

EDITOR'S COMMENTS


And so we have another year to look forward to and see us into our seventh year.

This issue has as usual a diversity of items in the hope that there is something for everyone. The mammoth "Looking at Geos " continues as does the flow of high quality graphics from New Zealand by Peter McGuinn we could fill quite a few copies of geoNews with nothing but Peter's art work. Page 10 has an item that may interest most readers regarding disk drive head knock. It is a revised program de-bugged by Danny Tod. Page 8 " A Blast from the Past" is basically the history of Geos has told by brains behind Berkeley Softworks Brian Dougherty in a Geos Forum on Q-Link, I have included this because I thought it may well interest many of you who are unaware of how when and why Geos began. Bringing us bang up to date we have an article from Ireland by Mark Boyle on Shopping on the Internet something that will soon become common place I am sure. An article on Page 3, changing text docs from 40 column to 80 column I have no reference to an author, whoever you are my apologies, if you let me know I will most certainly correct this in the next geoNews.

Thank you for your continued support and all your Christmas cards, they were very much appreciated.

Happy Geosing

Frank



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In Our 6th Year of Supporting GEOS and it's users

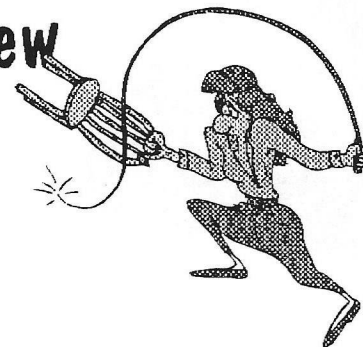


The November Disk Review

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To those of you who have decided to carry on with us for another year, from Sharon & me, a Very Happy New Year. A very big THANK YOU to all of you who sent us both Christmas cards, your Thanks and your Good Wishes are very much appreciated. All our thanks this month go to Peter Hunt and to Doreen Home for 7 new graphic conversion disks (pcx). If you can't find what you want amongst these, then you're very hard to please. The Pics come in a variety of sizes, and all the different pointers are done by Peter Hunt. The programme 'geoVIEW' is on most of the disks. As you'll notice, I've not put any 'comments' after every pic. To do that would occupy too much room, which I don't think that Frank would appreciate!

geoCLUB DISK 481

3 SISTERS; 64FALCON; BIG-RED; BRIDGE;
CNTRPOINT; BLIGH COTTAGE; BOAT;
DINGO; PARLMINT; PHILIP; PUB-XXX;
SHACK; ULAROO.

geoCLUB DISK 482

AUSSIE; AUSSIE 1 & 2; BBALL; COCKY;
CRICK-1; EMBLM-1; FJ HOLDEN; FLYDOC;
FLAG1; FLIND-ST; FLYER; GALAHS;
GENSTORE.

geoCLUB DISK 483

HAWKE; KEATING; KOALA2; OLDMAN1;
KEATING2; MAILBOX; OPERA2; LUNAR
PARK; NATIVE1; MONORAIL; NATIVE3; OLD-
PARL.

geoCLUB DISK 484

OLDPRSN; OLGAS; GOV-HOUSE; XPT;

PENGUINS; PHARLAP; STEAMER;
SHEARER1; STHN-X; SWAGGY;
SUGCANE; TRAM.

geoCLUB DISK 485

TERRACE; PHILLIP; HAWKE2; FRILL;
GUMTREE; DEAD-GUM; BALCONY;
BANKS; BLAXLAND; PARMAWAL.

geoCLUB DISK 486

BOURKE; CAPTCOOK; CHIFLEY;
CHISHOLM; FAREWELL; FLYN;
FRASER2; KENNEDY; KOREA; MOWER;
NAVY1; NOW.

geoCLUB DISK 487

AUST-5; BENHALL; CROC; BRADMAN;
FLAG-1; FLINDERS; FLOREY; HAWKE;
HOGAN; CLOTHLIN.

geoCLUB DISK 488

LUDWIG; MAWSON; MCQUARIE; NED
KELLY; ROLF; SMITHY; BHAWK.

