD (or DLOAD":*) is what it looks like- sorta.

What if you don't want it to run? Replace the last two key strokes (<SHIFT><RUN/STOP>) with <CONTROL><M>, this is a return. (Works on all commodore computers- (we think))

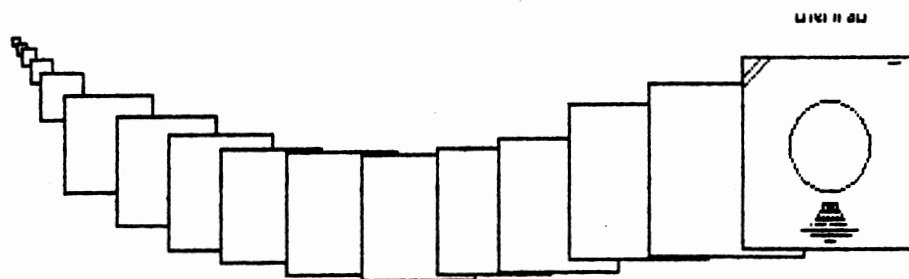
Other <CONTROL> key strokes that CAN have action in a program:

<CONTROL>+ KEY = ACTION	ASC/CHRS	SAME AS
<Q>=down	17	<CRSR DOWN>
< ; >=right	29	<CRSR RIGHT>
<T>=left	20	<CRSR LEFT IS 157- KINDA STRANGE>
<S>=home	19	<HOME>
<E>=white	5	<CONTROL><2>
<R>=rvs on	18	<CONTROL><9>
<↑>=green	30	<CONTROL><6>
<=>=blue	31	<CONTROL><7>
<BRITISH POUND>=red	28	<CONTROL><3>

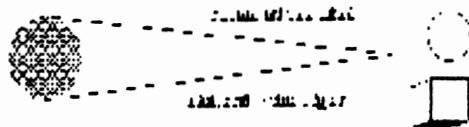
This is an escape code I use on my VIC auto line number program. Once the <CONTROL><ARROW LEFT> keys are stroked the routine erases itself from memory. I have not seen this anywhere, just came upon it hacking...

<CONTROL><ARROW LEFT> = CHR\$(6)

READY.



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POKEs & PEEKs

SYSTEMs & WAITs

compiled by

Brian L Crosthwaite

This month PAPSAM explores the commodore text screen.

A lot of stuff happens with the text screen and it is probably the single most important screen on your computer! Heck, the single most important device your computer has. Device? Yes, device. Device number 3 on the VIC, 64, 128, and 16/+4. The text screens start at:

```
16/+4.....3072 (color)..2048
VIC.....7680 (color)..38400
64/128.....1024 (color)..55296
```

These are the start addresses that are the top left hand corner of the screen. In a program, they may be placed in a variable and referenced over and over throughout the program. That way you don't risk typing the wrong number, saving yourself lots of grief. Let's use SA for Screen Address, (or start address, let's not nitpick). SA=1024, (or 7680 for VIC, 3072 for 16 or +4). CA=55296, Color Address. I'm using the 64, because I have one right next to me. Now on some computers the color pokes have to accompany the character pokes. (The character pokes are what we will put into the screen addresses). There are two ways to do this. One is to place your color pokes next to your character pokes in the same program line. The other is to change the screen color to a color different than the one you are actually going to use, then poke it back to the screen color of your choice:

```
VIC 20          POKE 36879,1:POKE 36879,27
64              POKE 53281,0:POKE 53281,6
(128, 16 & +4 don't need to do this)
```

This will speed things up a bit, because you only have to do this once, unless you clear the screen, so you'll want to do that first. If you need to clear the screen several times during the run of your program, you can do so in a small subroutine that will make typing a lot easier, all you have to type is GOSUB lineno.

```
10000 PRINTCHR$(147):POKE53281,1:POKE53281,6:RETURN
```

NOTE: This little ditty should do the trick, however, I was looking at this, proofing it and I got to wondering if between pokes is when I should clear the screen. Since I have limited space and we just got a new computer set up, I had to try it on a VIC 20, the kind that uses the 64 power supply. No variation of this technique worked. This new development has me boggled, as I know nothing of any variations in the VIC ROMs.

The following sets the character color and resets the color so when you poke a character it appears as color c. This will not replace the above on a machine that normally needs the color poked in separately.

```
10000 POKE646,c:PRINTCHR$(147):RETURN
      (POKE241,c 128 and POKE1394,c 16/+4)
```

Every time you GOSUB 10000, the screen is cleared and the color is restored. You'll want to change the POKE code to the desired color. Here are the codes:

```
code...64/128.....16/+4
0...black.....illegal
```

- 1...white.....black
- 2...red.....white
- 3...cyan.....red
- 4...purple.....cyan
- 5...green.....purple
- 6...blue.....green
- 7...yellow.....blue
- 8...orange.....yellow
- 9...brown.....orange
- 10...light red.....brown
- 11...dark grey.....yellow green
- 12...medium grey.....pink
- 13...light green.....blue green
- 14...light blue.....light blue
- 15...light grey.....dark blue
- 16.....light green

The VIC lives in a world all it's own. 0 - 255 at location 36879 screen color, border color, character-foreground and background colors. You'll have to experiment with these to find what you want.

If you decide this isn't the way you want to do things, or your computer won't respond to these coaxings, then you may have to just poke the color in before or after the character poke. Before we continue, I need to bring out a couple of points and give you a plotting formula.

1. The 64s with the second version of ROM need to have the screen cleared and set up as described above. All other 64s should display the character without the need for the color codes.
2. If you want to poke things on the screen using a different color for each character you'll have to use the poke codes for the colors.
3. Here is the formula:

```
Plot Position=SA+X+40*Y..all but VIC..Plot Position=SA+X+22*Y
POKE Plot Position, char (NOTE: char=32 unplots)

Color Position=CA+X+40*Y.....VIC..Color Position=CA+X+22*Y
POKE Color Position,c
```

Let's look at what we've got.

```
100 SA=1024:REM screen address
110 CA=55296:REM color address
120 GOSUB10000:REM clear screen set color
200 REM*****
210 REM** program body **
220 REM*****
230 GOSUB20000:REM plot a dot
500 END
10000 PRINTCHR$(147):POKE53281,1:POKE53181,6:RETURN
20000 POKESA+X+40*Y,81:REM plot dot
20010 REM if you need to poke color -- POKECA+X+40*Y,c:REM color
20020 RETURN
```

Now, let's plot a circle! We'll need our maximum coordinates:

XM=39:YM=24 (XM=21:YM=22 on VIC)

The coordinates that work with the formula are, X = from 0 to 39 and Y = from 0 to 25. If you'd like to have your numbers 1 to 40 and 1 to 25, just substitute the original formula with this one:

A+(X-1)+40*(Y-1)

Be sure to make the adjustment to the color formula as well. The formula is simple, you have 40 columns, so $(0 \text{ to } 39) + 40 * \text{lineno}$ will place you where you want to go, just thought I'd mention this to confuse you, you seemed to be getting all this and well, you know....

