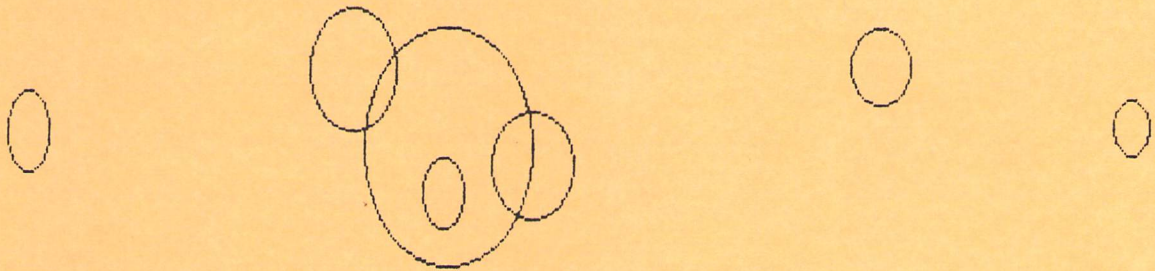


October 1992
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dis HARD

the Flyer for commodore 8biters



Tips
Just So Stories
Reviews
PAPSAW
PRG and more...



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View from the Underground

by

Brian L Crosthwaite

Well, my view this month is one on the upside. You see, although I'm a summer kind of a guy, I love Autumn. Specifically: Halloween. I had planned to have computer pumpkins running in my yearly hunted house. I have programs for the TimeX Sinclair, VIC20, C64, C16, and C128. The best one is for the VIC20. It probably won't happen, but it might be cool.

The Flyer is ending it's first quarter, with issue number four. I've got my 128 set up with a 1541 drive and an MPS 1250 printer to print things that come up, like letters and such, so I don't tie up the big machine. I've been debating about setting it up as a printer computer, and use GEOS 64 on it. With this issue we have set in a new system that will prevent me from over loading the magazine. It's called more time.

By making issue number 3 a double issue, because it was so big, and taking off a

month after that I get to build up an arsenal of articles and programs to pick and choose from. This way if it looks like the Flyer is going to go from a shuttle to a space station, I can back off and swap a smaller article for one that might make the issue bigger than our "set price" allows. Our cost is, by the way, \$1.50 per issue and \$15.00 per 12 issue subscription -- not the \$2.50 issue and \$20.00 subscription price quoted last issue.

Other happenings I've sent out review copies of dieHard to RUN, Compute, and LOADSTAR. Maybe they will think it's worth mentioning as maybe something new to be shared. I know until LOADSTAR advertised in Compute they never gave them mention. Who knows...

We're always looking for new programs and articles to publish, so send them in.

We're also looking for a font that is small, readable and doesn't have lot's of space between lines, a GEOS font, that is. A couple of people

said they had trouble with it.

We're going to start an information exstange to replace the LIST, known as Rarities. This will be a larger, more expanded list -- a connection from user groups. They can submit reports as well as lists of programmers and businesses that are commodore connections. I'll still compile lists to include. The expanded version will be wider in scope, opening up a broader base by loosening up the definition of list. The list will still be included until we pull this one off.

This Month We've got geoTips: an article on verious keyboard input; original programs; things to do -- things not to do, and more!

Up and Coming A users view of CompuServe, more programs...

Attention user groups!

Send us a list of your active

programmers who wish to get free publicity for their work. We will publish info, like programs they want to sell or distribute. Names, addresses. Software, hardware. Games, utilities. New, used. Send them on in.

Halloween programs for next year will be accepted. Get your Christmas music and graphic files sent in! Holiday themes are always cool. We'll also publish text adventures, as long as the code isn't too long.

Just an aside here, if you have a longer text adventure, we might consider it a Spinner exclusive -- available only on the dieHard disk.

In the next few months we'll be working on an operating system for the Spinner. This system will run text files and programs and be fairly close to self-contained. We are open to ideas. The system will either run on all the 8bits or will run submodules to customize itself to match a particular system and/or setup.

Enough already! Enjoy this month's issue, maybe you should leave that light on tonight...

READY.

geoTips

by

Brian L Crosthwaite

Lost geoPublish. When loading text into geoPublish, I choose the text region first. That way, after waiting a long time for text to the load, I don't sit there and go, "What the heck was I doing?"

Eraser Brush? geoPaint. The paint brush can be used to erase parts of a picture when the eraser is too small and edit can't get around the detail. On a normal screen, just select reverse and the brush you think will suit your needs.

geoMusts GEOS. What everyone using GEOS needs: 1) a mouse and a large mouse pad; 2) a RAM Expansion Unit (REU) with at least 512k memory; 3) 1561 and 1571 disk drives; 4) commodore 128D; 5) gateWay 128 (or 64); 6) GEOS 128 (or 64); 7) GEOS Companion's File Merge; and 8) Iconroller (warning, this is a great device, but it will not plug into the 128D because of the keyboard plug unless you extend the joystick port or alter the plug.)

How many? geoWrite. Need to know how many pages your document is? No problem, just select print from the file menu. The print window will open up and say PRINT FROM xx TO yy -- yy is the number of pages. If the document starts with a set page number, just subtract the last number from the first, then add 1 to that number: number of pages = (yy-xx)+1.

Name Copy GEOS. If you find yourself in view-by-name and are in a hurry it may be quicker to copy two files than one, providing the extra file is mega small. You won't have to wait for the icon to load, the multifile icon will appear instead. This may be a little extream...

READY.



JUST SO STORIES

"Buttons, Glorious, Buttons"

OR

"Antony, Baby Box, and the VIC20"

by

Brian L Crosthwaite

So many buttons, so little time! My 16 month old son, Antony loves buttons and just can't get enough of them. Most buttons just move and don't do anything, but they're still too fun to leave alone. He loves the phone more than most, probably because it has buttons, an antenna to pull out and push in and his mom's voice comes out of the speaker. He now has a cellular phone all his own. The antenna flexes, no voices come out of it, but the buttons work and make beeps, rings and buzzes.

His phone is often the first thing we hear at 7:30 in the morning. But, the button fascination doesn't stop there, he loves my computer's mouse. When the buttons get pushed, the disk drive light goes on and the screen changes. Antony just can't get enough of buttons. His next most favorite buttons in the entire universe are the ones on the joystick and the ones on the computer. Well, now he can use both. Back when he was just a blob that just lay there, spending much of his day sleeping, I ran across a type-in program called Baby Box in some old computer magazine.

The program changes the display's color and plays different sounds at the press of keys or joystick -- buttons! I set up the VIC 20 and 1541 by the big TV in my studio with the volume up. Antony sat on his Mama's lap before the keyboard. He was reaching for the joystick before I could get the program booted. He knew right away that it was his input to the joystick that altered the screen. He loved the buttons on the joystick, but had no problem with the idea of pressing keys on the keyboard. He decided that the

combination of the two was even better. He tried to press the keys with the joystick! He could have sat there for hours, quiet and content, but there is more to life than sitting in front of a TV screen. There are other buttons to find and press!

This Just In

Intelligence says that Antony's most favorite buttons in the world are those found either on his Daddy's **comodore 128D** or on his Daddy's **Casio**. Music or color? -- the fundamental questions of life. We return you now to the story already in progress...

It's truly an amazing thing to see him sit quietly for so long.

READY.



DOs and DO NOTs

by

Brian L Crosthwaite

For Programmers

DO NOT This is more of a **NEVER** than a **DO NOT**, also a pet peeve of many a computer user. Paranoid copy protect crap. **NEVER** make the computer reset if the user messes up with an improper response or places the wrong disk into the drive. It's the computer that is supposed to be perfect -- not the user.

Oops

Well, to start with, last issue was a double issue, something that must never happen again! The cover says July and should say July/August.

The only real thing I'm concerned about is the psychopathic-pathic mega-blooper. This one got passed three editors, including myself. I was so bummed when I saw it. I don't particularly care about the "3c" at the end of the **Turtle Graphics II** review, what the heck is that anyway? I'm sure that there are others, but this stupid psychopathic-pathic thing just gets my goat! Anyway the joke should read: "According to my wife, if you look at the histories of psychopathic-murders, there is a printer in it somewhere."

Subscriptions just seem to go up as well as the price, **dieHard** costs \$1.50 -- that's one dollar and fifty cents, \$15.00 for twelve issues -- fifteen not twenty, yes 15. one ten, five ones -- 15 bucks, and you *can* get a good pizza for fifteen bucks, not a great pizza, but a good pizza.

Some of the back covers on the July/August issue were upside-down some were not. You decide which way is correct!

-- The Editors

DO NOT Don't allow your program to crash if a drive or printer didn't get turned on or is not present.

DO Use color like there is no tomorrow, but make sure the black and white TV and monochrome monitor users can see you program as well.