geoCLUB DISK 489

SWAGMAN; BUSHOUSE; WAR-MEN;
FAIRYPEN; HUGHES; KEATING;
KEATING2; MCMAHON; MENZIES;
NATIVES.

geoCLUB DISK 490

NATIVE1; OLD-PARL; OLDMAN;
STOCKMAN; SWAGGY; OUTHOUSE;
PANNER; TAS-TIG; QUOKKA.

geoCLUB DISK 491

NURSE; NURSE2; PLANE; PELICANS;
SOLDIER1; SOLDIER2; SUB; SVIET; TANK;
WINDMILL; WHITLAM; XMAS2; GORTON;
TRI-SVCE.

geoCLUB DISK 492

LINDSAY; LUDWIG; MCQUARIE; MITCHELL;
NED; NED2; NELLIE; BLUEY; WENTWORT;
WILLS; BUSH-RAT; CAMEL; DES-HOUSE;
TASDEVIL.

geoCLUB DISK 493

MERINO; POSSUM; QUOKKA2; ROCKWBY;
TIGERCAT; WALLY; WOMBAT; WATERBUF;
DINGOS; ECHIDNA; MARSMOLE; BANANA;
BOT-BRUS.

geoCLUB DISK 494

GUM-LEAF; GUM2; IROBARK; KANGAPAW;
LEICHTRE; RF-FERN; SANDFIG; STUMP;
WAHATAH; WALKPALM; WATTLE;
WEETCORN.

So, for this month you've got a hell of a choice. The price of the library disks remain at £1.30, and this does include the P/P. A reminder to any new members, when writing out a cheque or postal order, PLEASE make it payable to GEOCLUB, and not to Sharon or myself - Thanks. If you've got anything that you'd like to contribute to the library, then please contact either Sharon or myself.

Once more -

A HAPPY NEW YEAR

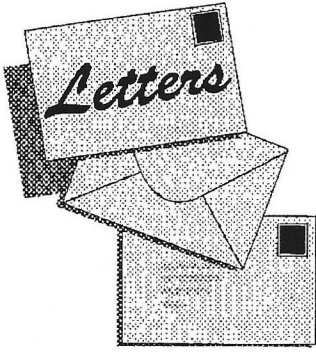
to all of you - Take Care - Sharon & Terry.

Change text DOCS from 40 to 80 col

A problem I have often encountered is the production of hard copy of Geos instruction documents. because most of these are produced in 40 column mode so that those unfortunates who lack an 80 column monitor can still view and print these documents. This meant that far too much valuable paper was being used, with most pages being half empty. For instance one document consisted of 14 pages if printed out in the original form. So, I decided to find a way to change from 40 column to 80 column and to use the whole page length. In the foregoing instance, the 14 pages was reduced to 5 pages. Following is how I did it.

1. Load the document to be changed into geoWrite C128/80 column
2. Starting with page 1, highlight all the text on this page.
3. Move the margins, paragraph markers etc. to 4 and 78.
4. Select next Page. Go to the top of the page and press DEL to cancel last line on previous page (normally a Page Break)
5. Hightlight all text as in (2) (It should still be on) when you reach the bottom of your first page. Insert a Page Break the text remaining would then be on page 2.
6. Continue highlighting text and repeating steps 4 and 5 until all text has been converted to 80 column.
7. Go to FONTS menu and convert to BSW128, press (R) to change all text to this font.

One Tip : Some of the fonts on the original documents are small (and very faint when printed out). Changing them to BSW 128 uses a littl more paper but they are certaintl more legible, so be very careful and make sure you put a Page Break on line 60 at the very most. Obviously you can in (7) change the font to whatever suits you personally but I find BSW 128 uses minimum paper with good clarity.



To The EDITOR

PO Box 223
Riga 82
LV 1082
LATVIA

Dear Mr. President,

I am writing to tell you how delighted I am with the geoClub membership certificate.

It has been placed in a prominent place in the house where all members of the family will regularly sit and admire it at their convenience.

