geoWorld

Volume 2 Issue 4 Number 13

The original desktop publishing systems...

LaserDirect

THE LASER PRINTING CENTER

Realize the full potential of your GEOS environment

With Laser Printed Documents!

Or continue to produce documents that look like this.

Or, your document could look like this.

Or, like this.

Or, like this.

Or, like this.

Or, like this.

Or, like this.

Ανδ τηισ.

And this.

And this.

✡■❄ ▼❋❋▲✎

In fact, your document could look any of eleven different ways, other than the dot-matrix font pictured above.

Near-Typeset Quality.

Near-Typeset Quality printouts of your GEOS™ created documents will help you realize the full potential of your Commodore 64 or 128. Create Laser printed documents with crisp, 300 dpi (dots-per-inch), professional quality just like the "big boys."

You've had the computer. You now have the software. Now let LaserDirect laser print your document on our LaserWriter Plus. With eleven different type faces to choose from, you have virtually the same capabilities as more expensive systems!

LaserDirect is The Laser Printing Center for GEOS™ documents. Our experienced staff will process your 5-1/4" or 3-1/2" disk, supply tips and hints, and have your documents back in the mail to you within 24-hours. We even offer special return shipping like Federal Express or UPS Next Day.

What are you waiting for? With the ability to produce professional looking laser printed documents, the only other thing you need is our free Laser Printers' Kit. Contact us today for your copy - and realize the full potential of your computer. *LaserDirect* POB 20913 Milwaukee, WI. 53220-0913 (414) 543-9923.

(C) Copyright 1987 Pro-Mark Assoc.
LaserDirect is a Registered Trademark of Pro-Mark Assoc.

LaserDirect is not affiliated with Berkeley Softworks, Inc.

GEOWORLD

The definitive magazine about GEOS

Volume 2
Issue 4

Number 13

Publisher
Roger Ledbetter

GEOWORLD is not affiliated with Berkeley Softworks, LaserDirect, Qlink, or Commodore Computers

Articles may be submitted by mailing on GEOS disk to:
GEOWORLD
38 Santa Ynez St.
Santa Barbara, CA
93103

Subscription
12 issues $20
6 issues $12
1 issue $2

If mention has been omitted in any article, let it be known that GEOS, geoWrite, geoPaint, geoPublish, geoLaser, geoPubLaser, Text Grabber & Graphics Grabber are Trademarks of Berkeley Softworks.

Copyright 1988
GEOWORLD MAGAZINE
No part of this publication may be reproduced by any means without the written permission of the Publisher.

Table of Contents

Columns

2 **As the world GEOS by...**
Roger Ledbetter *A word from your publisher.*

6 **Inside GEOS**
Master Blaster *An inside look at how GEOS works.*

Features

3 **Antigrav Toolkit Notebook**
Randy Winchester
File transfers with GEOS files.

10 **From the Captains chair**
Nathan Williams
GEOS I/O Errors

12 **GeoPublish Graphics**
Susan Puhn-Lamb
Inside tips from a graphic artist.

19 **Word Publisher from Spinnaker**
Peter & Paul Hughes
A review of 3rd party GEOS software.

Departments

17 **The Mystics' Corner**
Mystic Jim *What's new at Mystic Jim's.*

15 **A Word from BSW** ***4 special offers from Berkeley***
Rob Siegel *The latest Official word.*

Ad & Article Copy Deadlines are the 1st of the previous month that you wish the material to appear.

As the world GEOS by...

Hello Everyone welcome to another issue of GEOWORLD. Well as You can see there has been some changes in regard to the date of publication. Since I started publishing this magazine it has been hard to get the issues mailed out during the month it was put together, switching to the slower third class mail has made it even more difficult. So after much consideration, I have decided to follow the footsteps of other publications by dropping the date and just using an issue number. You have My promise that Everyone will still get all issues that You subscribed for.

Now for some exciting GEOnews, it seems that Master Blaster has finally done what so many have been asking for, that is write a GEOterminal program. Version 1.0 has been finished and sent to RUN magazine to be included in a super GEOS disk that they will be selling around september. The term has very basic features and only runs Xmodem, but Bill already has plans for another version that will satisfy Everyones requirements. An interesting thing about Master Blaster is that He finished GEOterm only a few nights before Uncle Sam sent him overseas.Bill will be back before Run releases the disk.

This month the news from BSW is that Fontpack+ and Deskpack+ have been released and should be available at the end of the month (April). An upgrade will be available to owners of GEOdex. GEOprogramer V2.0 is being developed, will support the 64/128 with an additional 64k. The program will work under both operating systems. And to wet Your appetite, the rumor of a new GEOS 2.0 for the 64 seems to be true. BSW isn't saying much about it but I have heard from reliable sources that it is going to be BIG! No more details at this time but You will be the first to know. Remember You saw it first in GEOWORLD.

There has been many request for a disk to be included in GEOWORLD. I think this is a great idea and I would like to hear Your ideas. Although time doesn't permit Me to answer each letter personally, I appreciate the ideas and suggestions from You.

Well I guess that is it for this time. Thank You for Your patience and support!

Roger Ledbetter

geoPublishers of the world, Unite!

I have been a writer all my life, a professional writer for the past several years, and a professional writer AND (desktop) publisher since I got hooked on geoEverything, especially geoPublish. Today I operate a small newsletter business based entirely on geoPublish, 'File, 'Write, etc. A real rags to riches story.

One thing I constantly do is look at a page or layout and say to myself "I can do that!," or "How did they do that?!?" Many times I would jump out of bed at 2:00 am, rush to the computer and try out some approach to shadowed boxes, reverse type, benday lines, scotch rules and hairlines. And now that I produce several 4, 8 and 16 page newsletters per quarter I am always looking for better ways to produce my work. I was going it alone for a while until a wonderful thing happened...QLink.

I finally got signed on and realized that there are lots and lots of other people out there who love Geos, write and publish professionally, and would value the chance to exchange ideas with like-minded individuals. After speaking to several such persons I decided to organize GeoPublishers, an organization to dedicated to facilitate this mutual exchange and support.

But what to do...how to proceed? My multitudinous Message Board announcements draw a steady flow of interested parties, and I hope this column in GEOWORLD will provide a forum for the group. Roger is very interested in supporting us, and we hope to set up a professional printing service for members in the future. Skip at Laser Direct is throwing his full support behind us, too. He is instumental is arranging our on-line events on QLink, and his excellent advice helps us keep moving forward.

What else? Right now, not much. We're new and are still getting our act together. We are planning our first on-line conference on QLink, entitled "Marketing your Desktop Publications." Exact dates should be available by the time you read this. More meetings will be set up, all with an eye towards mutual benefit through sharing information. I invite interested parties to send samples of their work to me...I'll also be glad to provide mine...and maybe you have a technique or approach that I would like to learn, or vice versa. Suggestions on support services GeoPublishers caould provide are VERY welcome. Isn't that what it's all about?

EMail me for details on GeoPublishers, and leave your address if you'd like to see my samples...mail your stuff to my office.

Mega Mike1 (QLink name)
Michael Barnett Willner
HCI
175 Fifth Avenue, Suite #2220
New York, NY 10010

Antigrav Toolkit Notebook

by Randy Winchester

Inside PostScript

Last month's article discussed how to connect to a laser printer with a modem. This month I'll show you how to save *geoLaser* output as a PostScript program. We'll go inside a PostScript program to see how new functions can be accomplished - features not now available from GEOS.

Snarfing a PostScript File

First, an update. Berkeley Softworks has released *geoPublaser*, a laser printer application for use with *geoPublish*. It includes some nice functions such as bitmap smoothing, a reduction and enlargement feature, multiple copies, and can produce "thumbnails" - miniatures of each page of your document on one page. In most other respects, it looks and operates just like *geoLaser*, except the screen is blanked when operating at 1200 bps.

To get started, we'll need two computers; one must be a C=64 or C=128. Both computers will have to be equipped with 1200 bps modems. If both computers are in the same room, you can use a "null modem" cable. This is simply a cable that connects between the user ports of the two computers and simulates a modem connection. For software, in addition to GEOS, we'll need *geoLaser*, *geoPubLaser*, or the *LaserWriter* printer driver; a *geoWrite*, *geoPaint*, or *geoPublish* document; and your favorite telecommunications software. I highly recommend the public domain *CBTERM*. After using it for several years, I've found it to be more reliable than most other terminal programs, including many commercial ones.

Get the terminal software running on the two computers. Use the following settings: Baud Rate = 1200, Data Bits = 8, Parity = none, Handshake = none, Echo = off. Depending on your circumstances, you might have two computers in the same room connected with a null modem cable, or you might ring up a friend who also has a computer and modem. The computer you send the PostScript program to doesn't even have to be a Commodore. Almost any computer with decent terminal software will do the trick.

Once a telecommunciations link has been established, open the capture buffer on the receiving computer. Boot GEOS on the sending computer and run *geoLaser*, *geoPubLaser*, or print a document using the *LaserWriter* printer driver. The output will go through the modem to the receiving computer's capture buffer. When the file is done printing, close the capture buffer and save it as a SEQuential file. The SEQuential file will be a complete PostScript program which can be edited, modified, copied onto other disks, and even printed without the use of GEOS.

Why PostScript?

PostScript is a page description language developed by Adobe Systems. It very quickly became the standard for use in laser printers. In comparison with other programming languages, PostScript is versatile and powerful, much more powerful than BASIC. Not only can PostScript programs be used to print bar graphs or pie charts, they can also do the calculations to generate them given the raw data. For now, we'll stick to using it for graphics and text. If you are interested in some of the more exotic uses of PostScript, there are some excellent books on the subject of PostScript programming, such as the *PostScript Language Reference Manual* by Adobe Systems.

PostScript programs can be produced on almost any computer using almost any word processor or text editor which saves it's output in SEQuential files. PostScript most resembles the Forth programming language. If you are at all familiar with Forth, you'll have little trouble adapting to PostScript. They both share the same syntax and many of the same features.

Once you have saved a few PostScript programs from GEOS, I suggest you print them and look them over. We'll carefully examine some specimens in the remainder of this article.