DO Have the computer screen and/or sound do something during those long boring disk accesses. Music, color changes -- something, anything!

DO NOT Don't make the poor user swap disks one hundred million times.

READY.

Tip of the Month
by Brian L Crosthwaite

This month's TOTM is that age old axiom that we all learn from our mistakes. Well, how about learning from our possible mistakes? What? This is not so weird. A good way to understand any system is to look through the listings of the error messages in a given system's manual, whether it be a word processor, an operating system, or a computer. The possible errors can give you insight into the inner workings of your system and thus help you understand more on what it can do.

READY.

Review

LOADSTAR

by
Brian L Crosthwaite

LOADSTAR is the magazine that opened up the world of the G4 for me back in the 80s. When I first got my FSD-1 drive, I had no software. I had to either write my own or type in the programs out of the back of computer magazines. I got real good at copying data statements without error. Two magazines, **Commodore Power/Play** and **Commodore Microprocessing**, advertised that their programs were available on disk -- **LOADSTAR**.

Not that I didn't like typing programs, but I really hated typing in programs! So I subscribed. My computer world opened up 10 fold. Not only were the **Commodore Magazine's** programs on the disk, it was filled with all sorts of stuff. It was an entity all it's own, and is so today.

LOADSTAR is full of programs for everyone. It is a magazine on disk, there is no other way to put it. Articles range from machine language courses to games. Games and utilities. Full

programs, all ready to run from the disk based system. When you're done with a program or article, you return to the main menu.

I've seen the magazine evolve over the past few years. It's gone from one disk, with an occasional two disks to two disks -- full time -- both sides. Part of this is a larger operating system, but most is due to the fact they have regular programmers who just don't quit!

Regular columns include **Discovery**, where their fearless leader Fender Tucker speaks his monthly wisdom; **Puzzle Page**, where Barbara Schulak challenges your mind with logic and word; **BASICS**, **BYTES**, **BITS**, articles and interactive tutorials in both **BASIC** and machine code.

Features every month: **GEOSware**, **Brainware**, **Grafixware**, **Helpware**, **Funware**, and **Utilityware**. Pretty self-explanatory titles. Walt Harned is their resident artist, maybe you've heard of him. He picked up the G4 as a medium and hasn't set it down since. He does art works as well as tutorials.

LOADSTAR When you load **LOADSTAR** from disk one, there is a picture, different every month and after a wait -- a long wait -- you'll hear

music, also different every month, compiled by Dave Marquis. There will be a list of Features on the left side of the screen and a pointer to the right of the list. You select items in the main menu with either the joystick in port two or the cursor keys and fire or return. Upon selecting an item, another menu to the right of the first one will open up. From here you can select the program and/or article. One last menu opens up with the options to **READ IT**, **RUN IT** or **COPY IT**.

LOADSTAR is not copy protected, and the programs are usually not sector or track sensitive. This means three things: 1) you can place the games on your game disk, utilities on your utilities disk etc., 2) you can list out the programs or disassemble them to look, learn, customize and otherwise alter, 3) copy the whole issue (four disk sides) onto one 1581 disk! And most of the time the whole issue will fit! I've only encountered one incident where I couldn't get the whole issue to one disk, but then I don't copy all of them to 1581 format. What does copying to 1581 format do? It decreases your disk

access time, and you will not have to swap disks! You will have to number the drive as unit number 8 to get along with the operating system, however.

One of the philosophies of **LOADSTAR** is that you learn from the programs on the disk. A philosophy we deeply believe in here at LynnCarthy Industries. The user is what makes **LOADSTAR**. The more you learn the more you can share and thus the more can learn and share...

System Requirements

To run **LOADSTAR** you need only the following:
C64, C64C, SX64, DX64, Educator 64, C128 or C128D computer; 1541, 1571 or compatible drive; TV or monitor.

Extras: A joystick is nice and IS sometimes necessary to play games and run some utilities. Color monitor, with sound. A fast load cartridge of some sort. I know the **Turbo Load and Save** does not work with issues 28 and on, the **Final Cartridge III** works great! A 1581 disk drive is a luxury for **LOADSTAR**.

LOADSTAR takes a while to load so I recommend some sort of fast load. My only

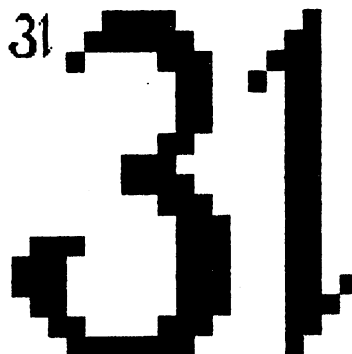
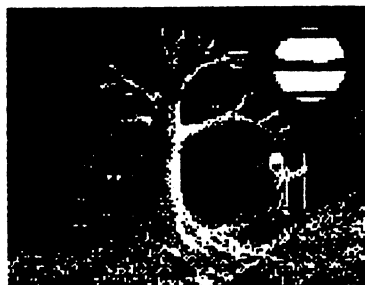
other gripe is the music has a tinny sound to the voicing, it always has. It gets old real fast. Now here's my contradiction -- I do like it, but, it could be better. No problem -- press S for silence and there's no music.

LOADSTAR also has a help screen, which is nice to keep track of those control keys. You can load the program from the article about the program without returning to the options menu. You can even go to a different **LOADSTAR** without rebooting!

Rating

I give **LOADSTAR** five stars despite the voicing on the music and the long wait.

READY.



Pokes And Peeks & Systems And Waits That Fabulous Commodore Key and More

by
 Brian L. Crosthwaite

Oh, that Fabulous Commodore key (C=), yes-- that glorious catch all key... Well, catch the remaining key. What? Let me explain, you've got your shift keys -- they do all that upper case alphanumeric stuff in your programs, then you've got your control key -- you use that for those special functions, after that you have the f-keys. What's left to program? The C= key!

Ok, not quite, but let's look at it anyway. This key does the obvious, all the graphics on the left side of your computer's keys are accessible with the C= key. This key is used to boot your 128 into 64 mode. On my **Turbo Load and Save** it boots my computer up in BASIC V4. I don't know where the author(s) got the idea to boot that way, but it seems an obvious choice.

The C= key also lets the computer know you're awake and ready to load when using the cassette (although the space bar does this as well, you might want be aware of whether or not your program starts off with something like "press space to begin"). But how does the average BASIC programmer access this key for his/her own use? Well, e-mail is not the answer!

GET C=

Fortunately, reading this key is easy. Using GET in conjunction with <C=>, <SHIFT> or <CONTROL> will allow you to read the alternate characters on the keys into a string. This is fine, except if you want to read just <C=>, <SHIFT>, <CONTROL>, or a combination of any of these. You can read these keys at 655 from BASIC.

Continued on page 8. See PAP CONT.

W/P TIPS

by

Brian L Crosthwaite

This month, WP Tips takes a look at **Fleet System 4**. Anyone with **Fleet System 2** or **3** will tell you the manual is truly the manual from hell -- unless you never used any computer before. I don't think that a word processor's manual should be a tutor for learning how to use the computer, unless when you buy the system the software came with it. A beginner would knock his or her brains out going through the basic manual just to use the system. Then they get this word processor that shows them how to do it, making them wish they waited and eventually jump off a bridge...

Ok, it's not that bad. But, if you know what you are doing, you don't want to have to muddle through the crap in this manual just to figure out what it is you are looking for. Chapter 14 is the quick reference guild, and even that is not quick. If you survive the manual, which I hate with a passion, you will come to love FS as a great WP. Maybe. I use

version 3 on my 128 with a monochrome monitor, and version 4 on my 128D with the color.

Version 4 is a total face lift from version 3. It's got a HELP screen available through, now get this -- the HELP key -- cool eh? From there you can find just about anything you need to know. The manual is a real manual. So you can look things up in it and it won't say stuff like "turn on your printer then your disk drive, then your computer..." You will find what you're looking for and if you don't, then FS4 doesn't do it.

Why would a dielhard let-the-computer-do-it kind of a guy, like myself, use a typesetting type of WP? Several reasons. As most of you know I use GEOS for just about everything, including putting on my Burkenstocks. But, I type faster than **geoWrite** can keep up with, like around page changes. **geoSpell** takes forever and while it does help me find the word, I just don't have 45 minutes to spell check a page of text.

Fleet System 4 is fast. I can out type version 3, but version 4 is real good at keeping up. Spell checking is out of this world -- ok, it's

darn good. I can get through a page of text in under five minutes. The actual checking takes less than a minute, including word count. I just slow it down because sometimes I really don't know how to spell some of my misspellings.

I don't use the thesaurus much, but it's nice to have. As for the Filer, I haven't even experimented with it.