Placed where it is there is the additional advantage that if our supply of an essential household commodity should be temporarily wiped out, your certificate may be quickly taken down and used in it's place.

The bottom line is that Dave Elliott who was recently visiting the area called in to do some business and in passing asked me to tell you, " Next year print it on softer paper.

Yours faithfully

Mustapha P. Kerwickley

Dear Mustapha,

Many thanks for your letter I am quite flushed to know that many members are very pleased with the new membership certificate and it comes as some relief I assure you. I had an inkling that they had gone down well however because of the very few that have been returned. It's always a good sign I feel when someone gets something the really like they are very reluctant to part with it. Unfortunately I have no control over the quality of the paper, it's a case of " yer pays yer money and yer takes yer chance " as we say up 'er in'th north. The next time Dave visits you ask him to bring his own paper.

V.S.P.

Frank

Dear Frank,

Many thanks for your letter dated November 8th 1996. I am very pleased to learn that I can join geoClub. Please find enclosed my £10 subscription fee. I have also enclosed a blank disk for a catalogue disk.

Could you please answer some questions for me ?.

1. Can I use geoWrite and geoPaint on different disks for more free memory

2 How can I use the alphabet of my Country

Many thanks for your kind co-operation.

I remain

Your sincerely

Yevgeniy (Makoveyev)

Dear Yev.

Welcome to geoClub it is our pleasure to have you with us and let me assure you we will do our utmost to help you get the most out of Geos and your C64.

To answer your questions,

1. Yes you can run geoWrite and geoPaint on separate disk. DO READ the manual that I have already sent to you. Make work disks, and all you must have on it the Application e.g. geoWrite, DeskTop and the Fonts you want to use etc plus Photo Manager if you are using photocscaps in your documents.

2. The solution to this maybe that you will have to design your own font. This is not as difficult as it may sound, by using Font Editor by Jim Collett or one of the others. You will find this on a disk I have sent with the manual. I do not know how close to Russian Latvian is but I once designed a Russian font, if that's of any use let me know I try to find it and send it on.

До СивиданЯ

Френк

Looking at GEOS

(This series of articles specifically meant for new comers to Geos was sent to us by Lawrence Burses, Hernando, Missouri, USA via Peter Hunt Australia. Small portions not applicable to Europe have been edited out. [Original articles by Mark McInnis])

This month let's start off with a tour of the Geowrite screen. Collectively what you are looking at when you open a Geowrite document is the writing window. At this stage of the game we should all know what the command menu is and what it looks like. The command menu is divided into seven groups: geos, file, edit, options, page, font and style. Just to the right of the command menu is the page indicator. At the extreme top right is the title bar. If you have not noticed, the small box located inside the page indicator box, gives you some idea of your location in the writing window. The ruler is pretty obvious and I believe most of us know how to use one. A couple of other items worth mentioning are the text cursor and the pointer. The text cursor (a small flashing vertical bar) indicates your active position in the writing window -

i.e., where the next typed character will appear. The pointer usually manifests itself as an arrow and with it you can move around the entire screen (via an input device), select commands that you want to activate or move the text cursor to another location. To use justification (right, left, center or full) and line spacing (1, 1 1/2, or 2) place the pointer on the appropriate box and click. So much for the grand tour.

The writing window covers roughly 2.75 inches down and about two thirds the width of an 8.5 x 11 inch piece of typing paper. In other words at any one time you are viewing a very small portion of the entire Geowrite document. As you move the pointer to the right and left, the writing window will flip to that side of the screen. This is called "side flipping." I always found this little idiosyncrasy to be somewhat annoying, but this is a minor irritant compared to what the application

is capable of doing. The first time you open a new document, you will note that the document width does not span the entire 8.2 inches of the page. It begins at 1.2 inches and ends at 7.2 inches. If you wish to widen that span so that the document begins at .2 inches and ends at 8.2 inches, select make full page wide from the options menu. Keep in mind that the "make full page wide" option is a no look back and no return action.