A Commented PostScript Listing

As the first example, let's take a look at the output from a *geoPaint* document made with the *LaserWriter* printer driver. This text has been reformatted in order to make it more readable.

```
/picString 640 string def
```

The **/** character begins a definition. This defines the variable **picString** as a string 640 bytes long. Values precede operators in PostScript. It may seem awkward to say **640 string** instead of **string 640** but it's really more efficient that way. The word **def** ends a definition.

```
/imageBuffer { gsave 640 8 scale
640 8 1 [640 0 0 -8 0 8]
{currentfile picString readhexstring pop}
image grestore } def
```

This defines a routine named **imageBuffer**, which handles the printing of bitmap graphics. It reads the bitmap data one line at a time. The command **gsave** places the current representation of the graphic image in temporary storage while new information is being processed. **640 8 scale** enlarges the

A Look Inside of GEOS PostScript Programs

bitmap 640 times in the horizontal direction and 8 times in the vertical direction, necessary because of the higher resolution of laser printers. 640 bytes of bitmap data are then read from the **currentfile** into the variable **picString** using the **readhexstring** command. The data is "painted" on the page by the **image** operator. The previous graphic image is then recalled using **grestore.**

```
/moveDown { 0 -8 translate } def
```

The **moveDown** procedure is used to create what would be a linefeed on a dot matrix printer. The word **translate** is responsible for setting the position of the drawing area, something like moving the drawing window in *geoPaint*. PostScript uses an X and Y axis to define coordinates. The lower left corner of the page is point 0,0. As you move to the upper right corner, the values increase. A PostScript page is 612 points wide by 792 points high. There are 72 points per inch - known as a *printer's point*. The values 0,-8 for **moveDown** position the laser printer drawing window down by 8 points.

```
72 75 div 72 75 div scale
```

This line scales the bitmap from the 75 pixel per inch representation used by GEOS to the 72 point per inch scale used by laser printers. The `div` operator takes two values (which precede it) and performs division. This line has the effect of reducing the page slightly, by 96% (72 divided by 75). This is one part of a PostScript program that can easily be modified. Replace the line with **.25 .25 scale**, and you'll get a minature copy of your artwork. If you use **1 .25 scale**, you'll get a normal width picture that is compressed vertically. Values much larger than 1.1 will print an expanded image off the edge of the page.

```
0.25 75 mul 10.75 75 mul translate
```

This time the **translate** command is used in direct mode to move the starting position to the upper left corner of the page. The word **mul** multiplies the two (preceding) values. The first values, 0.25 75, set the left margin at one-quarter inch. The second two values, 10.75 75, set the top margin at 10.75 inches. Remember that PostScript starts measuring from the lower left corner of the page. These two values can be changed to start printing at any location on the page.

```
moveDown
```

Executes **moveDown**, defined above.

```
imageBuffer
FF01C1C1C1C1C1C1C1C1C1C383838383838383838383838
838383838838  (...etc., 640 bytes, 1280 characters total)
```

The **imageBuffer** procedure reads in 640 bytes of bitmap data (represented by hexadecimal digits) and converts it to an image in the laser printer. This is followed by:

```
moveDown        % go to the next line
 imageBuffer    % followed by 640 more bytes
                  of data
 moveDown       % next line
```

repeated until the entire picture is drawn inside the laser printer. The **%** character is used to precede remarks in PostScript code, the equivalent of the **REM** statement in BASIC. GEOS doesn't include remarks in any of their PostScript output. I've added them to make the listings easier to read.

When the last line of the picture has been drawn,

```
showpage
```

paints the picture on a sheet of paper and pushes it out of the printer. That's all there is to it!

Now a partial look at the output from geoLaser:

```
72 75 div dup scale
```

Scales the final output in the same way that the *geoPaint* file above was scaled. The word **dup** takes the top value and duplicates it. 72 divided by 75 equals .96. Since the **scale** command requires two values, **dup** makes a second copy of the value .96.

Next, several variables are defined, followed by the definition of **PS**, a very complex procedure for printing text. This definition is more than 4 pages long (and that's without comments!). **PS** takes care of all the grunt work of positioning and printing text and graphics.

Here's the definition of the table used to hold the font names. These are the names used in PostScript to represent the fonts and font styles. The GEOS equivalents are LW_Roma for **Times-Roman**, LW_Cal for **Helvetica**, LW_Greek for **Symbol**, and LW_Barrows for **Courier**. Also, Oblique is the same as italic in GEOS.

```
/fonts
[/Times-Roman/Times-Bold/Times-Italic
/Times-BoldItalic/Helvetica/Helvetica-Bold
/Helvetica-Oblique/Helvetica-BoldOblique
/Times-Roman/Times-Bold/Times-Italic
/Times-BoldItalic/Helvetica/Helvetica-Bold
/Helvetica-Oblique/Helvetica-BoldOblique
/Symbol/Symbol/Symbol/Symbol/Courier
/Courier-Bold/Courier-Oblique
/Courier-BoldOblique ] def
```

Printing your PostScrip Programs

Now we'll examine how the text portion is constructed.

```
 2314 0 (Here's the missing link that connects
the old world with the
 new . . .) 1 0 346 100 33 PS

 2392 0 (Randy's geoDisk) 1 0 210 199 68 PS
```

These two lines of text are printed by the **PS** procedure. Notice that strings in PostScript are enclosed by parentheses. The **PS** procedure takes 7 numbers and a string and figures out where to print the string and which fonts and styles to use.

The last two lines of the program,

```
copypage
erasepage
```

take care of getting the output on the page and out of the printer. The **copypage** command prints a page. The **erasepage** command is equivalent to the BASIC NEW command. It clears the laser printer's memory.

Printing PostScript Programs

Now that you've captured and modified a PostScript program, you'll also need to send it to the laser printer in order to print it. If you're using a C= 64 or 128, the same RS-232 hookup is used as you would when printing from *geoLaser*. Use your terminal program with the same parameters listed earlier in this article for receiving a file from *geoLaser*.

Load the PostScript program into the terminal program's buffer. Now simply transmit the buffer to the laser printer. Some terminal software offers ASCII or Block transmission protocol. Both ASCII and Block are the transmission of text files directly from the disk. If your software includes this feature, give it a try. It's the way I do most of my work. I've found it to be much easier than first loading the buffer.

Yet another method of getting your PostScript programs printed involves connecting a modem to the laser printer. See last month's article for some handy hints on using a modem with a laser printer.

If you've uploaded your program to another computer with access to a laser printer, keep in mind that the procedure for connecting and printing will be similar to hooking up the C=. If in doubt, look it up in the manual.

I you are attempting to print from a computer on a networked system (that is, the laser printer and computers are all connected together), you might be able to get away with a command as simple as: **print filename**, or **lpr filename**. You might have to ask the system operator if that doesn't work. If you get a printed listing of your PostScript program instead of the intended output the program is supposed to produce, then you'll have to add the line: **%!postscript** to the beginning of your PostScript file. Omitting the line will result in a PostScript program listing being printed.

That's all for now. Try some the examples in this article. Experiment with the PostScript program by modifying the values for **scale** and **translate**. As practice, take a PostScript program output from a full-page-sized GEOS document, scale it to one-quarter size, and print it on the four corners of a single page. All of the commands necessary to do it have been discussed in this article. I'll give the solution next month along with more unusual tricks you can accomplish by modifying PostScript programs.

Coming Soon . . .

PS, I Love You!
Becker BASIC
Public Domain Review

I would like to include your GEOS hints & tips and bug reports in future columns. If you have any brief GEOS tricks, bugs, helpful hints, or whatever, please send them to me. In future columns, I plan on reviewing new GEOS software. I feel that many excellent new programs need more exposure. The major Commodore publications pay little attention to software from independent developers and the public domain. If you are a GEOS programmer I'm interested in hearing from you. I'd enjoy reviewing your work. If you're not a programmer, I'd still like to hear from you. Tell me about the programs you use, or what you would like to see available.

Randy Winchester
P.O. Box 1074
Cambridge, MA 02142

In exchange for material submitted on disk, I'll return a disk of some of the best public domain GEOS software.

INSIDE GEOS

A programmer's eye view into the world of Geos

By Master Blaster

This month we will again continue our discussion of Geos disk routines.In previous installments we covered the routines used to read and write files and individual blocks to the disk. This time we will be discussing the routines that can be considered the 'user interface', i.e. the ones used to scratch/delete/rename files, obtain info about the disk, etc.Next will will take a look at Disk Drivers and the routines unique to versions 1.3 and Geos 128.

Disk Info

The first routine we will look at is called ChkDkGeos ($C1DE). It will check to see if the current disk is a Geos formatted disk. To use the routine simply pass the address of the disk's header block (which must be in memory and is usually stored in curDirHead) in R5. The memory location isGeos ($848B) will be TRUE (non-zero) if the disk is a Geos disk.The accumulator will also contain this value and since it is loaded just before the routine exits you can use BEQ/BNE after calling this routine. Note that this routine is called by OpenDisk so isGeos will in most cases already be set (but not the accumulator).

Let's assume that the disk in the drive is not in Geos format. You can convert it over with a call to SetGEOSDisk ($C1EA). This routine will write the Geos ID string ('GEOS format V1.2') to the Directory Header starting at offset 173 and also allocate a block to use as the Off Page Directory and put it's track and sector link in the Directory Header at offset 171.

The only thing that must be done prior to calling this routine is a call SetDevice, everything else will be done by SetGEOSDisk including reading/writing the Directory Header, etc. The updated Directory Header will be in curDirHead when this routine exits. You should check X to make sure there where no disk errors (Disk Full, Write-Protect, etc.).

The next routine is a real mouthful: GetPtrCurDkNm ($C298). This routine will return a pointer to the name of the current disk (as indicated by curDrive). All it requires is the address of a zero-page variable in X which will hold the pointer. Do not use R15 for this as it is used internally by this routine. Of course a disk must be opened so that there is a name to locate: the disk itself will not be searched. OpenDisk calls this routine; you will find the pointer in R5 after a call to OpenDisk.

Well now that we know how to find out what the disk is called how do we find out how many blocks are free? By far the easiest way is to load in the disk's Directory Header, make R5 point to it, and then call CalcBlksFree ($C1DB). The number of blocks free will be returned in R4, R5 will stay the same in case you need it for something else. This routine can come in real handy in warding off 'Disk Full' errors.

