

# THE END

## Editor's Comments

Well this is it, Issue 88, the last ever geoNews. I guess we've been quite lucky really in 7½ years. Never missed an

issue, never been late on more than 2 occasions as I can recall and even then only by a couple of days and due to circumstances beyond my control. If my memory serves me correctly at least one of these was due to a postal service dispute. There have been a lot of changes over these years, I've certainly changed, I did not expect it to continue as long as this and indeed it wouldn't have done had I not been asked to carry on. I had originally planned to give up 2 years ago but was convinced by the other members who knew of my plans, to continue to support the C64 and Geos. I had also considered covering GeoWorks Ensemble the PC version of Geos but then Microsoft took control of the market and Berkely Softworks decided to call it quits and drop it's Windows alternative desktop . Once again Mr. Gates won over and has now won over the entire world as far as software and working environments is concerned. Apart form the more specialized usage All the worlds a Windows user. Still MS-DOS was always quite laborious to use and the point and click environment of Windows and the like has improved the computer users lot and made it all that bit more accessible and easy to use, which is all the better.

Happy Computing,  
and thanks for your attention.

*Frank*



## CONTENTS

Page	Item
2	The BIG Thank You Frank
3	Letter to the Editor Mark Vowels
4	Australian Geos Genie Jane M. Voskamp-Jones
6	Add 32K to a 1541 Andrew E. Mileski
8	Modem Schematics Ilker Ficilar
9	Funny ! Authur Unknown
10	Don's Digest Don McManamey
11	Re-Align a 1571 Kevin Schmidt

Published by:-

Frank Cassidy  
55, High Bank Road  
Droylsden  
Manchester  
M43 6FS

*In Our 8th Year of Supporting GEOS and it's users*

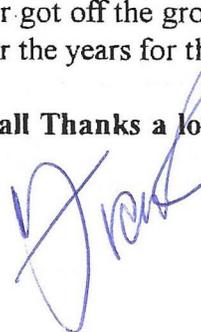
# The BIG Thank You

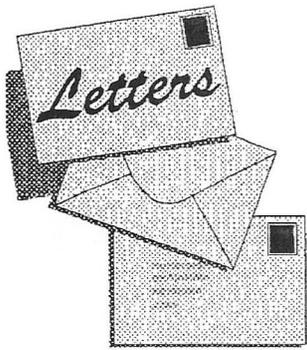
Where do I begin ?, (could be the start of a song or something) . It all began about 8 years ago. I discovered Geos, I just could not believe it, something I had always wanted, to be able to mix graphics and text, Oh yes, by today's standard quite poor really but 8 years ago reasonably acceptable. I'd picked up a copy of Geos V1.2 for about £5, money well spent I thought, I then began my search for other Geos related material which turned out not that easy to obtain here in the UK at least. One of the many letters I wrote was one to **Jason Finch**, then Technical Editor of the only magazine for the 'serious' C64 user "Commodore Disk User", he edited my letter and placed it in the readers letters column and this is where it all started. From that letter I was contacted by a number of fellow Geos enthusiasts 12 in all which surprised me to say the least. I met the first of these correspondents, **Brian Mills** of Great Massingham, when he came to Manchester on business. I invited him round for a meal we spent all evening and into the early hours of the morning discussing my idea of a Geos user group, he was as full of enthusiasm as I was and offered to back me all the way, that was it, we'd go for gold. I think issue 1 of geoNews was just a two page affair printed on my MPS801, what a mess that print out was but at the time the best I could manage. One of the very earliest contributors and a member until the very end was **Michael Pearson** and his son **Duncan**. If memory serves me correct Michael is the only surviving member from day one with the exception of myself and **Peter Hunt**. **Peter Hunt**, what a blessing in disguise he was. Receiving a letter from Australia was not that unusual for me, having been a radio ham for many years getting mail from around the globe was commonplace, but was I so glad to receive this letter. When I told him of my plans and he was so keen to join in it almost seemed that we were already able to boast a 'worldwide' membership. How little did I know just how worldwide we would become. From Pete's letters it soon became apparent that there was a need of a Geos group 'down-under' as well and he offered to make copies and mail out from Oz to keep costs down, this worked out fine most of the time for the past 7 years . I was still on the search for Geos related software, I had read an American magazine called GeoWorld and that was full of what we lacked over here. So I decided to write to one of the contributors of that magazine and hit the Jackpot. **Jeanine Olsen Cutler** was the author's name and what a lady she turned out to be, and so helpful.

When she discovered what problems we C64 users in England had trying to obtain anything Geos she immediately shipped out a box load of disks full with shareware Geos software, when I said jackpot I meant JACKPOT. The geoClub Library was born. That's when **Terry Watts** came on the scene, he had time on his hands, wanted to help and so I shipped a lot of my stuff to him and was able and happy to leave it to him, what a splendid job he did over the years. Later helped out by Helen and then Sharon There have been many contributors, non as prolific as the afore mentioned Michael Pearson, (who could forget the geoClub calendars) but our graphic artists from down under **Gordon Turrell** from **Australia** and **Peter McGuinn** from **New Zealand** have made an outstanding contribution not only to geoNews but also supplying the members with endless graphics of the highest quality all of which have been made available via the library. There have been a few un-sung hero's of geoClub too, none more dedicated than **Ron and Pat Crawley**. On more than one occasion Ron and Pat helped out with photocopying in the days when we had to get things done as cheaply as possible. The most memorable time, the first time we actually met, was when the copying had all gone haywire and Ron stepped into the breach. He and Pat did all the copying correlating and stapling ready for me to envelope and mail out, it was a last minute job and they kindly met me half way between Manchester and Liverpool to make the delivery. It was CHRISTMAS EVE, now that is what I call above and beyond the call of duty . Since then members have come and gone. we've had members from around the world, including England, Australia, New Zealand, Belgium, Holland, USA, Germany, Sweden, Norway , Italy, Canada, USSR, Latvia, Hungary, Denmark, Malta, Wales, Scotland , Eire. Over recent years **Dave Elliot** or **geoNut** to his phsyiciatrist, has been a tower of strength. he procured articles from a number of sources in the USA especially the Wichita Commodore Users Group, and has helped a great many who have sought his expertise. As I have already said, there are others, many who were just ships that pass in the night and I apologise for not mentioning you by name.