After entry, and spell checking, I save my new file to an ASCII file. This is done by pressing <SHIFT><CLR>, the status bar at the top of the screen changes from "Fleet System : at your service," to "Recall, Store or Insert." Press <A> and it reads: "ASCII: Recall, Store or Insert", followed by <S> for store, "ASCII: Store drive # ?" <2> for drive number 2, then the name of the file and it rings a bell to tell me to wake up, it's done. (Actually storing and recalling are not slow at all.)

From there I go on to another article. When I'm ready to put things into **geoPublish**, I get into GEOS and open the text grabber and use the **EasyScript** form. Everything converts perfect. The only thing I use is **BOLD** when I type things in.

I have put codes into a document and they converted into meaningless stuff. But the bold words are bold in my geOWrite docs.

FS4 uses a funny character for when you have more than one space and when this gets converted it turns into a question mark followed by a space. This is no problem, I just call up the search and replace window and search for "?" and replace with " ". This will replace the question mark with a space but not real question marks at the end of a sentence since I hopefully remember to put two spaces after it because it is at the end of a sentence ("? ").

I am a **GEOS** diehard, but **FS4** helps keep my sanity when I need speed. 45 second spell checking and a cursor that keeps up with me -- what more could anyone want.

Send us your **WP Tips**, dieHard, ATTN **WP Tips**, PO Box 392, Boise ID 83701.

READY.



RARITIES

The List

by

Brian L Crosthwaite

This months list consists of publications that support our world!

RUN (Commodore Magazine 64/128 User's Guide)

Technology Media Group, Inc.

88 Elm St.

Peterborough, NH 03458

Each issue not only has articles, features, and type in programs, but a special catalog section. Yes, they market some stuff for your **commodore**. **RUN** supports the 64 and 128. There is a disk called the **ReRUN** disk if you don't want to type in the programs.

COMPUTE Publications International Ltd.

1965 Broadway

New York, NY 10023-5965

There are different versions of this magazine, **IBM and compatibles**, **Amiga**, **commodore 64/128**, and the **Multi-user Edition** that has it all, I recommend the last one. They publish all kinds of great stuff for 64/128; disks and books. They have articles, features, and type ins. The **Gazette** disk is available also if you don't want to type things in, there are also extras on the disk, like art or bonus programs.

LOADSTAR & LOADSTAR128

Softdisk Publishing

PO Box 30000

Shreveport, LA 71130-0000

This is an inside connection, it's a disk magazine so there is no need to type in programs. Programs are not write protected, so you can alter code, costumize programs or just list them out to see how things are done, and they encourage you to do just that. They now have a catalog.

Here are some I've heard of but have no info on: **Twin Cities** for 128; **Commodore Format** a British magazine; **Light Disk** a British disk magazine; **Meeting Users through the Mail** a through the mail user group; **User Group Exchange** a net work for exchanging news letters and PD disks; **PD Magazine** a British magazine of Public Domain programs.

This not an ad and so on.... Send us your stuff and we'll list it. User Groups send us any and all the information you can about people in your group who are writing programs that wish to market them, we'll list their information here, like address, price, what it is, if they have a catalog and so on. If you know of any sources to LIST let us know, we are dedicated to letting Bitters know what's out there. Any PET or CBM people with info to share? Let us know. Write to dieHard, PO Box 392, Boise ID 83701.

READY.



PAP CONT.

```
0 E=PEEK(653):REM C64 ONLY
1 IF E=1 THEN PRINT"<SHIFT> WAS PRESSED"
2 IF E=2 THEN PRINT"<C=> WAS PRESSED"
3 IF E=3 THEN PRINT"<SHIFT> & <C=> WERE PRESSED"
4 IF E=4 THEN PRINT"<CONTROL> WAS PRESSED"
5 IF E=5 THEN PRINT"<SHIFT> & <CONTROL> WERE PRESSED"
6 IF E=6 THEN PRINT"<C=> & <CONTROL> WERE PRESSED"
7 IF E=7 THEN PRINT"<SHIFT>, <C=> & <CONTROL> WERE ALL PRESSED!"
8 GOTO 0
```

This, in concert with PEEK(197), can expand the normal input. See chart below entitled TYPEWRITER KEYS for input values.

```
0 A=PEEK(653):B=PEEK(197)
```

Try this,

```
10 A=PEEK(653):B=PEEK(197)
20 IF A=0 AND B=28 THEN PRINT"<B>"
30 IF A=1 AND B=28 THEN PRINT"<SHIFT><B>"
40 IF A=2 AND B=28 THEN PRINT"<C=><B>"
50 IF A=4 AND B=28 THEN PRINT"<CONTROL><B>"
60 GOTO 10
```

Press alone, then with <SHIFT>, <C=>, and <CONTROL>; the computer will respond by telling you what keys you pressed.

Using The <RUN/STOP> key in BASIC

The <RUN/STOP> key's ASC value is 3. Try this one, type:

```
0 GET E$:IF E$="" THEN 0
1 PRINT ASC(E$):GOTO 0
```

Then RUN it. Press <RUN/STOP>, then type:

```
?ASC(E$) <RETURN>
```

The number 3 appears on the screen. It's possible to use this in a program. First disable the <RUN/STOP> key with:

```
POKE808,100 (VIC20 & 128)
(POKE239,100 for the 64, POKE806,103 for 16/+4)
```

Now RUN the program. When you press <RUN/STOP> the number 3 is printed to the screen. This is a nice way to utilize this key in your basic programs, but beware, the <RUN/STOP>-<RESTORE> combination will not stop your computer, so you might hold out until you're done working out the bugs on your program before you turn the key off. Another way, and probably more practical, is to have a back door to exit your program such as:

```
0 GET E$:IF E$="" THEN 0
1 IF E$="(arrow back)" THEN STOP
2 PRINT ASC(E$):GOTO 0
```

Continued on page 10. See PAPSAW CONT.

Archaic Computer The Store Of The Past

by

Brian L Crosthwaite

This is a strange time of year. For some it is an end, to others a beginning. For those of us archaics out there it's a time to look back. Remember **Elite**? **Echelon**? **Lode Runner**? **Space Taxi**? Okay, now look at IBMs, not too many programs with built in voice, at least not till lately. And **Sim City**. That's an oldy for us Bitters, but to the IBM world it's -- lets just call it recent.

Sim World, **Sim Ant**. Now the past... **Potty Pigeon**, **Zaxxon**, **Forbidden Forest**, **Super Huey**, **Miner 2049er**. What's old and sill around? Lots, just check out a **Tennex** or **Software Support** catalog! This month we look at a game I still see in arcades every where -- **Pole Position!**



Pole Position
from **Atarisoft**
1982
author(s) not given
reviewed by
reviewer extra-ok
Brian L Crosthwaite
* * *

I'm being real nice by giving this one a three. The game is ok, as long as you are in Hl gear and racing. The background graphics suck, but sometimes that's what make these old games cool. The game is sort of like the arcade version, with minimal graphics, but if you don't shift out of low gear, you don't need to steer! You will remain in the center of the track out of danger!

You can select the number of laps that you want on a given track -- **Malibu Grand Prix**, **Namco speedway**, **Atari Grand Prix**, or **Practice Run**. The **Practice Run** will let you go forever -- as long as your in low gear you don't have to steer, just push the joystick forward, and you'll get bored

real fast.

I tested three versions, **CG4** cartridge, **CG4** diskette and **Atari** diskette. The best play was on the **40K Atari!** The game is however, identical in most aspects. The **Atari** version just seemed to have more danger to it, the low gear thing didn't apply.

With joystick in port 1, play is smooth. Just press **<F1>** and a blimp with a sign flies by, "prepare to qualify." Actually the only resemblance to the arcade classic is the car, those big stair-stepped edges. The background, although simple, is smooth in both shape and scrolling. If you do the honor thing and don't cheat you can have a competitive game against the computer cars. Of course, if you do cheat, you will get a killer high score, but you will never qualify and therefore never actually race.

Things I hate about this game. 1. you can't drive cross country to the hills. 2. once you pass everybody

you are racing, all of a sudden you come across more cars -- where did they come from? 3. The signs have nothing more than two squares on them, no Circle K or 7-11 or whatever the heck the real game has!

The only way to look at this game is to say it's a different game, similar to **Poll Position**. No steering wheel, joystick only. So poorly done it makes it cool. What can I say I like it -- kind of.

READY.

Archie Computer

Q & A

by

Brian L Crosthwaite

Q What's the right cartridge port on the early Atari computers for?

A I honestly don't know. At first I thought that must be where you plug the BASIC cartridge in, but that's not so, it too is a "left cartridge." Then I thought maybe it was for memory expansion, until I read somewhere about a person taking his computer in to have memory installed.

I'm baffled, maybe it was there "just incase," who knows. Mine remains empty. Any readers out there know what it's for?