Scratching files

There are three routines that are used to scratch files from a disk. The first one we will look at is called DeleteFile ($C238). All this routine requires is a pointer to a filename in R0. This routine will work for any type of file be it C-64 or Geos. All blocks associated with the file: Geos Header, Relative file side sectors, VLIR index tables, etc., are de-allocated in the BAM and the filetype in the directory entry is zeroed. Upon return R9 will point to dirEntryBuf ($8400) which in turn will contain the directory entry of the scratched file (the filetype will be CHR$(0)).

One of DeleteFile's disadvantages is that it can be slow because it needs to access the disk several times to find out where all of the blocks comprising the file are located. If the directory entry for the file is already in memory simply point R9 to it (contrary to what BSW's Reference guide indicates it does not have point to dirEntryBuf although it usually will) and call FreeFile ($C226). This routine is the one that DeleteFile calls. The speed advantage occurs because the file does not have to be located on the disk.

One thing that this routine does not do is to modify the directory entry to indicate that the file is scratched. If the directory sector containing the file is already in memory (and it probably will be if you have the directory entry in there) then simply zero out the filetype byte and write the sector back out to the disk.

The advantage in speed can really be seen by calling FastDelFile ($C244). But in order for this routine to work a list of all the track/sector links comprising the file must be fileTrScTab ($8300). If this is the case then simply point R0 at the filename (do not point this within the directory entry - it's not null terminated), R3 at fileTrScTab and call the routine. it will scratch the file in a single disk access.

Renaming files

The routine to accomplish this amasing feat is called RenameFile ($C259). All you need to pass this routine is a pointer to the current filename in R6 and a pointer to the new filename in R0 (both must be null terminated so don't use a directory entry image for the current name). The disk must already have been opened by a call to OpenDisk. RenameFile will search the disk directory for the file, load the sector containing it's directory entry into diskBlkBuf ($8000), change the name (including inserting any CHR$(160) padding needed) and then write the sector back onto the disk. dirEntryBuf will contain a copy of the new directory entry. As usual X will contain any error codes. One thing to keep in mind is that the name strings you pass must not be contained in diskBlkBuf or dirEntryBuf because they would be overwritten when the directory sector is loaded into the computer.

There is one lower level routine that

isn't strictly used to delete files but for lack of a better catagory we'll discuss it now. It's called FollowChain ($C205) and is used to build a table of track and sector links given the starting T&S in R1 (the track is in R1L) and a pointer to a buffer to hold the table in R3. Note that diskBlkBuf is used to hold the sectors as they are being search and the last one willtill be there when the routine is finished.

Unfortunaly to find the T&S link of a sector the entire sector must be transfered to the computer. This slows things down quite a bit but there's no getting around it (the disk Turbo is a block oriented system - everything is done in blocks of 256). The 128 version has a new routine to read just the link but I haven't had a chance to look at it and see just how much of the block is actually being read in.

Disk Drivers

Begining with version 1.3 all of the disk routines where gathered into a continuous section of memory called a Disk Driver. In V1.3 this area is $9000 to $9D7F. At the present time there is no way to swap out this driver (although it would be easy enough to overlay it with something else -- we'll have to see what V1.4 has in store for us). It contains the code to drive 1541's, 1571's, and the ram Disk. The 128 version has enough room for several drivers to reside at the same time. The Kernal can swap different drivers in and out of the REU as needed.

At the beginning of the driver ($9000 to $902F) is a vector table to all of the disk routines that are called from thru the Jump Table. See Figure 1 for a complete list. In Version 1.2 the jump table entries are absolute jumps, in V1.3 they where turned into indirect jumps, i.e. JMP ($90xx). Next, beginning a $9030, is a small jump table with some brand new routines. There are 8 entries in the 1.3 driver and 10 in the 128 driver. We will look at each of these routines in turn. See Figure 2 for a list of the routines available.

The first routine ($9030) is called Get1stDirEntry. You do not need to pass this routine anything (but the current disk must have been opened with a call to NewDisk or OpenDisk. When the routine returns diskBlkBuf will contain the first directory sector and R5 will contain a pointer to the first entry. This will be the first physical entry, it doesn't matter if the file is scratched or not. diskEntryBuf will not be loaded with the entry.

Next in the table ($9033) is a routine called GetNxtDirEntry. If you load R5 with the address of a directory entry in the directory sector currently in diskBlkBuf (the directory sector must be in diskBlkBuf) and then call this routine it will return a pointer to the next physical directory entry in R5. If necessary the disk will be searched for additional sectors.

As usual any disk errors will be passed in X. Y is also used in this case to flag errors. This routine will not create new directory sectors; if the pointer passed is the last file entry in the last sector in the directory , i.e. you where at the last entry of a directory sector with a 0,255 link, then Y will be non-zero.

Again please note that we are talking about phyical entries i.e., a particular offset within the directory sector. It is up to the application to decide if the entry is in use, free, or completly empty.

The next routine on in the table is GetOPDPtr. Nothing needs to passed to this routine. When it returns R5 will contain the track and sector of the Off Page Directory block for the current disk. If Y is non-zero then the disk is not a Geos Disk and doesn't have an OPD. The Directory Header will be loaded into curDirHead. Note that the OPD block itself will not be loaded into the computer.

Next in the table is a routine called AddDirBlock. It is used to append blank 'pages' in the directory (if there are any free). To use this routine first loading the Directory Header (with a call to GetDirHead) and load R1 with the track and sector of the last directory sector currently on the disk.

First the routine will make sure there is a free block (if not an error will be returned in X). Then it will allocate a new sector and update the link in what used to be the last directory block and write it back to the disk. Finally a blank sector will be written to the disk and it's location will be returned in R1.

The next to routines are versions of GetBlock and PutBlock respectivly. The big difference is that you don't need to specify where the buffer is, it is assumed to be diskBlkBuf. All then you need to pass to the routines is the track and sector to get/put the buffer in R1.

The next two routines (the last two in the 64 driver) are low-level disk routines. They jump all over the place and call low-level Disk Turbo code. I haven't had a chance to trace these routines to find out exactly what they do but by the looks of them you probably won't need to use them all that often anyway. I'll be discussing these routines further when I get them both deciphered.

There are two additional entries in 128 drivers (the last two listed in Figure 2).

$9000	Init4IO
$9002	DoneWithIO
$9004	ExitTurbo
$9006	PurgeTurbo
$9008	EnterTurbo
$900A	ChangeDiskDevice
$900C	NewDisk
$900E	ReadBlock
$9010	WriteBlock
$9012	VerWriteBlock
$9014	OpenDisk
$9016	GetBlock
$9018	PutBlock
$901A	GetDirHdr
$901C	PutDirHdr
$901E	GetFreeDirBlk
$9020	CalcBlksFree
$9022	FreeBlock
$9024	SetNextFree
$9026	FindBAMBit
$9028	NxtBlockAlloc
$902A	BlockAlloc
$902C	ChkDskGeos
$902E	SetGeosDisk

Figure 1: DD Vector Table

$9030	Get1stDirEntry
$9033	GetNxtDirEntry
$9036	GetOPDPtr
$9039	AddDirBlock
$903C	GetdiskBlkBuf
$903F	PutdiskBlkBuf
$9042	??????
$9045	??????
$9048	AllocateBlock
$904A	ReadLink

Figure 2: DD Jump Table

```
;Generic Disk Error Handler

;    Author: William C. Coleman          Date:  22 March 1988
;-------------------------------------------------------------

.if  Pass1
     .noeqin
     .nogbl
     .include    geosSym
     .include    geosMac
     .eqin
     .gbl
.endif
                         .psect

;Disk box DB Table

DErr_Box:
     .byte       DEF_DB_POS|1
     .byte       DBTXTSTR,42,TXT_LN_1_Y
     .word       derrtext
     .byte       DBVARSTR,TXT_LN_X,TXT_LN_3_Y,r5
     .byte       OK,DBI_X_2,DBI_Y_2
     .byte       NULL

err1:            .byte "Not Enough Blocks",NULL
err2:            .byte "Invalid Track",NULL
err3:            .byte "Insufficient Space",NULL
err4:            .byte "Directory is Full",NULL
err5:            .byte "File Not Found",NULL
err6:            .byte "Bad BAM in Drive",NULL
err7:            .byte "VLIR file not open",NULL
err10:           .byte "Geos Structure Mismatch",NULL
err11:           .byte "Buffer OverFlow",NULL
err12:           .byte "Cancel Error",NULL
err13:           .byte "Device Not Present",NULL
err20:           .byte "No Header Block",NULL
err21:           .byte "Unformatted or Missing Disk",NULL
err22:           .byte "No Data Block Found",NULL
err23:           .byte "Data Checksum Error",NULL
err24:           .byte "Incompatable Filetypes",NULL
err25:           .byte "Write Verify Error",NULL
err26:           .byte "Write Protect On",NULL
err27:           .byte "Header Checksum Error",NULL
err29:           .byte "Disk ID Mismatch",NULL
err73:           .byte "DOS Mismatch",NULL
errxx:           .byte "Unrecognized Error Code",NULL
derrtext:        .byte BOLDON,"" Disk Error "",NULL

errtab:
     .word       err1,err2,err3,err4,err5,err6,errxx
     .word       errxx,errxx,err10,err11,err12,err13
errtabhi:
     .word       err20,err21,err22,err23,err24,err25,err26,err27,errxx,err29
```

FIGURE 3: DiskError data

They are called AllocateBlock and ReadLink. I have not had a chance to trace these routines yet so I don't know what to pass them. AllocateBlock will allocate an absolute sector on the disk. Simply pass it the track and sector and off it goes.

ReadLink is supposed to return the track and sector link of a sector. Whether that means that it will only read in the first two byte of the indicated sector (which would make it faster) I don't know yet. I'll be discussing these routines further in a future issue.

There is one point I'd like to bring up about the jump table. Because it varies from not being available in V1.2, being partially available in V1.3, and being complete in the 128, you must decide whether or not you wish to use them or not. If you are writing an application that will only run on the 128 then there is no problem but if you are writing one that will run on any version then you will wind up having to code the equivelent of an IF...THEN statement to execute the proper routine for the version the application is being run under.

A better solution may be to simply disassemble the routines, see what they do and then write generic versions which can be used as needed. GeoProgramer makes this easy because you can put them all in a single module and link it into any of your applications that require it. It is a matter of preference but I thought it a good idea to bring it up.