The only person who I have yet to thank is my tower of strength, my wife **Doreen**. Without her backing , understanding and unstinting support I doubt geoClub would have ever got off the ground, She has had a lot to put up with over the years for the sake of 'The Club'.

To you all Thanks a lot it's been a pleasure to know you .





## To The EDITOR

Mark Vowles Wychwood 73 Rush Hill Bath Somerset BA22QT

Dear Frank,

I have been meaning to write for a while and have made several attempts which due to my University work load got put to one side I will try to put down my feelings as briefly as possible so that this time I can finish the letter.

Naturally, I am sad to hear that geoNews will be coming to an end at the end of the year, geoNews has brought many interesting articles to my attention, the internet activity was one very surprising result

That said, I really feel very strongly about the PC issue, I have had to buy a PC because I live at home and go to Bath University, not being resident on campus means that I don't have the benefit of living close to the computer room where the PC based software specific to my degree course is available. I have therefore decided that I should buy a PC and install the licensed copy of this software from the University, thus allowing me to complete assignments based on this software throughout the four year degree at home. I fully understand that other people have such needs for a computer which can deliver top quality resolution printing etc BUT, why does this have to be at the sacrifice of the C64..A couple of issues ago, someone was bleating bitterly about their new PC, its steep learning curve and how the C64 would do it quicker.Why does everyone make this an issue, people keep saying "I need a PC, it's time to move on, I'll miss the friendships but I going on"? HELLO People" If you feel that you want or need a PC then fine, I can accept that but are you really going to save (I presume finance is the key issue here?!) that much by selling your C64? This is one situation where, certainly some, people can have their cake and eat it Specifically I would like to point out Allan Bairstow, he, like me, owns a PC and a CI 28 setup. Allan's reasons for having a PC are clear, to produce the magazine Commodore Scene, there would be significant problems to be overcome if he used the Commodore for this, not least compatibility with the printing company.

Many people, myself included, have expressed the real rot of the C64 scene and it is friendships between fellow users, notice the absence of any restriction on owning other computers. If this is the case, then why give it up, surely you can divide your time between more than one machine. I really fear that the final demise of the C64 scene (note: scene not the computer) will be the fact that people run out of will power and commitment it strikes me to be a little hypercritical to bash on about the C64 then suddenly dump it for the PC. I wonder what is to be left only those who have invested too heavily in the C64, those like me who have spent the equivalent of a high specification PC on the C64. I have to stop here on this subject because I simply can't find words to express

my incomprehension, I only hope that people realise that the party need not be over yet just because the first few guest have started to leave doesn't necessarily mean that the party is over, does it?

I hear from Alan Bairstow that you plan to disband the geoClub library. I would just like to say that this would be a serious loss to the C64 scene. I know Allan Bairstow well because I write for Commodore Scene on a regular basis now and it was Allan who ordered my hardware from CMD in America..Allan is dedicated to the C64 scene, he has picked up CS from the scrap heap after Richard Bowen gave up suddenly without any warning. He also help me when my CMD HD power pack burnt out during warranty, he stayed up late to ring CMD and arrange for a replacement to be sent it was with me I week later, he also work at his own expense to find a fax modem which was compatible with geofax. I have no doubt that the library would be in extremely good hands with Allan, I also know that he has plans to try an incorporate geoNews, or articles from yourself in CS.As a plea from myself and I am sure many other users who will remain, please let Allan have the library for operation through CS, I believe that you will find it impossible to find anyone who is either in a better position or more trust worthy to run the library, please reconsider your decision for the benefit of *all*.

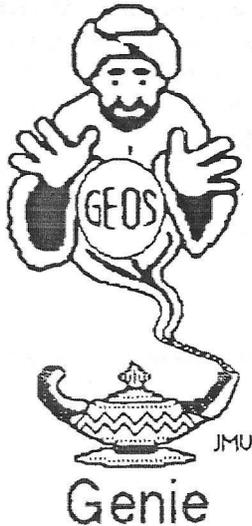
May I wish you well for the future in whatever you do. I would also like to thank you for geoClub it was a bright light in the darkness after Commodore Format closed. Best wishes and kindest regards.