Q How much memory does the Atari 800, not the 800XL, have?

A 48k. When I look at programs that run on that computer, sometimes I am simply amazed!

Q Can an Atari track ball be used with a commodore 64?

A Yes and no. Yes, in joystick mode, no in track ball mode. Unless of course you have a program that was written to read it's input. There is a GEOS input driver on **Q-Link**. It's not configured like a mouse, so you can't just hook it up and use it. I don't know if the games for the 64 that used track balls work with it, they should, commodore used Atari's joystick as a standard, so why not the track ball?

Got any Questions or Answers? Send them on in, on hard copy or 5 1/4 disk to dieHard, ATTN Q & A, PO Box 392, Boise ID 83701.

READY.

PAPSAW CONT.

To exit the program simply press the <arrow back> key. To reinstate the <RUN/STOP> key use one of the following:

```
VIC.....POKE808,112
64.....POKE808,237
128.....POKE808,110
16/+4....POKE806,101
```

Using F1-F8

The function keys are great for lots of things, namely menus. The f-keys are there for just that -- to be defined in a program and used for selection of whatever your program offers. With the help of the GET or GETKEY, statement input is easy. The 128 has predefined f-keys making programming them a pain! Hold the phone! They can be switched over to the basic f-keys of the 64 in one poke. No need to set up a loop to redefine them, just use:

```
POKE 828,183
```

Now, when you type quotation marks then press an f-key a graphical representation appears on the screen -- just like the 64! Be sure to include the poke in your program itself. To get back to the old f-keys use:

```
POKE828,173
```

You might put this in the end of your program so when you exit the f-keys go back to the defaults and you don't have to reset the computer or remember the poke.

F-keys on the 16/+4, as far as I know, have to be redefined using the loop method, although there is probably a poke that I'm unaware of:

```
10 C=-1:FOR I=133 TO
    140
20 C=C+2:IF I=137 THEN
    C=2
30 KEYC,CHR$(I)
40 NEXT
```

Remember that the keys are not in the same spot as the VIC, 64, and 128 keys (note that the definitions are similar to those on the 128). To restore, either reset the computer or use something like:

```
10 KEY 1,"GRAPHIC"
```

```

20 KEY 2,"DLOAD"+CHR$(34)
30 KEY 3,"DIRECTORY"+CHR$(13)
40 KEY 4,"SCNCLR"+CHR$(13)
50 KEY 5,"DSAVE"+CHR$(13)
60 KEY 6,"RUN"+CHR$(13)
70 KEY 7,"LIST"+CHR$(13)
80 KEY 8,"HELP"+CHR$(13)

```



If you're like me you'll put a clear screen character after the first quote mark in most of these commands. Nothing worse than pressing the RUN key when your cursor is in the middle of a line and you lose the code under the word RUN and have to retype it in again.

Other Keys

Most keys are programmable with the GETKEY and GET statements.

```

GET A$
IF A$="1" THEN...
IF A$="[CRSR DOWN]" THEN...
ET CETERA

```

But what about the <ESC> key (on 128,16 G+4)? Not to fret, you don't need to use quote mode graphic reps for all the keys (or any keys for that matter).

```
IF A$=CHR$(27) THEN THE <ESC> KEY WAS PRESSED
```

The arrow back key is also used as an escape key on the 64 with some programs.

```
IF A$=CHR$(95) THEN PRINT "<ARROW BACK> WAS PRESSED"
IF A$=CHR$(6) THEN PRINT "<CONTROL><ARROW BACK> WAS PRESSED"

```

What can these be used for? How about a back door to escape from your program when disabling <RUN/STOP>.

```
IF A$="[<arrow back>]" THEN STOP
```

Or a key to exit to a main menu of a program...

```
IF A$=CHR$(95) THEN GOTO MAIN MENU ROUTINE
```

KEY

Just a quick note on the KEY command for the 128, 16 and Plus4. This is primarily to let you define macros, such as the ones used to edit **Shoplister 128** from an earlier issue. These are for use in direct mode. Although the illusion of an edit program running was present, all the KEY commands were used to define the f-keys to list different parts of the program. (See July/Aug issue of dieHard).

HELP

The help key can be used, if you are careful.

```

GET KEYAS,B$,CS,DS
IF A$="H" AND B$="E" AND C$="L" AND "P" THEN
    PRINT "<HELP> WAS PRESSED"
    OR
IF A$=CHR$(72) AND B$=CHR$(69) AND C$=CHR$(76) AND D$=CHR$(80) THEN
    PRINT "<HELP> WAS PRESSED"

```

THIS IS DANGEROUS! If you press any other key that is single character defined, then the GETKEY reads it as A\$ and moves on to read the B\$. There is a better way!

```

***** A BETTER WAY! *****
BANK15:SYS DEC("6DEC"),,9,,CHR$(255)
GETKEY E$:IF E$=CHR$(255) THEN PRINT "<HELP> KEY WAS PRESSED"

```

If you press another key, no biggie, you only have one variable to keep track of. If you've redefined your DLOAD f-key to DLOAD":+, then you don't need the same thing on the <RUN> portion of the <RUN/STOP> key. Here's a better RUN key, one that actually runs your program:

```
BANK15:SYS DEC("60EC"),,8,,,"(c1r)RUN"+CHR$(13)
```

Now, whenever the <RUN> key is pressed, the screen clears and the BASIC program in memory RUNs. Quite simple really.

Reading the numeric pad

Reading the numeric pad as a different input source IS possible from within BASIC. In other words, you can press <2> on the numeric pad to do one thing and press <2> on the type writer keyboard and do an other. Reading the number at address 212 gives two different numbers upon key input, from keys that usually have the same functions.

```
0 E=PEEK(212):PRINT E:GOTO 0
```

Pressing the typewriter <2> returns a 59, while the numeric pad's <2> returns a 60. This comes in handy when you use the typewriter numbers to change places in your program, leaving the numeric pad numbers for data input. Here's a complete list. Note <SHIFT>, <ALT> and the <C=> keys have no effect on the number returned.

**** TYPE WRITER KEYS ****

0.....<INST>	16.....<5>	32.....<9>	48.....<ENGLISH POUND>
1.....<RETURN>	17.....<R>	33.....<I>	49.....<*>
2.....<CRSR RIGHT>	18.....<D>	34.....<J>	50.....<.>
3.....<F7>	19.....<6>	35.....<0>	51.....<CLR>
4.....<F1>	20.....<C>	36.....<M>	52.....<RIGHT SHIFT> NR
5.....<F3>	21.....<F>	37.....<K>	53.....<=>
6.....<F5>	22.....<T>	38.....<O>	54.....<?>
7.....<CRSR DOWN>	23.....<X>	39.....<N>	55.....</>
8.....<3>	24.....<7>	40.....<+>	56.....<1>
9.....<W>	25.....<Y>	41.....<P>	57.....<ARROW BACK>
10.....<A>	26.....<G>	42.....<L>	58.....<CONTROL> NR
11.....<4>	27.....<8>	43.....<->	59.....<2>
12.....<Z>	28.....	44.....<.>	60.....<SPACE>
13.....<S>	29.....<H>	45.....<:>	61.....<C=> NR
14.....<E>	30.....<U>	46.....<@>	62.....<Q>
15.....<L SHIFT> NR	31.....<V>	47.....<, >	63.....<RUN/STOP>

NOTE: NR means not readable.

**** NUMERIC KEY PAD ****

****OTHER KEYS****

64.....<HELP>
65.....<8>
66.....<5>
67.....<TAB>
68.....<2>
69.....<4>
70.....<7>
71.....<1>
72.....<ESC>
73.....<+>
74.....<->
75.....<LINE FEED>
76.....<ENTER>
77.....<6>
78.....<9>
79.....<3>
80.....<ALT> NOT READABLE
81.....<0>
82.....<.>

**** NUMERIC KEY PAD ****

****OTHER KEYS****

83.....<CRSR UP>
 84.....<CRSR DOWN>
 85.....<CRSR LEFT>
 86.....<CRSR RIGHT>
 87.....<NO SCROLL>

Some keys have values reserved for them, but a reading at 212 is not possible from BASIC. Also note that the keys are all unshifted, shifted returns the same number, as with <CONTROL>, <ALT> and <G>.

READY.

PRG

by
 Brian L. Grothwaite

Halloween will soon be with us. That means HORROR movies on TV, cats mysteriously disappearing from your neighborhood, increased candy sales, and cool programs for you commodore.

If you find yourself some time on your hands for meditation, run PRG's MAGNETIC FILE. This program demonstrates the use of the least significant bit when programming sprites on the 64. It is also a good meditational program, but I don't recommend sitting too close to the monitor as you may burn out your eye balls -- just kidding.