BugSquasher

There where a couple of errors in last month's issue that need to be corrected. The first is in the FreeBlock example (Figure 1). If you look through the code you will see a JMP 20$. You can't jump to a local lable in GeoAssembler. The correct instruction should be *bra 20$* . In the Alphabetic Jump Table on page 15 Get1stDirEntry is listed as $9930. It should read $9030. Some of the Disk Driver routines where missing from the two jump table lists. This was intentional because i hadn't traced them to see what they did yet. The four listed are official BSw names. The other names listed in this article are the names that I coined and which I will continue to use until BSw publishes the correct ones.

DiskError Routine

Just to give you something beside words to sink your teeth into figures 3 and 4 contain the source code for a disk error box routine. One of my pet peeves is error boxes that don't tell you what the error is. The routine is straightforward: simply link it in to any of your applications that use the drives. After a disk access check the X register; if it is zero continue with what you were doing. If not just pass X to DiskError. It will put up an error box telling the user what the problem was. When the user clicks on OK it will return to the caller. How you process the error after that is up to you.

DiskError is completly self-contained so simply type it in to a geoWrite file, assemble it, and then link it in to any program you have that needs it. If you do not have geoProgrammer you should still be able to convert it with little or no problems. By the way if you if you are serious about programming under Geos and don't have geoProgrammer yet, I would highly recommend it. It has a few faults but they are overshadowed buy it's utility and ease of use. Definitly worth the money (even if you can't generate a viewable symbol table when you're running with a single drive)!

Wrapping it up...

That's it for this month I'm afraid. This month we've covered routine to give you information about a disk, the file/chain deletion routines, FindChain, and discussed Disk Drivers including their Vector and Jump Tables.

Next month we will be discussing the VLIR handling routines and if we have time the lowest level (turbo handling) routines. Hope to see you there.

About the Author:
Bill Coleman (a.k.a. Master Blaster) has written numerous PD and commerial applications for Geos. He is the Co-Sysop on the C= RoundTable of the GE Information Network (GEnie). He can be reached online by sending E-Mail to: WC.COLEMAN

```
;Disk Error
;   Opens an OK dialog box to inform user that
;   there was a disk error.
;   Pass:     X = error code
;   Return:   nothing
;   Calls:    DoDlgBox

DiskError:
          pha                    ;Save registers
          txa
          pha
          tya
          pha
          PushW   r5
          PushB   currentMode
          cpx     #$20
          bcs     01$            ;Branch if high error
          dex
          txa
          asl     a
          tay
          bra     04$
01$:
          cpx     #$73           ;This one is not consecutive...
          bne     02$            ;...so we check it by hand
          LoadW   r5,err73
          bne     05$            ;Always branches
02$:
          cpx     #$2a           ;Highest error code+1
          bcc     03$
          LoadW   r5,errxx       ;Unrecognized error
          bne     05$            ;Always branches
03$:
          txa                    ;Do high error group
          sbc     #$1f
          asl     a
          tay
04$:
          lda     errtabhi,y
          sta     r5L
          lda     errtabhi+1,y
          sta     r5H
05$:
          LoadW   r0,DErr_Box
          jsr     DoDlgBox
          PopB    currentMode
          PopW    r5
          pla
          tax
          pla
          tay
          pla
          rts
```

Figure 4: DiskError

From the Captain's Chair

Geos I/O Errors:
by
Nathan Williams

(Q-LINK ID: Cpt Nathan)

It happens to all of us. Your typing along in GEOWRITE or drawing in GEOPAINT, you click a menu, and bang a box pops up. HUH??? It says I:2 error? What's that??? Quickly you grab your GEOS manual. You look up the error page in the index. If you have the 64 version all it says is "contact Berkeley Softworks for assistance." If you have the 128 version the page isn't even there. GEOS is a fine product but this short coming in the documentation is a major stumbling block for the users. Until the day that BSW prints new docs we the users must fend for ourselves. Hopefully this article will solve most of your problems. I have tried to cover all the errors that can possibly come up but if an error comes up that is not on this list let me know. I will update this article as needed.

There are two types of errors that can occur in GEOS. The first is the internal or I/0 error. These errors begin with an "I" and have a number. Sometimes track and sector data may be displayed, depending on the application being run. Some applications will display this, some will not. Some numbers are in hexadecimal, so take that in mind if you try to find out what has happened on your own. Most such errors are never seen by users as they are "decoded" by the application and an appropriate dialog box pops up in its place. Example most applications will read and "decode" I:26 and put up "Write Protect Tab on disk." But a simple application may not be able to do this. The other kind of error is the dreaded system error. This occurs when the system crashes. The number is the memory location of the crash.

Here is a detailed list of I:0 errors and what they mean. Where possible a Commodore DOS error number is provided as a reference:

I:1 NOT ENOUGH BLOCKS This error occurs when the number of disk blocks returned is not the same as what was expected by GEOS. Usually this is a fatal error. No DOS error.

I:2 INVALID TRACK This error means that an attempt to read/write a block to a non-existent track. Corresponds to DOS error 66.

I:3 INSUFFICIENT SPACE Insufficient blocks on the disk to store file. The disk is full. DOS error 72.

I:4 FULL DIRECTORY This means that from the point on the directory page you are at and the end there are no directory entries. Ex. you are on page 5 of the directory and all the pages from 5 to 18 are full. This error will pop up even if there are free spots on the directory on a lower page. However a well written application will move your spot to page 1 before trying to find an empty directory entry. So this means that the directory full. DOS error 72.

I:5 FILE NOT FOUND Returned when GEOS can't find the file. Considering the way GEOS works this is a sign of serious problems. DOS error 62.

I:6 BAD BAM The Block Availability Map somehow doesn't match what GEOS thought it should be. Could be a sign of a bad disk or bad drive. DOS Error 71

I:7 UNOPENED VLIR FILE This error is returned upon an attempt to Read/Write/Delete/Append a VLIR file. It is ***similar*** to DOS error 61.

I:8 INVALID RECORD This error will appear if an attempt is made to Read/Write/Next/Previous of a Multiple record file. BSW states the error is not fatal an is often used to move the record pointer along to find the end of a record chain. However if the error gets to the user level it could be sign of a bad file. It is similar to DOS error 50.

I:9 OUT OF RECORDS This error occurs when an attempt is made to insert or append a record on a full VLIR chain. No DOS equivalent.

I:10 STRUCT MISMATCH This error occurs when GEOS tries to perform a operation on a file of the wrong type. Example trying to add a VLIR record to a SEQ file. No DOS equivalent.

I:11 BUFFER OVERFLOW GEOS applications allocate a buffer for loading data. This error means that the data being loaded is too large for the buffer provided. A serious error. Your program doesn't know what it doing. An error the average user will not encounter, as all applications are broken up into modules that fit the buffer size. No DOS equivalent.

I:12 CANCEL ERROR Not a real error. When you hit a cancel box the error is returned and GEOS exits back to the application. GEOS uses the same methods to exit an error routine as to cancel an action so the "error" is needed. No DOS equivalent.

I:13 DEVICE NOT FOUND GEOS tried to talk to a printer or drive that isn't on-line. No DOS error equivalent. But it is equal to the BASIC "Device not found" error.

I:14 INCOMPATIBLE A GEOS 128 error. Occurs when you try to run a 40 col only program in the 80 column mode and visaversa. No DOS equivalent.

I:32($20) HDR BLK NOT THERE The GEOS header block cannot be found. The header block contains the ICON, time, date and other Info. No DOS equivalent.

I:33($21) NO SYNC Can't find sync mark on disk. Disk is unformatted or is misaligned. Or disk is not not is drive or the drive door is open. DOS error 21.

I:34($22) DATA BLK NOT THERE A read to an improperly written block. DOS error 22.

I:35($23) DATA CHKSUM ERR A data block checksum error has been found. A bad block on the disk. DOS error 23.

I:37($25) WR VER ERR A verify operation after a write operation has failed. Caused by a bad disk block or a bad drive. This is a minor error that can be fixed from CBM DOS commands. See your drive manual. DOS error 25.

I:38($26) WR PR ON Write protect tab is on. You cannot write to a disk till it is removed. DOS error 26.

I:39($27) HDR CHKSUM ERR A checksum error has occurred in the file header block. No DOS error equivalent.

I:41($29) DSK ID MISMATCH The disk in the drive has a different ID number then GEOS thought was there. Typical cause switching disks without properly closing it. DOS error 29.

I:46($2E) BYTE DEC ERR This is a special TurboCode error. The speed at which GEOS is reading data is not the same rate that the drive is sending it. A sign of a possible hardware failure in the drive. No DOS equivalent.

I:115($73) DOS MISMATCH The disk has the wrong CBM DOS type marker on it. definitely NOT a GEOS disk or a disk gone bad. DOS error 73.

This is all the disk errors that I know about. However, the REU appears to have numbers for its own errors. At the time of this writing my information is incomplete, so I will try to gather enough for a "REU errors" article next issue.

There is one other kind of error that exists. It is the dreaded system error. The form is "System error near #xxxx", where xxxx is the memory location of a BRK instruction. BRK stands for BREAK and it brings the application to a halt. That is the bad part about it. To get out of it you must re-boot. The routine is named PANIC - Roll Over and Die. An accurate description. You see the error Panic and your computer has Rolled over and died. It is important that you write down the location number and what you were doing ***EXACTLY***, also write down your equipment setup as well and contact BERKELEY. They can't fix the bugs for you if you don't let them know about it.

I hope this information will help you with any troubles you may have been experiencing. If you find a number not listed please contact me on Q-Link so I can add it to the list. My thanks to GEOS TECH for his help with this article.

GEOPUBLISH GRAPHICS

By Susan Puhn-Lamb

There seems to be an opinion held by many 128 owners that geoPublish is a little 64 program, unworthy of their more powerful machines. They have even gone so far as to say they wont buy it until a 128 version comes out. I can't imagine depriving oneself of this wonderful and versatile program unless you have a monitor that wont switch to 40 columns. Is there such a thing? I am using a 1541 drive and a 1750 Ram Expansion Unit which gives me 2 drives, one being a fast 1571 RAM disk. This combination gives geoPublish all the power of any program made for the 128 only.