Yours sincerely,  
Mark

Well Mark I guess I will try to answer your letter as best I can. To start with the 'PC issue' as you call it, believe me there's nothing here that I have not heard a 100 times before, don't forget I spent the last 7½ years supporting the C64 and Geos. Now it alright you saying 'why can't you divide your time between the two formats' ?. I'm afraid I don't have the time anymore. Not being a student, I have a full time job, a family and a home that needs my attention; gardening, decorating all the sorts of things that you'll have to do one day perhaps, and I NEED the space. I also have other interests which I wish to pursue further. I would suggest you try producing a 12 page newsletter 12 months of the year for 7 years always on time and see how many times 'other' matters have to take a back seat. I should also tell you here that I am not hypercritical, I haven't dumped the C64 for a PC, I haven't used a C64 for quite a few years now apart from copying Geos files to MS-DOS. I first went PC because of my job, I then discovered that I could do some of geoNews at work as well as at home and print the master copies on the company laser printer giving far better quality than I could manage on my Dot Matrix printer. The end results justifying the means, as Leon Trotsky might have said, had he been a Geos user. As for your heavy investment in the C64 and it's peripherals it is entirely your business what you spend on your hobby and you should not be too concerned if you are rebuked by others who think its a costly interest.

As for the library., by the time you read this it will most likely have gone to a new home .

# The Australian



by Jane M. Voskamp - Jones

## Tooling up geoWrite - Part Two

Continuing our look at other programs that can assist you when you work with geoWrite. Here are a few more that I have found to tell you about. I hope that you enjoy this exploration into other programs.

### Blue Pencil v1.0

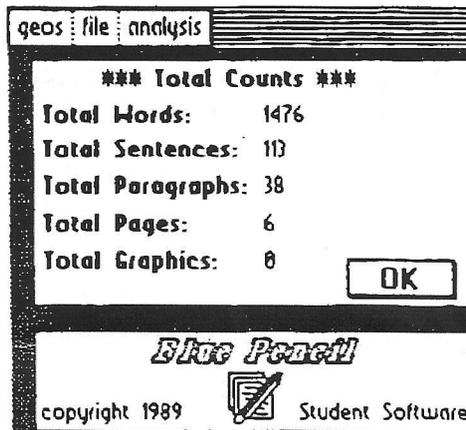
Blue Pencil v1.0 by Charles E. Kinney aka Student Software. This 40 columns PD Application program works with geoWrite files from v1.1 to v2.1.

On double-clicking to start the Application, you are presented with a main Menu for geos, file, and analysis. The geos menu, as usual, allows you to access other Desk Accessory programs on the current disk. For more information on the geos menu, refer to the section on 'The DeskTop, Part 2, The Menus' in 'The World of GEOS Handbook III (\*\*)'.

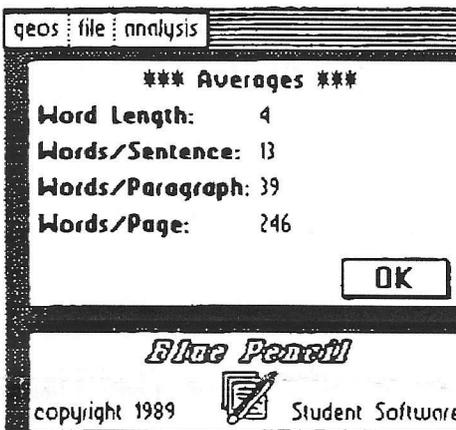
The file menu options are get file .. or quit. Clicking get file .. brings up a Dialog Box (DBox) to select a text file, and click on the OPEN gadget to continue.

After working the program displays the result of the count in a DBox showing the count of

words, sentences, paragraphs, pages, and graphics. Click the OK gadget when done.



The analysis menu options are set counts, and averages. If you click on averages an asterisk is displayed next to it to show that the option is on. Then next time after you get file .. a second DBox will follow the Total Counts DBox with the Averages of word length, sentence, paragraph and page.

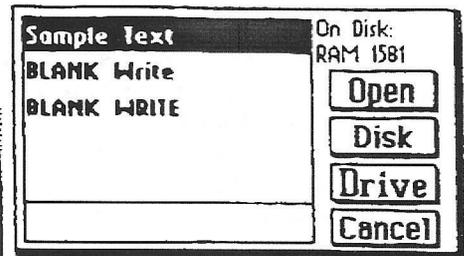


Click on the OK gadget to exit the DBox. Select quit from the file menu to exit back to DeskTop. That's it pretty much.

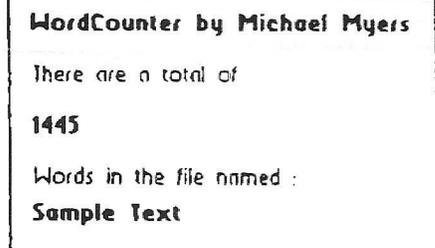
### Word Count v2.0

Word Count v2.0 by Michael Myers. This 40 columns PD Application program counts the words in your geoWrite files.

On activating a DBGetFile box is displayed to select your text file. Click on the OPEN gadget to begin.



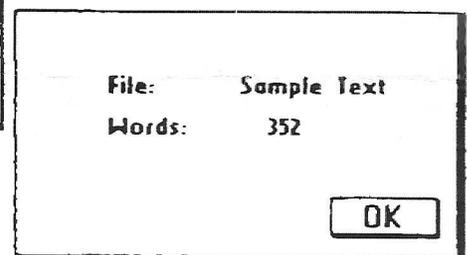
The program gets to work, and then a DBox is displayed showing the total number of words counted. Short and sweet.



Simply click to exit back to the DBGetFiles box. Click on the CANCEL gadget to exit back to DeskTop.

### WORDCOUNT

WORDCOUNT by Shawn K. Smith and Published as a type in program in the January 1988 COMPUTE!s Gazette Magazine. This 40 columns Application program displays a DBGetFiles box after activating, and lists your text files present on disk. Select your file, and click the OPEN gadget to begin.



After the program goes to work a DBox of the results is displayed. Another short and sweet program. Click on the OK gadget to exit back to DeskTop.