You cannot revert the document's dimensions to its original width. Also it will take three side flips to cover the width of a page. For the life of me I cannot imagine why anyone would want subject themselves to this option.

Entering text is a fairly straight forward process. Just press a key and what you see is what you get (WYSIWYG). However there some elementary points that are worth mentioning. One way to avoid that pesky side flipping is to pull the margins in and when you get ready to print the document simply pull the margins back out. More on margin moving in another column.

When that inevitable typing mistake occurs you can delete one or more characters on the line by pressing the INST/DEL key. This moves the text cursor backwards on the line, deleting characters as it goes. Another method of deleting text, especially large portions of text, is to use the highlighting feature. This feature will be covered in greater detail at a later date.

Any word processor worth its salt will word - wrap. If you reach the right margin of the page while typing a word, Geowrite will pick up the entire word and move it to the beginning of the next line and allow you to continue typing. In the not so distant past word - wrap did not exist and the typist had to press return for a line feed. That must have been the days of the dinosaurs.

Ending a paragraph. Simply put all one has to do is to hit the "return" key. This action will move the text cursor to the paragraph margin of the next line. Back in the old days one would have to slap the carriage return lever to throw the carriage and hit the tab key for the five space paragraph indent. It's amazing what one can accomplish with the push of only one key.

Another couple of features in Geowrite is the page

break and delete a page break. Most of us ordinary keyboard pounders probably don't have much use for page breaks. White space doesn't do much for the word count of your article. A page break can be inserted any where in your document and the text immediately following a page break will appear at the top of the next page. In order to use a page break, position the text cursor where you want the new page to begin and select page break from the page menu (or press the commodore key and the letter L). To delete a page break, position the cursor at the top left corner of the page following the page break and press the INST/DEL key. Then follow the screen prompts.

Wouldn't it be nice if you could view an entire page of your document on the screen. This feat can be done with preview from the file menu. When you use this feature you will understand where the expression, "it looks like Greek to me" came from. Unless you have exceptionally good eyesight I wouldn't recommend trying to read a document in this mode. However the preview mode can be extremely helpful in determining exactly how the text looks and fits on a page.

Moving the writing window. What the heck is the writing window? Remember our tour of the Geowrite screen and the numbered square located between the command menu and title bar? The numbered box is the page indicator box and the small rectangle within this box is the writing window. The writing window is a graphical representation of your relative position on any particular page. It's similar to the "you are here" signs that you see on a shopping mall map. Click once inside the page indicator and the writing window box will become attached to the pointer. Select a place and click to move the writing window there. Movement around a multi-page document is a matter of selecting next page or previous page from the page menu for one page at a time backwards or forward. Should you want to look a specific page, select goto page from the page menu and follow the screen prompts.

Next we want to look at editing your document. It's practically a given that you master the mouse in order to use this feature to it's fullest. You don't go hunting bear with only a knife and it's tough to use Geos without a mouse. One of the best things about a full featured word processor is its ability to

insert and delete text.

When that fabulous passage that you composed the night before cannot stand up to the light of day, simply delete the offending passage from your electronic page and savor the thought that you have saved a tree by not having to waste a piece of paper. All that you need to do is highlight the text that you want to remove and press the INST/DEL key.

Be absolutely certain that the text you want to delete is not needed as there is no known means of recovery. Well gang, it's that space thing again.

Let's do a little more editing. When you select text within a document, there are several things that you can do with that text. You can replace, delete, move or copy text. If the notion hits, you can even copy text to another disk. As was mentioned last month, it is imperative that you have a mouse because in order to take the above mentioned actions, the text in question must be highlighted.

To replace text, simply highlight the text and type the new text. To delete text all you need to do is highlight the text that has to go and press the INST/DEL key. To change the font (type face) or style of text, highlight the text and select font and font size from the font menu or if you want to change the style then select style from the style menu. In order to cut or copy text you follow the usual highlighting format and select cut or copy from the edit menu.