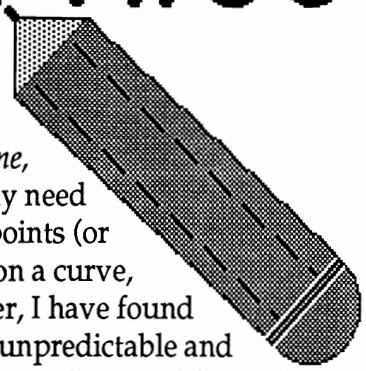
Preview display shows the entire page of a document with enough detail to compose the layout and do simple drawing. *Zoom display* is a 40 column display in which you can easily move around the page. In this mode, the text is readable and more complicated graphics can be created. With these two options, I don't feel a need for an 80 column display. If geoPublish provided one, it would probably be distorted as in the 80-column, GEOS 128 version of geoPaint which causes problems of visualizing final printouts. In fact, the only feature I really miss in geoPublish is *pixel edit*. Even the lack of this feature is compensated for with the *paint PAGES* driver, found on geoWrite Workshop. Artwork can be transferred to geoPaint for pixel edit and then back to geoPublish in a photo scrap.

So, anyone who would pass up geoPublish for the lack of a 128 version is cheating themselves. Once you have learned the program, you'll be continually pleased with what you can accomplish with this "little 64 program".

Last month this column was in the form of a sample newsletter. I wanted to see if I could create a satisfactory document in a timely and simple manner. I was able to devise some techniques that I will share with other users.

One is a single column that starts out double-wide and then narrows to single-wide. It is actually two columns and took a bit of arranging to make them line up correctly. In zoom display, I kept moving the bottom column until the copy lined up with the top wide one. Most wont notice it, but I ended up one pixel extra from the lines lining up perfect. This procedure can only be learned through trial and error.

Some of you were wondering how I created the script word, "newsletter". I used a technique similar to tracing, as it is difficult to draw freehand using the computer. If you look closely at curves in a computer graphic, you'll notice that they are made up of a series of short, straight lines. For my purposes, drawing curved lines is most easily accomplished by using the *connected line* tool.



With the *spline*, you may need fewer points (or clicks) on a curve, however, I have found it to be unpredictable and inaccurate when used for tracing.

To "trace" a graphic or create hand lettering, first put your rough copy on the *master page*. This can be a small graphic you have enlarged that has become very jagged or a line of copy set in a casual font. Screen the object using the attributes box so you can see the crosshair more easily while tracing.

Go to *page graphics* and use the *connected line* to make a new drawing. The line can be set as thin or thick as you like. The line wont show it's true form until you double click. When you have the drawing the way you want it, go back to the *master page* and use the scissors to eliminate the rough drawing. The new drawing or lettering can be used as-is or transferred to geoPaint for touching up in pixel edit or enhancing with geoPaint tools.

The lettering at the top of the page was created with this technique, by tracing a headline first set with the *Tolman* font. The "newsletter" word from last month was a tracing of a rough sketch drawn with a light pen. After it was traced and touched up, I screened it to provide contrast with the rest of the heading. For page two and three, I reduced another copy of the unscreened word in geoPublish.

continued, next page

After transferring the art to geoPaint with *Paint PAGES*, I extended the horizontal lines out to the side margins and screened this smaller version. So far, this has been the easiest way I've found to construct script lettering with any line consistency. I've outlined the procedure for hand-lettering below. The same steps can be taken with graphics, although sometimes smoothing causes too much distortion.

Step one: In Master Page mode I set the word "GEOS" using the *Tolman* font in 80 point, bold style (a). Within the attributes box, I used smoothing (b), but it looked lumpy and thin... not like hand-lettering with a bold felt pen. To aid in tracing the word, I screened it to better see the thin crosshair and letter at the same time (c).

a.

b.

c.

Step two: Switching to Page Graphics, I then used the *connected line* tool and traced over the letters, clicking out short lines on curved areas. Each click was made with the crosshair centered on the line. I chose to make the line much thicker than the original, although there are seven thicknesses available. Double-clicking at the end of the letter makes the line appear. As I work, I may re-do a line that doesn't look right. For this word, I used one connected line for each letter and an additional short line in the G and E. If you do a careful job, the word or headline can be used at this point (d).

d.

Step three: Back in Master Page mode, I used the scissors to remove the original word. If you forget to do this, parts may stick out from underneath the tracing when you go to print. I transferred the tracing to geoPaint with *paint PAGES* driver and touched-up the word in pixel edit (e). This whole procedure was far less time consuming than drawing the word from scratch in geoPaint.

e.

Object Oriented Graphics

By now, it is established that geoPublish is a great desktop publishing program with which many users are creating newsletters, brochures, booklets, catalogs... as well as business cards, forms, greeting cards, stationery, and more. Believe it or not, the program allows for the creation of professional documents that look as good as those done on high-priced systems.

What is now emerging from usage of this software is that it is a wonderful graphics program. Computer artists are now using geoPublish to accomplish drawing tasks that are difficult or impossible with other graphics software. The Paint Drivers included with geoWrite Workshop let you transfer geoPublish graphics to geoPaint in order to take advantage of additional tools.

Another dimension of geoPublish Graphics has been revealed to me on the pages of this magazine. I had read about *Object-Oriented Graphics* in magazines geared to the high-priced computers, but was unaware this option is available with geoPublish. A demonstration of this option was presented by Bob Thomas in the March issue of GEOWORLD. After reading his enlightening article, I searched in vain through the manual for mention of this feature. Since there are laser printing services available for GEOS users at nominal costs, lack of the expensive printer wont prevent one from using the 300 Dpi graphics. I am anxious to explore this feature further as it would allow the creation of graphics that are free of pronounced pixel effect.

If you have any hints to share, samples, or problems, write to Lamb Art & Design, 1764 Ave. B, Yuma, Arizona, 85364 or E-Mail *YumaLamb* on Q-Link.

I'm pleased to announce that the large headline fonts advertised in this magazine, are now available as Mega Fonts for use in geoPublish.

A CONFETTI OCCASION

A CAMEO APPEARANCE

PRIMITIVE INSTINCTS

THE SEVERITY OF BERLIN

A HOLLYWOOD MOVIE

A NEWSPAPER WORDGAME

The elegance of ElDorado and DeVille

TOUCH OF AVANT GARDE

Talking on a Partyline Trying to get through

The speed of Quicksilver with gossamer wings

The essence of Mercury and Venus and Mars, for that matter

POUR OVER A MANUSCRIPT

AN ART DECO FORTRESS

•P•H•I•L•A•D•E•L•P•H•I•A•

NEW YORK CITY

The Romance of Indiana as in "Jones"

DANCING AT THE CAFE ROXY

POW! ZAP! ZOOOOOOOM!!!!!

FONTS DISK 4

FROM

TT GRAFIX
326 CLOTHIER SPRING ROAD, R.D. #1
MALVERN, PA 19355-9657

$6.95 check or money order, postage included

4 Special Offers From Berkeley Softworks!!

Berkeley Softworks is currently offering four great promotions to all GEOS owners!!

Commodore Hardware

We have all heard of the many advantages that the Commodore 1351 mouse and 1750 and 1764 RAM Expansion Units bring to the Commodore Computer. Because BSW wants all **GEOS** users to get the most out of **GEOS**, we are now offering these Commodore hardware enhancements at perhaps the lowest prices seen anywhere!

The Commodore 1351 mouse will increase your **GEOS** productivity as it brings truly proportional movement from your input device. The amount you move your mouse on your desk is exactly the amount your cursor will move on the screen. Using **GEOS** becomes much easier by acquring this handy little rodent.

The Commodore 1750 (for the C128) and 1764 (for the C64) RAM Expansion Units allow you to work up to 4 to 5 times faster than on a regular floppy disk drive. These helpful hardware pieces can be used as second disk drives with **GEOS**, giving you increased speed and versatility.

You can purchase a **1351** mouse for **$37.00**, a **1764 RAM Expansion Unit** for **$115.00**, or a **1750 RAM Expansion Unit** for **$145.00** directly from Berkeley Softworks. Just send your name, address, and money to Berkeley Softworks, Attention: Commodore Hardware Offer. Please add $5 shipping and handling per item. (California residents please add 7% sales tax. Allow 4 to 6 weeks for delivery.) This is a limited offer so order right away!

Free GEOS T-Shirt

Any **GEOS** owner who purchases **geoCalc** or **geoFile** (64 or 128) between March 15 and May 15, 1988 is eligible to receive a free **GEOS** T-Shirt from BSW. Be a hit at parties! Make your friends envious! Simply send in your registration card and dated sales receipt along with your name and address to redeem your gift.

Send your information to Berkeley Softworks, Attention: **GEOS** T-Shirt Offer. Please include your proper shirt size (small, medium, large, or extra large).

Triple Value with Triple Pack!!

This is a special package consisting of DeskPack1, FontPack1, and geoDex. A regular retail value of $104.85, Triple Pack is now only $49.95. See your local retailer or call 1-800-443-0100 ext. 234.

This is a limited offer so order now!

GEOS Desktop Publishing and Programming Contests

Don't forget that the deadlines for these two contests are approaching quickly! Entries for the Desktop Publishing Contest are due by June 30, 1988 and entries for the Programming Contest are due by August 31, 1988. There are over $45,000 in cash and prizes between these two contests, including $1,000 in cash, a complete library of GEOS products, free Commodore hardware, free time on Q-Link, free laser printing from *LaserDirect*, and subscriptions to *Compute!s Gazette* and *Run Magazine*. See these publications for more details.

Commodore 64 on the blink?

Will do repairs on the 64 and 1541 Drive. Reasonable Rates! Will also buy dead 64's. Write or Call for prices!

Mike Hughes
P.O. Box 146
Cleveland, MS.
38732
(601) 843-6840
Will also do 1764 upgrades!

Mystic Jim
2388 Grape
Denver, CO 80207

Things are looking up. Our new disk duplicator finally arrived: it copies, 100% error-checks and verifies disks in one quarter of the time it had been taking just to copy disks. We've found new local suppliers for blank disks, RTC chips, and other electronics supplies; we hope this will eliminate the delays we've experienced in getting stuff through the mails . The disks we'll be using from now on are of much higher quality. We'll be sending most of our stuff by UPS to improve delivery time and reliability. We believe that these changes will eliminate problems with disk errors, and allow us to be caught up with orders by the middle of May, getting us back to a one-week delivery schedule.

On May 15, our shareware disks will be reorganized into 17 disks with 27 sides. New members will receive a set of eight disks, along with a six-issue subscription to GEOWORLD, full access to our BBS, and big discounts on our products, for their $50 contribution. An update kit which includes all the new programs in the new membership package is available to all old members at no cost. Our Update page in this issue describes the new disks.