The first listing is the boot program (LISTING ONE). The second is the menu program (LISTING TWO). Don't ask me why there are four programs, the only difference between them are the following lines. Save the listings as follows;

listing one: MENU.BOOT

listing two: MENUF

listing three: DATALOADER, this file creates a machine code file.

listing four: MAGNETIC, and save another as: MAGNEPNT

program five: MAGNETWO, replace this line;

```
4 for1=12288to12736step64: forp=1to1+63: :pokep,255:nextp,1
with;
```

```
4 for1=12288to12736step64: forp=1to1+63: :pokep,170:nextp,1
program six: MAGNETHO, replace this line;
```

```
4 for1=12288to12736step64: forp=1to1+63: :pokep,255:nextp,1
with;
```

```
4 GOSUB3004
```

and add;

```
3004 d=204:dc=0: for1=12288to12736step64:          d=204:dc=0: forp=1to1+63:
```

```
3005 pokep,d:dc=dc+1: ifdc>5thenletdc=0
```

```
3006 ifdc<3thenletd=204
```

```
3007 ifdc>2thenletd=51
```

```
3008 nextp,1:return
```

or alter one program to do all the three can do.

On page 21 is a fractal program for the 128. Page 22 has a medium-tech typewriter for the Plus4 & 16. Unfortunately, due to space vs cost the feature program is only on the **Spinner**, ONE DARK NIGHT, with two versions one for the 64 and one for the 128 -- plus more -- so check it out! This month's Spinner is specially priced at \$2.50!



Save this one before you run it, or there could be blood shed. This program will make a machine language file called MAGNAFILE, the music used by MAGNETICFIELDS.

listing three

```

100 FORA=32000T032000+2359
110 READD:POKEA,D
120 NEXT
130 PRINT"(ctrl)(ctrl 2)MAKE SURE
DATA DISK IS IN DRIVE,"
140 PRINT"THEN PRESS <RETURN>."
150 POKE53201,0:print"(5 crsr
down)(ctrl 1)SAUE"+chr$(34)+
      "MAGNAFILE"+CHR$(34)",8,1
      (3 crsr left)":NEW
1000 DATA 120,173,20,3,201,49,
      208,23
1010 DATA 169,90,160,125,141,20,
      3,140
1020 DATA 21,3,169,127,160,0,
      133,252
1030 DATA 132,251,32,74,125,88,
      96,169
1040 DATA 49,160,234,141,20,3,
      140,21
1050 DATA 3,88,96,24,14,7,7,32
1060 DATA 9,0,24,14,7,7,32,9
1070 DATA 0,24,14,7,7,32,9,0
1080 DATA 0,0,0,15,0,3,15,32
1090 DATA 32,32,162,0,189,43,
      125,157
1100 DATA 0,212,232,224,25,208,
      245,96
1110 DATA 4,4,206,89,125,208,19,173
1120 DATA 69,125,141,89,125,206,
      88,125
1130 DATA 208,8,169,4,141,88,125,32
1140 DATA 117,125,76,49,234,160,
      0,177
1150 DATA 251,41,1,240,4,76,91,126
1160 DATA 98,32,45,126,173,7,
      126,240
1170 DATA 30,173,71,125,141,4,
      212,173
1180 DATA 7,126,201,255,240,17,
      141,1
1190 DATA 212,173,8,126,141,0,
      212,173
1200 DATA 71,125,9,1,141,4,212,200
1210 DATA 32,45,126,173,7,126,
      240,30
1220 DATA 173,72,125,141,11,212,
      173,7
1230 DATA 126,201,255,240,17,141,
      8,212
1240 DATA 173,8,126,141,7,212,173,72
1250 DATA 125,9,1,141,11,212,200,32
1260 DATA 45,126,173,7,126,240,
      30,173
1270 DATA 73,125,141,18,212,173,
      7,126
1280 DATA 201,255,240,17,141,15,
      212,173
1290 DATA 8,126,141,14,212,173,
      73,125
1300 DATA 9,1,141,18,212,200,177,251
1310 DATA 141,88,125,24,165,251,
      105,4
1320 DATA 144,2,230,252,133,251,96,0
1330 DATA 0,0,119,126,134,142,
      150,159
1340 DATA 168,179,189,200,212,225,
      238,253
1350 DATA 255,255,255,0,124,151,
      30,24
1360 DATA 139,126,250,6,172,243,
      230,143
1370 DATA 248,46,255,255,255,177,
      251,74
1380 DATA 72,41,15,170,189,9,126,141
1390 DATA 7,126,240,29,201,255,
      240,25
1400 DATA 189,27,126,141,8,126,
      104,74
1410 DATA 74,74,74,170,240,10,24,78
1420 DATA 7,126,110,8,126,202,
      208,246
1430 DATA 96,104,96,177,251,201,
      1,240
1440 DATA 11,201,3,240,18,201,5,208
1450 DATA 3,76,199,126,169,127,160,0
1460 DATA 133,252,132,251,76,117,
      125,200
1470 DATA 177,251,141,69,125,200,
      177,251
1480 DATA 141,70,125,200,177,251,
      141,5
1490 DATA 212,200,177,251,141,12,
      212,200
1500 DATA 177,251,141,19,212,200,
      177,251
1510 DATA 141,6,212,200,177,251,
      141,13
1520 DATA 212,200,177,251,141,20,
      212,200
1530 DATA 177,251,141,71,125,200,
      177,251
1540 DATA 141,72,125,200,177,251,
      141,73
1550 DATA 125,169,12,24,101,251,
      144,2
1560 DATA 230,252,133,251,76,117,
      125,200

```

1570 DATA	177,251,141,3,212,200, 177,251	1950 DATA	224,2,110,224,182,2, 224,136
1580 DATA	141,10,212,200,177,251, 141,17	1960 DATA	224,2,224,224,138,2, 224,110
1590 DATA	212,200,177,251,141,2, 212,200	1970 DATA	224,2,86,224,224,2,224,100
1600 DATA	177,251,141,9,212,200, 177,251	1980 DATA	224,2,104,224,168,2, 224,132
1610 DATA	141,16,212,169,7,24, 101,251	1990 DATA	224,2,224,224,154,2, 224,254
1620 DATA	144,2,230,252,133,251, 76,117	2000 DATA	254,2,90,224,224,2,224,70
1630 DATA	125,72,74,74,74,74,32,4	2010 DATA	224,2,86,224,224,2,224,78
1640 DATA	3,4,15,9,9,9,0,0	2020 DATA	224,2,78,224,224,2,224,118
1650 DATA	0,64,64,64,5,1,1,1	2030 DATA	224,2,68,224,224,2,224,90
1660 DATA	128,128,128,3,8,15,9,9	2040 DATA	224,2,108,224,174,2, 224,146
1670 DATA	9,0,0,0,64,64,64,3	2050 DATA	224,2,224,224,154,2, 224,118
1680 DATA	8,15,41,41,25,0,0,0	2060 DATA	224,2,122,224,224,2, 224,100
1690 DATA	64,64,64,3,8,15,41,41	2070 DATA	224,2,104,224,172,2, 224,142
1700 DATA	25,0,0,0,64,64,64,3	2080 DATA	224,2,224,224,148,2, 224,110
1710 DATA	8,15,42,42,26,0,0,0	2090 DATA	224,2,110,224,224,2, 224,104
1720 DATA	64,64,64,3,8,15,42,42	2100 DATA	224,2,68,224,186,2,224,150
1730 DATA	26,4,4,4,64,64,64,3	2110 DATA	224,2,224,224,154,2, 224,104
1740 DATA	8,15,42,42,26,4,4,4	2120 DATA	224,2,86,224,224,2,224,80
1750 DATA	64,64,64,5,8,8,8,128	2130 DATA	224,2,78,224,224,2,224,70
1760 DATA	128,128,90,224,224,2, 224,70	2140 DATA	224,2,78,224,224,2,224,122
1770 DATA	224,2,86,224,224,2,224,78	2150 DATA	224,2,90,224,224,2,224,90
1780 DATA	224,2,78,224,224,2, 224,118	2160 DATA	224,2,122,224,172,2, 224,142
1790 DATA	224,2,68,224,224,2,224,90	2170 DATA	224,2,224,224,142,2, 224,104
1800 DATA	224,2,108,224,174,2, 224,146	2180 DATA	224,2,108,224,224,2, 224,118
1810 DATA	224,2,224,224,154,2, 224,118	2190 DATA	224,2,110,224,182,2, 224,136
1820 DATA	224,2,122,224,224,2, 224,100	2200 DATA	224,2,224,224,138,2, 224,110
1830 DATA	224,2,104,224,172,2, 224,142	2210 DATA	224,2,86,224,224,2,224,100
1840 DATA	224,2,224,224,148,2, 224,110	2220 DATA	224,2,104,224,172,2, 224,142
1850 DATA	224,2,110,224,224,2, 224,104	2230 DATA	224,2,224,224,132,2, 118,224
1860 DATA	224,2,68,224,186,2, 224,150	2240 DATA	224,2,224,82,224,2,90,224
1870 DATA	224,2,224,224,154,2, 224,104	2250 DATA	224,2,72,224,146,2,224,150
1880 DATA	224,2,86,224,224,2,224,80	2260 DATA	224,2,224,224,122,2, 224,110
1890 DATA	224,2,78,224,224,2,224,70	2270 DATA	224,2,76,224,224,2,224,86
1900 DATA	224,2,78,224,224,2, 224,122	2280 DATA	224,2,90,224,178,2,224,150
1910 DATA	224,2,90,224,224,2,224,90	2290 DATA	224,2,140,224,224,2, 224,118
1920 DATA	224,2,122,224,172,2, 224,142	2300 DATA	224,2,72,224,224,2,224,82
1930 DATA	224,2,224,224,142,2, 224,104	2310 DATA	224,2,78,224,164,2,224,154
1940 DATA	224,2,108,224,224,2,224,118		