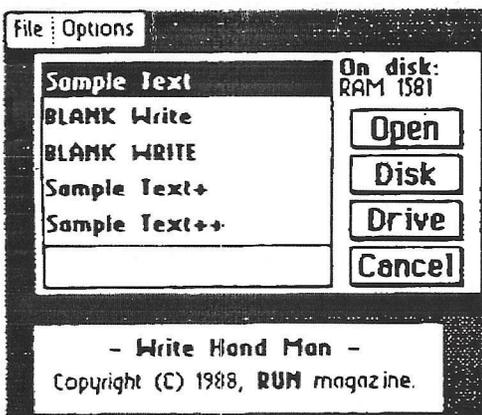
### Write Count v1.0

Write Count v1.0 by Joseph P. Buckley aka Red Storm, and Published by RUN Magazine

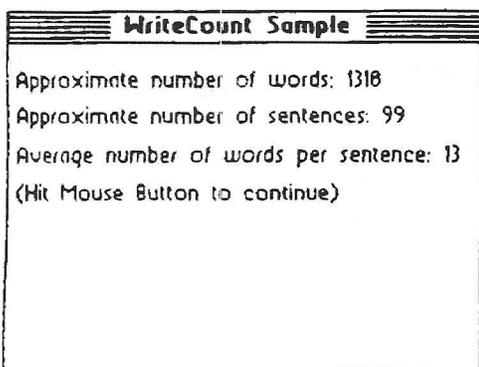
on the Power Pak I 1988. In the program, Joe calls it Write Hand Man.

When activated, this 40 columns Application program, displays a screen with a main menu of file and options. The file menu options are quit and information. The information options brings up a technical discussion of what constitutes a word, a sentence, a paragraph, etc. Some people may find that information helpful. Click on each OK gadget to continue.

The options menu holds Analyze and Report. Clicking on Analyze brings up a DBoxFile box to select your text file.



A prompt of Analyze page ... is displayed until it reaches Analyze finished. At which point the task is completed, and the information that was derived from the file is displayed in info type DBoxes.



The program details the number of Words, Sentences, Average Words per Sentence, followed by the numbers of one letter, two letter, three letter, etc up to the largest size word the program found.

It will be useful sometime I'm sure, although it is probably more than you needed to know. On selecting Report a DBox requests if you want a geoWrite copy of all subsequent document reports to be created with YES and NO gadget. Select your requirement, and the next time you select Analyze the program will display Creating write file after the screen only DBoxes are displayed.

Select quit from the file menu and you can then go and enter geoWrite to view the results at your leisure. The geoWrite file created is a v2.0 file and it is the same filename as your original, except with a plus sign suffixed to the end. That's it really.

However, I am not aware of this disks current sale status. Enquire for prices and shipping details. [Allow for conversion rates and bank charges]. The Power Pak I available from :

Creative Micro Designs Inc (CMD)  
PO Box 646  
East Lo gmeadow MA 01028 USA

#### Where to Get These Programs ...

All the aforementioned Public Domain (PD) 'write' utility programs have been sent on disk to Ivan, so that he can make them available to members on the MCCC disk again. Enjoy!!

#### Readers Three Wishes And All That ...

I have not had any letters for help, so I can definitely say that I am pleased you are all doing so well in GEOS-land. Ivan Blitz of M.C.C.C. has just recently (end February 98), sent me his CMD SuperCPU64 to play with for a while. This should be a lot of fun when I get the chance to plug it in and fire it up. I feel very lucky to be given a chance to test drive one. Afterall, it is not every day that your dreams come true.

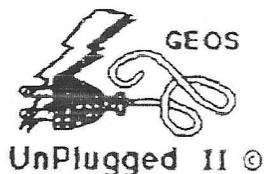
I hope that some of you may be interested in seeing the new GEOS UnPlugged Series HandBooks. Although, at this late stage in the 'game', I am not expecting any kind of rush to happen, but hey, it would be nice (smile).

Send in your comments, or great GEOS discoveries, and I will respond when I can in this column, unless you wish a private reply, in which case please send a SSA(Business)E and I will write you back. You can even just let me know if you are enjoying the column.

**The Australian GeosGenie**  
PO Box 635  
Enfield Plaza 5085 South Australia  
Telephone (08)8260 4062

(\*\*) The World of GEOS HandBook Series (I, II, III), are currently available from JMV Grafix

## NOW Available!!



The second Publication of the **GEOS UnPlugged Series** includes many more of the articles I have written as Column Editor on my column **GEOSgenie** (for the now 'missing' magazine of Commodore Network). Continuing on from 'UnPlugged I'...

Featuring such topics as :-

- 'System Enhancement, Part 2'
- 'GeoDate and Calendar'
- 'GeoCanvas v3.0'
- 'BBRTC Device'
- 'GeoPainting Experiences'
- 'Storm Systems, Part 1'
- 'GeoShell Demonstration'
- 'Storm Systems, Part 2'
- 'GeoGames, Part 1'
- 'GeoGames, Part 2'
- and much more.

The Publication is available folded and saddle bound to A4 size, for **AUD\$15.00\*** (includes P&H), from **JMV Grafix** P.O. Box 635 Enfield Plaza 5085 South Australia Cheques Payable to Jane M. Jones \*Overseas Orders add AUD\$5.00

# How to add 32K to a 1541

By Andrew E. Mileski

**"Recursion" on Q-Link  
210-180 Lees Avenue  
Ottawa, Ontario  
Canada K1S 5J6**

**Note: This is for experienced hardware hackers only!  
Proceed entirely at your own risk, and you can kiss  
the warranty goodbye!**

This is based on a 1984 Revision A circuit board, but there should be enough info here to do the expansion on any 1541 drive with very little work, and only a little thought.