Next we'll need center points XC and YC:

```
XC=XM/2:YC=YM/2
```

The center is half of our max -- right? Let's use radii of 10 by 10, on both axis.

```
RX=10:RY=10
```

Oh, sure we could do this with just one radius, but that's no fun, and it's a small program anyway. The computer thinks in RADIANS not to be confused with radius or radon gas. The human brain, on the other hand is into the less metric of things and uses degrees. So naturally we'll have to use a translator of some sort, or a conversion program like:

```
RADs=DEG/180*PI
```

Before we get in too deep, we'll just jump to the chase with:

```
X=INT(XC+XR*SIN(N/180*PI))
Y=INT(YC-YR*COS(N/180*pi))
```

Where N = 1 to 360 degrees. Don't forget to use INT to get the integer off the number, because if you try to plug X and Y with the decimal part of the number still attached the pokes will crap out on ya. You could use the INT in the address formula instead of just calculating the INT of X and Y, you'll have to remember to place INT on the color formula as well. Well, here it is:

```
100 SA=1024:REM screen address
110 CA=55296:REM color address
114 XM=39:YM=24:XC=XM/2:YC=YM/2:XR=10:YR=10
120 GOSUB10000:REM clear screen set color
200 FOR N=1TO360
210 X=INT(XC+XR*SIN(N/180*PI))
220 Y=INT(YC-YR*COS(N/180*PI))
230 IF X<XM AND X>0 AND Y<YM AND Y>0 THEN GOSUB 20000:REM plot dot
240 NEXT N
250 GET E$:IF E$="" THEN 250
500 END
10000 PRINTCHR$(147):POKE53281,1:POKE53181,6:RETURN
20000 POKESA+X+40*Y,81:REM plot dot
20010 REM need color? POKECA+X+40*Y,c:REM color
20020 RETURN
```

This will plot a circle on the text screen using white dots, found on the Q key, POKE code 81.

Animation

Animation is possible on the text screen. Keep in mind that print statements work a lot faster than pokes do. Kind of strange how it turns out that way. You can use poke to place a character in location 2023 (8185 VIC, 4071 16/+4). This location can't normally be PRINTed to using a print statement, as it is the bottom right most location and the screen will scroll, even when you use a semicolon. If you plan on filling the screen with characters, I recommend PRINTing everything then POKEing that last location to fill it in totally.

This technique is handy in writing games that redefine the character set and completes the picture.

Back to animation. Using the following can set your VIC or 64 up to effectively PRINT AT:

```
10000POKE781,ro:POKE782,co:POKE783,48:SYS65520:RETURN
10000CHAR,co,ro:RETURN:REM next text PRINTed will appear
at co,ro on 128, 16 or +4
```

Where ro = 0 to 22 on VIC, 0 to 24 on all other computers, co = 0 to 21 on VIC, 0 to 39 on all other computers. Do this every time you want to move your cursor to a given position. However, once again printing is still faster. You may be tempted to PRINT AT, then print your picture, PRINT AT then update your picture. I recommend using cursor key movement instead. Try the following two programs. They both do the same thing.

```
100PRINT"<CLR/HOME><CRSR DOWN><CRSR DOWN><CRSR DOWN><"
110GOSUB1000
120PRINT"<CRSR UP>>"
130GOSUB1000
140GOTO100
1000FORT=0TO300:NEXT:RETURN
-----
10PRINT"<CLR/HOME>"
100GOSUB10000:GOSUB1000
110PRINT"<"
120GOSUB10000:GOSUB1000
130PRINT">"
140GOTO100
1000FORT=0TO300:NEXT:RETURN
10000POKE781,04:POKE782,00:POKE783,48:SYS65520:RETURN
```

Depending upon the amount of cursor movement involved it may or may not be quicker to use the POKE and SYS routine. You'll just have to experiment. Sometimes, poking the stuff of animation into the screen is fast enough. Note, line 1000 in both programs. It's a delay loop to slow the program down, so the animation is not quite as fast as it could be. Sometimes a delay is good!

```
10PRINTCHR$(147):PLOT=1024+0+40*4
100PT=60:GOSUB10000
110PT=62:GOSUB10000
120GOTO100
10000POKEPLOT,PT:RETURN
```

Try one of the first two animation programs without the delay routine, and compare the speed of execution. It seems that the POKE job is quite fast, however if you had several different characters moving on the screen the program would have to reach all of the poke statements before everything got updated. Where as the use of ONE print statement could take care of most of the screen.

But, what about separate movement? The control of two separate entities on the screen at the same time -- in different directions? Well, never fear PRG TECHs are here! What the hell are PRG TECHs? Just some fancy smancy mumbo jumbo for programming techniques. Two of which we'll look at to solve this little dilemma.

1. First, the most obvious, the X1,Y1 X2,Y2 thing. Using poke. (Now, I know what your thinking, that I'm trying to steer you away from poking to the screen, well your wrong- look at the title of this article- does the word

PRINTs appear anywhere? Get with the program kiddies, we're talkin' POKES & PEEKs here...). Try this one:

```
10PRINTCHR$(147)CHR$(5):REM CLR and WHITE
100XM=39:YM=24:X1=10:X2=20:Y1=2:Y2=5
110H1=1:H2=1:V1=1:V2=1:SA=1024
120FORI=0TO9999
130POKESA+X1+40*Y1,32:POKESA+X2+40*Y2,32
140X1=X1+H1:IF X1>XM OR X1<0 THEN H1=-H1:GOTO140
150X2=X2+H2:IF X2>XM OR X2<0 THEN H2=-H2:GOTO150
160Y1=Y1+V1:IF Y1>YM OR Y1<0 THEN Y1=-Y1:GOTO160
170Y2=Y2+V2:IF Y2>YM OR Y2<0 THEN Y2=-Y2:GOTO170
180POKESA+X1+40*Y1,81:POKESA+X2+40*Y2,81
190NEXTI
```

Pretty cool, eh? Smooth, but kinda flashy. Be sure to use XM=21 and YM=22 with an SA of 7680 on the VIC -- now that your computer has locked up.