2320 DATA	224, 2, 224, 224, 140, 2, 224, 118	2660 DATA	224, 2, 122, 224, 168, 2, 224, 150
2330 DATA	224, 2, 72, 224, 224, 2, 224, 76	2670 DATA	224, 2, 224, 224, 132, 2, 224, 100
2340 DATA	224, 2, 100, 224, 168, 2, 224, 150	2680 DATA	224, 2, 108, 224, 224, 2, 224, 114
2350 DATA	224, 2, 224, 224, 114, 2, 82, 224	2690 DATA	224, 2, 110, 224, 182, 2, 224, 142
2360 DATA	224, 2, 224, 68, 224, 2, 224, 224	2700 DATA	224, 2, 224, 224, 156, 2, 224, 118
2370 DATA	110, 2, 224, 86, 224, 2, 86, 224	2710 DATA	224, 2, 106, 224, 224, 2, 224, 110
2380 DATA	224, 2, 224, 58, 224, 2, 224, 224	2720 DATA	224, 2, 68, 224, 168, 2, 224, 142
2390 DATA	84, 2, 224, 72, 224, 2, 78, 224	2730 DATA	224, 2, 224, 224, 132, 2, 224, 118
2400 DATA	224, 2, 224, 86, 224, 2, 78, 224	2740 DATA	224, 2, 68, 224, 224, 2, 224, 78
2410 DATA	224, 2, 224, 224, 86, 2, 224, 74	2750 DATA	224, 2, 82, 224, 224, 2, 224, 78
2420 DATA	224, 2, 86, 224, 224, 2, 224, 100	2760 DATA	224, 2, 82, 224, 224, 2, 224, 122
2430 DATA	224, 2, 76, 224, 224, 2, 224, 82	2770 DATA	224, 2, 72, 224, 224, 2, 224, 78
2440 DATA	224, 2, 122, 224, 168, 2, 224, 150	2780 DATA	224, 2, 122, 224, 168, 2, 224, 150
2450 DATA	224, 2, 224, 224, 132, 2, 224, 100	2790 DATA	224, 2, 224, 224, 140, 2, 224, 118
2460 DATA	224, 2, 108, 224, 224, 2, 224, 114	2800 DATA	224, 2, 118, 224, 224, 2, 224, 118
2470 DATA	224, 2, 110, 224, 182, 2, 224, 142	2810 DATA	224, 2, 118, 224, 182, 2, 224, 154
2480 DATA	224, 2, 224, 224, 156, 2, 224, 118	2820 DATA	224, 2, 224, 224, 156, 2, 224, 100
2490 DATA	224, 2, 106, 224, 224, 2, 224, 110	2830 DATA	224, 2, 68, 224, 224, 2, 224, 100
2500 DATA	224, 2, 68, 224, 168, 2, 224, 142	2840 DATA	224, 2, 100, 224, 164, 8, 254, 254
2510 DATA	224, 2, 224, 224, 132, 2, 224, 110	2850 DATA	254, 8, 58, 224, 224, 2, 224, 38
2520 DATA	224, 2, 68, 224, 224, 2, 224, 78	2860 DATA	224, 2, 54, 224, 224, 2, 224, 46
2530 DATA	224, 2, 82, 224, 224, 2, 224, 78	2870 DATA	224, 2, 46, 224, 224, 2, 224, 86
2540 DATA	224, 2, 82, 224, 224, 2, 224, 122	2880 DATA	224, 2, 36, 224, 224, 2, 224, 58
2550 DATA	224, 2, 72, 224, 224, 2, 224, 78	2890 DATA	224, 2, 76, 224, 174, 2, 224, 114
2560 DATA	224, 2, 122, 224, 168, 2, 224, 150	2900 DATA	224, 2, 224, 224, 154, 2, 224, 86
2570 DATA	224, 2, 224, 224, 140, 2, 224, 118	2910 DATA	224, 2, 90, 224, 224, 2, 224, 68
2580 DATA	224, 2, 118, 224, 224, 2, 224, 118	2920 DATA	224, 2, 72, 224, 172, 2, 224, 110
2590 DATA	224, 2, 118, 224, 182, 2, 224, 154	2930 DATA	224, 2, 224, 224, 148, 2, 224, 78
2600 DATA	224, 2, 224, 224, 156, 2, 224, 100	2940 DATA	224, 2, 78, 224, 224, 2, 224, 72
2610 DATA	224, 2, 68, 224, 224, 2, 224, 100	2950 DATA	224, 2, 36, 224, 186, 2, 224, 118
2620 DATA	224, 2, 118, 224, 168, 2, 224, 154	2960 DATA	224, 2, 224, 224, 154, 2, 224, 72
2630 DATA	224, 2, 224, 224, 140, 2, 224, 254	2970 DATA	224, 2, 54, 224, 224, 2, 224, 48
2640 DATA	254, 2, 86, 224, 224, 2, 224, 100	2980 DATA	224, 2, 46, 224, 224, 2, 224, 38
2650 DATA	224, 2, 76, 224, 224, 2, 224, 82	2990 DATA	224, 2, 46, 224, 224, 2, 224, 90
		3000 DATA	224, 2, 58, 224, 224, 2, 224, 58
		3010 DATA	224, 2, 90, 224, 172, 2, 224, 110
		3020 DATA	224, 2, 224, 224, 142, 2, 224, 72
		3030 DATA	224, 2, 76, 224, 224, 2, 224, 86
		3040 DATA	224, 2, 78, 224, 182, 2, 224, 104
		3050 DATA	224, 2, 224, 224, 138, 2, 224, 78
		3060 DATA	224, 2, 54, 224, 224, 2, 224, 68
		3070 DATA	224, 2, 72, 224, 168, 2, 224, 100
		3080 DATA	224, 2, 224, 224, 154, 2, 224, 254
		3090 DATA	254, 2, 58, 224, 224, 2, 224, 38
		3100 DATA	224, 2, 54, 224, 224, 2, 224, 46