Should you want to copy text from one location in a document to another location in the same document highlight the text, copy the text, place the cursor at the new location and select paste from the edit menu. You will have the same song, second verse without the hassle of all of that typing. Note: when you copy or cut text, it is placed into a special file called a text scrap. The text scrap is volatile in that the next cut or copy operation replaces the original contents of the text file. The text file can be permanently saved by using the text manager desk accessory. When it comes time to transfer your literary masterpiece to another disk,

highlight the text to be cut or copied, do the cut or copy operation, quit the current document and you will see a text scrap icon on the desktop which you then copy (text scrap) to the destination disk.

If you have only one disk drive drag the scrap text to the border, close the current disk, activate the destination disk, drag the text scrap onto the desktop from the border, open the destination document and paste the text where you want it in the new document. If you have two disk drives then the operation is somewhat easier. First insert the disk containing the destination document into a disk drive and activate it.

Activate the disk containing the source document and click on the text scrap file icon and drag its ghost to the destination disk drive. The destination disk drive will be represented as an icon on the desktop border which will resemble a floppy disk with the letters A, B or C. Deposit the text scrap icon onto the destination drive icon, click and the disk to disk transfer will be complete. I believe that everyone can handle the paste text operation from this point.

The next item on the agenda is formatting. In a nutshell formatting is how the text looks and how it is arranged on the page. First up is the ruler. Everyone should understand how to use a ruler by this stage in your life. The ruler runs across the top of the electronic page just below the pull down menu headings.

There are several formatting tools located on the ruler and they are the tab, paragraph and margin markers. If you have bad eyesight like me, you may not have seen or even noticed the tab and margin markers.

That strange little "M" on the ruler is the margin marker. This "M" has a twin. One for the left margin and one for the right margin. In order to set the margins:click on one of the "M"s and it will become attached to the pointer. Position the pointer at a new location and click to deposit it. I always had a little trouble getting the "M" to stick to the pointer, but it will eventually stick to the pointer.

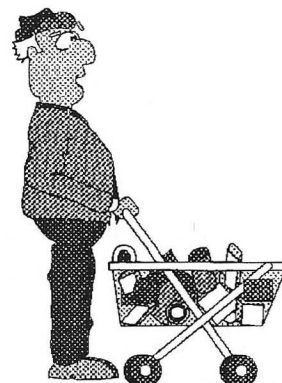
(To Be Continued)

Computer Shopping

by Mark P. Boyle

I hate shopping. I really do. Every shop for me is an assault course.

My nightmare is a shop full of mothers who take their children shopping with the sole purpose of slapping them. Little old ladies stalk the isles and children drag-race with trollies forming crash-test dummies from the shoppers. But the buoyant computer industry has a solution for this problem....computer shopping!



Home shopping is not a new idea. Afterall, mail order companies have been filling out post boxes with junk mail for years. Even the electronic home shopping is a fairly matured idea. But lets take a look at the various ways to shop fro home before we take take the plunge.

CD-ROM: This form ivolves catalogueing all the items and viewing them as multi-media (text, music & video). This has the advantge of making the catalogue more colourfull and interestihng than it's paper equivalent. However CD's are still expensive to produce with the cheapest CD writers costing over eight hundred pounds. It is still becoming popular as Freemans has shown.

Internet: This method gives access to a potential market of 35 million users but in reality on a few thousand will actually find the site unless it's well advertised. Also the majority of Internet users are at work or school or are computer boffins, rather than Mr or Mrs Average. You also have to pay to receive the software. Isn't your phone bill big enough already?

TV shopping never really took off except on satellite which you have to pay extra for. This

works like normal adverts but the channel is dedicated to convincing you to part with you money. A more high-tech idea is to use touch-screen TVs so you can enter your credit card number and simply touch your TV to have the latest gimmick wing it's way to you. (Note: No matter what the world tells you this idea will never work because TV last over 10 years and you will need special TV to use this feature.)

So all these ideas are useless?

No not quite. The CD is already taking off but right now in most countries only 4% of homes have a PC. The Internet has something going for it - especially with the Network PC. This method works well, take the Olympic96 WEB site. Over 100,000 tickets were sold for the Olympics via this site!