2. Let's try another way:

```
10PRINTCHR$(147)CHR$(5):REM CLR and WHITE
100XM=39:YM=24:X1=10:X2=20:Y1=2:Y2=5
110H1=1:H2=1:V1=1:V2=1:SA=1024
120FORI=0TO9999
130POKE781,X1:POKE782,Y1:POKE783,48:SYS65520:PRINT" ":REM
  substitute CHAR,X1,Y1," " on 16/+4 or 128
132POKE781,X2:POKE782,Y2:POKE783,48:SYS65520:PRINT" ":REM
  substitute CHAR,X2,Y2," " on 16/+4 or 128
140X1=X1+H1:IF X1>XM OR X1<0 THEN H1=-H1:GOTO140
150X2=X2+H2:IF X2>XM OR X2<0 THEN H2=-H2:GOTO150
160Y1=Y1+V1:IF Y1>YM OR Y1<0 THEN Y1=-Y1:GOTO160
170Y2=Y2+V2:IF Y2>YM OR Y2<0 THEN Y2=-Y2:GOTO17
180POKE781,X1:POKE782,Y1:POKE783,48:SYS65520:PRINTCHR$(113):REM
  substitute CHAR,X1,Y1,CHR$(113) on 16/+4 or 128
182POKE781,X2:POKE782,Y2:POKE783,48:SYS65520:PRINTCHR$(113):REM
  substitute CHAR,X2,Y2,CHR$(113) on 16/+4 or 128
190NEXTI
```

One last little idea on animation- windows. Using ESCape T and ESCape B you can define a window that will force everything to print in only the allotted space. Only the top need be used, then HOME to the same position on the screen each time you update the picture. A group of windows can be moved around the screen using window commands, updating as the process continues. We'll have an indepth look at these PRG TECHs next month, along with a Boolean logic demo using sprites and the LSB. In the mean time for those of you with 128s, 16s, and +4s, check this out.

```
100PRINTCHR$(147):CHAR,19,10
110PRINTCHAR$(27)"T(2 CRSR DOWN)(2 CRSR RIGHT)"CHR$(27)"B"
120PRINT"<":GOSUB1000
130PRINT">":GOSUB1000
140GOTO120
1000FORT=0TO300:NEXT:RETURN
```

The beauty of the commodore computer is you can print and poke redefined characters anywhere on the screen. This enables easy animation with your own custom character sets, which is a whole other topic for a near future PAPSAN, until then -- Happy hacking!

READY.

5. Memory expansion

- 17xx_____k
- GEORAM_____k
- RAMLink_____k
- RAMDrive_____k
- other_____k
- VIC Super Expander 3k
- other VIC expander_____k

6. Expansion board(s)

- _____
- _____
- _____

7. Modem

- _____ baud

8. BBS name(s)

- Q-Link_____
- _____
- GEnie_____
- _____
- CompuServe_____
- _____
- other_____
- _____

9. Input device(s)

- paddels
- joystick
- mouse
- track ball
- Koala pad/Animation Station
- light pen
- other_____

----- MUSIC -----

10. MIDI

- _____

11. Euphony + ver_____

- MIDI _____

Euphony Jr ver_____

- MIDI _____

12. Stereo setup

- SID Symphony
- Internally installed
second SID chip address_____
- other_____

13. Other keyboards

- _____
software:_____
- _____
software:_____
- _____
software:_____

14. Recording

- software_____
- hardware_____
- other_____

----- NISC -----

15. Favorite brand of disks

- 8'' _____
- 5.25'' _____
- 3.5'' _____

16. Magazines/Disks subscribed to

- RUN disk
- Gazette disk
- Ahoy disk
- LOADSTAR
- LOADSTAR128
- dieHard
- other _____

17. What do you use your computer for (rate usage 0 to 5, where 5 is most and 0 is never).

- word processing
- spread sheets
- data bases
- general productivity _____
- music composition
- music playing
- telecommunications
- adventure games
- arcade games
- mental games
- architectural drawing
- viewing computer art
- creating computer art
- other _____

18. What is your favorite...

- game _____
- utility _____
- productivity _____
- all time _____

19. What other computer related interests do you have?

20. What other non-computer related interests do you have? _____

21. What would you like to see more of in the Flyer?

21. Cont. _____

22. What don't you like about the Flyer?

23. Other comments, ideas, et cetera.

We'd like to see your programs! So this would be a good time to send one in, along with this survey!

dieHard
Flyer Survey
P O Box 392
Boise ID 83701


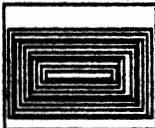
READY.

It is here, what you've all been waiting for, for so long. Yes, now you can subscribe to dieHard, the Flyer for commadore 8bittens!

It's easier than you think...

and cheaper too -

\$20.00 brings the Flyer for 1 year!

<input type="checkbox"/> Oh, why not! Enter my name onto your subscription list. name: _____ address: _____ city _____ state _____ zip _____	
<input type="checkbox"/> Enclosed is either a check or money order, I don't keep track of these things! One of these forms of payment is in the amount of 15 bucks, I could be buying beer, or going to a movie, but I'd rather spend it on a pizza! PLEASE NOTE: We don't accept any credit cards. All payments must be either check drawn on a bank within the United State of America, or a Money Order bought in the United States of America. Do NOT send cash or coin.	

Please note: the 15 bucks above should read, 20 bucks, anyway, you can't get a decent pizza for 15 bucks!

{Don't ya just hate typos?}

Here's where to send that 20 bucks, sorry no pizzas!

**dieHARD
ATTN SUBSCRIPTIONS
P O Box 392
Boise ID 83701**

PRG

BY
BRIAN L CROSTHWATE

Well, we're back with more PRG, and boy is it deep, try not to step in any! What is PRG? PRG is a little bit of info the disk drive places on the disk directory to indicate that a file is a PRoGram file. Now, that doesn't mean you can RUN the PRG, but there is a good chance you can. And if it's found here, it's sure to RUN! So whip out your blank floppys and start typin' -- but please -- not in public! All programs found under PRG are found on the Spinner. If you hate typing, the Spinner is five bucks and will be a 1541 format so just about anyone can RUN it! (Cassettes are available for \$5 upon request, be sure to state computer 'cos the Plus4 and C-16 read tape different than the VIC, 64, and 128- sorry PET, and CBM we have no equipment- anyone want to donate any?). (FOG committy here, will these run on PET, CBM)? Be sure to include \$1.65 for post and handling for either one..