Hints for other versions of controller boards: Figure out which ROM is ROM0 (\$C000-\$DFFF) and ROM1 (\$E000-\$FFFF). You MAY have to bend pin 20 of each ROM 180 degrees to the vertical; this is the \*ROMx pin. Ignore steps 13, 14, 15, and 16.

This may not be the easiest or best way to add RAM, but it does work. Seriously consider buying one of the RAM boards on the market today. They are easy to install.

**!!!!!!!!!!!!!!!!!!WARNING!!!!!!!!!!!!!!!!!!!!!!**

**You'll be handling very ESD sensitive  
devices! Make sure you and your tools are prop-  
erly grounded at all times!**

**(If you don't know what ESD stands for, don't  
even think about trying this!!)**

**!!**

An asterisk \* before a signal means it is active low.

Feel free to contact me if you need some help, or have a project idea. (If it was not for RaymondD2 on Q-link asking how to add 8k to his 1541, I never would have written this file! Thanks Raymond!)

Note: I did the 8k modification on my own drive. It does work. I modified it slightly; I now have 32k RAM installed!

How it works

The 1541 is very sloppy about how it uses its 64k memory space. The first 32k (\$0000-\$7FFF) is reserved for the RAM and I/O chips. This is  $2048+2*15$  bytes needed, but almost 30k wasted! The second 32k (\$8000-\$FFFF) is for the 16k of ROMs, which means another 16k has been wasted! So, we clean up the memory map, and use 32k of the wasted 46k to add some more RAM! This wastes only 14k. I dare anyone to try to add 40k of memory :)

## *The nitty-gritty details*

IC1 decodes the 64k address space of the 6502 into four 16k segments. The first segment (\$0000-\$3FFF) is reserved for the drive's own memory and I/O. This is done by generating a fake A15 signal which I call FA15. We allow this signal to go low (logic 0) only when we need the internal 2k RAM and I/O chips.

The next two segments (\$4000-\$BFFF) are our 32k expansion RAM area. An AND gate is formed with RDL (resistor and diode logic) to join the 16k segments.

The last 16k segment is reserved for the drive's ROMs, and is unused on IC1.

IC2 decodes the 64k address space into 8 memory segments of 8k. The last two segments (\$C000-\$DFFF, \$E000-\$FFFF) are for ROM0 and ROM1 respectively. The IC is enabled only on read cycles.

Why this way?

Note that I didn't have any schematics for the 1541, so this method is most likely not the best. I also didn't have a very wide selection of ICs on hand at the time, so I used what I had!

**In other words, if you know of a better method  
share it with the rest of us!**

- 1) Decide to add 8k or 32k. Most of today's software uses only 8k, but who knows what may be in store for the future! For 8k, ignore this article, and read the file "expand1541/8k".
- 2) Obtain the parts: Two 74LS138 (3 to 8 line decoder)  
One 62256 (32k static RAM, 120ns) (note that a 62LP256 is low-power)

Two switching diodes (any will do) One 3.3k Ohm ¼ Watt resistor. A small piece of pre-drilled board. Two 16 pin wire-wrap sockets if you are going to wire-wrap the circuit.

- 3) Open the disk drive case and remove the RF shield.
- 4) Mark one end of ALL connectors with a marker, so that you will be able to replace them later.
- 5) Unplug ALL connectors.
- 6) Unscrew the circuit board. Don't forget the screws that attach the heatsink to the frame.
- 7) Lift the circuit board out of the disk drive and place it on your anti-static conductive mat (or if your desperate, a folded towel will do!) component side up, and in the same orientation (top of board is towards back of drive).
- 8) Find the 6116 (2k by 8 bit RAM) on the circuit board (24 pins and not socketed, left side at the back).
- 9) On the new RAM chip to be added carefully bend the following pins 180 degrees, so that they are pointing in the opposite direction: pin 1, 2, 20, 22, 23, 26, 27, and 28. These are the signals A13, A12, \*CS, \*OE, A11, A14, \*WE and +5 volts.
- 10) Sit the new RAM chip on top of the 6116 chip. The bottom pins should be aligned. Make sure that both of the chips have their top-of-chip reference marks pointing in the same direction.
- 11) Carefully solder the two chips pins together so they are piggy-backed. Be carefull to avoid solder bridges between pins.
- 12) Locate the two 8k ROM chips on the circuit board (24 pins and socketed on right of 6116).
- 13) To the right of the ROMs, between the chips and the heatsink, you will see 3 silver dots on the PCB. These are pass-throughs to the other side of the board.
- 14) Flip the board over, and again find the same 3 pass-throughs.
- 15) Cut the trace leading to the front two pass-throughs (the ones towards the front of the drive). The signals \*ROM0 and \*ROM1 replace the original ROM chip selects that go to pin 20 of the ROMs, that is why you must cut the traces!
- 16) Solder a wire into the front pass-through; this is the \*ROM0 signal. Solder a wire into the middle pass-through; this is the \*ROM1 signal. The wires should be long enough to reach the front of the board plus about four inches.
- 17) Find the 6502 CPU chip (40 pins) on the solder side of the board.

Solder wires to pins 8, 20, 21, 22, 23, 24, 25, and 34. These are the signals +5 volts, A11, ground, A12, A13, A14, A15, and R/\*W. Solder two wires to 23, 24, and 34 so you can connect the 62256 RAM chip.