After a thorough analysis of direct costs and overhead, we've decided that members may request three disks in addition to the membership package, at no charge, with a $2 fee for subsequent requests.

New documentation, on disk or printed, for all of our shareware and other products, is being developed for May 15 delivery. The shareware documentation disk will be available to members on the same basis as other shareware. For information on printed items, see our ad in this issue.

We currently offer a dozen clip-art disks as shareware. This stuff is almost impossible to use without a catalog of what's there; so, we're offering a bound edition with printouts of each clip, from Disney to XXX. Our new catalog is a loose-leaf type, so you can add new printouts of fonts and graphics from us , from GEOWORLD, or from the new GEOWORLD disk..

Lots of you have signed onto GEnie, because we said our stuff would be available there, and found it wasn't. It's seems we had a little misunderstanding with the folks at GEnie, and the software to allow that kind of downloading wasn't quite ready yet. Well, we had a long discussion with them , and with Master Blaster , and we came up with an answer: by June 1, there will be a message on our own BBS, open only to members, explaining how to download our stuff fom GEnie. That info will also be available on our voice line, or through the mail And remember, Master Blaster's the sysop, so you know where to go to get the best help and advice about GEOS.

GEOTRONIX, our electronic circuit board design package is now a six- disk package because we keep adding new features, is now finalized and awaiting printing of the very extensive documentation.. Under development is an ultra-hi-res accessory package for the Okimate20, offering .005 inch resolution for your circuit designs.

For our Canadian friends, you can now get our stuff with much reduced phone costs from Bill McKibbon's satellite BBS is up and running fine in Canada: give him a call. at (705) 533-2126

It seems like everyone is having a GEOS programming contest, so we are, too: ours is a little different, though. When you enter your little gem of a program in the other contests, you're taking a gamble: win or lose, it belongs to them. Enter ours, and if we don't use it, it's still yours. Our emphasis is on fonts and graphics, and we'll use the best ones for the introductory GEOWORLD disk, along with a pull-out printout that you can add to our printed Clip-Art catalog. 'Course, there's cash and merchandise prizes, too. There'll be more details in GEOWORLD, and a member-user group mailing, soon.

We do wish all of you, and BSW, the best of luck with their programming contest; the folks at BSW are a pretty nice bunch, and they've always been especially nice to us. Their programming contest seems to be a neat way of paying back all of you GEOS lovers for your loyalty.

I want to take this opportunity to state our position on a very old, but always important and controversial subject: software piracy and copy-protection.

We strongly oppose piracy, because it hurts everybody, including the people who use pirated software. It costs a LOT of time, effort and money to develop the kind of programming that everyone likes best, and, if the developer can't make a reasonable profit, the good stuff just won't be produced, and who wants that?

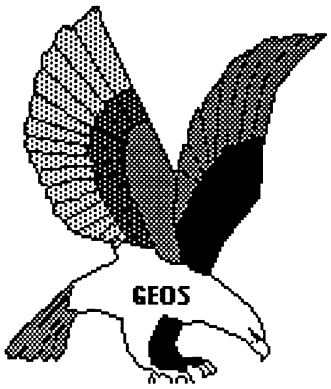
We don't believe that our stuff hurts BSW; on the contrary, we think it helps them:

In spite of what BSW believes, most GEOS users are very seriously inconvenienced by the severe copy-protection utilized on GEOS, and unhappy users don't make repeat customers. Our stuff just makes GEOS more pleasant to use, and that can't hurt anyone: pirates don't need our help. Of course, BSW believes that their copy-protection scheme doesn't seriously inconvenience users, or they wouldn't use it. But it's what the users believe that counts, and most GEOS users believe the contrary.

There are software companies that survive by selling copy-protection programs that do what ours do ('course our stuff is always first). The money that GEOS users spend on those programs will not be spent on more GEOS software, and that hurts BSW.

We don't believe that serious GEOS users are the kind of folks who steal software, and we don't think it's right to treat them as if they would. GEOS is not a video game: it's supposed to be, and certainly is, a serious productivity tool for serious and creative people. They deserve a break, and we try to give that to them.

Best.



Mystic Jim's Shareware Update

April, 1988 Volume 2, Number 4

m **NEW PROGRAMS Disk #1 a,b**

n **INTRO PROGRAMS Disk #2 a,b**

This disk is sent to new acquaintances on request. On it are samples of the kinds of programs found on our shareware disks:

Bootstrap1.2, 1.3: Make bootable workdisks.

Input Drivers: 15 kinds, for joystick, lightpens, KoalaPads, Super Sketch, and more.

Graphics convertors: for Commodore Hi-res and multi-color images; including KoalaPaint, Peripheral Vision, etc.; to GEOS.

Desk Accessories: More than a dozen kinds, including screen dumps, icon editors, Auto Preference, etc.

GEOPaint grids and helpers.

n **MISCELLANEOUS UTIL'S: Disk #2c**

More than two dozen new Desk Accessories and utilities.

n **FONTS: Disk #3 a,b,c**

Nearly 60 fonts.

c **FONTASTIC: Disk #3e $6.95, $4.95**

Font Grabber. Converts any Commodore character set, including Font Master, into GEOS 10 point fonts.

Font IDX. Read or edit the ID numbers of your fonts.

Font Data. Enter data statements representing character sets in memory for Grabbing.

Grabbed Fonts. Thirty-six new ten-point fonts.

HOWARD'S FONTS: Disk #3f.

12 of Howard Fernald's Pro fonts..

m **FONT PRINT FILES Disk #3g**

Print samples of all BSW and Mystic fonts. (also available in print: see printing section)

m **PROGRAMMING: Disk #4a.**

More than two dozen GEOS programming utilities of interest to programmers, including fixes for BSW's GEOS Tech guide.

m **TECH MANUAL: Disk #4b.**

Files containing Alex Boyce's Tech Manual, and the programs necessary for printing the manual. (also available in printed form. See printing section 9.

m **PROGRAMMING128: Disk #4c.**

Programs and files relating to GEOS128, GEOSCope and other GEOS Utilities.

m **MYSTIC BBS TERMINALS:** Disk#5a,b.

These terminal programs are all compatible with our BBS.

Master Blasterm. Very large buffer and good speed. Multiple character sets available.

Fast Term. Very "user friendly" terminal, with all features.

MultiTerm: Excellent program featuring modem nibbler for whole disk transfer.

m **LIBRARY UTILITIES**: Disk #5c.

Programs for linking and dissolving groups of programs for up- and downloading.

Library 7, 8.6

Arcaid, including self-dissolving ARC.

Lynx IX.

SQ V2. and USQ V2. for compacting and uncompacting files.

m **BBS INSTRUCTIONS:** Disk #5d.

Documentation and instructions for our Bulletin Board. (available in printed form. See printing section.)

m **GRAPHICS CONVERTS:** Disk #6a, b.

Conversions for all of the following graphics images from each to the other and back:

KoalaPad, PrintShop, NewsRoom, PrintMaster, Flexidraw, Doodle, MacIntosh, Peripheral Vision, Edumate, RLE, FontMaster, etc, etc....

PShop X2: Double size of PrintShop graphics.

GEOPaint forms and Grids.

Interceptor: A printer driver that "prints" to disk as a GEOPaint file. Add color or pixel-edit a GEOWRITE, GEOPublish, or any other printout.(by Master Blaster)

m **PRINTER DRIVERS:** Disk #7a.

More than 50 printer drivers, including Mills' double and quad-strike versions.

m **PARA-PRINT DRIVERS:** Disk #7b.

More than 50 parallel printer cable drivers. These special drivers are necessary for printing with parallel cables.

(lists of both kinds of drivers are available in printed form of Mystic Jim7s Documentation. (see printing section.)

m **REAL TIME CLOCK UTILS:** Disk #8a.

For use with our Tim's Timer RTC

Read RTC: Automatically (or manually) reads time from RTC into GEOS.

Write RTC: Set time and date in RTC.

Show Time 1.2, 1.3: Permanently display time in GEOS. (128 version coming soon.)

Reminder: At powerup of GEOS, reminds of special dates recorded in Calendar. (version for new E-Type RTCs, and for GEOS128, coming soon.)

Plans: Instructions for building your own RTC, or for internal installation.

m **Satellite BBS:** Disk #9a,b.

Run a Mystic Jim's Bulletin Board in your area; programs must be tailored to your system and equipment. Write or call us.

m **GAMES**: Disk #10a.

GEOS Based games and puzzles; just a few, now, but more coming!

Solo Poker: A neat game of Solitaire.

C I R C E: A game of international intrugue.

Culture: Cells live and die in the culture medium of GEOS.

n **Randy's Roundup:** Disk R.

Utilities by Randy Winchester.

m **HACK'N GEOS:** Disk #11a.

GEOHacker 2.0: New foolproof version strips copy-protection from all the latest GEOS programs, including GEOS128 versions. Read and edit serial numbers. Un-install disks, so you can try again after a faulty installation. (if you're into software piracy, please don't use our stuff; BSW is entitled to every nickel paid for their hard work and talent.)

Disk Digger:

Diskcompare: Compare any disk to any other to see the result of any operation.

GEOSMon: Go to monitor from any place in GEOS, and return.

GEOThreader: Step through job loops

Disk Doctor64

Disk Doctor 128

m **BASIC-8**: One two-sided C128 Disk

To be used only with BASIC-8, the fantastic ultra-hires color graphics language for the C128, by Lou Wallace.

BASIC-Write, BASIC-Calc, and fonts, drivers, brushes, etc.

c **CLIP ART**: Over two dozen 2-sided disks.

***N = non-members, M=members, C=**

Mystic Jim Enchants The Eagle

Word Publisher from *SPINNAKER*

A Review by Peter and Paul Hughes

GEOS word processors give one the ability to have fonts and graphics on the same page. But having those fonts and graphics in your way when editing text can slow down your writing considerably. Word Publisher from Spinnaker is a GEOS word processor that solves that problem. It also has the ability of placing as many graphics as you want beside text. It has a built-in spell-checker and mail merge capability.

GeoWrite Worshop 2.1 was a great improvement over GeoWrite 1.3. GeoWrite 2.1 added many necessary features such as centering, justification and line spacing, adjustable margins, headers and footers, pagination, search and replace and a full 8 inch wide workspace. It also allowed printing in draft, NLQ and high quality mode. Word Publisher has many of these commands and a few different ones.