India This program, written by Brian Crosthwaite, is called **India**. There are two versions, one written in **ULTRA-HIRES** ((c) 1986 CW Communications) from reRUN January/February 1986, the other, in good old BASIC 7.0 -- both for the 128. See that issue of **RUN** for further info on **UH**. Pressing 1-9 during program execution changes the plot increment. Pressing <RETURN> toggles PLOT and UNPLOT, and pressing <SPACE> will place a box at the present coordinates. **ULTRA-INDIA** runs on the 128 with **ULTRA-HIRES** installed, and **HIRES-INDIA** runs on any 128. The **HIRES** version will also run on the 16 and **PLUS4**. Enjoy!

```
1 REM ULTRA-INDIA
2 FAST:INPUT"PLOT FACTOR (1TO8)";D:PT=1
3 CGRAPHIC,0,2:CLCR,0: REM ENABLE ULTRA HIRES 640 X 200 AND CLEAR SCREEN
4 TRAP 30
5 ECHAR,53248,0,0,1,1,"(DRK BLU)":REM DARK BLUE ON THE 80 COLUMN RGBI
6 ECHAR,53248,0,24,4,4," TO ANTONY & MIA "
7 CGRAPHIC,0,2:CLCR,0
8 CBOX,0,0,639,199,1
9 XM=639:YM=199:XC=XM/2:YC=YM/2:DX=-D:DY=-D
10 :X1=XC
11 :Y1=YC
12 :X=X1:Y=Y1:GOSUB24
13 :X=XM-X1:GOSUB24
14 :Y=YM-Y1:GOSUB24
15 :X=X1:GOSUB24
16 GETA$:IFA$="" THENGOSUB100:ELSEIFA$=CHR$(13)THENPT=PT+1:IFPT>1THENPT=0
17IFUAL(A$)>0ANDUAL(A$)<10THENUNVAL(A$)GOSUB1000,2000,3000,4000,5000,6000,
    7000,8000,9000
19 :GOTO26
20 ::IFX1>XMTHENX1=0
21 ::IFX1<00THENX1=XM:RETURN
22 ::IFY1>YMTHENY1=0
23 ::IFY1<00THENY1=YM:RETURN
24 IFX<XMANDX>0ANDY<YMANDY>0THENCODOT,X,Y,PT
25 RETURN
26 ::X1=X1+DX:IFRND(0)*1>.9THENDX=-DX
27 ::Y1=Y1+DY:IFRND(0)*1>.9THENDY=-DY
28 :GOSUB20:GOSUB21
29 GOTO12
```

```

30 @TEXT:HELP:END
100 @DRAW,X1,Y1,XM-X1,Y1,PT
101 @DRAW,XM-X1,Y1,XM-X1,YM-Y1,PT
102 @DRAW,XM-X1,YM-Y1,X1,YM-Y1,PT
103 @DRAW,X1,YM-Y1,X1,Y1,PT
104 RETURN
1000 DX=1:DY=1:RETURN
2000 DX=2:DY=2:RETURN
3000 DX=3:DY=3:RETURN
4000 DX=4:DY=4:RETURN
5000 DX=5:DY=5:RETURN
6000 DX=6:DY=6:RETURN
7000 DX=7:DY=7:RETURN
8000 DX=8:DY=8:RETURN
9000 DX=9:DY=9:RETURN

1 REM HIRES-INDIA regular 128, 16, Plus4
2 INPUT"PLOT FACTOR (1TO8)";D:PT=1
3 GRAPHIC1,1
4 TRAP 30
8 BOX0,0,319,199,1
9 XM=319:YM=199:XC=XM/2:YC=YM/2:DX=-D:DY=-D
10 :X1=XC
11 :Y1=YC
12 :X=X1:Y=Y1:GOSUB24
13 :X=XM-X1:GOSUB24
14 :Y=YM-Y1:GOSUB24
15 :X=X1:GOSUB24
16 GETA$:IFA$="" THENGOSUB100:ELSEIFA$=CHR$(13)THENPT=PT+1:IFPT>1THENPT=0
17IFVAL(A$)>0ANDVAL(A$)<10THENONVAL(A$)GOSUB1000,2000,3000,4000,5000,6000,7000,
8000,9000
19 :GOTO26
20 ::IFX1>XMTHENX1=0
21 ::IFX1<00THENX1=XM:RETURN
22 ::IFY1>YMTHENY1=0
23 ::IFY1<00THENY1=YM:RETURN
24 IFX<XMANDX>0ANDY<YMANDY>0THENDRAWPT,X,Y
25 RETURN
26 ::X1=X1+DX:IFRND(0)*1>.9THENDX=-DX
27 ::Y1=Y1+DY:IFRND(0)*1>.9THENDY=-DY
28 :GOSUB20:GOSUB21
29 GOTO12
30 GRAPHIC0:HELP:END
100 DRAWPT,X1,Y1TOXM-X1,Y1
101 DRAWPT,XM-X1,Y1TOXM-X1,YM-Y1
102 DRAWPT,XM-X1,YM-Y1TOX1,YM-Y1
103 DRAWPT,X1,YM-Y1TOX1,Y1
104 RETURN
1000 DX=1:DY=1:RETURN
2000 DX=2:DY=2:RETURN
3000 DX=3:DY=3:RETURN
4000 DX=4:DY=4:RETURN
5000 DX=5:DY=5:RETURN
6000 DX=6:DY=6:RETURN
7000 DX=7:DY=7:RETURN
8000 DX=8:DY=8:RETURN
9000 DX=9:DY=9:RETURN

```

ColorCircle This is a DEMO of the 64's multicolor hires done in basic. There's not much to it, your 64 will plot dots in the colors you choose to form a circle -- rather 256 circles, until the

whole screen is full. More on this latter.

```
5 REM COLOR CIRCLE 64 COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
10 PRINT"(c1r)":XM=159:YM=199:XC=XM/2:YC=YM/2:X=1:YF=YM/XM
20 INPUT"COLOR";A,B,C,D:REM ENTER COLORS
100 GOSUB1000:REM SET UP
110 FORR=1TO255:REM RADIUS
120 C=C+1:IFC>3THENC=0:REM COLOR
130 FORD=1TO360:REM DEGREES
140 :X=INT(XC+R*XF*SIN(D/180*(shift ↑))):REM CALCULATE COORDINATES
150 :Y=INT(YC-R*YF*COS(D/180*(shift ↑)))
160 GOSUB2000:REM PLOT
170 NEXT:REM NEXT DEGREE
180 NEXT:REM NEXT ORBIT LEVEL
190 GETES:IFES=""THEN190:REM WAIT FOR KEY PRESS
200 GOTO3000:REM END ROUTINE
1000 POKE53265,PEEK(53265)OR32:REM SET UP HIRES COLOR
1010 POKE53270,PEEK(53270)OR16
1020 POKE53272,PEEK(53272)OR8
1030 FORI=1024TO2023:POKEI,B*16+C:NEXT:REM INITIATE COLORS AND CLEAR SCREEN
1040 FORI=55296TO56295:POKEI,D:NEXT
1050 FORI=8192TO16191:POKEI,0:NEXT:REM CLEAR SCREEN
1060 POKE53281,A:RETURN
2000 IFX>XMORX<0ORY>YMORY<0THENRETURN:REM ARE THE COORDINATES ON THE SCREEN?
2002 CH=INT(X/4):RO=INT(Y/8):LN=YAND7:REM CALCULATE FOR POKE
2010 BY=8192+RO*320+8*CH+LN:BI=6-(2*XAND7)
2020 POKEBY,PEEK(BY)ORC*2↑BI:REM POKE THE DOTS
2030 RETURN
3000 POKE53265,PEEK(53265)AND223:REM GET BACK TO REGULAR TEXT SCREEN
3010 POKE53272,PEEK(53272)AND247
3020 POKE53270,PEEK(53270)AND239
3030 END
```