- 18) On the component side of the board again with the 6502. Locate pin 25 (A15). Follow the trace leading from the pin to a pass-through. Cut the trace. Flip the board over and locate the pass-through again. Solder a wire into it; this is the FA15 signal.
- 19) On a small (1.25x1.75 inch) piece of circuit board, wire-wrap the ICs or use point-to-pont soldering.

IC1, a 74LS138

pin	
1 A14	16 +5 volts
2 A15	15 FA15
3 Ground	14 Diode1
4 Ground	13 Diode2
5 Ground	12
6 +5 volts	11
7	10
8 Ground	9

IC2, a 74LS138

pin	
1 A13	16 +5 volts
2 A14	15
3 A15	14
4 Ground	13
5 Ground	12
6 R/*W	11
7 *ROM1	10
8 Ground	9 *ROM0

Diode1 and Diode2 are the cathode ends (marked on diode with a band). Connect the anodes (other end) of each diode together and to a wire, and also to the same end of the resistor; the wire is the \*CS signal for the 62256. To the opposite end of the resistor (the end that isn't connected to anything yet), connect +5 volts.

Looks like this:

```

*CS Diode1  !
          IC1 pin 14 - +5V
          IC1 pin 13 resistor
          Diode2
  
```

- 20) Connect the 6502, ROMs, and RAM chip signals to the 74LS138s. Run the wires to the front, right of the board (see below for RAM).

Connect RAM pin 1 (A13) to the 6502 pin 23 (A13) wire.

Connect RAM pin 2 (A12) to the 6502 pin 22 (A12) wire.

Connect RAM pin 20 (\*CS) to the RDL "AND" gate as described in step 19.

Connect RAM pin 22 (\*OE) to pin 14 (Ground) of the chip with a small wire.

Connect RAM pin 23 (A11) to the 6502 pin 20 (A11) wire.

Connect RAM pin 26 (A15) to the 6502 pin 24 (A14) wire.

Connect RAM pin 27 (\*WE) to the 6502 pin 34 (R/\*W) wire.

Connect RAM pin 28 (+5 Volts) to 6116 pin 24 with a small wire.

Run these wires to the left of the board, and around to the solder side.

- 21) Replace the drive controller board in the drive, and mount the new small circuit board to the frame with a small machine screw.
- 22) BEFORE you screw the drive board in place, make sure the wires are not near the drive or transformer, and tape them in place to the bottom of the board.
- 23) Screw the drive controller board to the frame again.
- 24) Plug in all the connectors again. Check your reference marks.
- 25) Plug the drive in, and test to make sure the drive still works normally
- 26) If okay, then replace RF shield and case cover. If not, power-down and check all your connections!
- 27) Pat yourself on the back, your done! You know have 32k RAM extra!

The 32k you installed is available at \$4000-\$BFFF

ROM0 available at: \$C000-\$DFFF

ROM1 available at: \$E000-\$FFFF

The ROMs are read only, as they should be.

## Null-Modem Cable Schematics

by Ilker Ficicilar

To transfer data/prg/etc... , one can make use of the null-modem cable. With this you don't need any modem also. Only thing has to be done is, plugging this cable to the computers (just two computers, one to many communication with this kind of schematics causes data collision).

After plugging, and loading terminal programs to the computers, just send the program, from one of the machine and receive it using the other one.

. You can use Novaterm9.5 at C64 side and Lynx at the IBM side for example.

. You have to use same transfer protocol at both sides (eg. xmodem ) If you want you can put one of the terminal programs into BBS mode.

### The Schematics:

#### 1.) DB-25 to DB-25 Null-Modem cable.

db-25	db-25	Parts List
tx 2-----3 rx		Two DB-25 male connector.
rx 3-----2 tx		1-2 meter of 5(or 3) line shielded wire.
rts 4-----5 cts *		* If you want, you don't use rts/cts lines.
cts 5-----4 rts *		
gnd 7-----7 gnd		

#### 2.) DB-9 to DB-25 Null-Modem cable.

db-9	db-25	Parts List
rx 2-----2 tx		One DB-25, one DB-9 male connector.
tx 3-----3 rx		1-2 meter shielded wire with 5 or 3 lines.
gnd 5-----7 gnd		* It is OK if not to use these lines.
cts 7-----4 rts *		
rts 8-----5 cts *		

### 3.) DB-9 to DB-9 Null-Modem cable.

db-9	db-9	Parts List
-----	-----	-----
rx 2-----3 tx		Two DB-9 male connector.
tx 3-----2 rx		1-2 meter of 3(or 5) line shielded wire.
gnd 5-----5 gnd		
cts 7-----8 rts *		* Not using these lines does not cause a
rts 8-----7 cts *		problem at low speeds.

Term. progs. can use XON/XOFF bytes for data flow control.

The DB-25 Connector. (looking at back) The DB-9 Connector.

13 12 ..... 3 2 1	5 4 3 2 1
-----	-----
\ o o o ... o o o /	\ o o o o o /
\ o o ... o o /	\ o o o o /
-----	-----
25            14	9 8 7 6

Ilker Ficicilar  
 filker@newton.physics.metu.edu.tr  
 e068214@narwhal.cc.metu.edu.tr



Baby Flintstone  
 by  
 Gordon Turrell

## Funny !!

A pastor of one church who was previously a sailor, was very aware that ships are addressed as "she" and "her". He often wondered what gender computers should be addressed. To answer that question, he set up two groups of computer experts. The first was comprised of women, and the second of men. Each group was asked to recommend whether computers should be referred to in the feminine gender, or the masculine gender. They were asked to give 4 reasons for their recommendation.