On-line banking has been promised to us for as long as I can remember. It is already underway. many banks already offer this service over the phone but few offer it via computer. Barclays use the Internet to advertise themselves and this service has limited transaction services. You can find an up-to-date balance for your account there but no other transactions can be carried out. In future you will be able to cancel or write cheques, set up standing orders and much more. But the problem with the internet is that there is just too much hacking. Even encrypted messages can be decoded with time and if a hacker can discover your credit card number think what will happen to your credit bill! NIGHTMARE!

On-line shopping is not with us now but maybe in



the future couch potatoes will be able to remain firmly stuck in their sofas and shop or bank to their little hearts delight.

A Blast from the Past ! or Just Geos History

QANTUMLINK
PERSONAL COMPUTER NETWORK
GEOS FORUM, JULY 24, 1986
GEOS FORUM JULY 31, 1986

HOST BRIAN DOUGHERTY BERKELEY
SOFTWARES
GEOS FORUM, SEPTEMBER 4, 1986
HOST GEOS MIKE
GEOS FORUM, OCTOBER 23, 1986
HOST GEOS ROB

I'd like to say a few things about our company and the GEOS product development. We're about three years old, we started out developing products for other companies. About a year ago, we decided to focus all of our energies on developing a new operating system for the C-64. GEOS was the result. Before I go any further, I should make it clear that the Q-Link people over-billed me. I didn't design GEOS all by myself. In fact we had seven people involved in the development. I designed the desk top and portions of the operating system kernel. Jim DeFrisco designed most of geoPaint, Doug Fults designed parts of the operating system kernel (including the diskTurbo) and also contributed to geoPaint. Last but certainly not least Tony Requist designed geoWrite and many portions of the kernel and Dave Durran wrote all of the printer driver interfaces. For those of you who don't know what GEOS is, here's a brief explanation: GEOS stands for Graphic Environment Operating System, GEOS is the new official disk operating system (DOS) for the C-64. The GEOS package contains the new operating system, geoPaint (a sophisticated graphics editing program), geoWrite (a "What You See Is What You Get" wordprocessor), and a number of desk accessories that can be called up in any application. Desk Accessories include: a calculator, a note pad, photo and text albums for collecting pictures and phrases cut or copied from geoWrite and geoPaint documents, and a preference manager that lets you set time and date, mouse speed etc. GEOS creates a menu and icon user interface for the C-64 similar to the Amiga or MacIntosh user interface.

Question: Is GEOS a hardware cartridge or is it loaded into memory?

Brian Doc: GEOS is completely disk based, we have thought about a disk/cartridge combination but there are.. no definite plans as of the moment.

Question: Is geos just a graphic program?

Brian Doc: No, GEOS is much more than just another graphic application. We designed it first and foremostto be a new operating system for the C-64. Although the benefits of this design approach are ...not immediately obvious, it will become more clear as we and other developers introduce new ...applications. We have a new version of the operating system in development now that supports.. ...a 512K RAM expansion unit that Commodore is planning to introduce for the 64.

Question: I like GEOS very much, Please tell me when you expect to have a KOALA PAD input driver?

Brian Doc: We already have an input driver for a new TRUE mouse soon to be released by Commodore. As soon as Commodore releases the device we will make the input driver available on Q-Link in the GEOS SIG. We are also working on input drivers for the flexi-draw light pen and the Koala Pad.

Question: When will geos be available for the 128?

Brian Doc: We are working on a C-128 version of GEOS and it should be released some time this fall. The 128 version will have a number of features designed to take advantage of the added memory abilities but will not use the 80 column mode in any of the base applications. We decided to use the 320 X 200 screen mode of the VIC chip instead of the 80 column mode for a number reasons. One reason was a desire to maintain compatibility with the applications developed for the C-64 version of GEOS. We don't feel this actually imposed any limitations on the product since one of the principles behind GEOS is to make document resolution independent of screen resolution. Some of the features that will be in the C-128 version are: an application switcher (you will be able to have two a applications in memory at once and instantly switch between them); there will be an

improved deskTop as well as support for the 1571 disk drive (taking advantage the added disk space) and the 1750 RAM expansion unit.