3110	DATA	224, 2, 46, 224, 224, 2, 224, 86	3480	DATA	84, 2, 224, 40, 224, 2, 46, 224
3120	DATA	224, 2, 36, 224, 224, 2, 224, 58	3490	DATA	224, 2, 224, 54, 224, 2, 46, 224
3130	DATA	224, 2, 76, 224, 174, 2, 224, 114	3500	DATA	224, 2, 224, 224, 86, 2, 224, 42
3140	DATA	224, 2, 224, 224, 154, 2, 224, 86	3510	DATA	224, 2, 54, 224, 224, 2, 224, 68
3150	DATA	224, 2, 90, 224, 224, 2, 224, 68	3520	DATA	224, 2, 44, 224, 224, 2, 224, 50
3160	DATA	224, 2, 72, 224, 172, 2, 224, 110	3530	DATA	224, 2, 90, 224, 168, 2, 224, 118
3170	DATA	224, 2, 224, 224, 148, 2, 224, 78	3540	DATA	224, 2, 224, 224, 132, 2, 224, 68
3180	DATA	224, 2, 78, 224, 224, 2, 224, 72	3550	DATA	224, 2, 76, 224, 224, 2, 224, 82
3190	DATA	224, 2, 36, 224, 186, 2, 224, 118	3560	DATA	224, 2, 78, 224, 182, 2, 224, 110
3200	DATA	224, 2, 224, 224, 154, 2, 224, 72	3570	DATA	224, 2, 224, 224, 156, 2, 224, 86
3210	DATA	224, 2, 54, 224, 224, 2, 224, 48	3580	DATA	224, 2, 74, 224, 224, 2, 224, 78
3220	DATA	224, 2, 46, 224, 224, 2, 224, 38	3590	DATA	224, 2, 36, 224, 168, 2, 224, 110
3230	DATA	224, 2, 46, 224, 224, 2, 224, 90	3600	DATA	224, 2, 224, 224, 132, 2, 224, 86
3240	DATA	224, 2, 58, 224, 224, 2, 224, 58	3610	DATA	224, 2, 36, 224, 224, 2, 224, 46
3250	DATA	224, 2, 90, 224, 172, 2, 224, 110	3620	DATA	224, 2, 50, 224, 224, 2, 224, 46
3260	DATA	224, 2, 224, 224, 142, 2, 224, 72	3630	DATA	224, 2, 50, 224, 224, 2, 224, 90
3270	DATA	224, 2, 76, 224, 224, 2, 224, 86	3640	DATA	224, 2, 40, 224, 224, 2, 224, 46
3280	DATA	224, 2, 78, 224, 182, 2, 224, 104	3650	DATA	224, 2, 90, 224, 168, 2, 224, 118
3290	DATA	224, 2, 224, 224, 138, 2, 224, 78	3660	DATA	224, 2, 224, 224, 140, 2, 224, 86
3300	DATA	224, 2, 54, 224, 224, 2, 224, 68	3670	DATA	224, 2, 86, 224, 224, 2, 224, 86
3310	DATA	224, 2, 72, 224, 172, 2, 224, 110	3680	DATA	224, 2, 86, 224, 182, 2, 224, 122
3320	DATA	224, 2, 224, 224, 132, 2, 86, 224	3690	DATA	224, 2, 224, 224, 156, 2, 224, 68
3330	DATA	224, 2, 224, 50, 224, 2, 58, 224	3700	DATA	224, 2, 36, 224, 224, 2, 224, 68
3340	DATA	224, 2, 40, 224, 146, 2, 224, 118	3710	DATA	224, 2, 86, 224, 168, 2, 224, 122
3350	DATA	224, 2, 224, 224, 122, 2, 224, 78	3720	DATA	224, 2, 224, 224, 140, 2, 224, 254
3360	DATA	224, 2, 44, 224, 224, 2, 224, 54	3730	DATA	254, 2, 54, 224, 224, 2, 224, 68
3370	DATA	224, 2, 58, 224, 178, 2, 224, 118	3740	DATA	224, 2, 44, 224, 224, 2, 224, 50
3380	DATA	224, 2, 108, 224, 224, 2, 224, 86	3750	DATA	224, 2, 90, 224, 168, 2, 224, 118
3390	DATA	224, 2, 40, 224, 224, 2, 224, 50	3760	DATA	224, 2, 224, 224, 132, 2, 224, 68
3400	DATA	224, 2, 46, 224, 164, 2, 224, 122	3770	DATA	224, 2, 76, 224, 224, 2, 224, 82
3410	DATA	224, 2, 224, 224, 140, 2, 224, 86	3780	DATA	224, 2, 78, 224, 182, 2, 224, 110
3420	DATA	224, 2, 40, 224, 224, 2, 224, 44	3790	DATA	224, 2, 224, 224, 156, 2, 224, 86
3430	DATA	224, 2, 68, 224, 168, 2, 224, 118	3800	DATA	224, 2, 74, 224, 224, 2, 224, 78
3440	DATA	224, 2, 224, 224, 114, 2, 50, 224	3810	DATA	224, 2, 36, 224, 168, 2, 224, 110
3450	DATA	224, 2, 224, 36, 224, 2, 224, 224	3820	DATA	224, 2, 224, 224, 132, 2, 224, 86
3460	DATA	110, 2, 224, 54, 224, 2, 54, 224	3830	DATA	224, 2, 36, 224, 224, 2, 224, 46
3470	DATA	224, 2, 224, 26, 224, 2, 224, 224	3840	DATA	224, 2, 50, 224, 224, 2, 224, 46
			3850	DATA	224, 2, 50, 224, 224, 2, 224, 90
			3860	DATA	224, 2, 40, 224, 224, 2, 224, 46
			3870	DATA	224, 2, 90, 224, 168, 2, 224, 118
			3880	DATA	224, 2, 224, 224, 140, 2, 224, 86
			3890	DATA	224, 2, 86, 224, 224, 2, 224, 86
			3900	DATA	224, 2, 86, 224, 182, 2, 224, 122
			3910	DATA	224, 2, 224, 224, 156, 2, 224, 68
			3920	DATA	224, 2, 36, 224, 224, 2, 224, 68
			3930	DATA	224, 2, 68, 224, 164, 8, 254, 254
			3940	DATA	254, 8, 1, 1, 1, 1, 85, 85

FRG

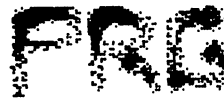
```
0 IFX=2THENOPEN4,4:CMD4:LIST1-
1 IFX=0THENX=1:LOAD"MAGNAFILE",8,1
2 POKE56,125:CLR:POKE53281,15:POKE53280,11:PRINT"■□":GOSUB125
3 V=53248:N=192:FORM=2040T02047:POKEM,N:N=N+1:NEXTM
4 FORL=12288T012736STEP64:FORP=LTOL+63:POKEP,255:NEXTP,L
5 C=0:FORK=V+39TOV+46:POKEK,C:C=C+17:NEXTK
6 X0=000:X1=X0:X2=X1:X3=X2:X4=X3:X5=X4:X6=X5:X7=X6
7 Y0=118:Y1=Y0:Y2=Y1:Y3=Y2:Y4=Y3:Y5=Y4:Y6=Y5:Y7=Y6
8 FORZS=V+1TOV+15STEP2:POKEZS,Y0:NEXTZS
9 POKEV+29,255:POKEV+23,255:POKE53280,11:POKE53281,00:GOSUB1000:SYS32000:POKEV+2
1,255
10 C=346:REM *** LOOP ***
11 C0=X0:C1=C0:C2=C1:C3=C2:C4=C3:C5=C4:C6=C5:C7=C6
12 X0=X0+1:X1=X1+2:X2=X2+3:X3=X3+4:X4=X4+5:X5=X5+6:X6=X6+7:X7=X7+8
13 C0=C0+1:C1=C1+2:C2=C2+3:C3=C3+4:C4=C4+5:C5=C5+6:C6=C6+7:C7=C7+8
14 IFC0>=CTHENC0=0:X0=0
15 IFC0<=255THENL0=0
16 IFC0=256THENX0=0:L0=1
17 GOSUB49:POKEV+0,X0
18 IFC1>=CTHENC1=0:X1=0
19 IFC1<=255THENL1=0
20 IFC1=256THENX1=0:L1=2
21 GOSUB49:POKEV+2,X1
22 IFC2>=CTHENC2=0:X2=0
23 IFC2<=256THENL2=0
24 IFC2=258THENX2=0:L2=4
25 GOSUB49:POKEV+4,X2
26 IFC3>=CTHENC3=0:X3=0
27 IFC3<=255THENL3=0
28 IFC3=256THENX3=0:L3=8
29 GOSUB49:POKEV+6,X3
30 IFC4>=CTHENC4=0:X4=0
31 IFC4<=255THENL4=0
32 IFC4=260THENX4=0:L4=16
33 GOSUB49:POKEV+8,X4
34 IFC5>=CTHENC5=0:X5=0
35 IFC5<=255THENL5=0
36 IFC5=258THENX5=0:L5=32
37 GOSUB49:POKEV+10,X5
38 IFC6>=CTHENC6=0:X6=0
39 IFC6<=255THENL6=0
40 IFC6=259THENX6=0:L6=64
41 GOSUB49:POKEV+12,X6
42 IFC7>=CTHENC7=0:X7=0
43 IFC7<=255THENL7=0
44 IFC7=256THENX7=0:L7=128
45 GOSUB49:POKEV+14,X7
46 IFPEEK(197)=62ORQ$="Q"THEN140
47 GOTO 12
48 END
49 LSB=L0+L1+L2+L3+L4+L5+L6+L7
50 POKEV+16,LSB:GETQ$
51 RETURN
```