The group of women reported that the computers should be referred to in the masculine gender because:

1. In order to get their attention, you have to turn them on.
2. They have a lot of data, but still are clueless
3. They are supposed to help you solve problems, but half the time they are the problem.
4. As soon as you commit to one, you realize that, if you had waited a little longer, you could have had a better model.

The men, on the other hand concluded that computers should be referred to in the feminine gender because:

1. No one but the Creator understands their internal logic.
2. The native language they use to communicate with other computers is incomprehensible to everyone else.
3. Even your smallest mistakes are stored in long-term memory for later retrieval.
4. As soon as you make a commitment to one, you find yourself spending half your paycheck on accessories for it.

# Don's Digest

by Don McManamey



I don't have much idle time. It would seem that every daylight hour that I am not at work I am cutting someone's grass. In fact, I don't cut mine as often as I should because I'm cutting for someone

else. Little wonder I have no time for computers or anything else for that matter. I do, however, find some time to get on the net or play with my train. Yes, you heard right, train.

I have been a model railroad enthusiast for just about as long as I can remember. I have collected rolling stock (cars) for some time now and in just the past year received as a gift a very high quality engine. In about April or May I started buying a railroad magazine on a regular basis. I am surprised what they have now that they did not have a few years ago. A few years back I wrote about a new watch I bought that had 64k of memory. Here was something small enough to fit on your wrist that had the memory of a Commodore computer. You would think I had been living in a cave. As I looked through the magazine I saw things I did not know existed and apparently they have been around for quite a while. I had heard many years ago that Lionel had put a TV camera in an engine but now they have them that fit in smaller trains and provide full color images you can record on your VCR. There are micro miniature circuits that provide lighting in passenger cars and cabooses. This lighting stays the same brightness at any voltage from about 3.5 volts up to 18 volts. There are crossing signals and gates which operate just like the real thing because of super small computers.

This engine that was given me has what is called a "mars light." Now if you don't know about trains you probably don't know what a mars light is. A mars light is the light on the front of the engine which lights the track ahead at night. But a mars light does more than that. It moves in a sideways figure eight pattern. This allows the engineer to see around curves, up and down hills, and to see on either side of the tracks for things like wild animals or automobiles that might get on the tracks.

The mars light is simulated by a miniature computer. The thing that impressed me the most though is one that eliminates the complex wiring that modelers had to learn in the past.

Time was that layouts were divided into sections with each section being wired separately. The section of track you planned to run the train on would be powered along with the section just ahead. In this way you could have more than one engine running at one time. When you got more than two trains running wiring could get a little tricky if you wanted your train to go anywhere on the layout without stopping. They now have a system in which all the track receives 100% power all the time. Each engine has a computer on board which controls everything from lighting to speed and direction. Another computer controls up to 99 trains. This system will keep the train running at the same speed both up and down hills. One of the really neat things in my opinion is that in the past if you wanted two engines working together they had to be matched. Now, the computer will take care of that. Let's say you had an engine that did 100 scale miles per hour and another one that could only do 80 scale miles per hour. You had better not put them together under the old system but with the new system the computer will give just the right amount of power to each to let them work together just like the real thing. The passenger cars can sit behind an engine which is sitting at the station and the engine headlight and passenger car lights can all be on. The entire package starts at about \$200 with the decoders being extra. This may sound like a lot of money but if you consider the real cost of wiring a layout the old way with miles of wire and switches galore plus the control panel, it really is not that much more.

It boggles the mind to think of where computers have gone in the few short years they have been around. Who knows where they will go? Interestingly enough, we have talked before about the computerized world our children are inheriting and how they will have to learn how to operate them but more and more they are getting so easy to use that many times we don't even realize we are using them.

Until next time, keep your computer on track and compute with a full head of steam.

# ReAligning a 1571

by Kevin Schmidt

(Q-link aka KevinS28) {Downloaded from The Internet }

Well here's a tale that might amuse you, if not, it might save you a trip to your local repair shop. About 4 months ago my 1571 in my 128D, started acting a little flaky. It seemed to be getting a little persnickity towards what brand of diskettes I bought for use when in CP/M mode. You may or may not use this capability at all, although the problem I am going to describe can still pop up to baffle and confuse the living day-lights out of you. What was happening was that when I tried to format a Kaypro IV type diskette (thats an extended format of appx 400K in MFM format) I would start getting an error generated towards the upper tracks on side 1 (top). This would'nt happen all the time, just every once in a while. Change a diskette and she'd be happy. Well as time went on It got to the point that I could'nt even copy from previously formatted diskettes into the reu. This only happened on the files which were on side 1, towards the end of the upper tracks. What really puzzled me was that I never had aproblem when running anything in Native 128 or 64 mode. Geos ran fine, Copy protected programs loaded without a hitch, Superbase128 never burped or complained, Fast-Hackem kept on hacking. Nothing in GCR format ever failed.

Well the day finally came, She bit the DUST. Everything still worked fine as long as I didnt try to use an Extended format MFM disk. Forget about using CP/M with Commodores format, its just tooo slooow, And CP/M is just as disk intensive as geos is if not more so. I went down to the local Discount store and bought a couple of different brands of diskettes, convinced that I was still having a diskette problem, 24 disks format failures later I decided that I had a hardware problem. I didnt know where to start, since Commodore did so much optimization on the 128D, the schematics I had for the 1571 (stand alone unit) wern't much use. Now I really put this piece of equipment through its paces, I keep a 1670 modem and a 1764 REU (expanded to 512K) and a 1370 mouse plugged into this thing at all times. Also added a fan to keep things cool. Figured that maybe I might be pulling down the power supply, so I unhooked everything, popped the hood and tried once again to format a 400k floppy. Nope didnt work, nex checked all the connectors for corrosion or looseness, no problem there. Took the Disk drive out of its cradle and popped the drive rom and reseated it in its

socket. Reassembled the beast and tried again. Nothing worked.