Neptune Neptune is a program that takes you to the far reaches of the solar system where you get a view of the planet Neptune as seen from the fly by pass of the artist/author, Brian L Crosthwaite. Neptune is for the C-16 and Plus4. To run the program on a C128 change the POKE65301,0 and POKE65305,0 to POKE53281,0 and POKE53280,0. Have a nice trip!

```
1 AS="NEPTUNE":REM COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
1000 GRAPHIC1,1:POKE65301,0:COLOR1,2,7:POKE65305,0
1010 CHAR1,16,0,"NEPTUNE"
1020 XM=319:YM=199:XC=XM/2:YC=YM/2:XF=YM/XM
1022 GOSUB2000
1030 CIRCLE1,XC,YC,(60*XF)+60,60
1040 BOX0,XC-20-40,YC-18-20,XC+20,YC-18+20,,1
1044 CIRCLE1,XC-20,YC-18,(20*XF)+20,17
1050 BOX0,XC+40,YC+30,XC+60,YC+40,,1
1054 CIRCLE1,XC+50,YC+40,10,10,,,,64
1060 PAINT1,XC,YC
1070 DRAW1,XC-150,YC+1TOXC+150,YC-1
1080 DO:FORY=INT(YC)-60TOINT(YC)+60
1090 R=INT(RND(0)*60)+1
1100 IFINT(Y/R)*R=YTHENDRAW0,XC-98,YTOXC+98,Y
1110 NEXT:UZ=UZ+1:LOOPUNTILUZ=4
1120 GETES:IFES=""THEN1120:ELSEGRAPHIC0:LIST:END
2000 FORI=0TO255
2010 X=INT(RND(0)*XM)+1:Y=INT(RND(0)*YM)+1
2020 DRAW1,X,Y
2030 NEXT:COLOR1,4,3:RETURN
```

DISCOSITY I Ah, what's in a name especially when no one knows what it means! This is one of those DEMOs to run when you're off doing something and your computer is bored. The program runs on the 128, 16, and Plus4.

```

1 REM DISCOSITY I COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
10 GRAPHIC3:COLOR3,15,6
11 PRINT"(26 crsr down)"
20 X=159/2
30 Y=99
42 FORF=0T0360STEP10:FORS=0T0360STEP10
44 XD=XD+1:IFXD>XTHENXD=0
45 YD=YD+1:IFYD>YTHENYD=0
46 P=P+1:IFP>3THENP=0
50 PRINT"(clr)XD="XD,"YD="YD,"S="S,"F="F
60 CIRCLEP,X,Y,XD,YD,S,F
62 IFS=FTHENPAINTP,X,Y
66 GETW$:IFW$="W"THENGOSUB4000
70 NEXTS,F
76 PRINT"DONE"
80 GETW$:IFW$="W"THENGOSUB4000:ELSEGOTO80
90 GOTO80
4000 W=W+1:IFW>1THENW=0
4010 IFW=0THENGGRAPHIC3,0
4020 IFW=1THENGGRAPHIC4,0
4030 RETURN

```

Etchmaster EM for the 64 is a multi color etch-a-sketch just for the hell of it. Actually, it shows the ease of plotting more than one color on the hires screen. Ok you're right, it's not the hires screen, it's the multicolor screen. Shouldn't be too hard to alter this one to do more than just draw lines.

```

0 REM HICO ETCHMASTER COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
100 POKE53281,1:POKE53280,0:Z=0:K=3
110 PRINT"(clr)(C= 2)(4 spc)(3 crsr down)*****"
120 PRINT"(4 spc)** HI RES COLOR ETCH-A-SKETCH **"
130 PRINT"(4 spc)**(13 spc)BY(13 spc)**"
140 PRINT"(4 spc)**(5 spc)BRIAN L CROSTHWAITE(4 spc)**"
150 PRINT"(4 spc)**(9 spc)OCT.30,1987(8 spc)**"
160 PRINT"(4 spc)*****"
170 PRINT"(4 spc)**(8 spc)USE CRSR KEYS(7 spc)**"
172 PRINT"(4 spc)**(5 spc)OR JOYSTICK TO DRAW(4 spc)**"
174 PRINT"(4 spc)*****"
176 PRINT"(4 spc)**(4 spc)(21 C= 0)(3 spc)**"
180 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 1)1=====INVISIBLE(rvs off)(C=
2)(3 spc)**"
190 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 2)2-----WHITE(rvs off)(C=
2)(3 spc)**"
200 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 3)3=====RED(rvs off)(C=
2)(3 spc)**"
210 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 4)4-----CYAN(rvs off)(C=
2)(3 spc)**"
212 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 5)C=====CLEAR SCREEN(rvs off)(C=
2)(3 spc)**"
214 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 6)H-----HELP(rvs off)(C=
2)(3 spc)**"
220 PRINT"(4 spc)**(4 spc)(rvs on)(ctrl 7)Q=====QUIT(rvs off)(C=
2)(3 spc)**"
222 PRINT"(4 spc)**(15 spc)(13 spc)**"

```

```

230 PRINT"(4 spc)*****"
240 IFZ=0THEN(3 spc)PRINT"(4 spc)**(4 spc)PRESS SPACE TO BEGIN(4 spc)**"
242 IFZ=1THEN(3 spc)PRINT"(4 spc)**(4 spc)PRESS SPACE TO RESUME(3 spc)**"
250 PRINT"(4 spc)*****"
260 GETA$:JV=PEEK(56320):IFA$<>" "ANDJV<>111THEN 260
261 PRINT"(clr)"
262 IFZ=1THENGOSUB10030:Z=0:GOTO1010
1000 GOSUB10000:X=79:Y=99
1010 GETA$:JV=PEEK(56321)
1020 IFA$="(crsr up)"ORJV=126THENY=Y-1:GOTO1110
1022 IFJV=118THENY=Y-1:X=X+1:GOTO1110
1030 IFA$="(crsr down)"ORJV=125THENY=Y+1:GOTO1110
1032 IFJV=117THENY=Y+1:X=X+1:GOTO1110
1040 IFA$="(crsr right)"ORJV=119THENX=X+1:GOTO1110
1042 IFJV=121THENY=Y+1:X=X-1:GOTO1110
1050 IFA$="(crsr left)"ORJV=123THENX=X-1:GOTO1110
1052 IFJV=122THENY=Y-1:X=X-1:GOTO1110
1060 IFA$="1"THENK=0
1070 IFA$="2"THENK=3
1080 IFA$="3"THENK=1
1090 IFA$="4"THENK=2
1092 IFA$="C"THENZ=1:GOSUB10020
1094 IFA$="H"THENZ=2:GOSUB30000:GOSUB110
1100 IFA$="Q"THENGOTO30000
1110 IFX>159THENX=0
1111 IFX<0THENX=159
1112 IFY>199THENY=0
1113 IFY<0THENY=199
1120 GOSUB20000
1130 GOTO1010
9999 REM ***** SET UP *****
10000 REM
10005 A=11:B=2:C=3:D=1
10010 PRINT"(clr)(12 crsr down)(14 spc)STAND BY..."
10020 FORX=8192T016191:POKEX,0:NEXT
10022 IFZ=1THENX=79:Y=99:Z=0:RETURN
10030 FORI=1024T02023:POKEI,B*16+C:NEXT
10040 FORI=55296T056295:POKEI,D:NEXT
10050 POKE53265,PEEK(53265)OR32
10060 POKE53270,PEEK(53270)OR16:POKE53281,A
10070 POKE53272,PEEK(53272)OR8
10080 RETURN
19999 REM ***** PLOT *****
20000 CH=INT(X/4):RO=INT(Y/8):LN=YAND7
20010 BY=8192+RO*320+8*CH+LN
20020 BI=6-(2*XAND7)
20030 POKEBY,PEEK(BY)ORK*2+BI
20040 RETURN
29999 REM **** NORMAL SCREEN ****
30000 POKE53281,1:POKE53280,1
30010 POKE53265,PEEK(53265)AND223
30020 POKE53272,PEEK(53272)AND247
30030 POKE53270,PEEK(53270)AND239
30032 IFZ=2THENZ=1:RETURN
30040 PRINT"(clr)(12 crsr down)(8 spc)QUIT FOR SURE? <Y/N>"
30042 GETA$:IFA$=""THEN30042
30044 IFA$="N"THENGOSUB10030:Z=0:GOTO1010
30050 PRINT"(clr)":END

```

Shoplister 128 Here is our feature program. It was supposed to be for the 64, but that's a

long story. Shoplister is a program dedicated to that trip to the grocery store. Type this puppy in **carefully!** Be sure the spaces in the data statements are exactly as they are in the listing -- and watch out for those commas that seem to be off in never-never land, they are very important.