Word Publisher is a post-formatting GEOS word processor that adds speed, power and flexibility that a WYSIWYG (What You See Is What You Get) word processor does not offer. One is not slowed down by tedious disk access to load in more fonts and graphics in the initial composition mode. With Word Publisher you do not have to wait for the screen to update.

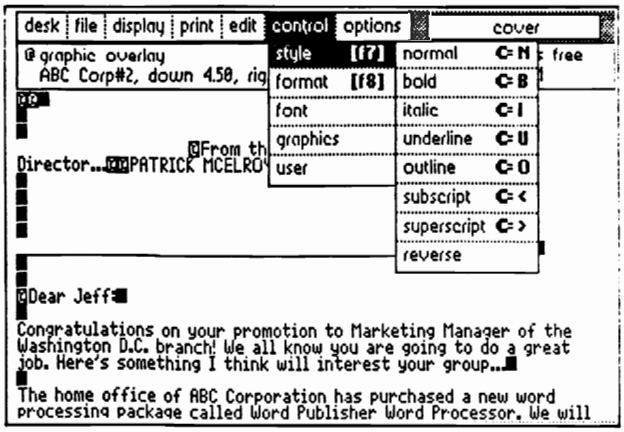
Because Word Publisher uses fast cursor movement routines and a special 8 point composition font that allows 20 lines on the screen, you can write faster and see more text on the screen than GeoWrite. Also there are numerous keyboard shortcuts. Pressing the SHIFT and RUN/STOP keys will pop up help screens listing all the keyboard shortcuts. Some menu selections can be selected from the function keys. There are keyboard commands for jumping forward and backward words, lines and screens that aid in moving about the document.

Word Publisher is unique in that all formatting commands are hidden away and recorded by @ symbols which are embedded in the text. Click on an @ symbol and an area at the top of the screen will explain what that symbol means. This status window shows the attributes of the @ symbol - text enhancements, tabs, formatting commands and placements of graphics. Fonts and graphics are seen only when viewing or after printing. Fonts and graphic do not get in your way while writing until you want to see them.

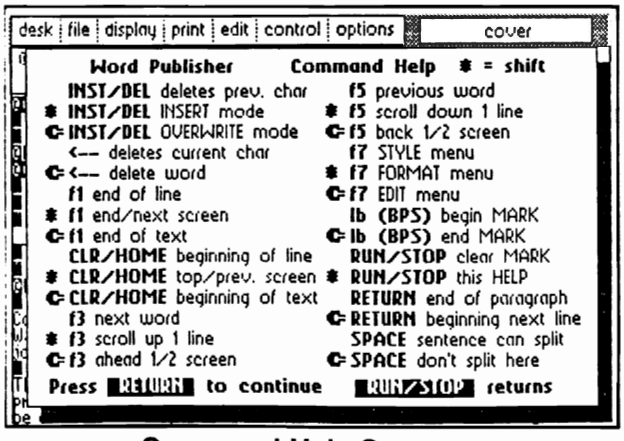
Word Publisher can use up to 9 fonts and six styles per section. It has a 6K cache buffer in RAM to store up to 5 small-point-size fonts so disk access is kept to a minimum. A section can be 1-5 pages if memory allows, depending on density or amount of style information that is recorded. One can have up to 120 sections per document. Document size is virtually unlimited because documents can be chained to each other with the INCLUDE command, even to documents on another drive.

Word Publisher has a unique way of placing graphics on a page. Graphics are taken directly from Photo Albums and overlayed anywhere on the page. No more fooling around with copying and pasting of photo scraps. You specify the name of the Photo Album, page number and how many inches over and down on the page you want the graphic placed. One can select any number of graphics from any number of albums on the disk. GeoWrite only allows graphics to be placed in the center of the margins with no text on either side. With Word Publisher one leaves a place in the text for the placement of the graphic.

The fonts and graphics can be seen in actual size WYSIWYG format



Composition Mode



Command Help Screen

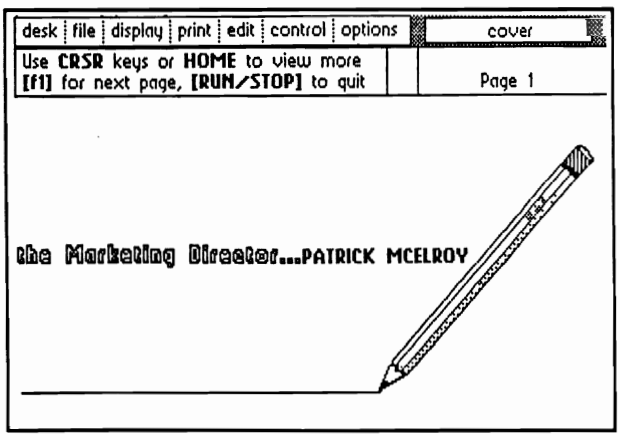
in VIEW mode. The PREVIEW mode shows on right half of the screen a full page reduced preview of the document. F1 key in both modes will skip to next page.

Word Publisher outputs to the printer in three different ways - FAST, DRAFT, and QUALITY. The document can be output to the disk as a standard PET ASCII file with embedded codes stripped, marked or expanded into outline format. The document can be output to the printer in FAST mode for a rough draft or use USER commands to send ASCII control codes directly to the printer. DRAFT mode is with fonts and graphics, but single pass of the print head. The final mode is QUALITY that does a double pass of the print head that produces a darker, smoother, higher quality output. Under one menu there is a selection for adjusting DPI (Dots Per Inch) for ones specific printer - 60, 72, 80 DPI. There is also a selection for printing through a SERIAL BOX 64K serial port print buffer from R. J. Brachman which speeds up GEOS printing by 3 times and allows one to go back to using GEOS while the printer does its work. A flyer is included in the package describing how to order the SERIAL BOX buffer.

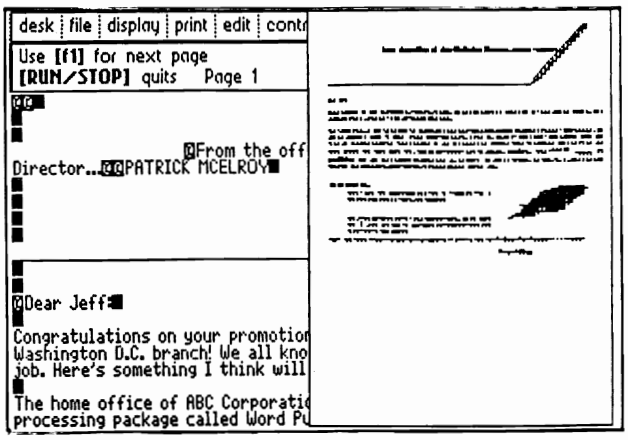
Word Publisher has a built-in 100,000 word Spell Checker as well as a Mail Merge capability for form letters. These features are adequate, but not as powerful as GEOSPELL and GEOMERGE which are separate GEOS applications. GeoSpell has a 28,000 word dictionary, but also has the ability to add words to a User Dictionary. GeoMerge is powerful in terms of doing IF and IF ELSE labels. The Spell Checker and Mail Merge in Word Publisher are handy and added bonuses.

Word Publisher is a different GEOS word processor and has many useful features. It is only $39.95 and is published by Spinnaker, a company with good software support. It has a special composition mode that many GeoWrite users were looking for in a new GeoWrite program. Font, style and graphic information are recorded rather than displayed during composition mode thus allowing for rapid text entry. The special fast cursor routine and composition font gives ultra-fast scrolling and more text visible at once. One can place many graphic overlays beside text. A 100,000 word spell checker and mail merge are built in the program. It has a view and preview in WYSIWYG format and fast, draft, and quality output to printer. It has complete keyboard control of the pointer as well as many keyboard shortcuts. Word Publisher has multi-page, multi-disk document storage capability. Word Publisher is a great alternative to GeoWrite for many people.

There are three problems that I found with Word Publisher. One problem can be alleviated somewhat; the other two are bugs which are going to be fixed. Word Publisher does not use a standard GeoWrite text file format. You cannot load GeoWrite documents into Word Publisher nor can you load Word Publisher documents into GeoWrite. Word Publisher text can be printed to disk in PET ASCII format that can be converted into GeoWrite format using the TEXT GRABBER on the GeoWrite Workshop disk. There may be a converter made that will allow files to be converted to and from Word Publisher and GeoWrite formats. One bug is that graphics can overlay or merge with text very closely and not wipe out surrounding text on 1.2 Kernals of GEOS and only some 1.3 Kernals. Also there is a problem where some format commands such as margin indentions are not recorded because of an updating problem. Moving cursor around before viewing or printing may help. This is a serious bug which should be fixed very soon. One last thing that is not a bug, but a missing feature, is a print from any page range command in case the paper jams on page ten. This would prevent having to reprint from page one.



Close-up VIEW mode



Reduced PREVIEW mode

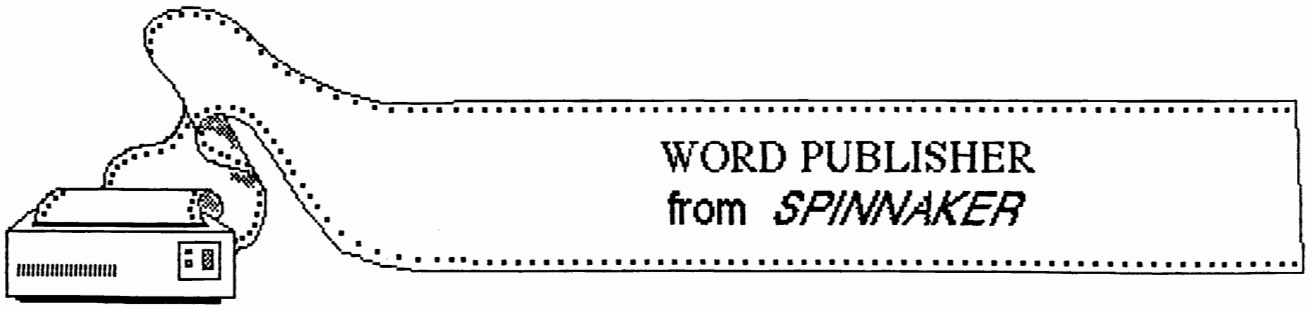
Write Quicker and With More Power With WORD PUBLISHER.