Well I was about to get frantic. Where to turn next? Out came the diagnostics for the 1571. Ran logic check and kept coming up with a u2 failure (drive rom), Well thats normal for this machine, they changed the rom, and don't have a Western Digital chip in the 1571 on the 128D like they do on the stand alone unit. Next on to the read-write tests. GCR format went like a song., but she would burp on any burst mode mfm read. Confirmed trouble, but still no cause. Yea I know that your thinking Alignment problem, but I had dismissed that as I keep the alignment checked at certain intervals, and that I didnt have a problem when in GCR mode. But I still checked it, and there wasn't a problem that is to say on drive 0. Now I had purchased an alignment program that would check both sides of a 1571, but It hadn't got here yet. All I had was one that would check a 1541 single sided and that always checked out fine. I had really concluded that I had an electronic problem either with the drive controller or the Ro chip or possibly the drive Ram. So I ran a program to check the drive ram no problem. Knowing that the decode tables for all the MFM burst reads are in the drive rom I concluded that (hopefully) there was where the problem lied. So I packed it away and slept on it. The next day I went down to the shop to see about how much the chip would cost and how long it would take to get it. Well the Rom wasn't even listed ( lucky for me ) and they weren't about to call Commodore for a 15.00 or 20.00 chip. I was told to double check my rom number and get back with them. Later on that Day when I got home UPS had delivered my Alignment program. Finally get to tackle that old 1571 which has a problem (different drive, different story). First thing I did was run the thing on the 128D. Yep there was a problem on head 1, it was a couple of thousanths of an inch off on track 36 and 70. But I had decided to go on and fix the other 1571 first. Well during my trials and tribulations on it I noticed that during the aignment of the top head that depending on where you set it you got different readings, adding two and two together I concluded that maybe I could fix the 128D in a matter of minutes. Boy I was Brainstorming Now. I've heard stories about the 128D having drive problems and I sure didnt want to have to take mine to the shop or really spend any money on it, so here's the cure.

Hopefully you can see what I am talking about, this may apply towards any newer 1571 also. The fix is relatively simple, simply use a screwdriver and pry up the read/write head using the clamp brace as a fulcrum. Don't apply too much pressure and keep the screwdriver off the metal spring or flex plate, keep it on the side of the plastic part of the head. When you think that you have it right look at it and see if the head is pretty close to horizontal to the clamp bars see the next example

So as not to confuse anybody and to try to make myself perfectly clear, the point is to pry the head from the side not the front by the read/write head, sorta in a counter-clockwise motion. DO NOT GET CARRIED AWAY about 1/4 to 3/8 of an inch will do.

Do not by any means loosen adjust or mess with the screws that hold the head assy to the stepper mechanism. It might be tempting to think that this adjustment could be made by these screws, but they don't!!!!!!!

Now I hope that all of this is clear. If not please Email me and I will try to answer any questions that you might have. Also I've included for your convenience a program which will format a Kaypro IV disk in 128 mode. What good might this do you, well for two minutes of your time you can check out any 1571 and see if its got a problem or not. Periodically check your drive to see if its developing a sloping head. Even if you don't use CP/M the problem can get bad enough to start causing problems whenever you use both sides of your disk drive. I've left word of this on the Commodore hotline over in CIN, and as of yet have not received a reply back from them. I've asked them if this was a known problem or if there was some kind of upgrade that might be made available. If not either of these I've asked for a replacement manufacturer that could supply a drive body that would rest in the cradle, and accomodate the C= architecture. Besides a drive is a drive is a drive as long as everything gets hooked u correctly and has close to the same specs. The only reason I asked for a replacement was I know that repeated bending of the flex plate will cause the head to get farther and farther out of alignment, and I don't want to spend

three or four hours guessing and getting it positioned close to use one of the commercial alignment programs available. Speaking of which I you buy one of these (either Cardinal or Free Spirit ) let me warn you that neither one of these use a true alignment diskette. They use a standard diskette which has been formatted in some odd balled manner and written with a code that the program can read and determine appx where the head is at. This isnt at all bad, but you can get misleading results and even then your not supposed to use the program to align your drive, you guesstimate from the data that the program gives you. Then rerun the program to check you results.

A true alignment diskette costs in the neighborhood of \$50.00 by itself, and that doesn't include any program that checks it. ( Dyan mfg. ). All in all the programs are probably worth the 25 or 30 bucks if your inclined to do it this way. You can align close to specs, but don't expect miracles.

The Format program is included for your convenience. I did not write it, and it is available in the Applications section under Drive utilities 128. Sorry I don't know who wrote it or I would give them the credit they rightly deserve, its a fine program and works flawlessly

Hey let me know what you discover under your C= monster machine.

Kevin Schmidt

(Q-link aka KevinS28)

P.S. A damn good alignment program is available called Multialign 1.6 its on Q-link over in the 64 drive utilities and various other places. ( it doesn't like any drive other than # 8 on a 128D ) supports up to 4 drives and runs under 64 mode, will only check a 1571 on side 0 or in 1541 mode !!