What the program does is simple -- **RUN** the program before you go shopping, enter the number or symbol corresponding with what you need, how many you need (decimals are supported), and the program does the rest. What's the rest? Shoplister will print out a shopping list for you, with the items, prices each, total each, subtotal and total with tax. You'll see, it's easy. Everything is menu driven and ready to go. However the prices may not be current. To alter the data run the second listing first. **Edit Data** programs the f-keys to select sets of data. All but the last set of data is accessible via the f-keys, you'll have to list these out manually. All you have to do are make your changes by typing over the present data. You can of course, just list out the statements yourself.

If you add new items be sure to follow the structure given in the REM statements 60000 and 60001. The "X" characters signify the spaces that have to be occupied by either actual data or just spaces, but make sure they are there, the program will not run without this format -- unless you alter it.

To change the amount of tax, list line 4060. Right now it's at .05, which is Idaho's sales tax. It's the calculation that reads: $TT=TS+(TS*.05)$. (Not $TT=TV-((TV+.005<=TT)*.01)$ - This rounds off the extra fractions of a penny, it rounds up at half a penny or more -- the store will round up at a millionth of a penny or less- just kidding...).

When you are typing in the program and encounter a "{rvs on}" (see Extra, else where in this issue) or anything within a non-commodore looking set of brackets those are things like, reverse on, reverse off, control 3, and cursor key strokes. I put the control in as ctrl, because lot's of commodore 64's have this on the keyboard, let me know if you have any problems deciphering these keystroke indicators.

Be sure you have your printer on line before you **RUN** the program.

Listing 1

```
1 REM SHOPLISTER 128 COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
2 POKE2594,64:IFRGR(0)=5THENFAST:ELSEGRAPHIC0:SLOW:REM TURN OFF REPEAT KEYS --
IF 80 COLUMN FAST OTHERWISE MAKE SURE IN 40 COLUMN AND SLOW
100 GOSUB1000
104 REM *** START ***
110 GOSUB2000
120 GETKEYS$
130 IFS$=CHR$(13)THENGOSUB4000:ELSEIFS$>"9"ORS$<"0"THEN120
134 S=VAL(S$):GOSUB3000
150 GOTO110
500 END
1000 REM *** SET UP STUFF ***
1010 U=0:SP$="(7 spc) (rvs on)":PRINTCHR$(14)
1011 S2$="(3 spc)(rvs on)":GRAPHICCLR:COLOR0,14
1012 DIML1$(15),IT$(15),PR$(15),PR(15),LI$(100,3)
1020 M$="(ctrl 6)(clr)(25 crsr down)"
1030 TP$="(rvs off)(33 C= 0)":S5$="(rvs off)(22 C= 0)"
1032 T2$="(rvs off)(5 spc)(30 C= 0)"
1034 B2$="(rvs off)(5 spc)(33 C= 0)"
1040 S3$="(rvs on)(15 spc)"
```



```

1042 S4$="(3 spc)"
1900 RETURN
2000 REM ***MAIN MENU***
2010 PRINTM$
2011 PRINTSP$S5$
2012 PRINTSP$"<1>(7 spc)BEVERAGES(3 spc)"
2020 PRINTSP$S5$
2022 PRINTSP$"<2>(7 spc)CERIALS(5 spc)"
2024 PRINTSP$S5$
2030 PRINTSP$"<3>(7 spc)DAIRY(7 spc)"
2032 PRINTSP$S5$
2040 PRINTSP$"<4>(7 spc)FRUITS(6 spc)"
2042 PRINTSP$S5$
2050 PRINTSP$"<5>(7 spc)MEATS(7 spc)"
2052 PRINTSP$S5$
2060 PRINTSP$"<6>(7 spc)MIXES(7 spc)"
2062 PRINTSP$S5$
2070 PRINTSP$"<7>(7 spc)POTPORI(5 spc)"
2072 PRINTSP$S5$
2080 PRINTSP$"<8>(7 spc)PRE-PACKAGED"
2102 PRINTSP$S5$
2110 PRINTSP$"<9>(7 spc)VEGETABLES "
2112 PRINTSP$S5$
2120 PRINTSP$"<RETURN> TOTAL(7 spc)"
2130 PRINT
2800 RETURN
3000 REM *** MAKE CHOISES ***
3001 IFS=1THENRESTORE60101
3002 IFS=2THENRESTORE60201
3003 IFS=3THENRESTORE60301
3004 IFS=4THENRESTORE60401
3005 IFS=5THENRESTORE60501
3006 IFS=6THENRESTORE60601
3007 IFS=7THENRESTORE60701
3008 IFS=8THENRESTORE60801
3009 IFS=9THENRESTORE60901
3010 READPD:FORI=0TOPD:READL1$(I):PR$(I)=LEFT$(L1$(I),6)
3012 IT$(I)=MID$(L1$(I),7,LEN(L1$(I))):PR(I)=VAL(PR$(I))
3013 IT$(I)=IT$(I)+LEFT$(S3$,23-LEN(L1$(I))+6)
3014 NEXT
3016 PRINTM$
3020 FORI=1TOPD
3030 PRINTS2$TP$
3040 IFI<10THENPRINTS2$I"(crsr left)<(crsr right)> "PR$(I)" "IT$(I)
3042 IFI=10THENPRINTS2$"<0> "PR$(I)" "IT$(I)
3043 IFI=11THENPRINTS2$"<+> "PR$(I)" "IT$(I)
3044 IFI=12THENPRINTS2$"<-> "PR$(I)" "IT$(I)
3050 NEXT
3060 PRINTS2$TP$:PRINTS2$"<RETURN> MAIN MENU(15 spc)"
3070 GETKEYA$:IFAS=CHR$(13)THENRETURN
3072 IFAS<="9"ANDAS>"0"THENA=VAL(A$)
3073 IFAS="0"THENA=10
3074 IFAS="+"THENA=11
3075 IFAS="-"THENA=12
3078 IFI-1<ATHEN3070
3080 GOSUB5000:C=C+1:IFC=100THENGOSUB6000
3090 GOTO3000
3900 END
4000 REM *** PRINT LIST ***
4002 PRINTM$
4010 FORL=0TOC-1