WORD PUBLISHER from SPINNAKER outshines other GEOS word processors because it gives you more. You can access more fonts, more typestyles and more features. With WORD PUBLISHER you can use up to nine fonts per page. The typestyle option includes **boldface,** *italics,* **outlining,** underlining and reversed print. You'll be amazed at how quickly you can learn to use WORD PUBLISHER to jazz up newsletters, memos, flyers, ads, and correspondence.

Use either cursor keys or a mouse to move around your document to select editing and formatting options such as center, right and full justification; single and double spacing; $^{super-}$ and $_{subscript}$; tabs; headers; footers; pagination; cut, copy, and paste; search and replace; word wrap and much more. And WORD PUBLISHER'S com- position mode allows for rapid entry of text - **up to five times faster than other GEOS word processors.**

Once your document is complete, spell check it with the 100,000 word spell checker that catches up to 99% of all spelling errors. Next, go to the View mode for a "what you see is what you get" display, then print directly to disk or printer in fast, draft, or quality output.

And that's not all! WORD PUBLISHER gives you a unique option for chaining files, so there's no limit to your document size. Plus, complete compatibility with geoPaint and geoFont allows you to import additional fonts or graphics into your documents. You can even place place multiple graphics within the same line beside text!



For a Good Time with GEOS

Tim's Timer

PERMANENT TIME AND DATE

* Plugs in port#2 with pass-thru or internally.
* Accurate to <1min/mo for 20yrs without recharge.
* Auto-display prg and much more on provided on disk.
* BASIC set/ permanent screen display.

☐ RTC-E1 For port#2, C64 and 128 $ 49.95
☐ RTC-E2 For internal installation C64 $ 44.95
☐ RTC-E3 For internal C-128 $ 44.95

NEW, improved version !

designed by Tim Corcoran

Mystic Jim
2388 Grape
Denver CO 80207

GEOS is a tradename of Berkeley Softworks. Tim's Timer is a tradename of MJ

HOT! from Master Blaster

GEOICON II

For Serious Programmers:
GEOICON II is a full-featured design package for all icon sizes and types, not just desktop program icons. Saves data to disk, printer or screen display. Extensive documentation & number of related utilities are included for only:

* *Now GEOS 128, 1750REU, 1571 compatible*

Mystic Jim
2388 Grape
Denver CO
80207

$ 19.95 ❋

Printed Documentation +$5.00
Please make checks payable to: Mystic Jim. ($14.95 to shareware members.)

Order by mail, phone (303)-321-3223 or from BBS (303)-321-8954.

© Mystic Jim 1987: all rights reserved. GEOICON II is a trademark of Mystic Jim, Master Blaster. GEOS is a tradename of Berkeley Softworks.

Available May 15. . . six 2-sided disks!

GEOTRONIX

Circuit design pak

Use GEOS to design your custom circuits, generate transparencies, photoetch boards.

* .01 inch precision. Run 3 leads between pins
* Perfect indexing for doublesided boards.
* Make unlimited, perfect, copies.
* Extensive instructions for novice to expert.
* NEW ultra-hires drivers for .005 in. precision

Introductory Price: $ 19.95
goes up July 1 !

($14.95 to members)
Add $3 for COD

BASIC -8 GEOS 128

To Get the Most From Your Commodore 128 80 column You Need a 64K Video RAM

Mystic Jim will soon offer a BASIC-8/ GEOS color conversion package that'll bring COLOR into GEOS128 80 column files

64K Video RAM kit: $ 14.95

EDUCATORS & PARENTS !

INTRODUCING TERRY MULLETT'S

Mystic Jim Presents **geoKids Vol. 1**

Educational enrichment programs for ages 3-7 .

INCLUDES: *Rave review in RUN magazine*

KIINDERMOUSE: Activities for development of the skills most important to early learners, including letter and number recognition, shapes and counting objects and parts of the whole. Child can play and switch activities at will.

SIMON'S SONG: A fascinating memory enhancement game using musical sounds and intriguing graphics. Child may increase the level of difficulty as memory skills improve.

READ ABOUT IT in RUN and INFO magazine articles:
"..an excellent educational program.... for ages 4-7 years"

YOUR KID WILL LOVE IT!!

Mystic Jim
2388 Grape
Denver CO
80207
BBS
(303) 321-8954

Introductory Price Only: $ 11.95 ❋

User groups inquire about special offer.

Check or money order payable to Mystic Jim. C.O.D. add $3.00

© 1987 Mystic Jim, Terry Mullett, all rights reserved. GEOKID is a tradename of MJ , GEOS,GEONET=Berkeley SW

ParaPrint Cable

Take advantage of the speed built into your printer! Eliminate those looong waits printing GEOS documents! Drivers for over 50 printers!

JUST $ 17.95

WHY PAY MORE?

($13.95 for members)

❋ MONEY BACK Guarantee!

If you are dissatified for any reason with any of Mystic Jim's Stuff, you may have a refund , less $2.00 s&h.

Mystic Jim's Stuff Order Form

You may order Mystic Jim's Stuff by mail or on our BBS. Payment can be by check or money order payable to Mystic Jim or C.O.D. (for $3.00 added)

Introductory GEOS Shareware		n/c		✓		
Mystic Jim's Membership		$50.00				
ITEM	no	each		amount		

name

street

city/state zip

BBS (303) - 321 - 8954

COD add $3.00

Total amount

from MASTER BLASTER!

GEOHEADER

EDIT and modify existing headers.
Create headers for your programs.
Move or copy headers to programs.
Headers fully buffered.
Edits all header fields.
Edit font ID numbers.

JUST $ 11.95

$9.95 to members
Printed docs add $5.00
C.O.D. add $3.00

PUBLISHED Docs 'N Stuff!

Laserprinted, Bound Editions

Special Introductory Prices!

1.) Complete shareware instructions. $ 9.95
2) Bulletin Board and terminals guide. $ 11.95
3) Clip Art catalog, including XXX & 12 double-sided Shareware disks $ 14.95
4) Alex Boyce's GEOS Reference Guide (now includes GEOS128 notes/x-ref) $ 11.95

All for $29.95 members $22 COD $3

Mystic Jim's GEOS Shareware Package Offer

Mystic Jim's Shareware membership, with
* Six-issues of GEOWORLD
* 13 disk sides of programs, & dozens more on request.
* Full access to our BBS.
* Discounts on for-sale stuff

$ 50.00

Tim's Timer Real Time Clock: (your choice of type) $49.95

Printed Shareware Docs.
Alex Boyce's Ref. Guide.
BBS & Terminals Guide.

$ 31.85

Total Value: $ 131.80

PACKAGE PRICE:

$ 80.95

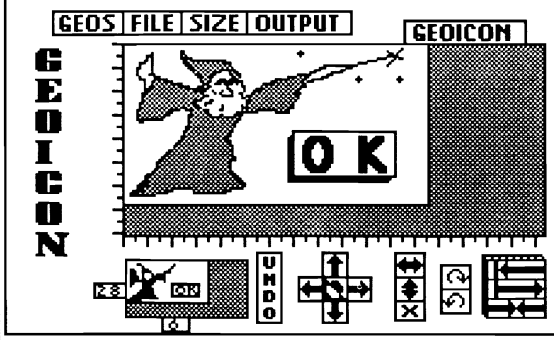
(Add $3.00 for C.O.D.)

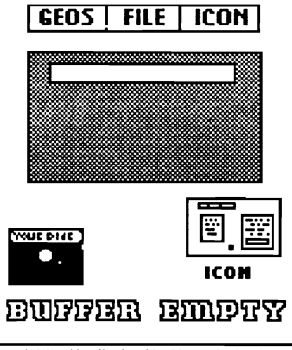
GEOICON II- GEOHEADER

TOGETHER! With lots of Master Blasters best GEOS programming tools. At the low price of:

$ 24.95

Members $17.95 COD+$3 Printed docs $5





SAMPLE SCREENS

GEOS is a tradename of Berkeley Softworks GEOICON, GEOHEADER are tardenames of Mystic Jim's Stuff. all rights reserved 1987

GRAPHIC IDEA FILES CLIP ART COLLECTION
VOL. 1, GRAPHIC ELEMENTS 17.50
VOL. 2, FULL PAGE BORDERS 17.50
HEADLINE FONTS, VOLUME 1 17.50

SEND CHECK OR MONEY ORDER TO:
LAMB ART & DESIGN
1764 AVENUE B
YUMA, ARIZONA 85364

Put these ***geoDisk II*** *icons to work for you!*

Can't open ?

Disk Repair
A fix for sick disks

Safety first!

Disk Guard
Keeps GEOS disks safe

Clowning around . . .

bigTop 128
Just for fun!

Which fonts did he use?

Font Finder
For geoWrite documents

Now you can easily cut and paste icons.

Icons -> Album
Saves icons in
a Photo Album

4X Icons
Save expanded (this size)
icons in a Photo Album

Oops!

TrashPicker
Find lost treasures
in the wastebasket

Get your disks in order.

geoInfo
Prints a directory with
all GEOS information

geoDisk II is now available. A 15 page laser printed manual includes a comprehensive list of available GEOS fonts. **geoDisk II** is only $12.95. Also available: **Randy's geoDisk**, featuring **SEQ->Text Scrap V2.0**, the ultimate text conversion tool. **Randy's geoDisk** is only $15. Get both **geoDisks** for $22.50 and save.

Overseas orders please include $3 for shipping. To order, send check or money orders to:

Turning the GEOS world on it's side!

Antigrav Toolkit
P.O.Box 1074, Cambridge, MA 02142

WANTED: Porsche-related clip art for club newsletter.
Contact Baker Jameson, 8027 Thyme Circle, Liverpool NY 13090

BACK ISSUES

Volume 1 Issue 2,3,4,5,6,7,8,9 $2.00 each postpaid
Volume 2 Issue 1,2,3,4 $2.50 each postpaid

Send check or money order to: GEOWORLD
38 Santa Ynez St.
Santa Barbara, CA 93103

12 Issues $20
6 Issues $12
send check or Money order to:
GEOWORLD
38 Santa Ynez St.
Santa Barbara, CA 93103

Subscribe to GEOWORLD!

Name

Address

City, State, Zip Code

☐ New Subscription

☐ Renewal