Question: Will GEOS work properly on an Indus GT Disk Drive?

Brian Doc: We haven't actually tested it ourselves but we have heard from users who have and they say there ... is no problem with it.

Question: Any possibility of a version to use with an MSD dual drive?

Brian Doc: We are looking into it for a later version of GEOS but we haven't set a date.

Question: When & where will the font library be available in the NY area?

Brian Doc: The font pack was packed with GEOS to our direct mail customers as a bonus, but we haven't ... started shipping into retail yet. it should early in august.

Question: Will you develop, or can I get technical data to develop printer drivers that make use of available multiple density printing modes?

Brian Doc: We have a draft of the programmers reference manual which is going into final editing shortly. The manual will be published by Bantam Books and should start appearing in book stores sometime after christmas. The manual contains everything you ever would want to know about programming under GEOS. All of the font, window, menu, icon, and diskTurbo routines are accessible through a jump table and clearly documented in the manual complete with examples and a sample application.

Question: Will there be fonts larger than 36 pt

Brian Doc: The system supports up to 48 point fonts currently. In principle that can be extended... ..indefinitely, however there are memory problems in allocating a buffer for fonts much larger... ..than 48 points.

Question: Does GEOS come with a built in assembler?

Brian Doc: Sorry...No!

Part two follows next month

Reverse Head Knock your Disk Drive

Original article published in RUN Magazine Sept 1988. First printing in geoNews on the October 1995 issue page 5.

Programs and text sorted/changed by Danny Tod.

Tested by Paul Boulter.

The original article in October '95 of geoNews had a problem with the program. Sharon originally sent it to me because she had a problem with line 40 - a SYNTAX ERROR kept on appearing whenever it was typed out. I suspect that many more of you may have had the same problem. Here's the fully working one.

If your 1541, 1571, or 1581 drive is not doing it's job properly, the heads inside the disk drive may not be aligned properly. Before you start tampering with it, or paying good money to get a repair shop to do it for you, try the reverse knocker below. (I'm currently attempting a program which will be more accurate than the one below. I may send it into the library once it's completed.)

WARNING: Please remember that you should have an OLD disk in your drive when this program runs. When it was tested on the 1541 mk1 drive, the noise was awful. But **NO DAMAGE WAS DONE TO THE DRIVE.** This was when the program was entered in EXACTLY.

0 REM REVERSE HEAD KNOCK YOUR
DRIVE BY STEVEN CHEUNG

1 REM SORTED OUT BY DANNY TOD

10 OPEN 15,8,15,"I0"

20 SP=1 : FOR I=1 TO 100 : GOSUB 40 :
NEXT I

30 FOR I = 1 TO 20 : SP=-1 : GOSUB 40 :
NEXT I

```
35 PRINT "DONE! HEADS ALIGNED..." :  
PRINT#15,"I0" : CLOSE 15 : END
```

```
40 PRINT#15,"M-R" CHR$(0) CHR$(28) :  
GET#15,A$ : A=ASC(A$+CHR$(0))
```

```
45 BI=A AND 3
```

```
50 BI=BI+SP : BI=BI AND 3
```

```
60 R=(A AND 252) OR BI
```

```
70 PRINT#15,"M-W" CHR$(0) CHR$(28)  
CHR$(1) CHR$(R)
```

```
80 RETURN
```

Then SAVE it, and RUN it.

NOTE: Try not to get confused with the number '0' and the letter 'O'. This happens quite often, and can cause errors in the program. The problem is they look quite similar. It depends what font is used in this.

I hope this program has put an end to the misery caused by out-of-touch disk drives. I'd better say that neither myself, Paul or geoClub are responsible for what this program might do. It works with our setup, so there's no reason that it won't work with yours.

Please note that this program may not work with the CMD FD-2000/4000, HD, or RAMLink/REU drives due to it using a different operating system/layout command. But you wouldn't need to use it with a RAM device anyway! But see what happens if you use the FD or HD. I cannot guarantee it will work, though.