```

```

4026 PP=VAL(MID$(LI$(L,0),2,6))
4028 HM=VAL(LI$(L,3)):IFHMTHEN4030:ELSEGOTO4040
4030 PRINT"(rvs on)"LI$(L,1);
4031 PRINT"(rvs on)(7 crsr left)";
4032 PRINTUSING"###.##";HM;
4033 PRINT" e "LI$(L,2)" =";
4035 PRINTUSING"$###.##";PP
4036 TS=TS+PP
4040 NEXT
4060 PRINT"(18 spc)SUBTOTAL "USING"$###.##";TS:TT=TS+(TS*.05)
4061 TV=(INT(TT*100)/100):TT=TV-(TV+.005<=TT)*.01)
4070 PRINT"(21 spc)TOTAL "USING"$###.##";TT
4073 PRINT"(7 spc)(ctr1 3)PRESS ANY KEY TO CONTINUE(ctr1 6)":GETKEYC$
4074 GOSUB6000
4080 GETKEYC$
4090 PRINTM$"ARE YOU SURE? ALL WILL BE LOST."
4092 GETKEYC$:POKE2594,255:IFC$="Y"THENRUN:ELSEEND
5000 REM *** HOW MANY ***
5002 PRINTM$T2$:PRINTS4$ (rvs on)(8 spc)"IT$(A):
(7 spc)PRINTB2$:PRINTT2$:N0$="":N=0:F=0
5006 PRINT" "S2$"ENTER NUMBER, PRESS <RETURN>."
5010 PRINT"(12 spc)"S2$"HOW MANY(crsr down)(crsr left)(rvs off)(18 C= t)":PRINT
5020 GETKEYN$:IFN$=CHR$(13)THENN=VAL(N0$):GOTO5060
5030 IF(N$<"0"ORN$>"9")ANDN$<>".":THEN5020
5036 IFFANDN$="":THEN5020:ELSEIFN$="":THENF=-1
5040 N0$=N0$+N$:PRINT"(crsr up)(18 crsr right)(rvs off)"N0$
5050 GOTO5020
5060 PRINTS2$TP$:PRINTS2$"(6 spc)PRESS <RETURN> IF OK.(6 spc)"
5070 PRINTS2$"(8 spc)<+> TO INCREMENT(9 spc)"
5080 PRINTS2$"(7 spc)<-> TO DEINCREMENT(8 spc)":PRINT"(5 crsr up)";
5090 GETKEYA$
5092 :IFAS=CHR$(13)THENGOSUB7000:RETURN
5100 IFAS="+":THENN=N+1
5110 IFAS="-":THENN=N-1
5120 PRINT"(13 crsr right)(4 spc)"N"(crsr up) (crsr left)"
5130 GOTO5090
6000 REM *** PRINTER DUMP ***
6001 PRINTM$"(ctr1 3)"S2$TP$
6002 PRINTS2$"(4 spc)PRESS <RETURN> TO INITIATE(3 spc)":PRINTS2$"(10 spc)PRINT
(1 spc)SEQUENCE(9 spc)"
6004 GETKEYC$:IFC$<>CHR$(13)THEN6004
6010 PRINTM$:OPEN1,4,7:OPEN2,3:FORL=0TOC-1
6020 LI$(L,0)="(rvs off)"LI$(L,0)+"(rvs off)"
6021 FORJ=1TOLEN(LI$(L,1)):J1=ASC(MID$(LI$(L,1),J,1))
6022 IFJ1=18THENMID$(LI$(L,1),J,1)=CHR$(32)
6023 NEXTJ
6024 LI$(L,2)="(rvs off)"LI$(L,2)+"(rvs off)"
6025 LI$(L,3)="(rvs off)"LI$(L,3)+"(rvs off)"
6026 PP=VAL(MID$(LI$(L,0),2,6))
6028 HM=VAL(MID$(LI$(L,3),2)):IFHMTHEN6030:ELSEGOTO6040
6030 PRINT#1,LI$(L,1):PRINT#1,USING"###.##";HM;
6031 PRINT#1," e ";LI$(L,2);" = ";:PRINT#1,USING"###.##";PP
6032 PRINT#2,LI$(L,1)"(7 crsr left)"USING"###.##";HM;
6033 PRINT#2," e "LI$(L,2)" = "USING"###.##";PP
6034 :
6036 :
6040 NEXT
6060 PRINT#1,"(18 spc)SUBTOTAL "USING"$###.##";TS
6062 PRINT#2,"(18 spc)SUBTOTAL "USING"$###.##";TS
6070 PRINT#1,"(21 spc)TOTAL "USING"$###.##";TT
6072 PRINT#2,"(21 spc)TOTAL "USING"$###.##";TT

```

```

6080 PRINT#1:PRINT#2:CLOSE1:CLOSE2
6090 RETURN
7000 REM *** TOTALS AND LIST ***
7010 N=ABS(N):SU=PR(A)*N:LI$(C,3)=STR$(N)
7020 LI$(C,2)=PR$(A):LI$(C,1)=IT$(A)
7030 LI$(C,0)=STR$(SU)
7040 RETURN
60000 REM PRICE=> "(3 shift v).(2 shift v)" ITEM=> "(3 shift v).(2 shift
v)NAME(6 shift v)"
60001 REM ITEM NAME=> "NAME(3 spc)" 7 CHAR.
60002 REM
60101 REM ** BEVERAGES **
60102 DATA6,B1,001.76CRANBARRY,003.29SHARP'S,001.23FRZN ORANGE,001.47FRZN(1
spc)CRANBARRY
60103 DATA001.99FRZN JUICE,000.77APPLE JUICE
60201 REM ** CEREAL **
60202 DATA4,C1,003.08WHEAT CHEX,002.37GENERIC(3 spc),000.79BREAD(5
spc),001.09TORTILLA ,
60301 REM ** DAIRY ***
60302 DATA8,D1,001.69MILK 1% GL,001.04EGGS DZ,000.46MARGARINE,004.79DRY MILK L
60303 DATA 001.80COTTAGE CHEESE,002.09CHEDDER,002.36JACK CHEESE,000.60YOGURT
60401 REM ** FRUIT **
60402 DATA11,F1,001.29TOMATO LB,001.69APPLESAUSE,000.83PINEAPPLE CAN
60403 DATA001.16OLIVES CAN,000.32TOMATO SAUSE,000.55ST.TOMATO CAN
60404 DATA001.54BANANAS LB,002.49STRAWBARRYS QT,002.06GREEN GRAPES LB
60405 DATA002.40APPLE GD LB,000.75FRUIT COCKTAIL,000.69REFRIED BEANS
60501 REM ** MEAT **
60502 DATA7,M1,002.99SLICE TURKEY,001.59 LIVERWORST,003.00GAME HEN ,001.60GRND
(1 spc)TURKEY
60503 DATA004.50TURKEY HAM,003.90FRYER BREAST,000.65GRND BEEF ,
60601 REM ** MIXES **
60602 DATA9,M2,000.63PUDDING,002.99VANILLA,001.29STUFFING ,000.25MAC N CHEESE
60603 DATA001.69PEANUT BUTTER,001.59JAM/JELLY ,001.17CHOC CHIPS
60604 DATA000.91WORCHTERS HRE,001.50SPICE(5 spc),
60701 REM ** POTPORI **
60702 DATA11,P1,002.23DISHSOAP M,002.03BATH TISSUE,000.50PAPER TOWELS
60703 DATA002.20AJAX-TYPE,000.69GUM SF ,001.30WINDOW CLEANER,003.62MASCARA
60704 DATA002.68MAXI PADS ,002.43DETERGENT ,001.08SHAMPOO,001.08CONDITIONER
60801 REM ** PRE-PACKAGED **
60802 DATA2,P2,000.93BEEF RAVIOLI,001.53SALSA ,002.15ICE CREAM ,001.69MUSTARD
(1 spc)GP
60901 REM ** VEGETABLE **
60902 DATA5,V1,000.97HEAD LETTUCE,000.99FRZN PEAS ,000.99FRZN CORN(1 spc)
,000.22ONIONS LB
60903 DATA000.67ARTICHOKES