FRG

```

1 PT=1:GRAPHIC5,0:GRAPHIC3,1:SLOW
2 REM*****
3 REM* COPYRIGHT 1992 LYNNCARTHY IND *
4 REM* ALL RIGHTS RESERVED *
5 REM* OCTOBER 1992 DIEHARD SPINNER *
6 REM*****
10 PRINT"#####"
12 PRINT"#####"
14 PRINT"#####LEDSOFT AND VOYAGEUR STUDIOS FRACTALSCAPE#####"
17 PRINT"#####"
18 PRINT"#####"
20 PRINT"#####"
22 PRINT"#####"
24 PRINT"#####"
26 PRINT"#####"
28 PRINT"#####"
30 PRINT"#####"
32 PRINT"#####TTTT"CHR$(27)"#####"
#####"CHR$(27)"B":PRINT""
1000 DIMXS(128),YS(120)
1010 FORZ=0TO198STEP16:SP=1
1020 X=0 :REM START X
1021 Y=Z :REM START Y
1022 XS(SP)=319/2 :REM ENDING X
1023 YS(SP)=Z :REM ENDING Y
1024 XT=4 :REM SCREEN SIZE
1025 M=1.1
1026 V=.4
1030 :
1040 IFXS(SP)-XCXTTHEN1100
1050 XM=.5*(XS(SP)+X)
1060 YM=.5*(YS(SP)+Y)+(XS(SP)-X)*V*RND(0)
1070 V=V*M
1080 SP=SP+1:XS(SP)=XM:YS(SP)=YM
1090 GOTO1040
1100 GOSUB10000:IFZB=1THEN1142
1110 X=XS(SP):Y=YS(SP):SP=SP-1
1120 V=V/M
1130 IFSP>0THEN1040
1140 PAINTPT,0,199:PT=PT+1:IFPT>3THENPT=0
1142 ZB=0:NEXT GETKEY$:END
10000 IFX>319/2ORX<0THEN20000
10010 IFY>199ORY<0THEN20000
10020 IFXS(SP)>319/2ORXS(SP)<0THEN20000
10030 IFYS(SP)>199ORYS(SP)<0THEN20000
10040 DRAWPT,X,YTOXS(SP),YS(SP)
10042 PRINTPT,INT(X),INT(Y),INT(XS(SP)),INT(YS(SP))
10060 RETURN
20000 ZB=1:RETURN

```

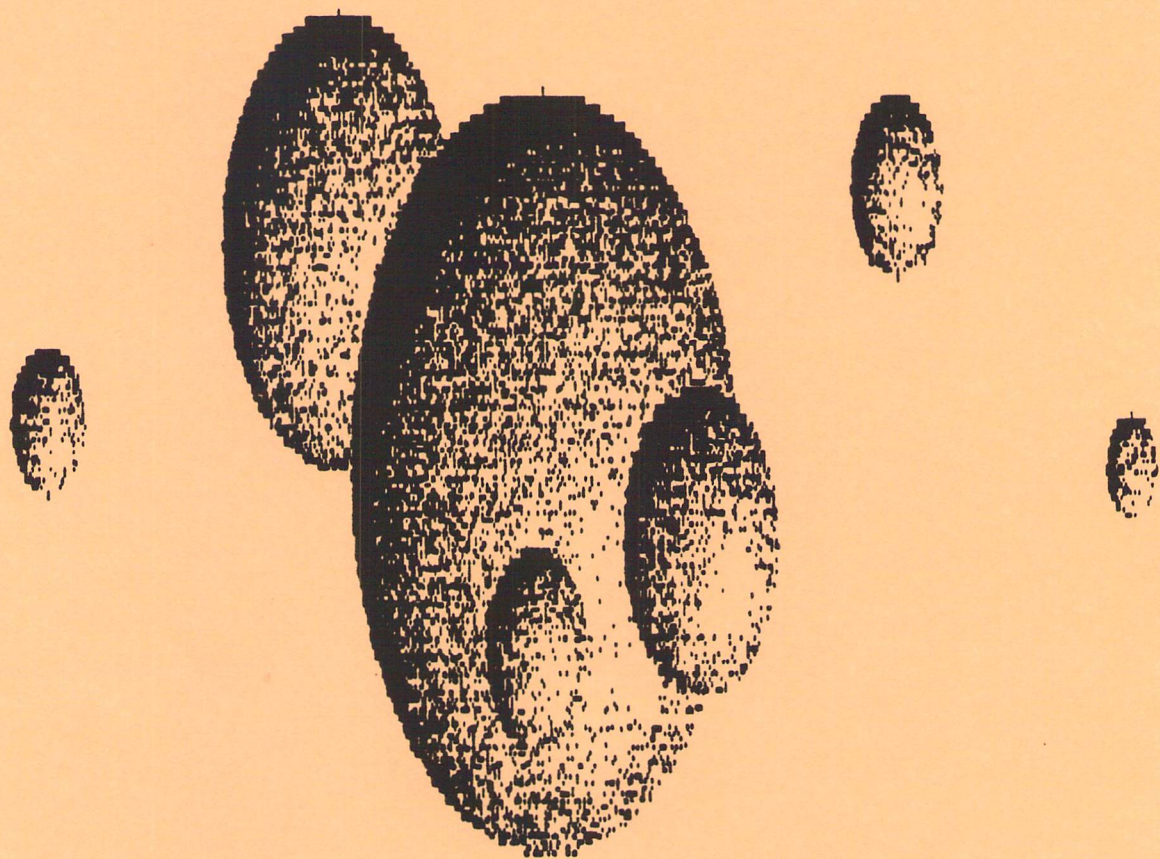



```
0 REM *** DELUXE LINE PROCESSOR ***
10 REM * THURSDAY MARCH 7, 1991 *
20 REM * BY *
30 REM * BRIAN L. CROSTHWAIT *
40 REM * COPYRIGHT 1991 ALL RIGHTS *
50 REM * RESERVED (C)LEOSOFT *
64 REM * COPYRIGHT 1992 LYNNCARTHY *
66 REM * ALL RIGHTS RESERVED *
68 REM *OCTOBER 92 DIEHARD SPINNER*
70 REM *****
1000 COLOR1,1,1:COLOR2,7,3:COLOR3,3,3
1010 C=1:S=35:GRAPHIC4,1:PRINTCHR$(14):SA=3952:X=2
1020 CHAR1,1,1," CTRL N NORMAL WIDTH PRINTOUT"
1030 CHAR1,1,2," CTRL D DOUBLE WIDTH PRINTOUT":CHAR1,1,3," CTRL Q QUIT"
1040 CHAR3,1,5," WARNING! ",1
1050 CHAR3,1,6," CHANGING WIDTH IN MID-SENTENCE WILL ",1
1060 CHAR3,1,7," CANCEL PRESENT LINE. ",1
1070 CHAR3,1,4," _____"
1080 BOX2,S-1,69,S+80,131
1090 GETKEYN$
1100 V=ASC(N$)
1110 IFV=14ORV=4ORV=17THENGOTO1420
1120 GOTO1090
1130 REM MAIN LOOP-----
1140 FORY=70TO130
1150 B$="":X=1
1160 PRINT"J":POKESA+Z,107
1170 FORL=SATOSA+M
1180 GETA$:POKEL,102:POKEL,32:IFA$=""THEN1180
1190 V=ASC(A$)
1200 IFV=14ORV=4ORV=17THENG=1:GOTO1420
1210 IFV<>13THENGOSUB1500
1220 IFA$=CHR$(13)THENPRINTCHR$(157)" ";TAB(M)" "CHR$(145):G=0:GOTO1370
1230 IFA$=CHR$(20)ORA$=CHR$(157)THENA$=CHR$(157):GOTO1250
1240 IFV<32OR(V>127ANDV<160)THEN1180
1250 IFB$=""ANDA$=CHR$(157)THEN1180
1260 IFA$=CHR$(157)THENB$=LEFT$(B$,LEN(B$)-1):IFL>SATHENL=L-1:GOTO1180
1270 B$=B$+A$:IFLEN(B$)>=M-5THENGOSUB1480
1280 POKEL,ASC(A$):POKEL+1,102
1290 NEXTL:POKESA+M+1,32
1300 G=1:GOSUB1370:G=0
1310 PRINT"J"
1320 NEXTY
1330 PRINT"*****ANOTHER PAGE? (Y/N)?"
1340 GETKEYA$:IFA$="Y"THENA$="":GOTO1140
1350 IFA$<>"N"THEN1340
1352 GRAPHIC0,1:END
1360 REM END MAIN LOOP -----
1370 OPEN1,4,7
1380 PRINT#1,CHR$(N)B$:PRINT#1,CHR$(15)
1390 CLOSE1
1400 IFG=1THENRETURN
```

PRG

```
1410 GOTO1320
1420 IFV=14THENN=15:M=79:Z=M
1430 IFV=4THENN=14:M=39:Z=M
1440 IFV=17THENGGRAPHIC0,1:END
1450 IFX>1THENDRAW0,S,YTOS+X-1,Y
1460 IFG=1THENG=0:GOTO1150
1470 GOTO1140:G=0
1480 VOL8: SOUND1,599,5
1490 RETURN
1500 IFN=14THENXF=2:ELSEXF=1
1510 IFV=32THENPT=0:ELSEPT=1
1520 IFV=200RV=157THEN:PT=0:X=X-XF
1530 DRAWPT,S+X-1,Y:IFN=14THENDRAWPT,S+X,Y
1540 IFNOT(V=200RV=157)THEN:X=X+XF
1550 RETURN
```


VOYAGEUR
STUDIOS



LynnCarthy