If you have problems, then write to me explaining the problems:

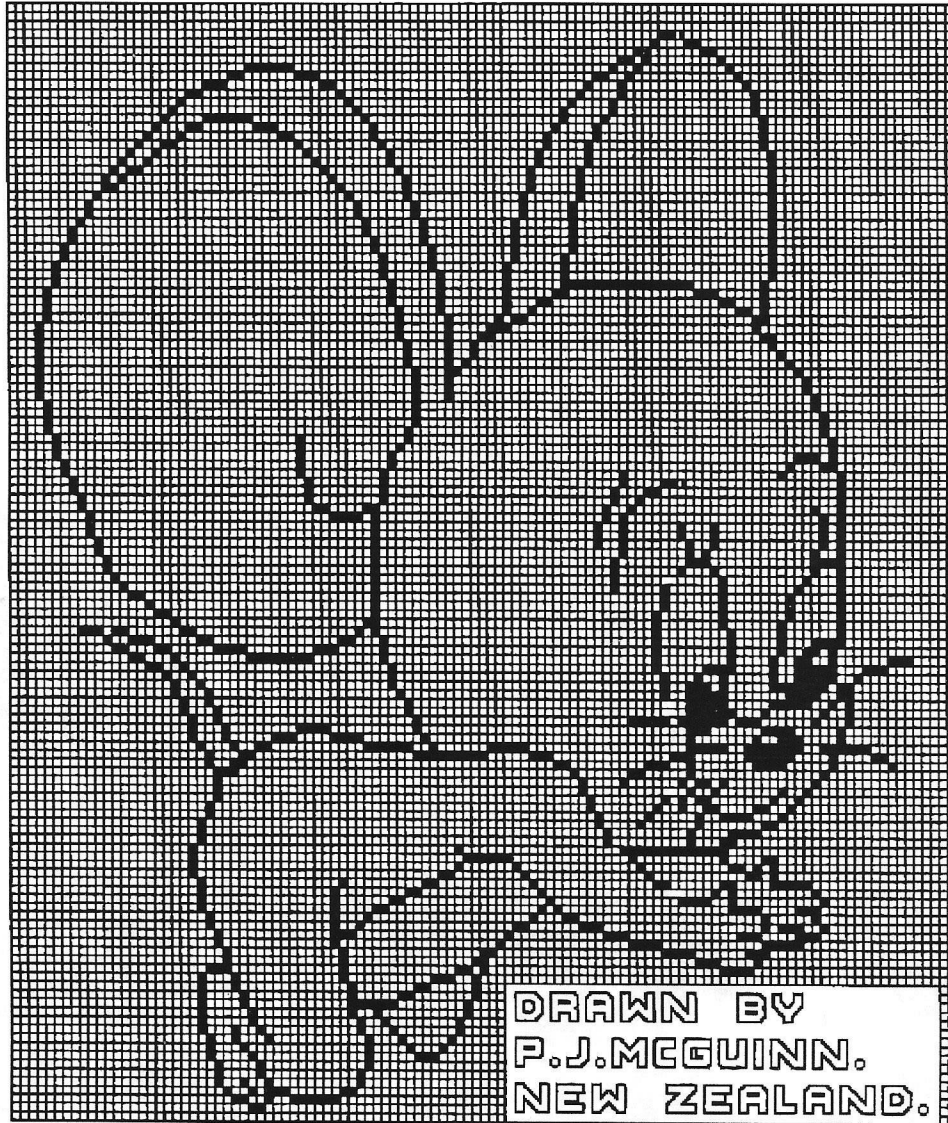
Danny Tod, 79 Orwell Drive, Ladygrove
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D.I.Y. CLIPART

FOR USE IN GEOPAINT
PIXEL MODE.



DRAWN BY
P.J.MCGUINN.
NEW ZEALAND.

Peter, a little bit of explanatory text wouldn't have gone amiss here. *Frank*



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NEW ZEALAND.