```

Listing 2

```

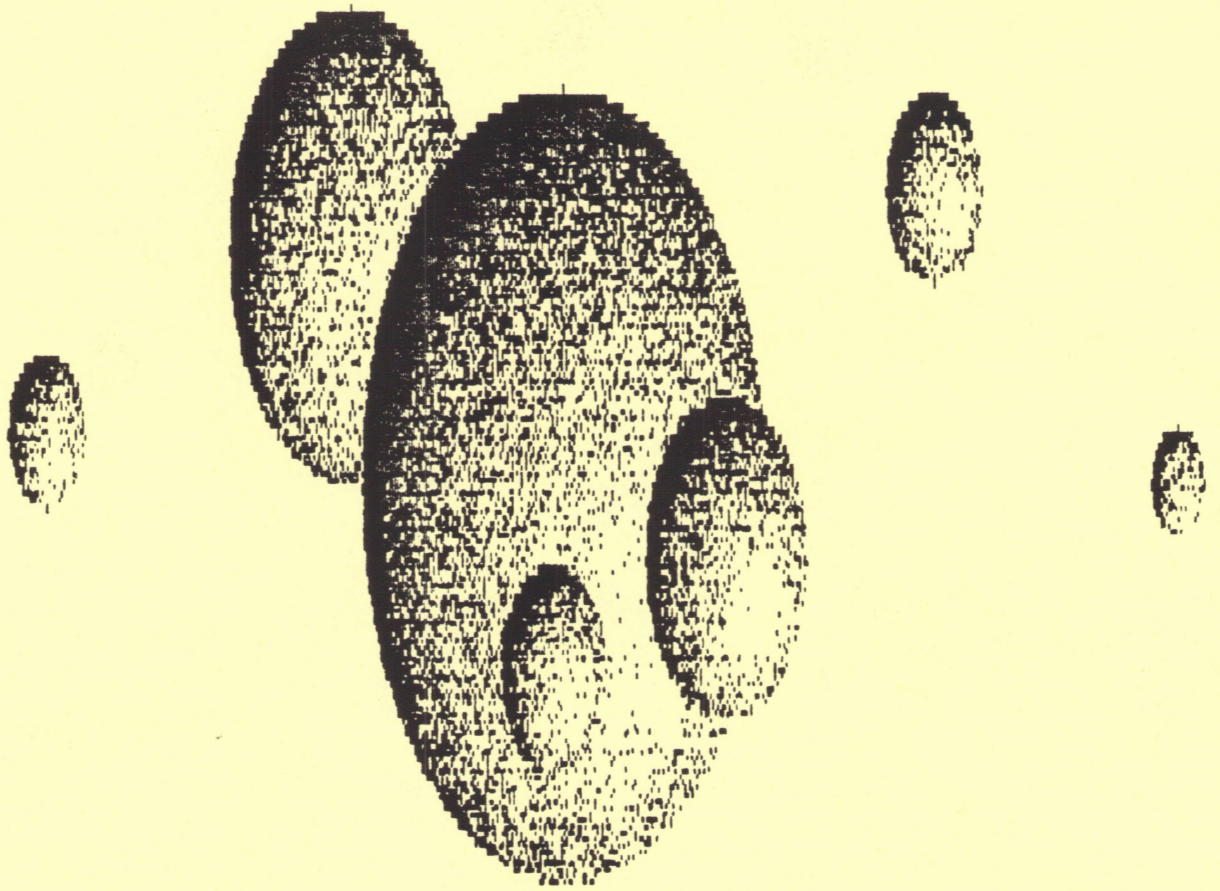
1 A$="EDIT DATA":REM COPYRIGHT 1992 BRIAN L CROSTHWAITE - LEOSOFT - LYNNCARTHY
6 COLOR0,2,7:COLOR1,1,1:COLOR6,2,1
10 KEY1,"(clr)(ctrl 1)LI60100-60200"+CHR$(13)
20 KEY2,"(clr)(ctrl 3)LI60200-60300"+CHR$(13)
30 KEY3,"(clr)(ctrl 6)LI60300-60400"+CHR$(13)
40 KEY4,"(clr)(ctrl 7)LI60400-60500"+CHR$(13)
50 KEY5,"(clr)(C= 7)LI60500-60600"+CHR$(13)
60 KEY6,"(clr)(C= 5)LI60600-60700"+CHR$(13)
70 KEY7,"(clr)(C= 1)LI60700-60800"+CHR$(13)
80 KEY8,"(clr)(C= 2)LI60800-60900"+CHR$(13)
100 PRINT"(clr)"CHR$(14)A$"(2 crsr down)"
110 PRINT"USE F-KEYS TO LIST DATA GROUPS(crsr down)"
120 PRINT" <F1> => LISTS 60100-60200"
130 PRINT" <F2> => LISTS 60200-60300"

```

```
140 PRINT" <F3> => LISTS 60300-60400"  
150 PRINT" <F4> => LISTS 60400-60500"  
160 PRINT" <F5> => LISTS 60500-60600"  
170 PRINT" <F6> => LISTS 60600-60700"  
180 PRINT" <F7> => LISTS 60700-60800"  
190 PRINT" <F8> => LISTS 60800-60900"  
200 PRINT"(33 C= 0)"  
210 PRINT"(rvs on)PRESS <(shift r)(shift e)(shift t)(shift u)(shift r)(shift  
t)> TO ENTER EDIT MODE(5 crsr down)":A$="SHOP LISTER128"  
230 PRINT"(ctrl 2)COLOR4,1:?"CHR$(34)"(clr)(ctrl 1)PLEASE STAND BY...(ctrl  
2)"CHR$(34)":L(shift 0)A$,8"  
240 PRINT"(4 crsr up)"
```

READY.

VOYAGEUR
STUDIOS



LynnCarthy